

**INTEGRATED NATURAL RESOURCES  
MANAGEMENT PLAN  
2015 – 2020**

**FINAL**

**TOOELE ARMY DEPOT  
UTAH**

**June 2015**

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*Prepared for:* **Tooele Army Depot  
Tooele, UT 84074**

*Prepared by:* **Tetra Tech, Inc.  
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**Final**  
**Integrated Natural Resources Management Plan**  
**2015-2020**  
**Tooele Army Depot North and South Areas,**  
**Utah**

Prepared for:  
Tooele Army Depot,  
Utah

Prepared by:  
Tetra Tech, Inc.  
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Mobile, AL  
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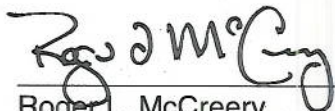
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**PLAN APPROVAL – TOOELE ARMY DEPOT**



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Roger L. McCreery  
Colonel, U.S. Army  
Commander  
Tooele Army Depot, UT

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Robert McCarley  
Colonel, U.S. Army  
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# INTEGRATED NATURAL RESOURCES

## MANAGEMENT PLAN

2015 - 2020

### TOOELE ARMY DEPOT, UTAH

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#### PLAN APPROVAL – TOOELE ARMY DEPOT

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Thomas Turner

Garrison Manager

Tooele Army Depot, UT

INTEGRATED NATURAL RESOURCES

MANAGEMENT PLAN

2018 - 2020

TOOELE ARMY DEPOT, UTAH

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**PLAN REVIEW – TOOELE ARMY DEPOT**



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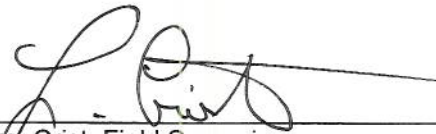
  
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**AGENCY AGREEMENT**



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## ACRONYMS AND ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
µg/L	micrograms per liter
µS	microsiemens
AMC	U.S. Army Materiel Command
AR	Army Regulation
AS	Air Sparging
AUM	animal unit month
BCC	Birds of Conservation Concern
BLM	Bureau of Land Management
BMPs	best management practices
BRAC	Base Realignment and Closure
CAMDS	Chemical Agent Munitions Disposal System
CAP	Corrective Action Permit
CERCLA	Comprehensive Environmental Response, Compensation, and Liabilities Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CO	carbon monoxide
CRM	Cultural Resources Manager
CTC	carbon tetrachloride
DA	Department of the Army
dB	decibels
DCD	Deseret Chemical Depot
DOA	Determination of Availability
DoD	Department of Defense
DoDI	Department of Defense Instruction
EA	Environmental Assessment
Eh	Oxidation potential
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FFA	Federal Facilities Agreement

FY	Fiscal Year
GIS	Geographic Information Systems
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HQDA	Headquarters, Department of the Army
ICRMP	Integrated Cultural Resources Management Plan
ICUZ	Installation Compatible Use Zone
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management
IPMP	Integrated Pest Management Plan
IRP	Installation Restoration Program
ISO	International Organization for Standardization
ITAM	Integrated Training Area Management
LCTA	Land Condition Trend Analysis
LUC	Land Use Control
MACOM	Major Command
MC	munitions constituents
MEC	munitions and explosives of concern
mg/L	milligrams per liter
MMRP	Military Munitions Response Program
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mV	Millivolts
MWR	Morale, Welfare, and Recreation
N/A	not available or not applicable
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOx	nitrogen oxides
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OB/OD	open burn/open demolition



PCB	polychlorinated biphenyls
PCE	tetrachloroethylene
PID	Peterson Industrial Depot
PLS	Planning Level Survey
PM	particulate matter
RBP	Rapid Bioassessment Protocol
RCRA	Resource Conservation and Recovery Act
RDA	Redevelopment Agency
REC	Record of Environmental Consideration
ROA	Report of Availability
SAIA	Sikes Act Improvement Act
SARA	Superfund Amendments and Reauthorization Act
SHPO	State Historic Preservation Office
SO <sub>2</sub>	sulfur dioxide
SOP	Standard Operating Procedure
SVE	Soil Vapor Extraction
SVOC	semi-volatile organic compounds
SWMU	solid waste management unit
TCE	Trichloroethylene
TDS	total dissolved solids
TEAD	Tooele Army Depot
TNT	trinitrotoluene
TOCDF	Tooele Chemical Agent Disposal Facility
TRI	Training Requirements Integration
UDEQ	Utah Department of Environmental Quality
UDNR	Utah Department of Natural Resources
UDWR	Utah Division of Wildlife Resources
UID	Utah Industrial Depot
UCWS	Utah Comprehensive Wildlife Strategy
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USFWS	United States Fish and Wildlife Service
UTL	upper tolerance level
VOC	volatile organic compounds

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## **SECTION 1.0 EXECUTIVE SUMMARY**

### **1.1 PURPOSE**

#### **1.1.1 Purpose and Scope**

The purpose of this Integrated Natural Resources Management Plan (INRMP) is to guide the natural resources management program at Tooele Army Depot (TEAD) North and South Areas from 2015 through 2020 and to provide a solid foundation on which to build the program beyond 2020.

The INRMP addresses natural resources management on all lands for which TEAD has jurisdiction and control, including lands occupied by tenants or lessees or lands being used by others pursuant to a permit, license, right of way, or any other form of permission. Natural resources management efforts are coordinated with adjacent landowners to the extent practicable to address resource management planning on a landscape scale.

#### **1.1.2 Support of Army Mission**

Maintaining optimal environmental conditions on the military lands is essential for the success of the military mission at TEAD. The management measures have been developed on the basis of the conditions of the resources and the military mission and activities as they are anticipated.

#### **1.1.3 Benefits**

The INRMP provides the Army and the installation with one document that describes the state of natural resources and describes natural resources management on the installation. Formerly, individual species management was the norm, and each managed species had a management plan. These plans often had redundant information and did not address the larger context of ecosystem-level natural resources management goals and objectives. The INRMP, however, provides a concise analysis of all levels of the ecosystem, from the interaction of terrestrial and aquatic habitats with each other to the management methods and goals for individual species. This larger picture provides a broader basis of understanding for planning and budgeting purposes.

### **1.2 IMPLEMENTATION**

#### **1.2.1 Primary Natural Resource Management Goals**

The general goals of this INRMP conform to those outlined in the Army Environmental Strategic Plan and are as follows:

- Ensure the long-term sustainability of the lands to support the military mission.
- Conserve and protect the natural resources.
- Protect cultural resources.
- Accommodate multiple uses of the land.

The goal established by TEAD for the natural resources management program is to maintain ecosystem viability and ensure the sustainability of desired military mission activities. The following management objectives were identified to achieve this goal:

Manage all resources to support the installation mission.

- Implement a natural resources management program that reflects the principles of ecosystem management.
- Provide special protection and management for listed species.
- Manage terrestrial and aquatic resources within the principles and guidelines of ecosystem management to maintain productive habitats and viable populations of native species.
- Provide outdoor recreational opportunities to the extent practicable and that do not conflict with the military mission.
- Use adaptive management techniques to provide the flexibility to alter strategies using increased knowledge and data gained from monitoring programs, special studies, and scientific literature.
- Seek to maintain or increase the level of biodiversity of native species.
- Communicate, cooperate, and coordinate with neighboring land owners.
- Protect the natural resources from unacceptable damage and degradation resulting from insects and disease, animal damage, invasive species, and wildfire; and manage the resources in a manner that supports the military mission.
- Prevent the degradation of water quality, protect aquatic and riparian habitats, and identify and restore degraded habitats.
- Protect soil resources from erosion and destabilization through prevention and restoration efforts.
- Protect and preserve cultural resources.
- Protect rare and unique plant species identified as state or locally rare but without legal protection status, to the extent practical without restrictions on operations.
- Protect sensitive and ecologically significant habitats on TEAD.

This INRMP also identified specific goals:

- Maintain and improve vegetation health and diversity.
- Maintain and improve aquatic, riparian, and wetland habitats.
- Decrease soil erosion and associated stream turbidity.
- Ensure the long-term sustainability of the lands to support the military mission.
- Conserve and protect the natural resources.
- Accommodate multiple uses of the land.
- Ensure that natural resources conservation measures and Army activities on TEAD land are integrated and consistent with federal stewardship requirements.

The ability to achieve these goals depends directly on the health and condition of the natural resources at TEAD. Protecting the ecological and biological integrity of the military lands ensures that the environmental conditions continue to provide the soil and vegetative cover necessary for controlling erosion, reducing fire hazards, and improving overall operational safety and efficiency.

The natural resources management program must remain flexible if it is to achieve long-term success. The natural resources management program will achieve and maintain this flexibility by incorporating adaptive management techniques into the program. Adaptive management is a process by which new information from monitoring data, special studies, or scientific literature is used to evaluate the success of the management measures in place. This information is then used to determine the changes in the management approach necessary to ensure the continued

success of the program. The natural resources management program might also be required to adapt to unforeseen changes in military mission and legal requirements.

### **1.2.2 Impact on Current Management Practices**

This INRMP has more clearly defined the natural resources management goals and objectives at TEAD. These refined goals and objectives have been designed to reflect the aim of continual improvement of the ecosystem at TEAD and the balance between the ecosystem and military mission.

## **1.3 ENVIRONMENTAL IMPACTS**

As stated in Army Regulation (AR) 200-1, *Environmental Protection and Enhancement*, “the Army is committed to environmental stewardship in all actions as an integral part of its mission and to ensure sustainability,” and will “sustain the environment to enable the Army mission and secure the future.” This INRMP has been prepared in accordance with AR 200-1 and the Department of Defense (DoD) manual, *Integrated Natural Resources Management Plan (INRMP) Implementation Manual* (DoD Manual 4715.03-M). This INRMP provides the guidance necessary for TEAD to maintain compliance with the DoD Instruction 4715.03 (*Natural Resources Conservation Program*), Executive Order (EO) 11990 (*Protection of Wetlands*), the Clean Water Act, and the Endangered Species Act of 1973 (ESA).

## **1.4 SUMMARY**

This INRMP, if implemented as written, will fulfill the intent and obligations of the Sikes Act and all other applicable federal, state, and local rules and regulations regarding management of natural resources on TEAD. Furthermore, floral and faunal resources will be managed to achieve self-sustaining populations and communities, while federal and state listed candidate, threatened, and endangered species may be accorded special management prescriptions. Invasive, non-native species will be managed on a species-specific basis through the most feasible methods, and their respective populations will be controlled or eradicated on TEAD to the extent practicable. The depot will be proactive in community outreach by providing recreational and educational opportunities to the public, within the limits of safety and security

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## **SECTION 2.0 GENERAL INFORMATION**

### **2.1 PURPOSE**

The purpose of this INRMP is to guide the natural resources management program at TEAD's North and South Areas from 2015 through 2020 and to provide a solid foundation on which to manage the program beyond the year 2020. Implementing this INRMP will help TEAD achieve its mission to support Warfighter readiness through superior receipt, storage, issue, demilitarization, and renovation of conventional ammunition and the design, manufacture, fielding, and maintenance of ammunition peculiar equipment.

#### **2.1.1 Use of the INRMP to Guide Natural Resources Management**

This INRMP is to serve as an effective installation tool for managing natural resources consistent with mission goals. This INRMP is the adaptive plan for managing natural resources, thereby supporting consistency with the military mission while protecting and enhancing resources for multiple use, sustainable yield, and biological diversity. This INRMP will ensure that natural resources conservation measures activities on mission land are integrated and are consistent with federal stewardship requirements.

#### **2.1.2 Scope of the INRMP**

This INRMP is designed to address natural resources and their management throughout the installation. Because most of the existing natural resources are in the Ammunition Storage Area and Buffer Area, the majority of the topics in this INRMP are directed at those locations. This INRMP does not address managing natural resources on properties that lie off the installation (i.e., adjacent properties and properties that were removed from TEAD's property inventory under Base Realignment and Closure actions), but it strives to address all those activities occurring on the installation that could benefit or degrade natural resources.

#### **2.1.3 Function of the INRMP**

This INRMP helps ensure that environmental considerations will continue to be an integral part of planning activities at TEAD and that natural resources are protected in accordance with Army regulations and policies. This INRMP represents a review, update, and revision of previous TEAD INRMPs, and integrates the previous TEAD North Area INRMP, dated May 2007, and the previous Deseret Chemical Depot (now the TEAD South Area) INRMP, dated February 2009. This document presents a review of the natural resources activities undertaken at TEAD over the intervening years, and it proposes a range of new projects and initiatives for implementation in 2015 through 2020.

This INRMP is not intended to be a stand-alone document. Instead, it is designed to document the health and extent of existing natural resource assets and their existing management, and assist in the full integration of natural resources management into other installation plans and activities across the depot.

### **2.2 AUTHORITY**

The DoD is considered a leader in natural resources management. The military services have fully embraced an ecosystem management approach since the adoption of ecosystem management in 1994 (DoD 1994). Although the DoD and the Department of the Army (DA) had provided guidance on most of the major natural resources components (forestry; endangered

species; game, fish, and wildlife; and related outdoor recreation), the guidance was not integrated and did not incorporate an ecosystem management approach. Mission support, sustained yield, and multiple uses continue to be supported under an ecosystem management approach; however, additional objectives are included. Ecosystem management objectives consider a regional context and emphasize a desired future condition that is anticipated within 10, 20, or more years.

### **2.2.1 The Sikes Act (16 U.S.C. 670 et. seq.)**

Under the Natural Resource Management on Military Lands Act of 1960, commonly known as the Sikes Act,

The Secretary of Defense shall carry out a program to provide for the conservation and rehabilitation of natural resources on military installations. To facilitate the program, the Secretary of each military department shall prepare and implement an integrated natural resources management plan for each military installation in the United States under the jurisdiction of the Secretary. Consistent with the use of military installations to ensure the preparedness of the Armed Forces, the Secretaries of the military departments shall carry out the program to provide for the conservation and rehabilitation of natural resources on military installations; the sustainable multipurpose use of the resources, which shall include hunting, fishing, trapping, and non-consumptive uses; and subject to safety requirements and military security, public access to military installations to facilitate the use.

Per title 16 United States Code (U.S.C.) section 670a(b) of the Sikes Act Improvement Act (SAIA) of 1997, to the extent appropriate and applicable, this INRMP provides for the following:

- Fish and wildlife management, land management, forest management, and fish- and wildlife-oriented recreation.
- Fish and wildlife habitat enhancement or modifications.
- Wetland protection, enhancement, and restoration, where necessary for support of fish, wildlife, or plants.
- Integration of, and consistency among, the various activities conducted under the plan.
- Establishment of specific natural resource management goals and objectives and time frames for proposed action.
- Sustainable use by the public of natural resources to the extent that the use is not inconsistent with the needs of fish and wildlife resources.
- Public access to the military installation that is necessary or appropriate for the use described above, subject to requirements necessary to ensure safety, military security, and fulfillment of the military mission.
- Enforcement of applicable natural resource laws (including regulations).
- No net loss in the capability of military installation lands to support the military mission of the installation.
- Such other activities as the Secretary of the military department determines appropriate.

### **2.2.2 Department of Defense Instruction 4715.03: Natural Resources Conservation Program, March 18, 2011**

This revised INRMP was prepared in accordance with the SAIA, DoD Instruction (DoDI) 4715.03 (Natural Resources Conservation Program). The SAIA states that “the Secretary of each military department shall prepare and implement an INRMP for each military installation in the United



States under the jurisdiction of the Secretary, unless the Secretary determines that the absence of significant natural resources on a particular installation makes preparation of such a plan inappropriate.” DoDI 4715.03 prescribes procedures for integrated management of natural and cultural resources, including preparing an INRMP as required by the SAIA. DoDI 4715.03 also states that “INRMPs shall be prepared, maintained, and implemented for all installations and ranges that contain significant natural resources for which DoD has authority for or control of natural resources management.”

### **2.2.3 AR 200-1: Environmental Protection and Enhancement**

The Army’s commitment to the conservation of its natural resources is further reflected in AR 200-1, *Environmental Protection and Enhancement*. AR 200-1 requires the preparation of INRMPs and prescribes Army policies, procedures, and standards for the “conservation, management, and restoration of land and the renewable natural resources on it, consistent with and in support of the military mission.”

### **2.2.4 Sikes Act Policy and Guidance**

#### **2.2.4.1 USD Sikes Act Policy Memorandum, October 10, 2002**

On October 10, 2002, a memorandum from the Deputy Under Secretary of Defense (*Implementation of Sikes Act Improvement Act: Updated Guidance*) defines requirements and expectations associated with U.S. Fish and Wildlife Service (USFWS) and state natural resources agency coordination, DoD reporting, implementation and funding, and other miscellaneous requirements, such as no net loss to military lands and cooperative agreements.

Supplemental guidance (*Supplemental Guidance for Implementation of the Sikes Act Improvement Act: Additional Guidance Concerning INRMP Reviews*, November 1, 2004) was issued in relation to the October 2002 memorandum. It provides additional guidance concerning the scope of INRMP reviews, public comments on INRMP reviews, and ESA consultation on INRMPs. Specifically, this guidance clarifies that although DoD policy indicates that INRMPs must be reviewed regularly (not less often than every five years), not all INRMPs will require revision upon those reviews and INRMPs should be reviewed annually by the installation and other parties to the INRMP. With respect to public review of INRMPs, the policy is that there is no legal obligation to invite the public either to review or to comment on a mutually agreed upon decision to continue implementing an existing INRMP without revision. Finally, regarding USFWS consultation, the policy is that most INRMPs will incorporate by reference the results of previous ESA consultations, and as a consequence neither a separate biological assessment nor a separate formal consultation should be necessary concerning most INRMPs or INRMP revisions. Informal consultation with the USFWS during the INRMP revision process is, nonetheless, encouraged.

These guidance memorandums were further revised by a memorandum dated May 17, 2005 (*Implementation of Sikes Act Improvement Amendments: Supplemental Guidance Concerning Leased Lands*). The memorandum clarifies that an INRMP must address resource management on all the lands for which an installation has real property accountability, including lands occupied by tenants or lessees or being used by others pursuant to a permit, license, right of way, or any other form of permission.

#### **2.2.4.2 INRMP Comprehensive Strategic Action Plan, August 6, 2004**

The *Comprehensive Plan for Using Integrated Natural Resource Management Plans at Active Military Installations and Ranges to Sustain Readiness* describes a set of activities related to

implementing INRMPs that will ensure the DoD's ability to properly manage the valuable natural resources entrusted to its care and sustain the readiness of its force.

#### **2.2.4.3 Sikes Act Tripartite Memorandum of Understanding, January 2006**

This Memorandum of Understanding (MOU) established a cooperative relationship between the DoD, the USFWS, and state fish and wildlife agencies (represented by the International Association of Fish and Wildlife Agencies) for preparing, reviewing, and implementing INRMPs.

#### **2.2.5 32 CFR Part 651: Environmental Effects of Army Actions**

Title 32 of the Code of Federal Regulations (CFR) "implements the National Environmental Policy Act of 1969 (NEPA), setting forth the Army's policies and responsibilities for the early integration of environmental considerations into planning and decision-making." In particular, 32 CFR 651.14, Integration with Army Planning, states that "environmental analyses required by this part will be integrated as much as practicable with other environmental reviews, laws, and Executive Orders" (40 CFR 1502.25) and "...installation management plans, particularly those that deal directly with the environment." To meet the requirements of 32 CFR part 651, this document combines the TEAD INRMP and the associated NEPA analysis—in this case, a Record of Environmental Consideration (REC)—for implementing the INRMP. The REC is included as Appendix A to this INRMP.

#### **2.2.6 HQDA INRMP Policy Memorandum, March 21, 1997**

The Headquarters, Department of the Army (HQDA) INRMP Policy Memorandum (March 21, 1997) titled *Army Goals and Implementing Guidance for Natural Resources Planning Level Surveys and Integrated Natural Resources Management Plan* states that the purpose for completing planning-level surveys and the INRMP is "to ensure that natural resource conservation measures and Army activities on mission land are integrated and are consistent with federal stewardship requirements" (HQDA 1997).

### **2.3 RESPONSIBILITIES**

The success of the management of the natural resources on the grounds of TEAD requires a cooperative effort among the parties directly responsible for implementing this INRMP. The level of success can be enhanced by developing partnerships among the parties that have a vested interest in the responsible management of the natural resources at TEAD. Outside parties and their roles and responsibilities are described in Chapter 7. Brief descriptions of the parties directly responsible for implementing this INRMP are provided below.

#### **2.3.1 Installation Commander**

The Commander is directly responsible for operating and maintaining TEAD, including implementing and enforcing this INRMP. The Commander is responsible for outdoor recreation activities at TEAD, including hunting and fishing, and has the authority to delegate all or portions of the management of outdoor recreation activities and fish and wildlife management to members of his command. The Commander retains the exclusive approval authority for use of normally restricted areas for recreational purposes.

In accordance with AR 200-1, the Sikes Act, and other federal laws, the commander of TEAD is personally liable for noncompliance with the environmental laws this INRMP is designed to uphold and, therefore, has a personal interest in ensuring the full and complete implementation of the plan.

### **2.3.2 Garrison Operations Directorate**

The Garrison Operations Directorate directly supports TEAD through real property management, master planning, building and grounds maintenance, utility maintenance, refuse pickup, equipment and supply management, fleet management, fire and emergency services, the environmental program, and recreation services. Divisions under the Directorate include: Emergency Services (Fire and Security), Morale, Welfare, and Recreation (MWR), Environmental, Logistics Support, Safety, Facilities Support, and Engineering Services.

## **2.4 MANAGEMENT PHILOSOPHY**

### **2.4.1 How This INRMP Supports the Army Military Mission**

Maintaining optimal environmental conditions on the military lands is essential for the success of the military mission at TEAD. The management measures have been developed on the basis of the existing conditions of the resources, and the military mission and activities as they are anticipated. Implementing this INRMP will guide natural resources management at TEAD for the next five years (Fiscal Year [FY] 2015 through FY 2020) and provide a solid foundation on which to build the program beyond the year 2020.

### **2.4.2 How This INRMP Was Developed**

The preparation of this INRMP involved the review and analysis of past natural resource management practices, ongoing programs, and the current conditions of the existing resources as detailed in Section 3.0. The review process included interviewing TEAD Environmental Management Office personnel, as well as key individuals from state and federal agencies; collecting existing environmental documentation; and conducting a field reconnaissance of the installation.

Once the existing conditions had been established, the study team reviewed management practices to ascertain whether they had been effective over the past five years and where they could be improved. As a result of this analysis, the natural resource management goals and objectives have not been altered significantly from the previous INRMP, but they have been more clearly defined (Section 8). Projects were proposed that are designed to attain those goals and objectives.

### **2.4.3 How This INRMP Implements the Army Principles for Ecosystem Management**

This INRMP uses an ecosystem management approach to natural resources management. Each element of the ecosystem is studied and managed in relationship to other parts of the ecosystem, so that natural biological integrity is maintained to the extent feasible. Stewardship of natural resources on an ecosystem scale addresses requirements of water quality, soil productivity, biological diversity of native flora and fauna, and compliance concerns. This INRMP, therefore, emphasizes protection and management of soil and water resources and lower levels of the food chain, which will, in turn, support the sustainability of biological resources and of mission activities.

### **2.4.4 How This INRMP Supports the Installation Planning Process**

This INRMP supports TEAD's planning process by identifying and prioritizing natural resources management goals, identifying projects to support those goals, and identifying the schedule and resources (labor and funding) required for performing those projects. These functions, then, help guide the larger planning process, including budgeting, hiring, and acquisition.

## **2.4.5 Integrated Training Area Management Program**

Lands that support military missions are valuable assets. The Army recognizes that training to doctrinal standards will affect the environment. The primary goal of land management is to ensure the long-term availability of land and natural resources for mission activities. This goal is compatible with and depends on sound stewardship and conservation practices.

Natural ecosystems play a vital role in a healthy environment, and installations can best maintain ecosystems by giving special consideration to soil and vegetation characteristics, surface and subsurface water, wetlands, archaeological and geological sites, flood plains, and wildlife resources in their operations, development, design, construction, and maintenance activities.

The Army incorporates ecosystem management principles into the Integrated Training Area Management (ITAM) program, the comprehensive approach to land management on Army installations. ITAM includes four components:

- Land Condition Trend Analysis (LCTA), a management procedure that provides for collecting, inventorying, monitoring, managing, and analyzing tabular and spatial data concerning land conditions on an installation.
- Training Requirements Integration (TRI), a decision-support procedure that integrates training requirements with processes to manage land, training, and natural and cultural resources. TRI also accounts for data derived from LCTA and Army conservation program components.
- Land Rehabilitation and Maintenance, a preventive and corrective land rehabilitation and maintenance procedure that reduces the long-term impacts of training and testing on installation lands.
- Environmental Awareness, a means to develop and distribute educational materials to land users. Materials relate procedures for sound environmental stewardship of natural and cultural resources and reduce the potential for inflicting avoidable impacts.

An effective installation ITAM program increases training realism, promotes effective land rehabilitation, abates environmental damage, reduces costs for land management and environmental compliance, and enhances the Army's public image as a conscientious land steward.

Objectives, responsibilities, and policies for integrated range and training area management under the ITAM program are set forth in AR 350-19 (*The Army Sustainable Range Program*).

## **2.5 CONDITIONS FOR IMPLEMENTATION AND REVISION**

### **2.5.1 Implementation**

The TEAD Environmental Division has the primary role and responsibility for implementing this INRMP, which is in effect from FY 2015 through FY 2020.

### **2.5.2 Review and Revisions**

The Environmental Division will annually conduct a review of this INRMP in light of the preceding year's accomplishments. TEAD will invite annual feedback from the USFWS and the state fish and wildlife office participating in the review on the effectiveness of the INRMP. The state office that participates in the INRMP review is Utah Division of Wildlife Resources (UDWR).

According to DoD policy (DoDI 4715.03, March 18, 2011), reviews of the INRMP for operation and effect must be performed no less frequently than every five years by the DoD, USFWS, and state fish and wildlife agencies. The review for operation and effect will determine if the INRMP is

being implemented to meet the Sikes Act requirements and if the INRMP needs to be revised. The existing INRMP remains in effect until the USFWS and UDWR mutually agree on the revision.

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## **SECTION 3.0      INSTALLATION OVERVIEW**

### **3.1      LOCATION AND AREA**

TEAD North and South Areas are in Tooele County in north central Utah, about 35 miles southwest of Salt Lake City (Figures 3-1, 3-2, and 3-3). TEAD North Area is just west of the city of Tooele and south of the city of Grantsville, and it is bordered by Utah State Routes 36 to the east and 112 to the northeast. TEAD South Area is about 20 miles south of TEAD North Area. TEAD South Area is bordered by Utah State Route 73 to the north and east and Utah State Route 36 to the west. The town of Stockton (on State Highway 36) is about eight miles to the north, and the small, historic mining town of Ophir in Ophir Canyon in the Oquirrh Mountains is about four miles to the northeast.

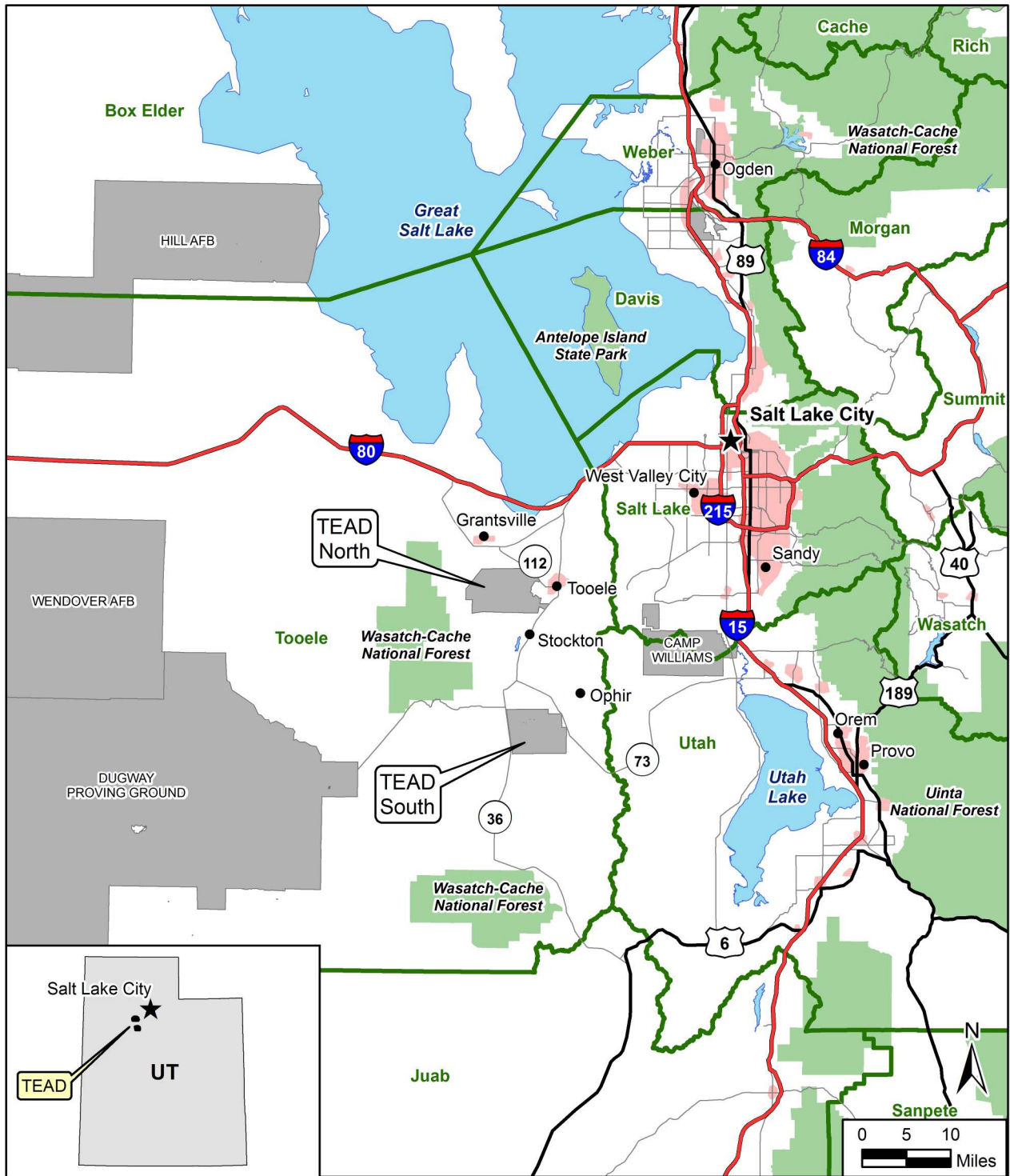
TEAD North Area lies in Tooele Valley and TEAD South Area is in Rush Valley (Figure 3-4). These valleys are delineated by the Oquirrh Mountains to the east, Stansbury and Onaqui Mountains to the west, and the Great Salt Lake to the north (the lake is about 15 miles north of the TEAD North Area). To the south of TEAD North Area is South Mountain, and to the south of TEAD South Area are the Sheeprock and Tintic Mountains. The elevation in the valleys is about 5,000 feet above mean sea level and the surrounding mountains peak at about 11,000 feet.

### **3.2      INSTALLATION HISTORY**

#### **3.2.1      TEAD North Area**

The U.S. Army acquired 25,000 acres of previously uninhabited semi-desert land in sparsely populated Tooele County for much needed expansion during World War II. Construction of the Tooele Ordnance Depot (now TEAD North Area) was completed in 1943 to be used primarily as a military surplus materials salvage, storage, and disposal facility (TEAD 2007).

TEAD North Area has served primarily as an ammunition supply, storage, and disposal facility throughout its existence and has at times also served as the primary command for several satellite installations (including Umatilla Chemical Depot, Oregon; Fort Wingate, New Mexico; and Pueblo Chemical Depot, Colorado). In 1955 TEAD assumed command of the Deseret Chemical Depot, which until 1997, when it was realigned under a different Army command, was known as the TEAD South Area. In 1962 the facility was redesignated from Tooele Ordnance Depot to Tooele Army Depot. It reached peak size during the Vietnam conflict, when a number of U.S. Army ordnance and supply depots in the West were closed, and their missions were turned over to TEAD. Today the Depot retains only the conventional ammunition storage, maintenance, and demilitarization portions of its mission. TEAD transferred a 1,707-acre Base Realignment and Closure (BRAC) parcel (a former industrial vehicle maintenance area) to the Tooele City Redevelopment Agency (RDA) in January 1999, which resulted in TEAD's size being reduced to 23,611 acres. The RDA subsequently sold its interest in the BRAC property to Endeavor Business Park, who shortly thereafter sold the property to Depot Associates. Depot Associates operated the facility under the name of Utah Industrial Depot (UID). In 2012, Depot Associates sold their interest in the property to the Ninigret Group, who in turn sold part to the Peterson Holdings Group. The two companies operate the property as a commercial business/industrial park called the UID/Peterson Industrial Depot (PID) (TEAD 2007, 2013a).

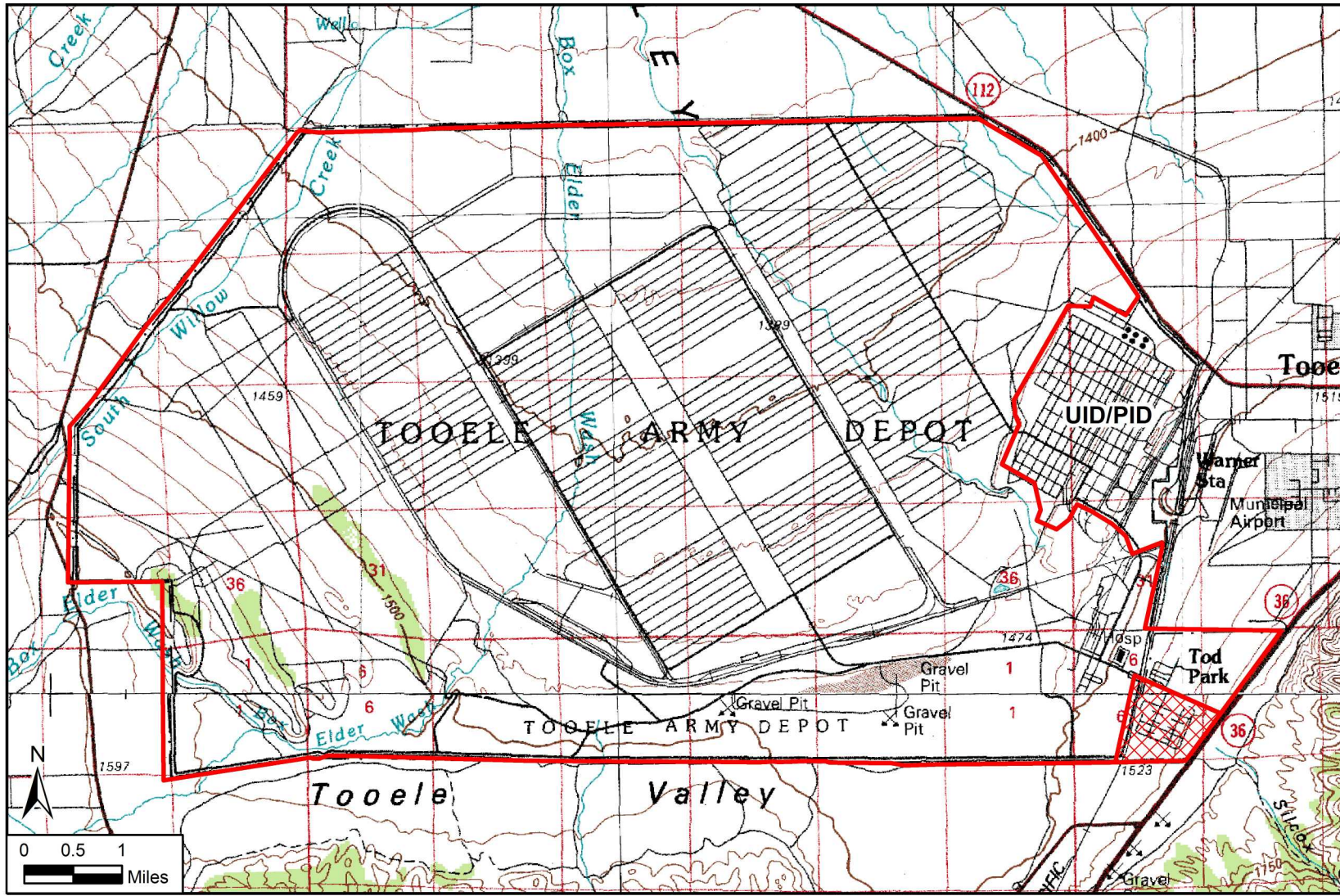


- LEGEND**
- Military Installation
  - County Boundary
  - Interstate Highway
  - U.S. Route
  - State Route
  - Surface Water
  - Urban Area
  - Park

## Installation Location

Figure 3-1

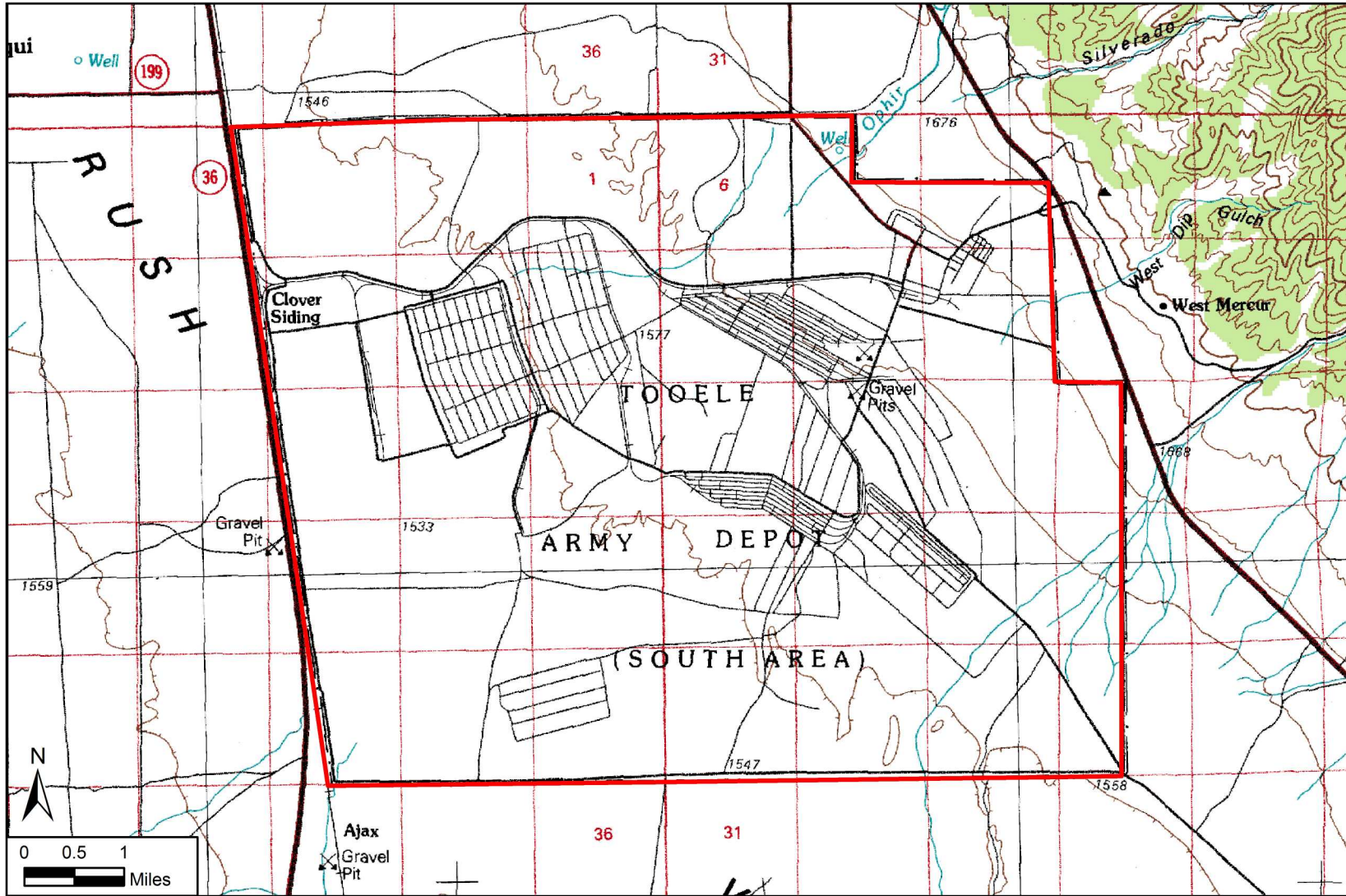




**LEGEND**  
 [Red outline] Installation Boundary  
 [Hatched red] Leaseback Area

**Installation Map - TEAD North**

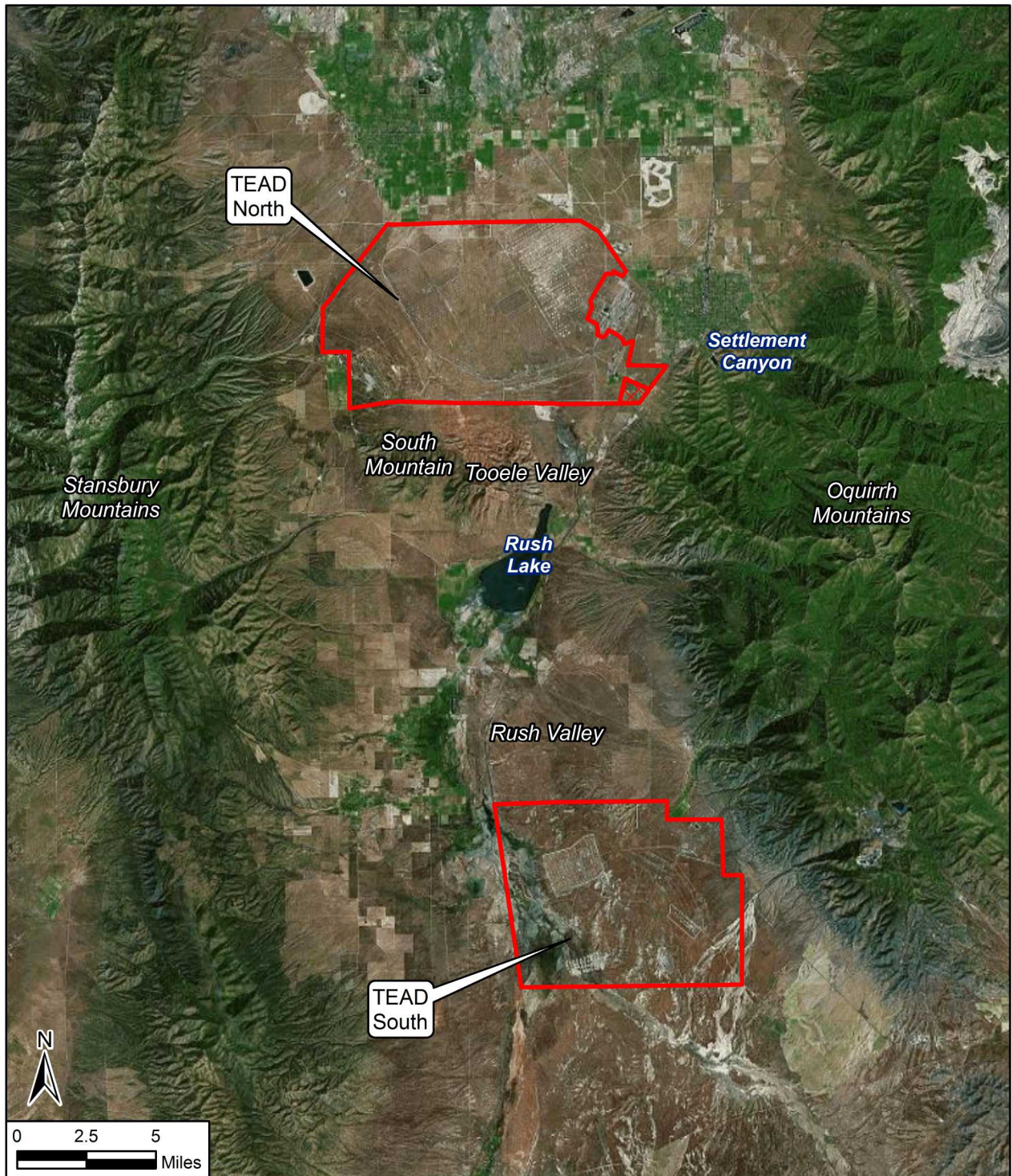
**Figure 3-2**



**LEGEND**  
Installation Boundary

**Installation Map - TEAD South**

**Figure 3-3**



**LEGEND**  
[Red outline] Installation Boundary  
[Red outline with cross-hatch] Leaseback Area

### Aerial View of TEAD

Figure 3-4

Source: ESRI 2011.

### **3.2.2 TEAD South Area**

The TEAD South Area (formerly Deseret Chemical Depot, or DCD) is about 19,368 acres. In 1942, about 4,196 acres were acquired by direct purchase, 15,170 acres by transfer, and 2 acres by leases to form DCD.

Prior to its construction in 1942, DCD property was used for grazing and agriculture. Initial construction on DCD began in July 1942 and was completed in January 1943. DCD was constructed to provide storage and maintenance services for chemical munitions during World War II. Because of potential risks associated with its mission, DCD was remotely situated away from populated areas. During this time, the installation facilities included housing and community facilities. Workers lived in either neighboring towns or at the Depot.

After World War II, DCD's mission changed, and the installation served as a military chemicals storage facility, which staffed only maintenance and security personnel. DCD was reactivated during the Korean War in July 1950. In May 1955, TEAD assumed command of DCD, and in 1962, DCD became known as the TEAD South Area and TEAD became the North Area. Agent munitions were moved from TEAD North Area to South Area in 1977. TEAD South Area included the Chemical Agent Munitions Disposal System (CAMDS) and the Tooele Chemical Agent Disposal Facility (TOCDF). CAMDS was constructed at TEAD South Areas in September 1979 as a pilot facility to test demilitarization methods on various chemical munitions. Between 1990 and 1993, the Army constructed TOCDF, an incineration facility designed to demilitarize the chemical munitions stockpile stored at TEAD South Area. In 1996, TOCDF began operations, and TEAD South Area phased out its open detonation of conventional munitions. Originally, approximately 44.5 percent of the total United States chemical weapons stockpile was stored at TEAD South Area. The chemical stockpile consisted of both nerve agents (tabun [GA], sarin [GB], and VX) and blister agents (sulfur mustard [H, HD, HT] and Lewisite [L]). TOCDF was the operating facility for the demilitarization of the TEAD South Area chemical stockpile. CAMDS was a former prototype and research facility designed for the demilitarization of chemical munitions and for the detoxification of nerve agents (GB and VX) and mustard agent fills.

In 1997, TEAD South Area was redesignated as DCD and was no longer under the command of TEAD. DCD's chemical munitions stockpile demilitarization mission has been completed; the last chemical agent munition in the DCD stockpile was destroyed on January 21, 2012. The CAMDS facility was closed in April 2013, and the TOCDF facility was closed in September 2014 and their incinerators were demolished. Other CAMDS and TOCDF facilities (such as administrative buildings and lab) still remain, and the TEAD Business Development Division is looking at potential reuse of these facilities.

On July 11, 2013, TEAD again assumed command of DCD, renaming it Tooele Army Depot South Area (and the original TEAD property again became the TEAD North Area).

### **3.3 MILITARY MISSION**

The mission of TEAD (North and South Areas) is to support Warfighter readiness through superior receipt, storage, issue, demilitarization, and renovation of conventional ammunition and the design, manufacture, fielding, and maintenance of ammunition peculiar equipment. The Depot's vision is to be the DoD's western region conventional ammunition hub and the DoD ammunition peculiar equipment center. TEAD was designated as a Center of Industrial and Technical Excellence for Ammunition Peculiar Equipment by the Secretary of the Army on March 1, 2010. TEAD is International Organization for Standardization (ISO) certified in ISO 9001 (Quality

Management), ISO 14001 (Environmental Management), and the Occupational Health and Safety Assessment Series 18001.

TEAD North Area tenants are the U.S. Army Civilian Human Resources Agency; Army Contracting Command; Shadow Logistics Center; U.S. Army Health Clinic (Medical and Dental Activity); Air Force Reserve Ammunition Team; Marine Corps Liaison; and Defense Logistics Agency. TEAD South Area tenants are Joint Professional Military Education Personal Protective Equipment Team; TOCDF; Missile Defense Agency; and Assembled Chemical Weapons Alternatives.

### **3.4 SURROUNDING COMMUNITIES AND REGIONAL LAND USE**

The major land uses in Tooele County are cattle ranching, mining, and related activities. Much of the land surrounding TEAD North and South Areas is agricultural, and it is used primarily for livestock grazing with some limited cultivation.

#### **3.4.1 TEAD North Area**

Property west and south of TEAD North Area is managed by the U.S. Forest Service, the Bureau of Land Management (BLM, which leases parcels of land for livestock grazing), and Tooele County. Areas of low to moderate intensity development are located in the cities of Tooele and Grantsville and the small communities of Stockton and Ophir. Salt Lake City is the nearest major metropolitan area. Residential neighborhoods in Grantsville border the Depot along the northwest boundary, and Tooele City residences are near the Depot's southeast boundary (Figure 3-5).

Utah State Route 112 bounds TEAD North Area to the northeast, and a salvage company, Tooele County Deseret Sports Complex, and Miller Motor Sports Park own parcels of land north of this road. The industrial UID/PID parcel is adjacent to TEAD North Area to the east. The Union Pacific Railroad borders the eastern side of TEAD North Area, and it is the main line between Salt Lake City and Los Angeles. Paralleling the railroad a mile to the east is Utah State Route 36, which runs through the city of Tooele.

#### **3.4.2 TEAD South Area**

The land surrounding TEAD South Area is relatively unused or is used for agriculture and grazing. BLM owns most of the property surrounding and adjacent to TEAD South Area. Some of the property is used for sheep grazing during the winter months. A private rancher owns the property northeast of TEAD South Area. Two small portions of land east of and six parcels of land south and southwest of TEAD South Area are privately owned. Faust Land Inc. owns some property west of TEAD South Area across Utah State Route 36. These areas are predominantly desert land and are not known to be used for grazing or other agricultural purposes (Figure 3-5).

Crops grown in the area surrounding TEAD South Area include small amounts of wheat and barley. The dry climate and lack of water prevents crop agriculture except near the few surface water resources in the area. Grazing of sheep and cattle occurs from November through April, as the summer is too hot for grazing. Recreational uses supported by the surrounding lands include hunting of dove, rabbit, deer, antelope, coyote, and badger. Off-road vehicle use, camping, and hiking are also popular. The Ajax Historical Site is a former general store and boarding house near the southwestern corner of TEAD South Area, but it does not attract much visitation. The small mining town of Ophir northeast of TEAD South Area has a permanent population of about 20, with some increase during the summer months. The town has historic structures and rail lines associated with the former mining activity that attracts some visitors.

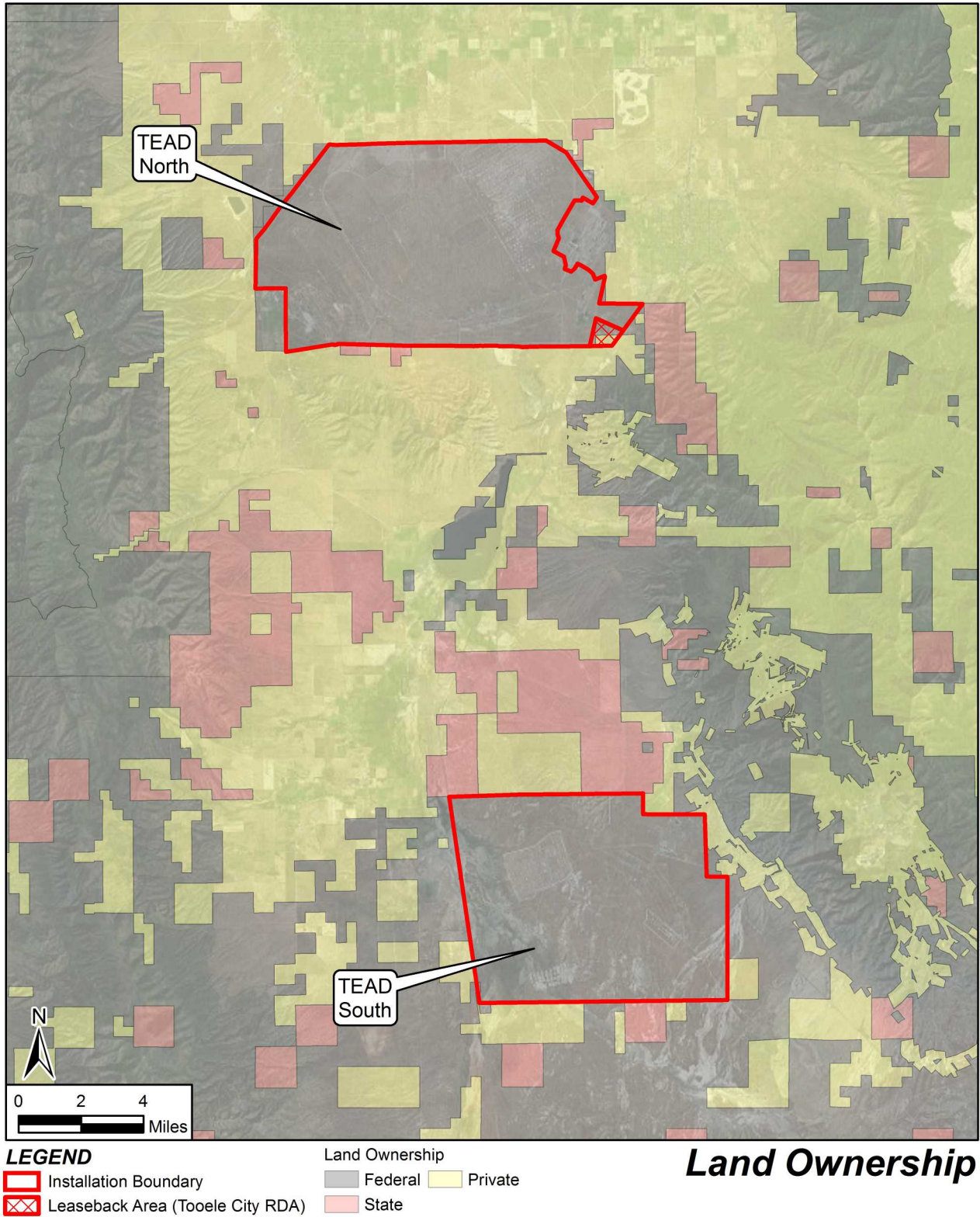


Figure 3-5

Source: BLM 2014; ESRI 2011.

### 3.5 REGIONAL SOCIOECONOMICS

The socioeconomic region considered in this INRMP is Tooele County, Utah. There are no residential housing units, schools, or daycare centers on TEAD North or South Areas. All TEAD employees reside off-post.

#### 3.5.1 Population

Population data for Tooele County is shown in Table 3-1, with data for Utah and the United States for comparison. To illustrate trends, data are provided for 2000, 2010, and 2013.

Tooele County ranks (out of the 29 counties in the state) as the second largest county on the basis of land area and the seventh largest county on the basis of population. Tooele County's 2013 population was about 60,760, an increase of 49 percent since 2000. The county's population growth of 49 percent was higher than the state population growth of 30 percent and the national population growth of 12 percent during the same time period (2000–2013). The county had a population density of about 8 persons per square mile, much lower than the state (34 persons per square mile) and the nation (87 persons per square mile).

**Table 3-1.**  
**Population trends**

	2000 population <sup>a</sup>	2010 population <sup>b</sup>	2013 population <sup>b</sup>	Change in population, 2000–2013	Persons per square mile, 2010 <sup>b</sup>
Tooele County	40,735	58,218	60,762	49%	8
Utah	2,233,169	2,763,885	2,900,872	30%	34
United States	281,421,906	308,747,716	316,128,839	12%	87

Sources:

a U.S. Census Bureau 2000

b U.S. Census Bureau 2014a,b

#### 3.5.2 Housing

There are about 19,845 housing units in Tooele County. The median value of an owner-occupied housing unit was \$172,300. The median monthly mortgage was \$1,332 and the median gross rent was \$790, compared to a median monthly mortgage of \$1,484 and rent of \$900 for the United States. The county homeowner vacancy rate was 2 percent, and the renter vacancy rate was about 10 percent, compared to the homeowner vacancy rate of 2 percent and rental vacancy rate of 7 percent for the United States. The majority of the Tooele County housing units (77 percent) were single-family, detached homes. In the United States, 62 percent of homes are single-family, detached homes (U.S. Census Bureau 2014b).

#### 3.5.3 Industry and Employment

The top five sources of employment in Tooele County (on the basis of employment by industry) were government and government enterprises (which includes federal civilian, military, and state and local government); retail trade; health care and social assistance; manufacturing; and finance and insurance. Together, these five industry sectors accounted for about 50 percent of the county's total employment. The largest industry was government and government enterprises, which provided 14 percent of total employment. Farming accounted for about 1 percent of total county employment (BEA 2014).

Tooele County's 2013 annual unemployment rate was 5.2 percent, which was higher than Utah's unemployment rate of 4.4 percent but lower than the United States' annual unemployment rate of 7.4 percent (BLS 2014).

Tooele County's per capita personal income was \$21,883, which was 92 percent of the state level per capita personal income of \$23,760 and 78 percent of the national per capita income of \$27,884. The county's median household income of \$61,378 was 105 percent of the state median household income of \$58,561 and 118 percent of the national median household income of \$52,176 (U.S. Census Bureau 2014b).

### **3.6 LOCAL AND REGIONAL NATURAL AREAS**

TEAD North and South Areas, bordered by mountains and with the Great Salt Lake to the north and Utah Lake to the southeast, are surrounded by natural areas that offer opportunity for hiking, camping, fishing, hunting, and wildlife observation. Tooele County maintains trails in the Oquirrh and Stansbury Mountains, and Settlement Canyon in the Oquirrh mountains offers camp sites, hiking trails, and fishing in the Tooele City Reservoir (Tooele County 2014).

Nearby Utah state parks include Antelope Island in the Great Salt Lake, the Jordan River Off-Highway Vehicle State Recreation Area in Salt Lake City, the Camp Floyd/Stagecoach Inn State Park (about 30 miles southeast of Tooele in Fairfield, Utah), and the Flight Park State Recreation Area (about 50 miles east of Tooele in Lehi, Utah) (Utah Office of Tourism 2014).

The Unita-Wasatch-Cache National Forest is a more than 2.1-million-acre United States National Forest in northeastern Utah (east of Salt Lake City), extending in to parts of Idaho and Wyoming. The Stansbury Mountains are also part of this national forest. These lands are managed for livestock (permitted sheep and cattle grazing) and wildlife and for protection of critical watersheds and more than half million acres of wilderness. Use of these wilderness areas continues to be popular for recreational activities (such as skiing, snowboarding, snowmobiling, hiking, mountain biking, camping, picnicking, fishing, boating, swimming, and horseback riding) (USFS 2014).



## **SECTION 4.0 PHYSICAL ENVIRONMENT**

### **4.1 CLIMATE**

Six distinct climatic zones are recognized in the region surrounding TEAD: the high mountain, mountain, upland, semidesert, desert, and azoral (wetland). TEAD lies primarily in the semidesert climatic zone, with a climate that is characterized by hot, dry summers and cool, moderate winters.

Average mean annual temperatures in Tooele range from 80 degrees Fahrenheit (°F) in the summer to 30 °F in the winter, but temperature extremes from -3 °F in the winter to 106 °F in the summer are on record (NWS 2014). Mean annual precipitation averages 18 inches a year in Tooele, but due to a rain shadow effect from the Stansbury mountains to the west, precipitation amounts on TEAD vary considerably. The north-central part of TEAD North Area averages eight inches annually, while the annual average in the northeast corner is 16 inches (TEAD 2007). At the TEAD South Area the average annual precipitation in Rush Valley varies from about 8 inches in the southwest region to more than 14 inches in the northeast region (DCD 2009). Snowfall in Tooele and Rush Valleys is minimal, although areas at higher elevations are generally snow covered from December to May. Snowfall in these areas is greatest in the winter and early spring, with a mean seasonal snowfall of 74 inches (NWS 2014). The area has a growing season from May to September. On average, the last killing frost is around the first of April and the first killing frost occurs near the end of October.

#### **4.1.1 TEAD North Area**

The Great Salt Lake Basin and surrounding major mountain ranges form a large, generally enclosed air basin of approximately 7,500 square miles. The Great Salt Lake generates a classic sea breeze air circulation caused by uneven heating and cooling of land and water surfaces. Wind direction for TEAD North Area tends to flow down and out of Tooele Valley north towards the lake at night when the land surface is warmer than the water, and south away from the lake during the day when the water is warmer than the land. Although these wind speeds rarely exceed ten miles per hour, enough constant interchange of air and low humidity prevents fog and smog from developing. Strong high-pressure systems follow winter storm fronts and can persist for several weeks, which can trap cold air in the valley and produce temperature inversions, leading to fog and smog problems.

#### **4.1.2 TEAD South Area**

The TEAD South Area is characterized by strong wind components from the north-northwest and the south-southeast to southeast. The dominant wind direction in Rush Valley is from south to north during the summer and north to south during the winter. The average wind speed in the TEAD South Area is around nine miles per hour, except during summer thunderstorms.

### **4.2 LANDFORMS**

TEAD North and South Areas are in the Basin and Range physiographic province, which covers most of Nevada and western Utah. The province is characterized by a series of north-south trending fault block mountains and broad intervening valleys. The landforms developed under these complex structural geologic controls are known as horst and graben topography. The Great Salt Lake and the Salt Lake Desert represent the dominant topographic features in the region. Elevations in the region range from 11,000 feet above mean sea level at Deseret Peak to the west in the Stansbury Mountains, to about 4,200 feet above mean sea level to the north at the edge of the Great Salt Lake.

#### **4.2.1 TEAD North Area**

Elevations on TEAD North Area range from about 5,250 feet above mean sea level along the southern boundary to about 4,430 feet above mean sea level along the installation's northern boundary. The average slope of the land surface at the Depot ranges from about three percent near the base of the Oquirrh Mountains to the east and flattens to about one percent at the north-central boundary of the installation.

#### **4.2.2 TEAD South Area**

Most of TEAD South Area is on the east side of the Rush Valley on gently southwestward sloping terrain that developed on an alluvial fan from Ophir Creek that originates in the Oquirrh Mountains. The southeastern part of the Depot is on the flank of an alluvial fan from Mercur Creek that also originates in the Oquirrh Mountains. The southern and western sections of TEAD South Area are in a relatively level valley bottom. Elevations on TEAD South Area range from about 5,425 feet above mean sea level along the Depot's northeastern boundary to around 5,050 feet above mean sea level along the southern boundary.

### **4.3 GEOLOGY AND SOILS**

#### **4.3.1 General Geology**

TEAD is about 25 miles west of the Wasatch Front, which marks the eastern edge of the Great Basin section of the Basin and Range physiographic province. The Great Basin is characterized by closed drainage basins bounded by north-trending asymmetrical fault-block ranges. As a result of the general lack of rainfall (on average the Great Basin receives less than five inches per year), erosional detritus from the mountains collects in the basins. Shallow alkaline playas or saline lakes form on the valley floors.

During the early Cambrian period (approximately 540 million years ago), the area that now makes up the Basin and Range physiographic province was a sea floor. The oldest stratigraphic units in the vicinity of Tooele consist of interbedded limestones, quartzites, and shales that formed from sediments that were deposited in a marine environment. The next oldest units in the area consist of Mississippian period (360 to 325 million years ago) limestones that were also formed from marine deposits. During the late Tertiary to early Quaternary periods (approximately 2 million years ago), tectonic forces began to pull the region apart initiating mountain formation. These forces are still active today and account for the seismic activity in the region. During the Pleistocene Epoch (1.8 million to 8,000 years ago), several major glacial stages occurred which resulted in the creation of Lake Bonneville. At its highest level, the elevations of the shorelines of Lake Bonneville were about 5,200 feet above mean sea level (present day). Two regression stages of the lake left shoreline benches, which today can be seen at the base of topographic high points surrounding Tooele Valley. The Great Salt Lake represents what is left of Lake Bonneville.

The oldest rocks in the area are 500 million year old quartzites exposed in the Stansbury Mountains. Most of the remaining core of the Stansbury and Oquirrh Mountains consists of limestone and dolomite deposited during the Paleozoic Era. Mesozoic through early Tertiary rocks are not represented in western Utah because this was a time of uplift and erosion.

Sediments eroded from the uplifting mountain ranges were deposited in the adjacent valleys and were covered sporadically by volcanic ash or basalt flows. The older Tertiary deposits belong to a moderately consolidated stratigraphic sequence known as the Salt Lake Group. Salt Lake Group

rocks are exposed on the southwestern and southeastern margins of Tooele Valley but are overlain by unconsolidated Quaternary sediments over most of the valley.

The rise and fall of the shoreline of Lake Bonneville resulted in deposition of alternating fine and coarse-grained sediments in Tooele Valley. Deposits consisting of the fine grained sediments act as confining beds in the basin fill aquifer. The basin fill deposits have buried a rugged subsurface terrain. Maximum depths to bedrock beneath TEAD North Area have been estimated to be greater than 2,000 feet. The TEAD South Area is underlain entirely by more than 400 feet of unconsolidated rocks of late Tertiary to Holocene age (8,000 years ago to present). Most of the southwestern section of TEAD South Area is underlain by 25 to 100 feet of low permeability Pleistocene lakebed sediments that were deposited when the central section of Rush Valley was occupied by Lake Bonneville. Younger deposits occurring at TEAD South Area include Pleistocene post-Lake Bonneville alluvium and Recent alluvial, lakebed, and dune sand deposits.

#### **4.3.2 Seismicity**

TEAD North and South Areas are near the western edge of a zone of intense seismicity along the north-south trending Wasatch Mountains. The zone correlates well with segmented Quaternary faults centered along the Wasatch Fault Zone (about 25 miles east of the Tooele area) and is bounded on the west by the Oquirrh Mountains Fault Zone (about 5 miles east of the Tooele area).

The Wasatch fault, at the foot of the Wasatch Mountains, is an active, high-angle normal fault capable of producing large magnitude earthquakes. The Wasatch fault probably has the greatest potential for producing a damaging earthquake at the site. The frequency of earthquakes of Richter magnitude 7.0 or greater on the segment of the Wasatch fault between Bingham City and Nephi (which are east of Tooele) is about once every 340 to 415 years.

Recent studies indicate that the Oquirrh fault is capable of producing a magnitude Richter 7.0 or greater earthquake. The last significant movement on the Oquirrh fault occurred between 4,000 to 7,000 years ago.

No major earthquakes have been recorded in Tooele Valley since its settlement. Except for micro-earthquakes, the nearest recorded earthquakes occurred along the western slope of the Stansbury Mountains in 1915 and at Magna (about 20 miles northeast of Tooele) in 1962.

No known faults underlie TEAD North or South Areas. Inland Pacific Engineering (1982) reported that: "numerous micro-earthquakes [have been] recorded in conjunction with munition disposal operations..."; however, no causative link between detonations and micro-earthquake activity has been established (TEAD 2007).

#### **4.3.3 Petroleum and Minerals**

The only known mineral resources on TEAD North and South Areas are sand and gravel. The TEAD North Area has two active sand and gravel pits, one in the southeast area of the Depot and one in the western area of the Depot in grazing Field #2 (formerly known as Field #5); however, the pit in Field #2 is minimally used, generally one to two times per excavation season (October to March) (Howard, personal communication, 2014). The TEAD South Area has only one active sand and gravel pit, adjacent to the north central boundary of the installation. The primary use of the materials taken from these sand and gravel pits is for backfill and road maintenance on the Depot. Just south of the TEAD North Area southern boundary are two privately operated sand and gravel pits.

The mountains adjacent to Tooele Valley, and particularly the Oquirrh Mountains, contain a variety of mineral resources. The Oquirrh Mountain range, extending about 30 miles southward from the Great Salt Lake and flanked on the west by Tooele and Rush Valleys and on the East by Jordan and Cedar Valleys, has been the center of a thriving mining and mineral production industry for more than a century (Encyclopedia Britannica 2014; USGS 1999). Most of the mining activity has taken place on the central ridge and east side of the Oquirrh Mountains. Metals include copper, gold, lead, mercury, silver, and zinc. Sand, gravel, limestone, dolomite, and salt also are quarried.

The Oquirrh Mountain range hosts several of the more prominent base- and precious-metal and gold mining areas in the western United States. The Mercur mining district (east of TEAD South Area), mined most recently beginning in 1985 by American Barrick Resources Corporation, was one of the first of the new-type disseminated gold deposits. The Mercur mine was closed in 1998 and was reported to have been undergoing reclamation (Utah Mining Association 2014).

#### **4.3.4 Soils**

##### **4.3.4.1 TEAD North Area Soils**

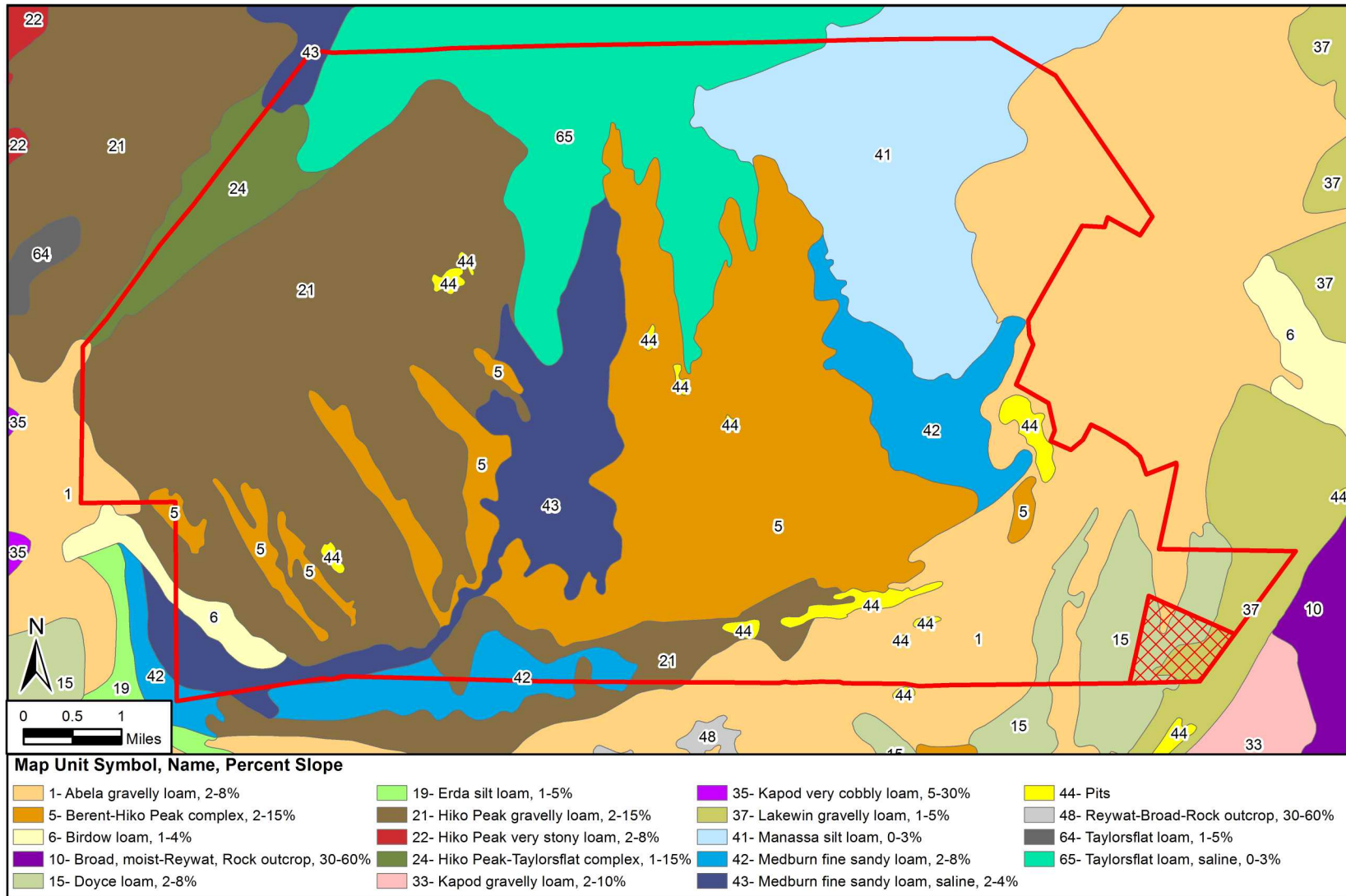
TEAD North Area soils are mapped on Figure 4-1, and Table 4-1 lists the 12 soil series or complexes on TEAD North Area and provides general characteristics. Drainage class, land capability classification, and some potential limitations associated with the soils are provided. The predominant soils on TEAD North Area are the Hiko Peak Gravelly Loam, Berent-Hiko Peak Complex, and the Abela Gravelly Loam. These soils are used principally for rangeland, livestock grazing, and wildlife habitat (NRCS 2014a).

*Hydric Soils.* Hydric soils are soils that are saturated, flooded, or ponded for long enough during the growing season to develop anaerobic (oxygen-deficient) conditions in their upper part. Anaerobic soil conditions are conducive to establishing vegetation that is adapted for growth under oxygen-deficient conditions and is typically found in wetlands (hydrophytic vegetation). The presence of hydric soils is one of three criteria (hydric soils, hydrophytic vegetation, wetland hydrology) used to determine the presence of U.S. Army Corps of Engineers (USACE) jurisdictional wetlands. None of the TEAD North Area soils are hydric soils, and the frequency of ponding or flooding for these soils is rare to none.

*Erodible Soils.* These soils are susceptible to erosion hazard from wind or water. Their erodibility makes them unsuited for many activities, including any activities that would involve intense or repeated use of the erodible area (e.g., footpaths, unpaved roads, or earthmoving). Three soils on TEAD North Area have been identified as having severe susceptibility to erosion: Berent-Hiko Peak complex, Hiko Peak gravelly loam, and Hiko Peak-Taylorflat complex. Four soils on TEAD North Area are identified as having high susceptibility to erosion: Abela gravelly loam, Doyce loam, Manassa silt loam, and Medburn fine sandy loam (2 to 8 percent slopes). Generally, these soils are alluvium in fan remnants.

*Prime Farmland.* Prime farmland soils are protected under the Farmland Protection Policy Act of 1981. The intent of the act is to minimize the extent to which federal programs contribute to the unnecessary or irreversible conversion of farmland soils to nonagricultural uses. None of the soils on TEAD North Area are identified as prime farmland.

*Contaminated Soils.* Soils and groundwater in parts of TEAD North Area have been contaminated by past disposal of solid waste and industrial chemicals on the Depot. See Sections 6.2.1.4 *Hazardous Materials Storage and Waste* and 6.2.1.5 *Contaminated Site Restoration*.



**LEGEND**  
 Installation Boundary  
 Leaseback Area

## Soils - TEAD North

Figure 4-1

Source: USDA NRCS 2014.

**Table 4-1.  
Soils Mapped on TEAD North Area - General Characteristics**

<b>Soil Series or Complex</b>	<b>Acres/ Percent of TEAD North Land Area<sup>a</sup></b>	<b>Parent Material</b>	<b>Drainage Class</b>	<b>Land Capability Classification<sup>b</sup></b>	<b>Landform Setting</b>	<b>Ecological Site</b>
Hiko Peak Gravelly Loam, 2-15% slopes	6,195/ 26%	Mixed alluvium	Well drained	Irrigated: 4e Nonirrigated: 6s Hydrologic soil group: A	Fan remnants	Semidesert Gravelly Loam (Wyoming Big Sagebrush) North
Berent-Hiko Peak Complex, 2-15% slopes	4,859/ 21%	Mixed alluvium	Somewhat excessively drained	Irrigated: 4e Nonirrigated: 6s Hydrologic soil group: A	Dunes, fan remnants	Semidesert Gravelly Loam (Wyoming Big Sagebrush)
Hiko Peak- Taylorsflat Complex, 1- 15% slopes	501/ 2%	Mixed alluvium and/or mixed lacustrine deposits	Well drained	Irrigated: 4e, 3s Nonirrigated: 6s Hydrologic soil group: A/C	Fan remnants	Semidesert Gravelly Loam/Loam (Wyoming Big Sagebrush) North
Taylorsflat Loam, saline, 0- 3% slopes	2,449/ 10%	Mixed alluvium and/or mixed lacustrine deposits	Well drained	Irrigated: 4s Nonirrigated: 6s Hydrologic soil group: C	Fan remnants, lake terraces	Semidesert Alkali Loam (Black Greasewood)
Abela Gravelly Loam, 2-8% slopes	3,019/ 13%	Alluvium derived from limestone and/or alluvium derived from quartzite	Well drained	Irrigated: 3e Nonirrigated: 6s Hydrologic soil group: A	Fan remnants	Upland Gravelly Loam (Bonneville Big Sagebrush)
Manassa Silt Loam, 0-3% slopes	2,452/ 10%	Alluvium derived from limestone and sandstone and/or lacustrine deposits derived from limestone and sandstone	Well drained	Irrigated: 3e Nonirrigated: 6s Hydrologic soil group: C	Lake terraces, fan remnants	Semidesert Alkali Loam (Black Greasewood)
Medburn Fine Sandy Loam, 2- 4% slopes	1,629/ 7%	Alluvium and/or lacustrine deposits derived from sedimentary rock	Well drained	Irrigated: 4s Nonirrigated: 7s Hydrologic soil group: A	Fan remnants, lake terraces	Semidesert Alkali Loam (Black Greasewood)
Medburn Fine Sandy Loam, 2- 8% slopes	988/ 4%	Alluvium and/or lacustrine deposits derived from sedimentary rock	Well drained	Irrigated: 3e Nonirrigated: 7s Hydrologic soil group: A	Fan remnants, lake terraces	Semidesert Loam (Wyoming Big Sagebrush)

Table 4-1. (continued)

Soil Series or Complex	Acres/ Percent of TEAD North Land Area <sup>a</sup>	Parent Material	Drainage Class	Land Capability Classification <sup>b</sup>	Landform Setting	Ecological Site
Doyce Loam, 2-8% slopes	675/ 3%	Alluvium derived from mixed rock	Well drained	Irrigated: 3e Nonirrigated: 4s Hydrologic soil group: C	Fan remnants	Upland Loam (Bonneville Big Sagebrush) North
Lakewin Gravelly Loam, 1-5% slopes	218/ 1%	Alluvium and lacustrine derived from quartzite and limestone	Well drained	Irrigated: 4s Nonirrigated: 6s Hydrologic soil group: A	Lake terraces	Upland Gravelly Loam (Bonneville Big Sagebrush)
Birdow Loam, 1-4% slopes	131/ 0.5%	Sandy or gravelly; alluvium derived dominantly from limestone and quartzite	Well drained	Irrigated: 2e Nonirrigated: 6s Hydrologic soil group: B	Alluvial fans, flood plains, stream terraces	Loamy Bottom (Great Basin Wildrye)
Pits	249/ 1%	N/A <sup>c</sup>	N/A	Irrigated: None Nonirrigated: 8s Hydrologic soil group: N/A	N/A	N/A

Source: NRCS 2009, 2014b; USDA SCS 1961.

Notes:

a: Acreages and percentages are rounded.

b: Land Capability Classifications places soils in eight capability classes (numbered 1 through 6) where the risks of soil damage or limitations in use become progressively greater from Class 1 to Class 6:

1 Soils have few limitations that restrict their use.

2 Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

3 Soils have severe moderate limitations that reduce the choice of plants or that require special conservation practices or both.

4 Soils have very severe limitations that reduce the choice of plants or that require special conservation practices or both.

5 Soils have severe limitations that make them generally unsuitable for cultivation.

6 Soils have very severe limitations that make them unsuitable for cultivation.

Capability subclasses are groups of capability units that have the same major conservation problem or limitation noted with an e (erosion and runoff), w (wet, excess water), s (root zone limitations due to shallow, droughty, or stony soil), and c (climatic limitations, temperature or lack of moisture).

Hydrologic soil group is assigned based on rainfall, runoff, infiltrometer data, and the judgment of soil scientists. The four hydrologic soil groups are:

A Soils have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.

B Soils have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.

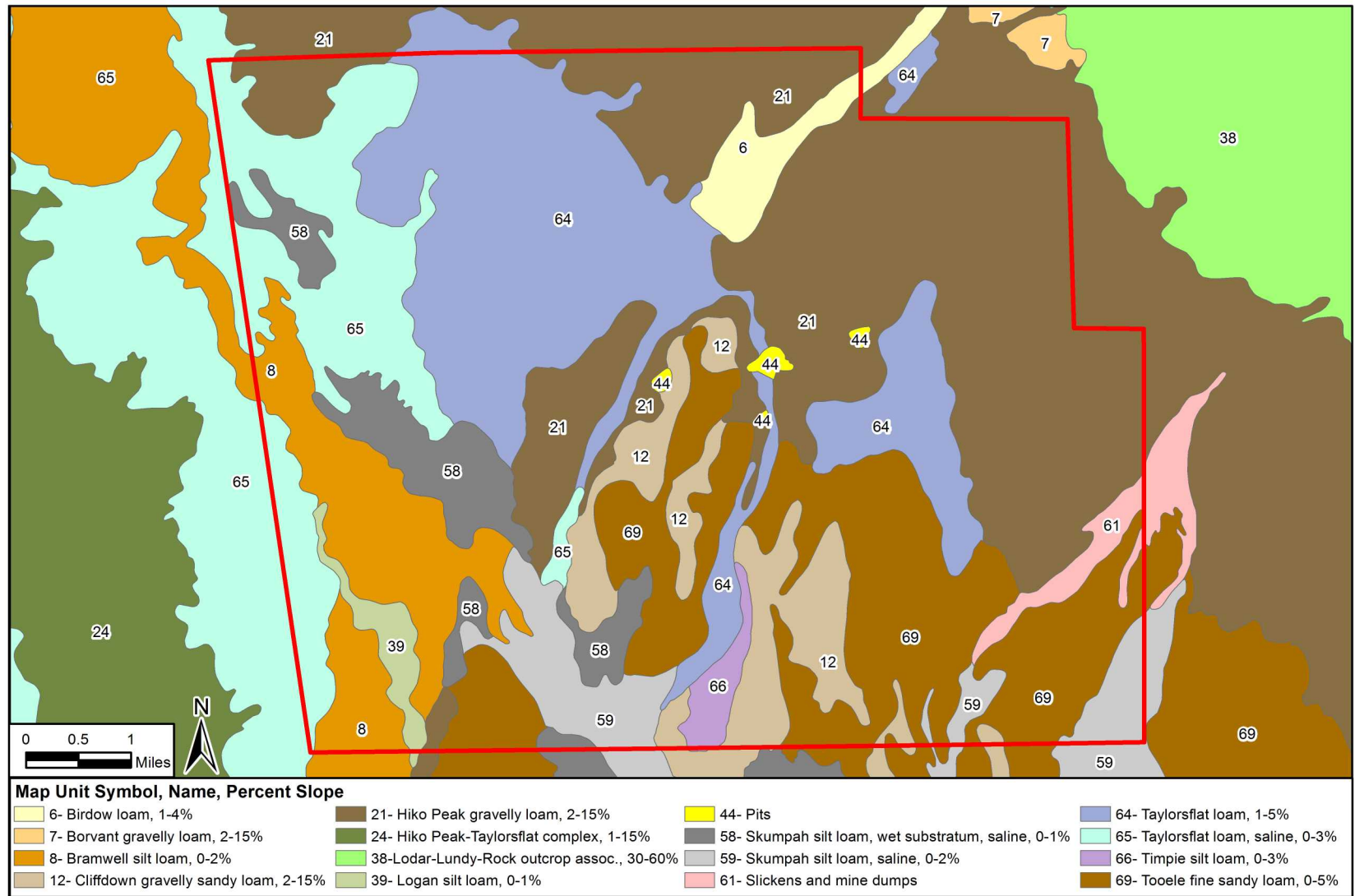
C Soils have moderately high runoff potential when thoroughly wet. Water transmission through the soils is somewhat restricted.

D Soils have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.

c: N/A = Not applicable.

#### 4.3.4.2 TEAD South Area Soils

TEAD South Area soils are mapped on Figure 4-2, and Table 4-2 lists the 13 soil series or complexes and provides general characteristics (drainage class, land capability classification, and potential limitations associated with the soils). The predominant soils on TEAD South Area are the Hiko Peak gravelly loam, Taylorsflat loam, and Tooele fine sandy loam. These soils are used principally for rangeland, wildlife habitat, pasture, and livestock grazing (NRCS 2014a).



**LEGEND**  
 Installation Boundary

## Soils - TEAD South

Figure 4-2

Source: USDA NRCS 2014.



**Table 4-2.  
Soils Mapped on TEAD South Area - General Characteristics**

<b>Soil Series or Complex</b>	<b>Acres/ Percent of TEAD South Land Area<sup>a</sup></b>	<b>Parent Material</b>	<b>Drainage Class</b>	<b>Land Capability Classification<sup>b</sup></b>	<b>Landform Setting</b>	<b>Ecological Site</b>
Hiko Peak Gravelly Loam, 2-15% slopes	5,624/ 29%	Gravelly loam; alluvium derived from mixed rock sources	Well drained	Irrigated: 4e Nonirrigated: 6s Hydrologic soil group: A	Fan remnants	Semidesert Gravelly Loam (Wyoming Big Sagebrush) North
Taylorflat Loam, 1-5% slopes	3,777/ 20%	Mixed alluvium and/or mixed lacustrine deposits	Well drained	Irrigated: 3s Nonirrigated: 6s Hydrologic soil group: C	Fan remnants, lake terraces	Semidesert Loam (Wyoming Big Sagebrush)
Taylorflat Loam, 0-3% slopes	1,524/ 8%	Mixed alluvium and/or mixed lacustrine deposits	Well drained	Irrigated: 4s Nonirrigated: 6s Hydrologic soil group: C	Fan remnants, lake terraces	Semidesert Alkali Loam (Black Greasewood)
Tooele Fine Sandy Loam, 0-5% slopes	3,092/ 16%	Eolian material, lacustrine sediments, and alluvium derived from mixed rock sources	Well drained	Irrigated: 4s Nonirrigated: 7s Hydrologic soil group: A	Fan remnants, lake terraces	Desert Loam (Shadscale)
Bramwell Silt Loam, 0-2% slopes	1,326/ 7%	Silty, clay loam; alluvium and lacustrine sediments derived from mixed rock sources	Somewhat poorly drained	Irrigated: 4w Nonirrigated: 7w Hydrologic soil group: C	Lake and stream terraces	Alkali Bottom (Alkali Sacaton)
Cliffdown Gravelly Sandy Loam, 2-15% slopes	1,234/ 6%	Gravelly sandy loam; alluvium derived from sedimentary rocks	Somewhat excessively drained	Irrigated: 4e Nonirrigated: 7s Hydrologic soil group: A	Fan remnants	Desert Gravelly Loam (Shadscale)
Skumpah Silt Loam, Wet Substratum, Saline, 0-1% slopes	923/ 5%	Mixed alluvium and/or mixed lacustrine deposits	Well drained	Irrigated: None Nonirrigated: 7s Hydrologic soil group: C	Lake terraces	Desert Salt Flat (Sickle Saltbush)
Skumpah Silt Loam, Wet Substratum, Saline, 0-2% slopes	808/ 4%	Mixed alluvium and/or mixed lacustrine deposits	Well drained	Irrigated: None Nonirrigated: 7s Hydrologic soil group: C	Lake terraces	Alkali Flat (Black Greasewood)
Birdow Loam, 1-4% slopes	322/ 2%	Sandy or gravelly; alluvium derived dominantly from limestone and quartzite	Well drained	Irrigated: 2e Nonirrigated: 6s Hydrologic soil group: B	Alluvial fans, flood plains, stream terraces	Loamy Bottom (Great Basin Wildrye)

Table 4-2. (continued)

Soil Series or Complex	Acres/ Percent of TEAD South Land Area <sup>a</sup>	Parent Material	Drainage Class	Land Capability Classification <sup>b</sup>	Landform Setting	Ecological Site
Logan Silt Loam, 0-1% slopes	198/ 1%	Mixed alluvium	Poorly drained	Irrigated: None Nonirrigated: 7w Hydrologic soil group: C/D	Floodplains	Wet Saline Meadow (Saltgrass)
Timpie Silt Loam, 0-3% slopes	163/ 1%	Lacustrine sediments and alluvium derived from limestone and quartzite	Well drained	Irrigated: 4s Nonirrigated: 7s Hydrologic soil group: C	Fan remnants, lake terraces	Desert Loam (Shadscale)
Slickens and Mine Dumps	210/ 1%	N/A	N/A	Irrigated: None Nonirrigated: 8s Hydrologic soil group: N/A	N/A	N/A
Pits	56/ 0.5%	N/A <sup>c</sup>	N/A	Irrigated: None Nonirrigated: 8s Hydrologic soil group: N/A	Lake terraces, hillsides	N/A

Source: NRCS 2009, 2014b; USDA SCS 1961.

Notes:

a: Acreages and percentages are rounded.

b: Land Capability Classifications places soils in eight capability classes (numbered 1 through 6) where the risks of soil damage or limitations in use become progressively greater from Class 1 to Class 6:

- 1 Soils have few limitations that restrict their use.
- 2 Soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.
- 3 Soils have severe moderate limitations that reduce the choice of plants or that require special conservation practices or both.
- 4 Soils have very severe limitations that reduce the choice of plants or that require special conservation practices or both.
- 5 Soils have severe limitations that make them generally unsuitable for cultivation.
- 6 Soils have very severe limitations that make them unsuitable for cultivation.

Capability subclasses are groups of capability units that have the same major conservation problem or limitation noted with an e (erosion and runoff), w (wet, excess water), s (root zone limitations due to shallow, droughty, or stony soil), and c (climatic limitations, temperature or lack of moisture).

Hydrologic soil group is assigned based on rainfall, runoff, infiltrometer data, and the judgment of soil scientists. The four hydrologic soil groups are:

- A Soils have low runoff potential when thoroughly wet. Water is transmitted freely through the soil.
- B Soils have moderately low runoff potential when thoroughly wet. Water transmission through the soil is unimpeded.
- C Soils have moderately high runoff potential when thoroughly wet. Water transmission through the soils is somewhat restricted.
- D Soils have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.

c: N/A = Not applicable.

**Hydric Soils.** Four of the TEAD South Area soils are hydric soils: Bramwell silt loam, Logan silt loam, Skumpah silt loam (wet substratum), and Skumpah silt loam (saline) (NRCS 2014b). These soils are in the southwestern and southern portions of the installation.

**Erodible Soils.** Two soils on TEAD South Area have been identified as having severe susceptibility to erosion: Cliffdown gravelly sandy loam and Hiko Peak gravelly loam. Generally, these soils are loam and alluvium in fan remnants.

**Prime Farmland.** None of the soils on TEAD South Area are identified as prime farmland.

**Contaminated Soils.** Mining activities occurred in the Oquirrh Mountains east of TEAD South Area, including in Mercur Canyon by American Barrick Resources Corporation (the land is now owned by BLM; see Section 4.3.3 *Petroleum and Minerals*). Although the operation is closed, run off from Mercur Canyon carries water and sediment contaminated by mine tailings onto the Depot.

The drainage ditch along the outside of the east side perimeter road channels most Mercur Canyon run off along the outside of the installation; however, during heavy thunderstorms the run off still enters the installation. Mine tailings are proven to have impacted the soils in the southeastern corner and the east central edge of TEAD South Area (DCD 2009). The installation performed soil testing for metals contamination. Soil samples were collected and metals contents of the soils were analyzed by Walker & Associates (in 2001) and EarthFax (in 2004) (DCD 2009). Both events found metals, arsenic, and mercury, in particular, at levels significantly higher than government standards. TEAD South Area has an agreement with Utah State Environmental Division that TEAD will not do further soil sampling or clean-up (as the source of contamination is not on TEAD land, and unless the source is cleaned up, contamination will continue) but TEAD South Area has a Resource Conservation and Recovery Act (RCRA) permit and Land Use Controls (LUCs) in place for that southeast area of the Depot.

Soils and groundwater in parts of TEAD South Area have been contaminated by past disposal of solid waste and industrial chemicals on the Depot. See Sections 6.2.2.4 *Hazardous Materials Storage and Waste* and 6.2.2.5 *Contaminated Site Restoration*.

#### **4.4 HYDROLOGY**

Water resources at TEAD North and South Areas are limited due to the arid nature of the region. Figures 4-3 and 4-4 show the surface water drainage network at TEAD North and South Areas.

##### **4.4.1 TEAD North Area**

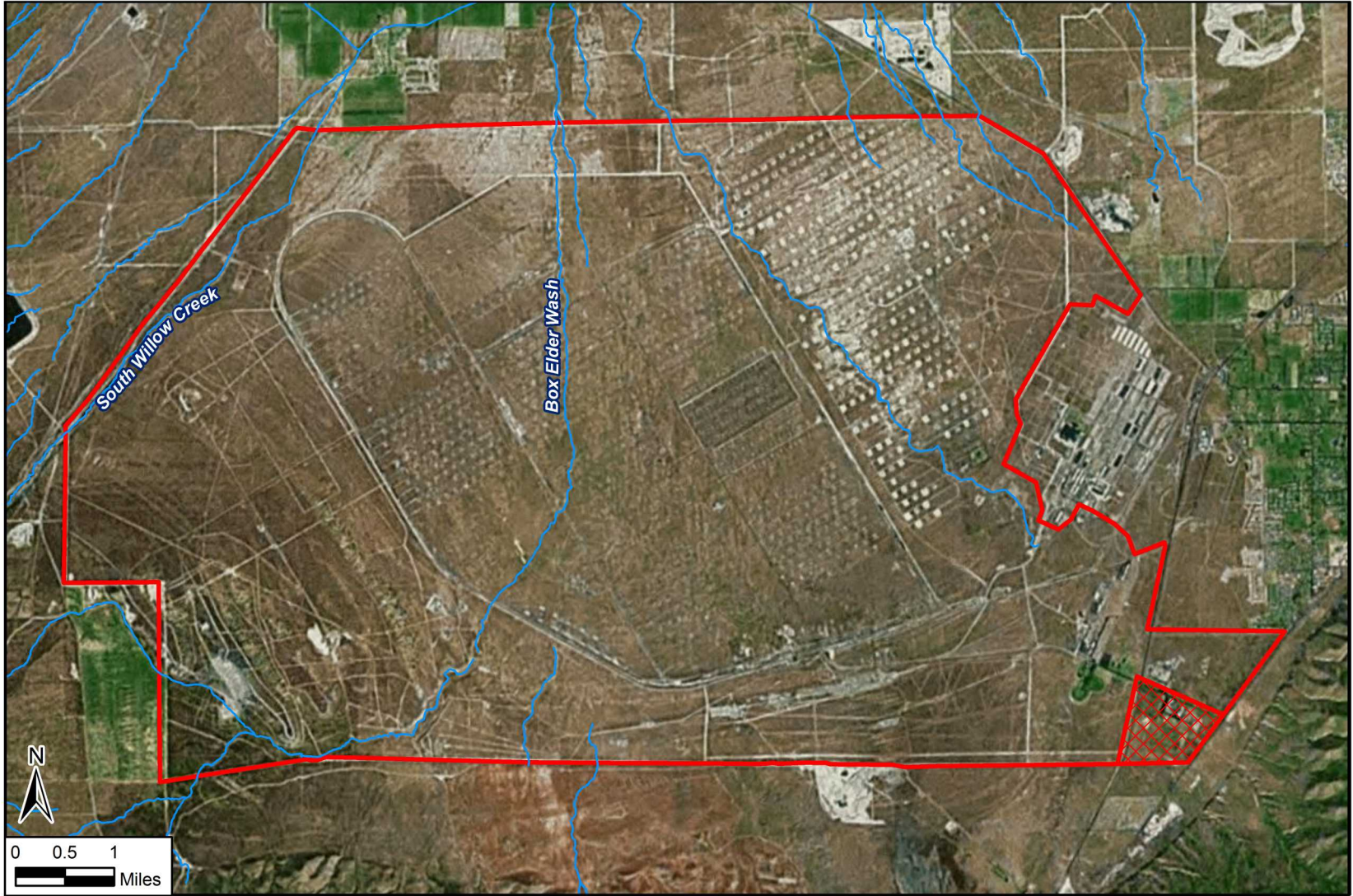
###### **4.4.1.1 Groundwater**

TEAD North Area is in Tooele Valley. Tooele Valley contains one of the principal unconsolidated basin-fill aquifers in Utah (TEAD 2007). Aquifer recharge occurs primarily near the basin margin and the normal groundwater flow pattern is controlled by the structure of the basin. Groundwater flows from the basin margins toward the axis of the valley and then follows the northward trend of the valley, discharging in or near the Great Salt Lake. A large groundwater discharge area, marked by springs, wetlands, and artesian wells, is in the area that is roughly between Utah State Route 138 and the margin of the Great Salt Lake, about four miles north of the TEAD North Area northern boundary.

In recharge areas near the basin margins, downward vertical gradients prevail, while upward vertical gradients occur near the TEAD North Area north boundary. The alluvial aquifer beneath the TEAD North Area is generally unconfined but becomes confined toward the center of the basin north of TEAD North Area.

The depth to groundwater in Tooele Valley depends on the location. Groundwater discharges to the surface in springs north of Grantsville, and it appears to be deepest in the southwest part of the basin. The depth of potable groundwater wells at TEAD North Area ranges from 428 feet to 780 feet, with static water levels reportedly ranging from about 200 feet to more than 700 feet.

TEAD North Area obtains its water supply from groundwater. The Depot operates and maintains its own water supply and distribution system. The water supply system is on the eastern side of Tooele Valley. The natural slope of the valley in this area maintains a gravity based pressure in the supply system. Water is supplied by five groundwater wells, which draw from a confined aquifer. There are three domestic supply wells (W-1, W-3, and W-4) and two stock watering wells (W-5 and W-6). Well 2, which supplies water to the UID/PID (the former BRAC parcel), and its associated water rights were transferred to Tooele City. The remaining wells on the TEAD North Area are required to provide water for potable, irrigation, and stock watering needs.

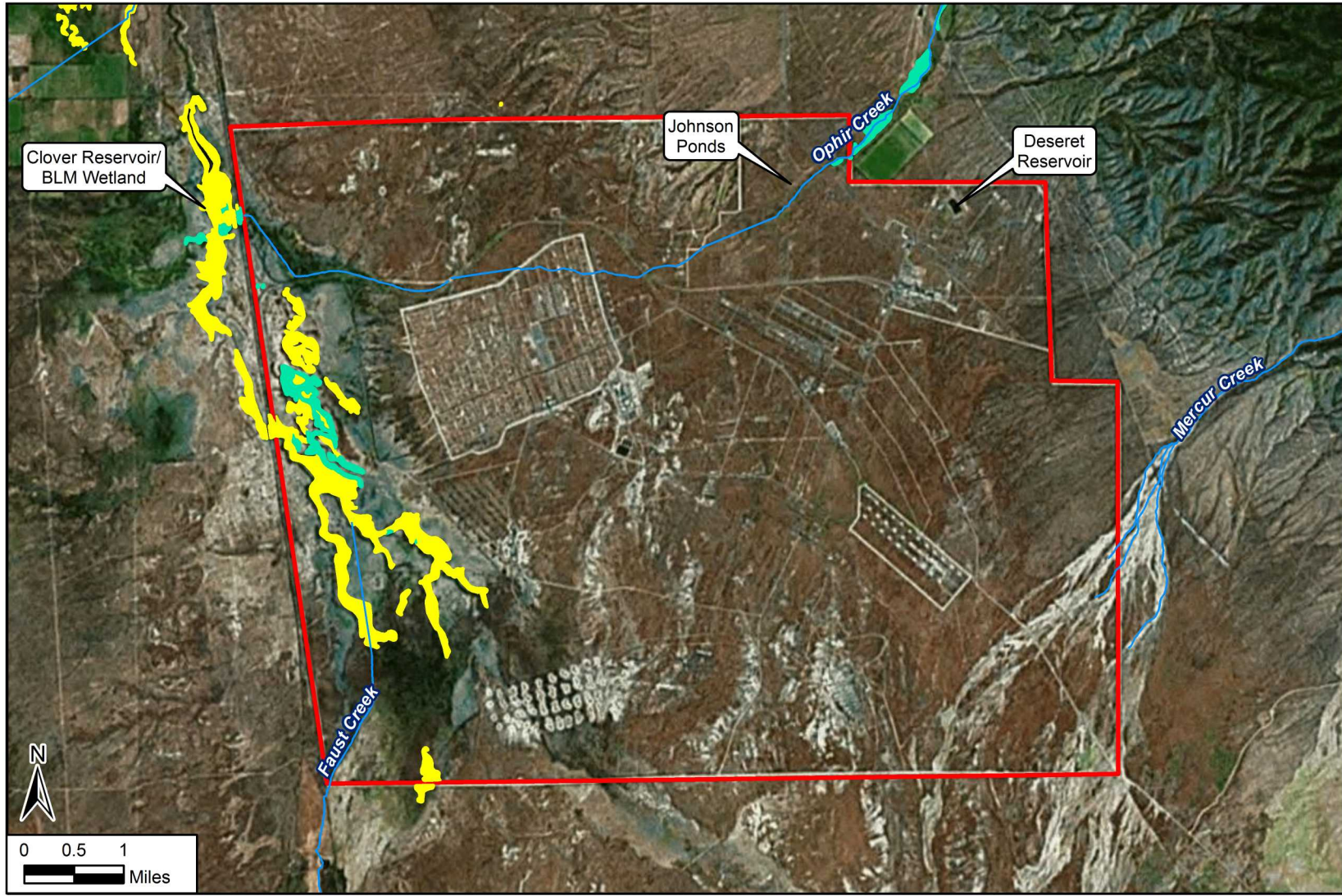


**Surface Water - TEAD North**

- LEGEND**
- Installation Boundary
  - Leaseback Area
  - ~ Intermittent Stream

**Figure 4-3**

Source: ESRI 2011; Utah AGRC 2014.



### Surface Water - TEAD South

Figure 4-4

Source: ESRI 2011; USFWS NWI 2014; Utah AGRC 2014.

#### **4.4.1.2 Surface Water**

Tooele Valley lies on the northern flank of the Shambip River basin, which includes both the Tooele Valley and Rush Valley to the south. The northern 400-square mile portion of the basin, which contains Tooele Valley and TEAD North Area, is separated from the southern 730 square miles of the basin by the South Mountains and Stockton Bar. Water falling in the watershed of Tooele Valley discharges to the Great Salt Lake. There are no major natural fresh surface waterbodies in Tooele Valley. A number of perennial streams originate in the Oquirrh, Stansbury, and South Mountains that surround Tooele Valley. The five largest of these streams have a combined annual flow of about 3,930 acre-feet per year.

Natural stream channels that come out of the canyons onto the slope at the base of the mountains become washes, dividing and ultimately disappearing into the alluvial aprons on the basin margin. Most of the stream flow from the mountains is collected in a system of irrigation canals and storage reservoirs. Excess runoff is allowed to flow in the washes when the capacity of the irrigation system is exceeded. Based on the review of USGS 1:24,000 topographic maps, there is one intermittent creek and one wash on TEAD North Area. South Willow Creek enters the TEAD North Area at its west central boundary, then extends along the western boundary and then off the Depot at its northwestern corner. The Box Elder Wash is near the Depot's southwestern boundary (USGS 2014a, 2014b, 2014c, 2014d). A small, earthen dam (referred to on the installation as the Ethiopian Dam) was built on Box Elder Wash to help control flash flooding. The flood gates of the dam are inoperable.

#### **4.4.1.3 Water Quality**

Natural groundwater quality in Tooele Valley varies depending on location in the valley and depth. For example, some shallow perched groundwater (18 to 20 feet in depth) contains high sulfate and chloride concentrations, while deeper groundwater (338 to 623 feet) is generally of better quality. Groundwater in the southwest portion of the valley near the recharge area is of a calcium and magnesium bicarbonate type, with dissolved solids concentrations of 1,000 to 3,000 milligrams per liter (mg/L) near the center of the valley.

Groundwater in parts of TEAD North Area (and adjacent off-post areas) has been contaminated by past disposal of solid waste and industrial chemicals at the Depot (Parsons 2010, 2014). Two large groundwater plumes (the Northeast Boundary and Main Plumes) have been identified at TEAD North Area. See Section 6.2.1.5 *Contaminated Site Restoration*, for further information on the plumes.

#### **4.4.2 TEAD South Area**

##### **4.4.2.1 Groundwater**

TEAD South Area is in Rush Valley. The watershed of Rush Valley drains internally toward Rush Lake (which is south of the city of Tooele, southeast of the South Mountains, and just west of the town of Stockton). Groundwater in Rush Valley is derived almost entirely from snowmelt and rainfall within the drainage basin, mostly on lands above altitudes of 5,500 to 6,000 feet. The amount of precipitation at these elevations generally exceeds immediate losses from evapotranspiration. As a result, some of the water derived from runoff and snowmelt infiltrates into consolidated rocks in the mountains and some collects in streams that discharge onto the adjoining alluvial fans and aprons. Stream water that reaches the fans is either lost to evapotranspiration, is taken up as soil moisture, or percolates to the water table.

The average annual rate of recharge from precipitation on lands below 5,500 to 6,000 feet is low because the amount of precipitation is generally small and most of it is lost to evapotranspiration. Recharge rates are highest in coarse grained deposits and least to nonexistent in the fine grained deposits.

Groundwater occurs in three distinct aquifers in Rush Valley. The three aquifers have been designated as the basin fill, the alluvial fan, and the shallow brine aquifers. The basin fill aquifer is the most extensive and occurs in the valley in unconsolidated gravels, sands, and clays that overlie consolidated Paleozoic sedimentary rocks. Relatively impermeable, clay-sized lacustrine sediments restrict hydraulic communication between the basin fill aquifer and the ground surface. The basin fill aquifer is recharged primarily from subsurface inflow from adjacent alluvial fans and underlying Tertiary or Paleozoic rocks.

The alluvial fan aquifer occurs in the sands and gravels of the fans located along the flanks of the mountains. The alluvial fan aquifer is unconfined in its upper reaches and confined along the valley walls where interbedded, fine-grained lacustrine deposits act as confining beds. Artesian conditions may occur at locations near the valley walls in this aquifer. Where the quantity of groundwater passing through the aquifer exceeds the transmissive capacity of the confining beds, discharge may occur in the form of surface seeps or springs located along the base of the alluvial fan. Hydraulic connection occurs between the basin fill and the alluvial fan aquifers where sand and gravel deposits grade into conglomerates. Recharge to the alluvial fan aquifer occurs mainly from infiltration of precipitation and melted snow, as well as from subsurface inflow from consolidated rocks in the adjacent mountains.

The shallow brine aquifer is unconfined and occurs just below the valley surface. The aquifer occurs in near surface carbonate muds and in crystalline halite and gypsum deposits. Groundwater flow in the shallow brine aquifer generally parallels the surface topography. Hydraulic connection between the shallow brine and alluvial fan aquifers occurs where sand and gravel deposits are interbedded with the near surface carbonate muds. Recharge to the aquifer is mainly from incident precipitation, with lesser amounts resulting from stream flows reaching the valley floor, excess irrigation water, discharges from mines and tunnels, and subsurface flow from nearby consolidated rocks.

The depth to groundwater on TEAD South Area ranges from around 290 feet below ground surface in the topographically high northeastern section of the installation to less than 10 feet below ground surface in the southwestern section. Short term variations in groundwater levels of up to 6 feet have been observed in monitoring wells. The greatest observed variations occur near the southwestern corner of TEAD South Area where Faust Creek enters the installation.

Groundwater flow in Rush Valley is divided into two distinct regions by a southwest to northeast trending divide that passes through TEAD South Area in its northwest section. Groundwater flow to the north of the divide is towards the center of Rush Valley, then to the north where it contributes either to the baseflow entering Rush Lake or to the recharge of the Tooele Valley aquifer system. Groundwater to the south of the divide flows south to Vernon (about 12 miles south of TEAD South Area), then clockwise around Vernon, then eastward towards the Thorpe Hills.

#### **4.4.2.2 Surface Water**

Rush Valley is a closed basin, with no outlet for surface water (DCD 2009). Some of the precipitation that falls on the mountains encircling Rush Valley flows to lower elevations in streams. Most of these streams are ephemeral and flow only in direct response to snowmelt and summer rainfall. Nearly all surface drainage is directed northward toward Rush Lake, at the northern boundary of the valley; however, upland stream channels in the southeast portion of

Rush Valley end at a string of playas south and southeast of TEAD South Area. The playas, by their nature, are wide, long, flat areas which can dissipate large amounts of runoff water (e.g., cloud burst). Due to the dissipative capacity of these playas, the potential for flooding at TEAD South Area from flash flooding type rainfall in the valley is low.

The surface water system of TEAD South Area is composed of several perennial and intermittent streams, one man-made reservoir, and two ponds. The majority of the water from the streams either recharges the groundwater, is lost to evaporation, or is excessed to Clover Reservoir on BLM land west of the Depot. Specific surface water bodies at TEAD South Area are described in detail below.

#### 4.4.2.2.1 *Ophir Creek*

Ophir Creek is a locally perennial stream originating in the Oquirrh Mountains to the northeast of TEAD South Area. Ophir creek enters the installation at the northeast corner and flows southwesterly to Adamson Road. At Adamson, the creek is channelized to flow due south along Adamson to Harrison Road. At Harrison Road, the creek is diverted along the north side of Harrison Road to flow due west to the west boundary of the installation. The channelized path along Harrison is equipped with an irrigation system designed to water the agricultural outlease area. Ophir Creek exits the installation on the western boundary where it flows to Clover Reservoir, a wetland on BLM land. Water flow to the Clover Reservoir has greatly increased with the channeling of Ophir Creek across TEAD South Area. Since the channeling of Ophir Creek, approximately 30 percent of TEAD's share of Ophir Creek water reaches the off-post Clover Reservoir wetland (see Section 5.5 Wetlands).

The creek flow is partially diverted from Ophir Canyon in the town of Ophir where TEAD has a stream sedimentation control pond, diversion structure, and intakes into an underground pipeline to collect flow from the creek. The Ophir Creek Water Company has rights to 11 cubic feet per second (cfs) from Ophir Creek. TEAD owns 60 percent of the water rights (or 6.6 cfs) and a private owner (a neighboring rancher) owns the remaining 40 percent (4.4 cfs) (Ensign 2012). TEAD has a right-of-way for the pipeline and is responsible for the maintenance of the pond and diverter system, cleaning it every two- to three years. The TEAD water share is diverted to feed TEAD South Area's Deseret Reservoir (which feeds Johnson Ponds and the wet meadows west of the ponds) and is used for agricultural purposes (irrigation) and livestock watering.

Ophir Creek is subject to flash flooding during heavy rains or rapid snow melt, but major flooding hazards do not exist. Flash flood and sheet flow conditions cause water erosion problems on the installation along Ophir Creek. In 1991, to counteract these natural occurrences, a revegetation program was implemented to reclaim areas of land that were stripped of cover. In addition, water control devices (i.e., appropriate sized culvert systems at road crossings, rip rap and pylons in drainage basin embankments) were placed in critical areas to reduce the potential for erosion. In the past, sheet flow problems existed where Ophir Creek crosses the main entrance road. After September 11, 2001, culverts were placed at four road crossings on Ophir Creek to facilitate the increased military security presence. There is no history of flooding on TEAD South, with the exception of a 100-year occurrence in 1985 when the western part of the United States received abnormally high snow pack during the winter of 1984 to 1985.

#### 4.4.2.2.2 *Mercur Creek*

Mercur Creek is also a locally perennial stream whose headwaters originate in the Oquirrh Mountains to the east of TEAD South Area. The creek is channeled into a diversion ditch flowing south along the eastern boundary of the installation. At one time, this ditch carried Mercur Creek water to the playa area south of the Depot, but it is presently totally covered by the BLM-Mercur



Outwash Tailings. Mining recently occurred in the Mercur Canyon area of the Oquirrh Mountains (see Section 4.3.3 *Petroleum and Minerals*). The Mercur Creek outwash area in the southeastern corner of TEAD South Area is characterized by brown-red soils that contain mine tailings (see discussion of contaminated sediment in Section 4.3.4.2 TEAD South Area Soils).

Like Ophir Creek, Mercur Creek is subject to flash flooding during heavy rains or rapid snow melt, but major flooding hazards do not exist. The 1991 revegetation program was also implemented around Mercur Creek to reduce the potential for erosion.

#### 4.4.2.2.3 *Faust Creek*

Faust Creek intermittently flows north through the center of Rush Valley, collecting water from Ophir, Mercur, and Clover Creeks, and carrying surface water from other tributaries in the south half of the valley, and ultimately discharging to Rush Lake in the north half of the valley. During periods of heavy rain or rapidly melting mountain snowpack, Faust Creek enters TEAD South Area near the southwest corner of the installation and ponds in the west central part of the Depot by the damming effects of the intersection of two railroad embankments. When stream flow is high, the creek overflows its banks and flows to the BLM-owned wetland, Clover Reservoir, west of the installation. Flooding in this area may serve as a groundwater recharge area. Faust Creek is managed by the UDWR of the Utah Department of Natural Resources (UDNR).

#### 4.4.2.2.4 *Deseret Reservoir*

Deseret Reservoir is a 3.5-acre, 20 million gallon capacity, man-made reservoir in the northeast corner of the installation outside the main gate. Water from Ophir Creek is diverted to and stored in Deseret Reservoir. Originally named Rainbow Reservoir, the reservoir was constructed in 1987 as an irrigation reservoir and has contributed to better management and use of Ophir Creek. The water in the reservoir was originally planned to be used for irrigating agricultural outlease land on the installation. The agricultural outlease was in effect for a few years in the early 1980s; upgraded infrastructure (piping and wheel lines) are being installed in Spring 2015 to support the new agricultural outlease.

#### 4.4.2.2.5 *Johnson Ponds*

A pioneer-era homestead that used to be in the northern section of the installation included two small ponds (referred to as the Johnson Ponds) used in the late 1800s and early 1900s to water livestock. The ponds remained as dry depressions since the Army obtained TEAD South Area in 1942; the water rights associated with the homestead property and ponds were transferred to the Army with the land transaction. The water rights were used by the installation for agriculture, fish culture, and grazing. In 2010, TEAD developed and approved a plan to restore the ponds after a meeting with UDWR revealed that the agency was looking for a partner to establish broodstock and refuge populations of the least chub, a former Federal Endangered Species List candidate species and state-listed conservation agreement species.

### 4.4.2.3 **Water Quality**

#### 4.4.2.3.1 *Groundwater Quality*

Groundwater quality in Rush Valley ranges from fresh to briny. The shallow brine aquifer groundwater is of the sodium chloride type with total dissolved solids of more than 150,000 mg/L. Groundwater in the basin fill aquifer, in the central sections of the valley, generally has total dissolved solids ranging between 500 to 1,000 mg/L. In areas where the basin fill aquifer grades into the alluvial fan or shallow brine aquifers, total dissolved solids may range between 1,000 and 3,000 mg/L. Groundwater in the valley fill aquifer is of the sodium chloride type and is generally

suitable for consumption by livestock, but it is not recommended for irrigation of crops. Concentration of total dissolved solids decreases in the basin fill aquifer towards the valley wall.

Groundwater in the alluvial fan aquifer is of the calcium magnesium bicarbonate type, with total dissolved solids concentrations of less than 500 mg/L. Groundwater chemistry in the alluvial fan aquifer is the result of recharge from an area consisting primarily of limestone, dolomite, and shale. A mixed calcium magnesium bicarbonate, sodium chloride groundwater may occur in areas where the alluvial fan aquifer has been pumped for prolonged periods of time, or where recharge is minimal due to induced hydrologic connection between it and the shallow brine or basin fill aquifers. Groundwater having high concentrations of sulfate has occurred in areas where uncontrolled effluents from mines or tunnels recharge any of the three aquifers. Overall, groundwater in Rush Valley is classified as very hard because calcium carbonate exceeds 150 mg/L.

#### 4.4.2.3.2 Potable Water Quality

Water quality data for the TEAD South Area is limited. A drinking water system analyses conducted in 1998 and 1999 found the quality of groundwater in local water-supply wells to be excellent, meeting all federal, state, and DA standards, except for total dissolved solids (TDS). TDS slightly exceeded the national secondary drinking water regulations of 500 mg/L. Values from monitoring wells (1 and 2) were 730 and 682 mg/L TDS respectively in an August 20, 1998 sampling event. In 2003, Drinking Water Source Protection Plans for both wells were updated. Groundwater is used for drinking water at TEAD South Area (DCD 2009).

#### 4.4.2.3.3 Surface Water Quality

A TEAD Master Plan reports that the water quality is excellent at the headwaters of the major streams on TEAD South Area (DCD 2009). As the water flows toward base level, the water quality lessens due to silt and salt loading. The master plan identifies the most detrimental water quality problem in the region as chemical leaching from waste pits on TEAD South Area. Waste pits, primarily constructed in the 1940s, contained miscellaneous conventional and chemical munitions as well as various ordnance disposal items.

*Ophir Creek.* Santa Rita LLC conducted a series of soil and water samples and analysis of Ophir Creek for heavy metals under contract to TEAD in 2002. The 38 sediment samples found elevated quantities of metals from the Ophir mining district present in the sediment of Ophir Creek at TEAD South Area; however, metals were not found dissolved in the water in appreciable amounts. The Santa Rita LLC report *Investigation of Ophir Creek* (dated October 2002) can be reviewed at TEAD South Area's Risk Management Office.

*Deseret Reservoir.* cursory surface water quality monitoring was conducted at Deseret Reservoir in 1996 and 1997 (the most recent data available). The study in May 1996 recorded data from five sampling stations, sampled one time each. Results of this sampling are presented in Table 4-3. In addition, chemical analyses were conducted to determine the levels of inorganic analytes (i.e., metals and anions). The results of the chemical analyses are presented in Table 4-4. Fish samples are taken yearly at Deseret Reservoir by TEAD South Area staff. No exceedances of government standards for pollutants have been encountered.

No water quality data is available for Mercur Creek, Faust Creek, or the Johnson Ponds.

**Table 4-3.  
Water Quality Data for Deseret Reservoir**

<b>Parameter</b>	<b>Sample Site 1 (5/8/96)</b>	<b>Sample Site 2 (5/9/96)</b>	<b>Sample Site 3 (5/9/96)</b>	<b>Sample Site 4 (5/9/96)</b>	<b>Sample Site 5 (5/10/96)</b>	<b>Average</b>
pH	8.26	8.45	8.35	8.18	8.24	8.30
Temperature (°C)	11.38	10.06	9.76	11.07	10.01	10.46
Conductivity (µS)	390.00	396.00	396.00	391.00	390.00	393.00
Dissolved Oxygen (mg/L)	8.37	8.95m	9.32	8.20	9.01	8.77
Eh (mV)	115.00	151.00	78.00	99.00	137.00	116.00

Source: DCD 2009

Notes: °C = Degrees Celsius, Eh = Oxidation potential, µS = Microsiemens, mg/L = Milligrams per liter, mV = Millivolts

**Table 4-4.  
Baseline Analyte Data for Deseret Reservoir**

<b>Analyte (µg/L)</b>	<b>Mean ( µg/L)</b>	<b>Standard Deviation (µg/L)</b>	<b>Maximum (µg/L)</b>	<b>Calculated Comparison Criteria<sup>a</sup></b>
Aluminum	132	94	292	670
Boron	70	64	181	10.7
Calcium	60,320	838	61,200	65,137
Iron	92	49	171	373
Magnesium	N/A	N/A	12,400	12,400
Sodium	5,328	126	5,530	6,051
Chloride	5,800	71	5,900	6,207
Nitrate-Nitrite	494	9	505	545
Sulfate	N/A	N/A	11,000	11,000

Source: DCD 2009

Notes:

<sup>a</sup> The calculated comparison criteria is the 99 percent upper tolerance level (UTL) for each analyte. The 99 percent UTL tests for extreme values in the sampling. Where no UTL is calculated due to failure of distribution testing, the maximum detection is selected as the analyte comparison criteria.

µg/L = Micrograms per liter

N/A = Not available

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## **SECTION 5.0 ECOSYSTEMS AND THE BIOTIC ENVIRONMENT**

### **5.1 ECOSYSTEM CLASSIFICATION**

Ecoregions have been defined in different ways by different agencies depending on each agency's conceptual approach. The U.S. Environmental Protection Agency (EPA), Western Ecology Division, published the result of an interagency effort to develop a common framework of ecological regions that combined and refined the most common ecoregion-type frameworks, including those developed by the U.S. Forest Service, the EPA, and the U.S. Department of Agriculture Natural Resources Conservation Service (USEPA 2014). Under this ecoregion classification system, four levels of ecoregions are defined, with each lower (more defined) level being a subdivision of the higher level. North America is divided into 15 Level I ecological regions and 52 Level II ecoregions. At Level III the continental United States has 104 Level III ecoregions, which are further divided into Level IV ecoregions. TEAD North and South Areas are within the Central Basin and Range Level III ecoregion, which covers an area extending from the western half of Utah across Nevada (Woods et al. 2001). The Central Basin and Range Level III ecoregion is bordered by the Wasatch and Uinta Mountains Level III ecoregion to the east, the Northern Basin and Range Level III ecoregion to the north, and the Mojave Basin and Range Level III ecoregion to the south (Figure 5-1).

The following is a general description of the Central Basin and Range ecoregion (adapted from Woods et al. 2001): The Central Basin and Range ecoregion is composed of northerly trending, fault-block ranges and intervening, drier basins. Valleys, slopes, and alluvial fans are either shrub and grass-covered, shrub-covered, or barren. Woodland, mountain brush, and scattered open forests are found at higher elevations on mountain slopes. The potential natural vegetation is, in order of increasing elevation and ruggedness, saltbush-greasewood, Great Basin sagebrush, juniper-pinyon woodland, and scattered western spruce-fir forest. Tule marshes occur locally, especially along the Great Salt Lake shoreline. The ecoregion is internally-drained by ephemeral streams. In Utah, most of the ecoregion lower than about 5,200 feet elevation was inundated by Pleistocene Lake Bonneville. Extensive playas occur and are nearly flat, clayey, and salty. In general, the Central Basin and Range ecoregion is drier than the Wasatch and Uinta Mountains ecoregion to the east, cooler than the Mojave Basin and Range ecoregion to the south, and warmer and drier than the Northern Basin and Range ecoregions to the north. The land is primarily used for grazing. Some irrigated cropland is found in valleys near mountain water sources.

The Central Basin and Range Level III ecoregion is divided into eight Level IV ecoregions (Woods et al. 2001). TEAD North Area lies entirely in the Sagebrush Basins and Slopes Level IV ecoregion, as does the northern half of TEAD South Area (Figure 5-2). This ecoregion is semiarid. The potential natural vegetation is Great Basin sagebrush. It is dominated by Wyoming big sagebrush but perennial bunchgrasses occur and become increasingly common northward as available moisture increases. The major land use is grazing, but feedlots, dairy operations, and irrigated cropland are found locally. It includes valleys, alluvial fans, and mountain flanks that are less saline than those in surrounding ecoregions, and it is less rocky, rugged, and wooded than surrounding ecoregions.

The southern half of TEAD South Area is primarily within the Shadscale-dominated Saline Basin Level IV ecoregion (Woods et al. 2001). It is arid, internally-drained, and gently sloping to nearly flat. Light-colored soils with high salt and alkali content occur and are dry for extended periods. Vegetation is salt- and drought-tolerant. It is dominated by shadscale, winterfat, and greasewood and is distinct from the Wyoming big sagebrush of the less saline Sagebrush Basins and Slopes ecoregion and the mostly barren Salt Deserts ecoregion (see below). The Shadscale-dominated

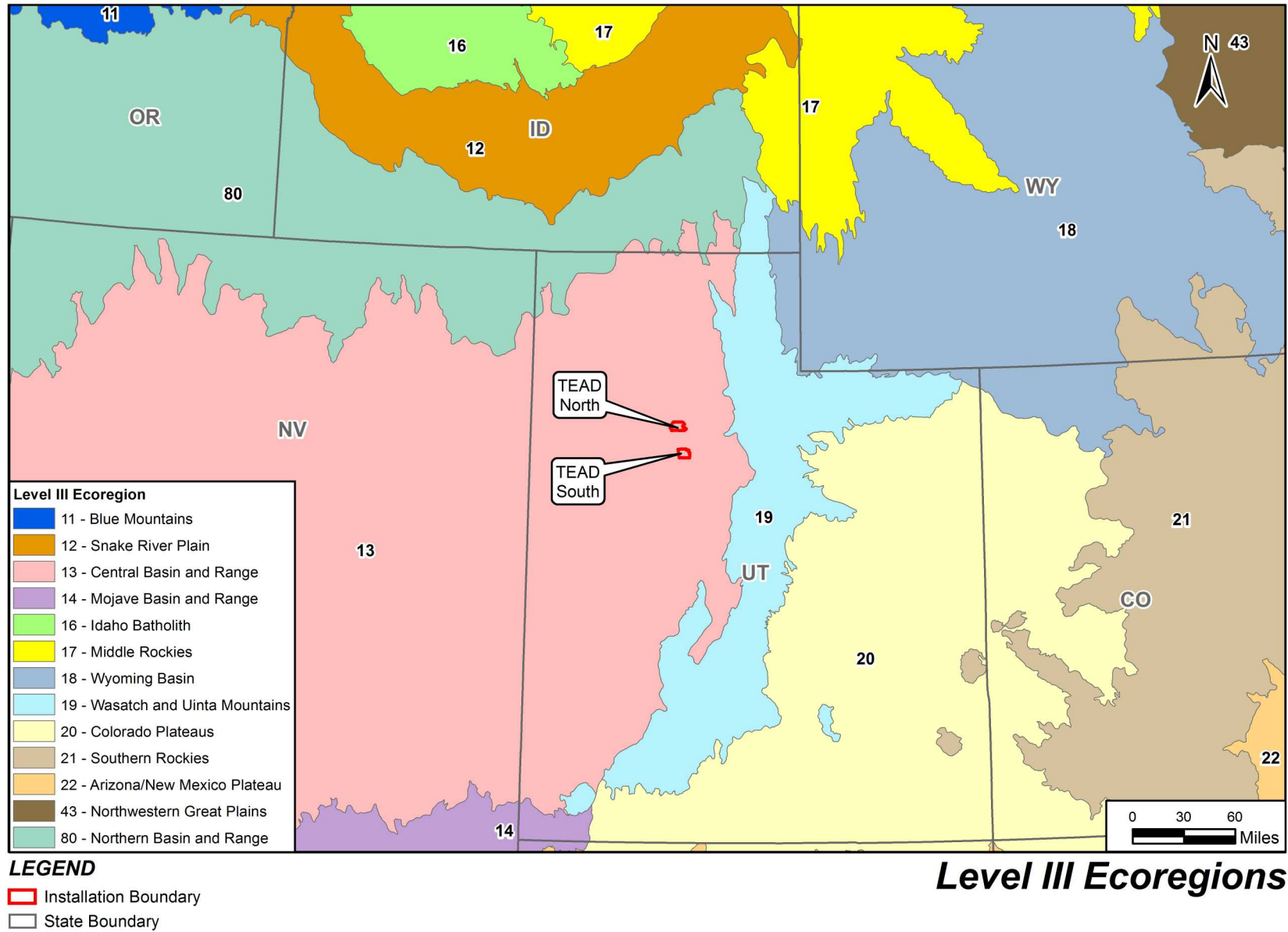


Figure 5-1

Source: USEPA 2014.

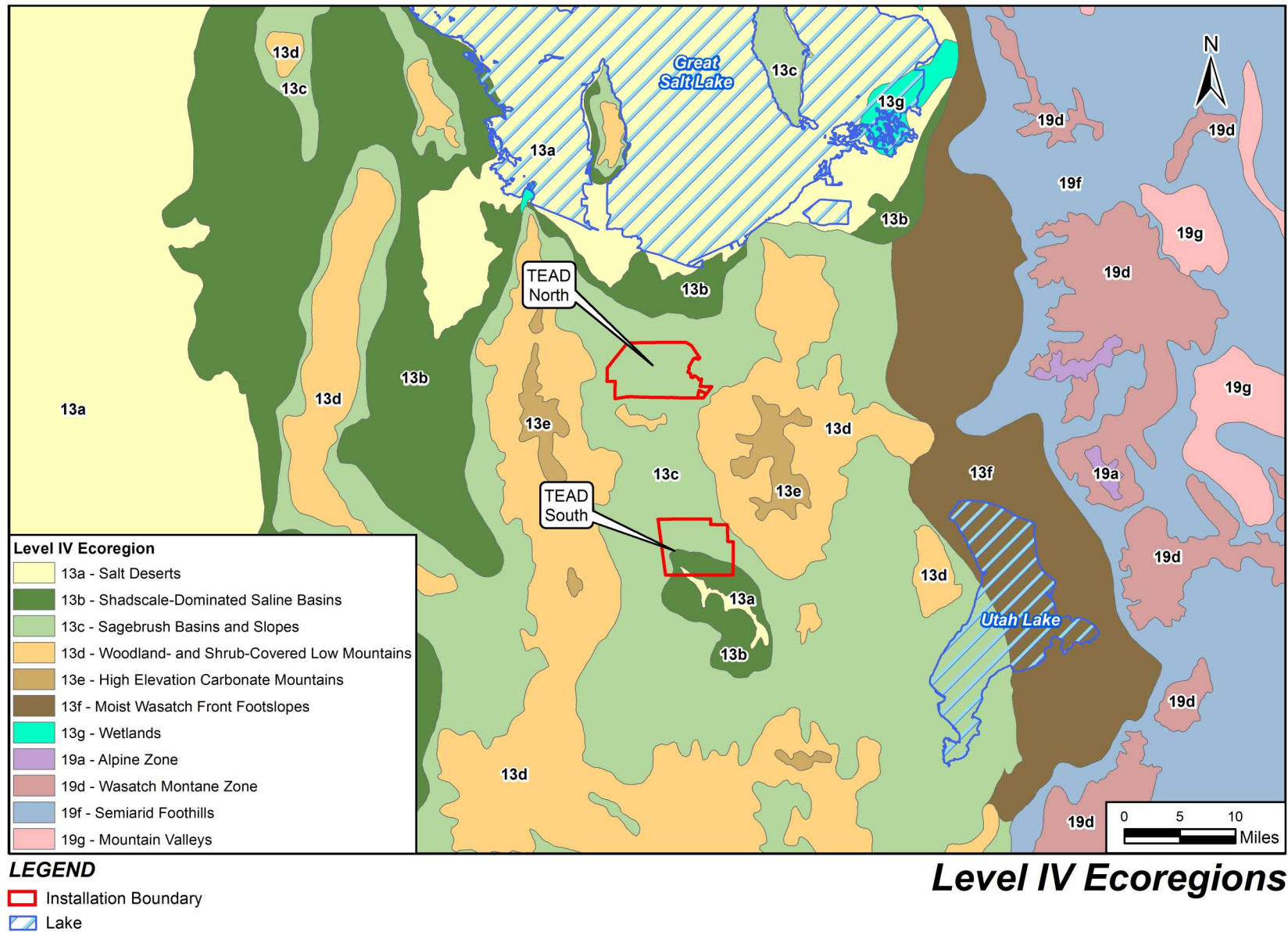


Figure 5-2

Source: USEPA 2014.

Saline Basin ecoregion is primarily rangeland, but large livestock and poultry farms are found locally. Irrigated farming is not common.

Along the southern boundary of TEAD South Area is a small area within the Salt Deserts ecoregion (Woods et al. 2001). This ecoregion is nearly level, internally-drained, mostly barren, arid, and nonarable. It contains playas, salt flats, mud flats, and saline lakes. Water levels and salinity fluctuate seasonally and yearly. Soils are mostly clayey and poorly drained. Vegetation, where present, is sparse and composed of salt-tolerant plants such as salicornia and saltgrass. Land uses within the ecoregion include recreation, transportation, defense installations, and industry, including salt production.

## **5.2 VEGETATION**

### **5.2.1 TEAD North Area**

TEAD North Area has no forested areas, wetlands, or major riparian areas. Six vegetative communities have been identified on TEAD North Area in the undisturbed areas. Three of these communities—Wyoming big sagebrush, mountain big sagebrush, and pinyon-Utah juniper dominate the installation. Other communities found at TEAD North Area are Utah juniper, black greasewood, and basin wildrye.

Invasive plant species of concern on TEAD North Area include yellow star thistle, Scotch thistle, and hemlock. In FY 2014, nine acres of TEAD North Area were chemically spot treated for these plants. TEAD personnel conduct quarterly inspections for invasive species and annually consult with UDNR and Tooele County to assist in identification and eradication of invasive plants (Howard, personal communication, 2014).

The area surrounding TEAD North Area consists of desert shrublands. The last Planning Level Surveys (PLS) of the flora and vegetative communities were completed in February of 2001. A list of plant species observed on TEAD North Area while conducting the 2001 PLS is in Appendix B. Based on those surveys the vegetative communities and plant species that commonly occur in those communities on TEAD North Area were described based on range sites. Range sites were determined based on combinations of soils and climate that result in differences in the kinds, combinations, or abundance of plant species that occur in them. Plant communities occurring on a range site are characteristic for that range type and are described below.

Range sites determined to be on TEAD North Area were the Upland Loam, Upland Gravelly Loam, Semidesert Loam (Wyoming Big Sagebrush), Semidesert Gravelly Loam (Wyoming Big Sagebrush) North, Semidesert Sand (Utah Juniper), Semidesert Shallow Hardpan, Desert Salt Flat, and Alkali Flat. Potential dominant vegetative species occurring in each of the range sites are discussed below.

#### **5.2.1.1 Upland Loam**

Common plant species occurring in the Upland Loam range site, in undisturbed conditions, include: basin wildrye, bluebunch wheatgrass, Indian ricegrass, antelope bitterbrush, big sagebrush, Nevada bluegrass, phlox, and arrowleaf balsamroot.

As ecological conditions deteriorate due to over grazing, bluebunch wheatgrass, Indian ricegrass, Nevada bluegrass, and bitterbrush decrease while big sagebrush, rubber rabbitbrush, and Douglas rabbitbrush increase. If the natural plant community is burned, big sagebrush, and bitterbrush decrease and arrowleaf balsamroot and rubber rabbitbrush increase. Vegetative species that are likely to invade the site include annual forbs, cheatgrass, and snakeweed.



### **5.2.1.2 Upland Gravelly Loam**

Common plant species occurring in the Upland Gravelly Loam range site, in undisturbed conditions, include: bluebunch wheatgrass, muttongrass, Nevada bluegrass, Sandberg bluegrass, big sagebrush, needle and thread, and antelope bitterbrush (Trickler 1985). If the natural plant community is burned, big sagebrush, bitterbrush, and bluegrass decrease while balsamroot, horsebrush, and rabbitbrush increase.

### **5.2.1.3 Semidesert Loam**

Common plant species occurring in the Semidesert Loam range site, in undisturbed conditions, include: bluebunch wheatgrass, Indian ricegrass, bottlebrush squirreltail, needle-and-thread, and scarlet globemallow.

### **5.2.1.4 Semidesert Gravelly Loam**

Common plant species occurring in the Semidesert Gravelly Loam (Wyoming Big Sagebrush) range site, in undisturbed conditions, include: bluebunch wheatgrass, Indian ricegrass, bottlebrush squirreltail, Nevada bluegrass, hood phlox, rose pussytoes, Wyoming big sagebrush, shadscale, and Douglas rabbitbrush (Trickler 1985). When the natural plant community is burned, Wyoming big sagebrush, Indian ricegrass, and Eriogonum species decrease while annual forbs, arrowleaf balsamroot and western wheatgrass increase.

### **5.2.1.5 Semidesert Sand**

Common plant species occurring in the Semidesert Sand range site, in undisturbed conditions, include: Utah juniper, needle and thread, Indian ricegrass, bottlebrush squirreltail, sand dropseed, and scurfpea (Trickler 1985). Russian thistle and cheatgrass are common invasives of the semidesert sand range site.

### **5.2.1.6 Semidesert Shallow Hardpan**

Common plant species found in the Semidesert Shallow Hardpan range site, in undisturbed conditions, include: bluebunch wheatgrass, Indian ricegrass, needle and thread, bottlebrush squirreltail Nevada bluegrass, thickstem wild cabbage, black sagebrush, winterflat, Douglas rabbitbrush, and Mormon-tea (Trickler 1985). When the natural plant community is burned, black sagebrush, shadscale, winterflat, and some perennial grasses such as Nevada bluegrass decrease while Indian ricegrass, bluebunch wheatgrass, bottlebrush squirreltail, needle and thread, and Douglas rabbitbrush increase.

### **5.2.1.7 Alkali**

Common plants occurring in the Alkali range site, in undisturbed conditions, include: bottlebrush squirreltail, alkali sacaton, seepweed, black greasewood, shadscale, and nuttall saltbush. When the natural plant community is burned, bottlebrush squirreltail, Indian ricegrass, alkali sacaton, gray molly and shadscale decrease while black greasewood, rubber rabbitbrush, and horsebrush species increase.

## **5.2.2 TEAD South Area**

TEAD South Area also has no forested areas. The TEAD South Area flora is a sagebrush community tending toward a desert shrub community on the valley floor (FWI 1994). The lack of precipitation during the summer months limits plant life to several drought resistant or tolerant species (TEAD 1995b). The TEAD South Area southwest corner consists of several alkaline tolerant species. The TEAD South Area vegetation generally consists of sagebrush, rabbit brush,

and native grasses and forbs. Dominant native grasses and grass-like plants that occur at TEAD South Area are alkali sacaton, basin wildrye, bottlebrush squirreltail, and needle-and-thread (TEAD 1995a). Dominant native forb species include hood phlox, milkvetch, and penstemon. Dominant shrub species include basin big sagebrush, basin saltbush, black greasewood, and Mormon tea. Appendix B provides a comprehensive list of all the native vegetation observed at TEAD South Area.

Plants that are classified as noxious plants by the State of Utah that have been identified on TEAD South Area include bindweed or wild morning glory, white top, Canada thistle, and Russian knapweed (FWI 1994; TEAD 1995b).

Invasive plant species of concern on TEAD South Area include white top weed, Scotch thistle, saltcedar, and hemlock. In FY 2014, seven acres of TEAD South Area were chemically spot treated for these plants. TEAD personnel conduct quarterly inspections for invasive species and annually consult with UDNR and Tooele County to assist in identification and eradication of invasive plants (Howard, personal communication, 2014).

Plants that are known or suspected to contain poisonous substances and that have been identified on TEAD South Area are low larkspur, gray horse brush, greasewood, halogeton, and death camas (FWI 1994; TEAD 1995b).

TEAD South Area supports four dominant terrestrial plant communities and wetland/riparian communities, described briefly below (FWI 1994).

#### **5.2.2.1 Upland Shrub**

The upland shrub habitat is found in relatively dry areas with well-drained soils and low salinity. The area is dominated by sagebrush which comprises one-quarter of the total species composition in this habitat. The shrubs are 1 to 6 feet tall consisting of big sage, greasewood, and rabbitbrush. The understory consists of grass, forbs, and large areas of bare ground.

#### **5.2.2.2 Upland Grass**

The upland grass habitat occurs in areas with well-drained soils and low salinity. Unlike the upland shrub habitat, this area lacks shrub communities and includes vegetation types such as bunchgrass and annual forbs. This habitat may be a successional stage to the upland shrub habitat because of past environmental disturbances.

#### **5.2.2.3 Salt Shrub**

This habitat occurs in areas with poorly drained soils and increased salinity. The environmental gradients in this area are in transition. This area supports xeric shrubs consisting mainly of saltbush, which is about one-quarter of the total species composition in the salt shrub habitat. Other vegetation types include snakeweed, grasses, and greasewood.

#### **5.2.2.4 Alkali Meadow**

This area is found on the valley floor in the southwestern corner of TEAD South Area. Because this area tends to flood during the spring, the vegetation types are those that thrive in soils with high moisture and high salinity. The most common vegetation types are therefore alkali grass, rabbit brush, juncus, foxtail grass, and saltblite.

#### **5.2.2.5 Wetland/Riparian**

TEAD South Area has wetland habitat in the vicinity of its western boundary associated with Clover Reservoir (see Section 5.5) and riparian habitat associated with the channelized Ophir

Creek which runs along the northern portion of the installation (see Section 4.4.2.2.1). The predominant vegetation in the wetland includes alkali grass and other alkali meadow species which thrive in soils with high moisture and high salinity (DCD PLS as cited in DCD 2009). Riparian vegetation along Ophir Creek is mainly sandbar willow, cattail, wire rush, and sedges (TEAD Environmental Management Office 2013), as well as saltbrush, sagebrush, and willows (DCD PLS as cited in DCD 2009).

### **5.3 FISH AND WILDLIFE**

The fauna discussed in this section represents common birds, mammals, fish, amphibians and reptiles that have been observed at TEAD during various surveys and assessments conducted on the installation. Appendix C provides a comprehensive list of species identified on TEAD, along with others that may be found on the facility or in surrounding areas. Appendix C includes a list of mammals and birds observed on TEAD North Area during the installation's 2001 PLS; a list of mammals, fish, reptiles, and birds observed on TEAD South Area during various surveys and assessments; and the USFWS Information, Planning, and Conservation System ESA list and migratory birds of concern list for TEAD North and South Areas.

Appendix D lists species identified by the Utah Comprehensive Wildlife Strategy (UCWS) common to both the UCWS/TEAD South Area list. This table lists species that are identified in this INRMP, but have not been confirmed to be at TEAD South Area. Species on this list confirmed at TEAD South Area are the bald eagle, burrowing owl, ferruginous hawk, sage thrasher, loggerhead shrike, mule deer, kit fox, dark kangaroo mouse, long-billed curlew, short-eared owl, and sagebrush sparrow. At the bottom of the species block are notes pertaining to the current management of these species at TEAD South Area.

#### **5.3.1 Mammals**

Nearly 70 species of mammals have been observed at TEAD North Area, and approximately 20 more are expected to inhabit the area. Various surveys and assessments conducted at TEAD South Area indicate that a total of 39 mammal species have been observed on TEAD South Area property (Ebasco 1994; EMD TEAD 1991; TEAD 1995a; UNDR 1969; USFWS 1999; Zeveloff and Collett 1988). Large mammal species that have been detected on TEAD (North and South Areas) include the pronghorn, mule deer, coyote, porcupine, striped skunk, and spotted skunk. Small mammal species existing on site include shrews, bats, squirrels and chipmunks, ground squirrels, white-tailed antelope squirrel, rabbits and hares, gophers, kangaroo rats, pocket mice, voles, and woodrats. Black-tailed jackrabbit and rock squirrel are common on TEAD South Area. The TEAD South Area upland shrub habitat supports badgers and Ord's kangaroo rats.

The following specific species were found on TEAD North Area in surveys conducted in 2000: deer mouse, Great Basin pocket mouse, little pocket mouse, Ord's kangaroo rat, black-tailed jackrabbits, mountain cottontail rabbits, coyote, weasel, raccoon, Brazilian free-tailed bat, elk, and mule deer. Elk are known to move on to TEAD from the neighboring Oquirrh Mountains during most winters. TEAD supports a modest population of mule deer.

#### **5.3.2 Birds**

More than 60 species of birds have been observed at TEAD North Area, including 13 bird of prey species: golden eagle, red-tailed hawk, rough-legged hawk, ferruginous hawk, bald eagle, turkey vulture, prairie falcon, American peregrine falcon and five species of owls (including the burrowing owl and great horned owl). Based on several assessments and surveys performed on TEAD South Area, there are about 105 bird species that use TEAD South Area property (Ebasco 1994;

EMD TEAD 1991; Environmental Staff Monthly Surveys 2006-2013; TEAD 1995a; UDNR 1969; USFWS 1999; Zeveloff and Collett 1988). Of the 48 species listed at TEAD South Area, only six species on the Region 9 Birds of Conservation Concern (BCC) list have been confirmed onsite: bald eagle, ferruginous hawk, golden eagle, loggerhead shrike, peregrine falcon, and sage thrasher. The ferruginous hawk is confirmed to nest on TEAD South Area, as is the burrowing owl. All future INRMP updates will reference the USFWS Migratory Bird Program BCC web site for future revisions (<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html>).

TEAD is not in the Utah Bird Habitat Conservation Areas (Appendix E) (IWJV 2007).

### **5.3.3 Reptiles and Amphibians**

Six species of reptiles have been observed on TEAD North Area, and surveys and assessments performed on TEAD South Area indicate that a total of eight reptile species potentially occur there (FWI 1994; TEAD 1995a; UNDR 1969; USFWS 1999). Species observed on TEAD North Area include the collared lizard, side-blotched lizard, Great Basin skink, western whiptail, Great Basin gopher snake, and Great Basin rattlesnake. Common reptile species on TEAD South Area include the western fence lizard, side-blotched lizard, western yellow-bellied racer, and Great Basin rattlesnake. The TEAD South Area upland shrub habitat supports sagebrush lizards.

No amphibians have been observed on TEAD North Area. Four amphibian species may occur on TEAD South Area: the Great Basin spadefoot toad, western Woodhouse's toad, northern leopard frog, and Columbia spotted frog (FWI 1994; TEAD 1995a).

### **5.3.4 Fish**

No fish species have been recorded at TEAD North Area. Little information exists on the fish and other aquatic biota species inhabiting TEAD South Area. Least Chub have been established in the Johnson Ponds (see Section 5.4.1.5). Carp have been observed in the ephemeral wetlands, and rainbow trout are stocked at Deseret Reservoir (TEAD 1988). Data has been gathered (Appendix F) that identifies other aquatic biota that are present in the surface water bodies at TEAD South Area; no vertebrate species were observed. Other than occasional washouts during heavy rainstorms, Ophir Creek appears healthy, is well vegetated, and its banks have been restored between occasional washouts, implying that Ophir Creek supports a healthy aquatic biota population. Although no sampling of the water quality or aquatic biota in the wetlands has been conducted, some concern exists that run off from Mercur Canyon could carry water that is contaminated from mine tailings to the ephemeral wetlands, which appear to obtain water from Faust Creek and Mercur Canyon runoff (Tetra Tech 1999a).

## **5.4 THREATENED AND ENDANGERED SPECIES**

### **5.4.1 Protected Species**

The USFWS lists one candidate species (greater sage-grouse) and two threatened species (yellow-billed cuckoo, Ute ladies'-tresses) as occurring in Tooele County (see Appendix C; USFWS 2015). There are no federal or state listed threatened, endangered, or rare species known to occur on TEAD North Area. According to the UDWR (Appendix G) there is a record of occurrence of the Greater Sage Grouse on TEAD South Area property.

The only record of occurrence on TEAD South Area of a federal or state protected species is the Bald Eagle. The Bald Eagle was delisted from the ESA effective August 8, 2007, but it is still protected under the Migratory Bird Treaty Act (MBTA), the Bald and Golden Eagle Protection Act,

and the Lacey Act; it has been known to roost in two locations in the Rush Valley (Tetra Tech 1999b; UDWR 1999). One roost was confirmed in Ophir Canyon adjacent to TEAD South Area and the other was near Vernon, approximately 13 miles south of TEAD South Area. As many as 25 eagles have been observed in one stand of cottonwood trees on the valley floor.

The Ute ladies'-tresses is a native orchid in Utah that is known to inhabit streamside meadows and other low-elevation wetland habitats throughout the United States. Suitable habitat for the Ute ladies'-tresses does not exist on TEAD.

The least chub, a species endemic to the Bonneville Basin of Utah, was recognized as a species at risk in 1994 and the species was proposed for listing in 1999. TEAD and UDWR have successfully established a least chub broodstock and refuge population in the Johnson Ponds.

The Bonneville cutthroat trout and the Columbia spotted frog, both federal and state listed conservation agreement species, may inhabit TEAD South Area property.

#### **5.4.1.1 Greater Sage-grouse**

About eight percent of the greater sage-grouse in the western United States lives in Utah (UDWR 2013). The state's population fluctuates annually, but the population is in the range of 16,000 to 34,000 birds. Greater sage-grouse populations are declining across the western United States. The USFWS will make a decision in 2015 about whether to list the species as threatened or endangered under the ESA. Utah has developed a Conservation Plan for greater sage-grouse that identifies how the state will expand greater sage-grouse habitat and populations, reduce the threats facing greater sage-grouse in Utah, and balance economic and social needs concerning the species.

#### **5.4.1.2 Yellow-billed Cuckoo**

This species occurs in scattered locations throughout the state and possibly in Tooele County, but there have been no known sightings on TEAD South Area. The cuckoo's habitat includes low- and mid-elevation riparian areas with abundant dense brush and overstory gallery forest, especially cottonwood-willow associations. Loss of habitat has been the result of invasive species such as salt cedar, livestock use, water withdrawal from streams, and urban development (UDWR 2003). Because this species is rather secretive and difficult to detect and populations are sparsely distributed, definitive estimates of the number of pairs breeding in the state have not been produced. Most occupied habitat patches probably support only 1 or 2 pairs, so the number of breeding adults may be fewer than 20 (Bosworth 2003).

#### **5.4.1.3 Ute Ladies'-Tresses**

Ute ladies'-tresses is a native orchid in Utah (UDWR 1999). Its distribution is wide but sporadic in streamside meadows and other low-elevation wetland habitats throughout the United States. This plant species is more evident in northeastern Utah compared to other areas in its range. The largest known population of Ute ladies'-tresses is on Diamond Fork in Utah County. It was rediscovered in 1994 at Willow Springs, near Callao, Tooele County. This is the only known population of Ute ladies'-tresses in Utah's western desert region. A survey by the USFWS and TEAD South Area was performed on August 16, 1999 to assess the presence of the Ute ladies'-tresses at TEAD South Area. None were found within the boundaries of TEAD South Area.

#### **5.4.1.4 Bald Eagle**

There were 17 nesting pairs of bald eagles in Utah as of 2015, and the nesting and wintering population is anticipated to increase (UDWR 2015a,b). The breeding pairs are in Carbon,

Duchesne, Grand, Salt Lake, and Summit counties (Crist, personal communication, 2015; UDWR 2010a). The bald eagle, according to the UDWR, has records of occurrence within the boundaries of TEAD South Area, although no bald eagle nests have been found on TEAD South Area. Bald eagles are common to the area in the winter, with an estimated average of 1,243 individuals present in Utah. Their wintering habitats include rivers and streams; lakes, reservoirs, and ponds; sewage lagoons; montane riparian woodlands; desert riparian woodlands; submontane shrub; croplands; and orchards, shelterbelts, and tree farms. The bald eagles in Tooele County generally perch on the valley floor where shadscale, greasewood, and sagebrush are common and provide good forage and cover for jackrabbits, which are the eagles' primary food source in the valley (Sabine 1987). They are usually seen perching on sites higher than juniper trees. Recent nesting records in Utah indicate that the bald eagle breeds mostly in riparian habitats.

#### **5.4.1.5 Golden Eagles**

Golden Eagles, not a threatened or endangered species but a protected species under the Bald and Golden Eagle Protection Act and a BCC, has been observed on TEAD North and South Areas, but no nests have been found. The TEAD North and South Areas have scrub habitat suitable for the eagles. The golden eagle primary habitat during the breeding season is cliffs; their secondary habitat used during the breeding season for nesting or foraging and for wintering is high desert scrub. The golden eagles is a carnivore that is a ground hawker and scavenger (Parrish et al. 2002).

#### **5.4.1.6 Least Chub**

There are four to seven natural occurrences of the least chub in Utah. This species was once common in ponds and warm pools but has since declined in distribution and abundance since the 1940s and 1950s (UDWR 1998). The least chub formerly occurred in almost all aquatic habitats throughout the Bonneville Basin in Utah. The few populations that exist today occur in alkaline marshes and springs. The least chub thrives in habitats of low diversity where it manages to avoid competition with other introduced species of fishes. The habitat must also have an abundance of aquatic vegetation.

It was determined in 1994 that the least chub was struggling and was recognized as a species at risk. On July 29, 1999 the species was proposed for listing in the Federal Register. Under a MOU signed February 2, 2011 by the Installation Commander, the UDWR Acting Director, and the USFWS Utah Field Office Supervisor, the TEAD South Area Johnson Ponds could be used by UDWR to establish a least chub broodstock and refuge population for a period of 10 years (TEAD Environmental Management Office 2014). The MOU between UDWR and TEAD was updated on September 1, 2013 as a result of the transfer of DCD to TEAD (see Appendix H). UDWR was allowed to annually monitor the least chub. UDWR transported fish from a hatchery in southern Utah to the installation in October 2011 and introduced 500 least chub to the eastern Johnson Pond. The fish naturally migrated to the west pond. One year after their introduction, the population was estimated at 5,000 fish; after two years, the population was estimated at 50,000 fish; and in 2014, the population was estimated at 100,000 fish. On August 25, 2014 the USFWS announced that the least chub did not need to be listed on the Federal Endangered Species list. The partnership of UDWR and TEAD was the key to keeping the fish from being federally listed. The TEAD South Area Johnson Ponds population of fish will be used by UDWR to reintroduce the least chub back into ponds, lakes, and wetlands that had historically been native locations for the species but had suffered from introductions of invasive species.

#### 5.4.1.7 **Bonneville Cutthroat Trout**

The Bonneville cutthroat trout is a subspecies native to the Bonneville Basin (UDWR 2010b). The species evolved primarily as a lake-dwelling population inhabiting Lake Bonneville during the Pleistocene. After Lake Bonneville desiccated, the subspecies became restricted to stream-dwelling populations in isolated river drainages. Only six Bonneville cutthroat trout populations were known to exist in Utah in 1978. Known populations increased to 29 by the early 1990s; by 2000, 261 populations of Bonneville cutthroat trout had been identified in Utah. Bonneville cutthroat trout brood populations are now in all the management areas of the state.

#### 5.4.1.8 **Columbia Spotted Frog**

There are at least 11 populations of the Columbia spotted frog in the western desert regions of Utah. This species habitat is characterized as small permanent ponds that have continual sources of water with very little movement and water flow (UDWR 1998). The ponds have deep silt or muck bottoms where the spotted frogs hibernate in the winter. Columbia spotted frogs also thrive in wetlands with small, clear, cold-water habitats where shallow water is present with an abundance of herbaceous emergent vegetation. The frogs can survive in a variety of conditions and do not require a certain temperature, salinity, or acidity.

### 5.5 WETLANDS

There are no wetlands on TEAD North Area, but TEAD South Area has 403 acres of wetland habitat in the vicinity of its western boundary (Table 5-1) (Figure 4-4) (USFWS NWI 2014). In 2000, the USACE made a determination that none of the wetlands on TEAD South Area are jurisdictional (Johnson, personal communication, 2014). The emergent wetland habitat is important in Tooele County and throughout the arid Northern Great Basin eco region due to its rarity. Clover Reservoir, outside of TEAD South Area's western boundary, has historically been an area of changing water levels from a dried out intermittent mud flat to a fully productive wetland supporting brood-rearing grounds for several species of waterfowl. When wet, the habitat functions as a stopover site during spring and fall migration and/or as a brood-rearing area for waterfowl.

**Table 5-1.  
TEAD South Area Wetlands**

<b>Wetland Type</b>	<b>Acreage</b>
Freshwater Emergent Wetland	349
Freshwater Forested/Shrub Wetland	72

Source: USFWS NWI 2014.

Water flow to the BLM-owned wetland has greatly increased since the channelization of Ophir Canyon across TEAD South Area (TEAD 1995a). The Army owns 60 percent of the water rights of the Ophir Creek Water Company. Typically, water remains in the reservoir during spring and early summer then dries up. The surrounding wetland habitat usually remains wet at the surface from spring snowmelt through April and sometimes into June depending on the amount of the previous winter snowfall. Continued input of water from Ophir Creek assists in maintaining the wetland habitat.

In 2000 the USFWS completed 1:24,000 scale installation specific National Wetlands Inventory (NWI) maps of TEAD South Area. The NWI maps show both wetlands and riparian areas on TEAD South Area and are accompanied by a summary report. The report includes acreage

summaries of wetland classification types (based on the Cowardin Classification System), riparian areas, and deepwater habitats found on TEAD South Area, and provides narrative descriptions of the habitats. The maps and information are included in Appendix I.

## **5.6 OTHER SENSITIVE HABITAT AREAS**

### **5.6.1 Aquatic Habitat**

Detailed documentation of aquatic habitats and aquatic habitat quality is lacking for TEAD South Area. No information exists on emergent and submergent vegetation. A PLS was conducted at TEAD South Area in 2000. Appendix F contains a list of macroinvertebrates in Ophir Creek and the TEAD South Area wetlands. Little information exists on the fish species existing at TEAD South Area. There were no vertebrates identified during the PLS, and the only fish species known to exist on TEAD South Area is the rainbow trout, which is stocked in Deseret Reservoir (TEAD 1988).

### **5.6.2 Riparian Habitat**

Riparian areas on TEAD South Area are limited. Approximately 2 percent (28 acres) of the land at TEAD South Area is classified as riparian area (FWI 2000). These areas occur in the western central portion of the site where the ground water level is relatively close to the surface and across the northern portion of the site next to Harrison Road in the Ophir Creek path. Phreatophytes (such as salt cedar) can flourish in these areas and the agricultural outlease area on TEAD South Area to the western boundary. This riparian area is considered an improved wildlife habitat.

TEAD South Area's primary riparian area is in the northwest quadrant of the Depot, along the channelized banks of Ophir Creek. Vegetation includes saltbrush and Wyoming big sagebrush. Wildlife known to inhabit or browse the riparian area habitat are the bald eagle, pronghorn antelope, and mule deer. Roosting bald eagles have been observed during winter ecological surveys (Ebasco 1994; FWI 1994). A variety of waterfowl and shorebirds use the small areas where open water occurs. Major species include mallard, cinnamon teal, Canada goose, American coot, black-necked stilt, killdeer, yellow-headed blackbird, and American avocet (TEAD 1988).

Riparian areas in the arid western parts of the United States are critical ecological habitats that have been on the decline over the past 60 years (Boyce and Haney 1997; Briggs 1996). Human activities and water use have significantly reduced the amount of water that is available for arid riparian areas. Riparian areas are dependent on the existence of surface or subsurface water, water flowing through a natural channel, and plants requiring readily available water and aquatic soils derived from alluvium. The extent of riparian habitat is limited to areas where the water influences the land surrounding the water body. Often, this area is narrow, although most riparian areas are seasonally flooded.



## SECTION 6.0 MISSION IMPACTS ON NATURAL RESOURCES

### 6.1 LAND USE

#### 6.1.1 TEAD North Area

##### 6.1.1.1 Installation Land Use

TEAD North Area has two primary land use designations: Minimal Use Areas and Administration/Community Support Areas, which consist of a variety of specific land uses and functions (Table 6-1) (TEAD 2007). A third land use category, High Intensity Use Area, is applied to the TEAD North Industrial Area, which was transferred under BRAC and now is the privately owned UID/PID.

**Table 6-1.  
TEAD North Area Land Use Categories**

Land Use Category	Description	Acreage
Administration/Community Support Areas	Cantonment area	1,632
Minimal Use Areas	Storage, ammunition demilitarization, and buffer areas	21,979
Total Acreage of TEAD		23,611

Source: TEAD 2007

Minimal Use Areas account for about 93 percent of the TEAD North Area. Specific land uses within the Minimal Use Areas include igloo storage units; ammunition storage, maintenance, and demolition; and firing. Buffer zones around the main ammunition activity areas provide for public safety and weapons security considerations. TEAD is using part of the buffer areas (nearly 1,000 acres) for renewable energy development (see Section 6.1.1.5). Portions of the Minimal Use Areas are leased to a rancher for livestock grazing.

Administration/Community Support Areas, account for the remaining seven percent of TEAD North Area land use, including the Depot's main entrance gate and cantonment area. The main entrance gate off of Utah State Highway 36 enters the cantonment area in the southeast corner of the installation. Depot headquarters, communications facilities, community support/service areas, fire department, administrative buildings, and recreational facilities are in the cantonment area.

##### 6.1.1.2 BRAC Parcel (UID/PID)

TEAD North Area transferred a 1,707-acre parcel along the eastern boundary of the Depot as part of a BRAC action. The parcel was an industrial vehicle maintenance area. It was initially transferred to the Tooele City RDA, then sold to private owners. It is owned by the Ninigret Group and Peterson Holdings Group, who operate the property as a commercial business/industrial park. The Army maintains the right to access the UID/PID to fulfill its obligations to continue to remediate contaminated soil and groundwater to protect human health and the environment.

##### 6.1.1.3 Leaseback Area

The Leaseback Area is an approximately 12 acre parcel of land in the southeast corner of the TEAD North Area. This parcel, which was part of the cantonment area, is just south of the main

entrance gate and cantonment area. The parcel was transferred to the Tooele RDA in 1998 under a BRAC action, but is leased back by the Army. The lease term is for 50 years. The Army has full-time, exclusive use of the parcel and is responsible for the operation and maintenance of any improvements (buildings, roads, land, fixtures, etc.) on the Leaseback Area (USACE, Sacramento District 1998, 2013a). The Leaseback Area has MWR facilities, including the Eagles Nest restaurant, Outdoor Recreation Center, fitness center, and an RV park. A copy of the lease and map of the leaseback area is in Appendix J.

#### **6.1.1.4 Grazing Lease**

The grazing program on TEAD North Area has been in existence since 1944 and is administered by the USACE Sacramento District. Five-year leases are awarded through a sealed bidding process and permit the grazing of cattle from 1 November through 31 May each year. Prior to the 1980s, the grazing of both sheep and cattle were permitted, but sheep have since been prohibited. A single rancher held the cattle grazing leases from 1985 to 2012 to 19,700 acres of land on TEAD North Area. A five-year lease with a new rancher was signed in 2013. The lease for cattle grazing 17,515 acres of TEAD North Area expires in 2018. The grazing lease provides for 4,176 animal unit months (AUMs) of grazing from 1 November to 31 May of each lease year. A 2014 supplement to the grazing lease agreement reduced the acreage and AUMs of field 2 by 180 acres and 48 AUMs to allow for the Army to conduct necessary environmental remediation in field 2 (USACE, Sacramento District 2013b, 2014).

TEAD North Area uses grazing as a management measure to control the accumulation of fine fuels in a fire-susceptible region. Grazing is managed to ensure that sufficient grazing is taking place to remove significant amounts of fuel, yet not severe enough to harm perennial vegetation and allow cheatgrass to invade. In addition, the lessees receive rental abatements for performing facility improvements, such as construction of fencing, gates, and cattle guards; development of water supplies; and range seeding and fertilization. These facility developments have resulted in improved forage utilization and cattle distribution, which are necessary elements of proper grazing use. A copy of the TEAD North Area grazing lease and map of grazing fields is in Appendix K, which also includes the land use regulations and grazing management, including stocking rate and field rotation.

#### **6.1.1.5 Alternative Energy Corridor**

TEAD North Area has established an Alternative Energy Corridor along the southern boundary of the Depot. A 1.5 megawatt wind turbine powered electrical generator was installed in 2010 to 2011. Construction of a second wind turbine is scheduled to begin in the spring of 2015 (Anderson et al. 2014). Energy produced by the turbines is used to supply electrical energy to the Depot (U.S. Army 2006). A 1.5 megawatt solar farm with 430 solar dishes was installed in 2012 to 2013 (Boal and O'Donoghue 2012). The solar farm is under USACE responsibility, but TEAD will take ownership of the farm after a necessary repair is complete. Energy produced by the solar farm will also be used to supply electrical energy to the Depot. In the future, TEAD will contract out the maintenance of the wind turbines and solar farm. The Army's goal is to use the Alternative Energy Corridor to allow the Depot to become net zero, going off of the grid and producing all of its own energy in five years (Anderson et al. 2014). In addition, TEAD is planning a land lease of approximately 900 acres for private development of renewable energy for private use.

## 6.1.2 TEAD South Area

### 6.1.2.1 Land Use

Like TEAD North Area, the predominate land use at TEAD South Area is the Minimal Use Areas for igloo munitions storage and ammunition storage, maintenance, and demolition, with buffer zones around the ammunition activity areas to provide for public safety and weapons security considerations (Table 6-2). Minimal Use Areas account for about 96 percent of TEAD South Area land.

**Table 6-2.  
TEAD South Area Land Use Categories**

Land Use Category	Description	Acreage
Service Areas	High intensity use area	54
Administration/Community Support Areas	Cantonment area	755
Minimal Use Areas	Storage, ammunition demilitarization, and buffer areas	18,555
Total Acreage of TEAD		19,364

Source: DCD 2009

Minimal Use Areas are buffer areas in the southeast corner, the western edge, and much of the northern border of the installation; a spoil area (active gravel pit) near the center of northern boundary; a cemetery in the northern buffer area; and an open storage, igloo storage, ammunition area, and former TOCDF and CAMDS in the center of the Depot (DCD 2009). The south-central border is occupied by an area contaminated with explosives and buried chemical munitions. Roads that formerly served the central storage areas are still present, but are not in working condition. Almost all rail lines have been removed from TEAD South Area.

The Administration/Community Support Areas account for almost four percent of TEAD South Area land use. The Administration/Community Support Areas of TEAD South Area are concentrated in the Depot's northeast corner and include the Depot's main entrance gate, cantonment area, and the Deseret Reservoir recreation area. The cantonment area is near the main gate and has the Depot headquarters building, administrative buildings, and the fire department. The Deseret Reservoir recreation area is outside and to the north of the main gate. Service Areas, considered high intensity use areas, account for less than one percent of TEAD South Area's acreage.

### 6.1.2.2 Grazing Lease

Historically, grazing was conducted on most of TEAD South Area and surrounding areas. The last grazing effort was reported to have ended in 1972. Livestock grazing was not practiced on site during the demilitarization of chemical weapons. Now that the demilitarization mission is complete, the Army has entered into a new grazing lease. The grazing lease program is administered by the USACE Sacramento District. TEAD South Area uses grazing as a means of managing rangeland pasture to achieve uniform range utilization, reduce overall fire hazard, improve and maintain ecosystem viability of the rangelands, optimize the use of the Depot's natural resources, and maintain mission readiness for future military use (TEAD Environmental Management Office 2013; USACE, Sacramento District 2013a). A five-year lease with a rancher was signed in 2013; the lease expires in 2018. A copy of the TEAD South Area grazing lease and map of grazing fields is in Appendix L. The grazing lease provides for cattle grazing 10,920 acres

of TEAD South Area from 1 October to 15 June of each lease year, with estimated annual AUMs in the lease ranging from 1,035 to 1,625 (AUMs depend on precipitation, forage availability, and overall range health) (TEAD Environmental Management Office 2013; USACE, Sacramento District 2013c). The lessee receives rental abatements for performing facility improvements, such as construction of fencing, gates, and cattle guards; development of water supplies; and range seeding and fertilization.

In 1987, 908 acres on TEAD South Area were fenced with gates and cattle crossings to allow for prescribed grazing practices and protect riparian areas along Ophir Creek from overgrazing. Several stretches of Ophir Creek still need to be protected from overgrazing and streambank degradation with buffer zones to manage habitat adjacent to the waterway and wet meadows (TEAD Environmental Management Office 2013). Stream crossing areas or water gaps are intermittently dispersed along the creek to allow livestock watering and crossing of the stream for movement corridors. This also allows for timely controlled grazing of the riparian areas so as not to interfere with the habitat during wildlife and plant reproduction.

The Johnson Ponds were fenced to protect the habitat as part of the restoration of the ponds in 2011. Livestock watering troughs were planned for but not installed when the fenced pastures were erected. Watering troughs will be installed in 25 locations throughout the depot as funding becomes available. Before grazing began, the lessee installed fencing with water gaps to buffer the riparian area. Pastures that are adjacent to Ophir Creek will be able to use the water gaps in the fence to access the creek for watering. Stock troughs were strategically placed in each of the pastures to fully use available forage and mitigate over grazing within the pastures. Placement of watering troughs is used as a herd management tool to encourage proper grazing of all areas of the pastures. A water truck filling station is available near the old Officer's Club circle northeast of the Depot's main gate. Development of the watering trough system is installed by the lessee as payment in-lieu-of rent as part of the grazing lease (TEAD Environmental Management Office 2013).

### **6.1.2.3 Agricultural Lease**

The TEAD South Area has been used in the past for agricultural purposes. The land had been farmed prior to government ownership. A parcel of land in the northern portion of the Depot (in the northwest corner of the intersection of Harrison and Adamson Roads) was partly established as a potential range tract for agricultural lease in the late 1980s; the installation installed an irrigation system adjacent to Ophir Creek and wild rye grass was planted to prepare the land for growing other crops (DCD 2009; TEAD Environmental Management Office 2013). With the completion of TOCDF operations, TEAD South Area has reestablished the agricultural lease with up to 360 acres available for agriculture use.

A Report of Availability (ROA) for leasing a parcel of TEAD South Area for agricultural purposes was prepared by the installation in April 2013, and a Determination of Availability (DOA) with approval of the ROA by the Installation Commander was also completed in April 2013 (see Appendix M). The agricultural lease is to be conducted in compliance with this INRMP and the conditions in the lease itself, and is fully consistent with managing and sustaining wildlife populations and habitats on TEAD South Area land. TEAD South Area is upgrading infrastructure to include new piping and wheel lines to support the new lease (Johnson, personal communication, 2014). The lease is for five years. The parcel is fenced. As the agricultural lease might require the use of pesticides, only approved substances for federal installations will be used and only in allowable quantities.

The Depot will provide irrigation water from Deseret Reservoir. Maintenance of the irrigation system up to the agricultural fields (irrigation water delivery system) will be provided by the Depot's Facilities Support Division. The lessee will receive rental abatements for purchasing materials for and maintaining the irrigation equipment (TEAD Environmental Management Office 2013).

## 6.2 CURRENT IMPACTS

### 6.2.1 TEAD North Area

#### 6.2.1.1 Air Emissions

Air pollutant emission sources on TEAD North Area include boilers, furnaces, paint booths, fuel dispensing facilities, vehicles, and ordnance detonation resulting in process and fuel emissions, fugitive emissions, fugitive dust from roads, and evaporative emissions. TEAD North Area 2011 installation-wide air emissions for all significant stationary sources are tabulated in Table 6-3.

**Table 6-3.**  
**Annual emissions for significant stationary sources at TEAD North Area**

<b>Pollutant</b>	<b>Emissions (tons/year)</b>
PM <sub>10</sub>	19.596
PM <sub>2.5</sub>	2.729
SO <sub>2</sub>	0.622
NO <sub>x</sub>	49.154
VOC	1.450
CO	1.082
Lead	0.000

Source: TEAD Environmental Management Office 2011

Note: PM<sub>10</sub> = particulate matter less than 10 microns in diameter; PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter; SO<sub>2</sub> = sulfur dioxide; NO<sub>x</sub> = nitrogen oxides; VOC = Volatile Organic Compounds; CO = carbon monoxide.

#### 6.2.1.2 Point-Source Water Discharges

Because the Administrative/Community Support Area consists primarily of impervious surfaces, storm water runs off quickly into storm sewer collectors and is routed to an area north of the Administrative/Community Support Area, where water is discharged and allowed to percolate into the soil. No type of stormwater infrastructure is present in the Minimal Use Areas.

#### 6.2.1.3 Noise

Noise sources at TEAD North Area include a helicopter landing pad, railway operations, outdoor rifle range, and ordnance demolition. On-base and off-base noise-sensitive land uses are generally far enough from these major noise sources to prevent unacceptable noise exposure; however, ordnance demolition activities have generated noise complaints from residents of Grantsville and Tooele City.

The helicopter pad and outdoor rifle range are infrequently used. Noise contours for these facilities have not been developed. An Installation Compatible Use Zone (ICUZ) analysis was performed for TEAD North Area in 1991, with supplemental analyses conducted in 1993 and 1994 (no further

noise study has been performed since 1994). The ICUZ study evaluated use patterns and noise complaint records related to these facilities. The helicopter pad is used about once every two years. It has generated no noise complaints. The rifle range has side berms and overhead baffles to minimize noise impacts and is used during daylight hours only. Operation of the rifle range has not generated any noise complaints.

Ordnance demolition activities occur in the southwest corner of TEAD North Area. Ordnance demolition activities generated about 10 to 15 noise complaints per year between 1986 and 1989. Few noise complaints were received during 1990 when most ordnance demolition was temporarily shifted to TEAD South Area. The number of noise complaints increased significantly in 1991 when ordnance demolition was resumed at TEAD North Area.

A special blast noise study was conducted at TEAD North Area in 1990, and the results of that study are included as an appendix to the ICUZ document. Noise levels were monitored at three sites within the Depot, at the southeastern side of Grantsville, and on the western side of Tooele City. Peak overpressures above 115 decibels (dB) were monitored in Grantsville during 7 of 12 detonation episodes, although the average peak overpressure for most detonation sequences was less than 115 dB. For reference, long-term noise levels in excess of 65 dB are normally considered unacceptable for noise-sensitive land uses such as residences, schools, and churches.

The blast noise study suggested that weather conditions exert a significant influence on peak noise levels experienced in surrounding communities. Blast events that involved more than 2,000 pounds of explosive generally produced slightly higher peak noise levels than did events with less than 2,000 pounds of explosive weight detonated and the resulting peak noise levels. Wind conditions and the probable occurrence of noise refraction from elevated temperature inversions appear to have had a dominant influence on peak noise levels.

In response to the community and the ICUZ and blast noise study, TEAD personnel check the weather (wind direction, atmospheric pressure, etc. via weather stations at the demolition ranges) for optimal conditions before conducting demolitions. In addition, the Depot reduced the net explosive weight of munitions detonated. TEAD is obtaining permits to perform demolition operations at TEAD South Area and, if all goes as planned, would move some demolition operations from the North to the South Area (the South Area does not have nearby sensitive receptors such as the residential neighborhoods near the TEAD North Area property).

#### **6.2.1.4 Hazardous Materials Storage and Waste**

The Army is implementing its environmental response authority under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), the Superfund Amendments and Reauthorization Act (SARA), and RCRA to investigate and implement corrective action on areas of the TEAD North Area potentially contaminated by previous and ongoing mission activities (maintenance of tactical wheeled vehicles and power generation equipment, supply, guided missile rebuild, ammunition logistics, conventional ammunition demilitarization, design/fabrication of ammunition equipment). Primary contaminants of concern under the Installation Restoration Program (IRP) are dioxins/dibenzofurans, explosives, metals, munitions and explosives of concern (MEC), munitions constituents (MC), pesticides, polychlorinated biphenyls (PCB), radionuclides, semi-volatiles (SVOC), and VOC in groundwater, sediment, soil, and surface water. Primary contaminants of concern under the Military Munitions Response Program (MMRP) are metals, MEC, and MC in soil (TEAD 2013b).

The EPA placed TEAD North Area on its National Priorities List in October of 1990. In September 1991, a federal facility agreement (FFA) between the Utah Department of Environmental Quality

(UDEQ), EPA Region 8, and the Army was signed. In this agreement, 17 of the waste sites at TEAD North Area were designated as CERCLA sites. In January 1991, TEAD North Area was issued a RCRA post-closure and corrective action permit. This permit basically serves the same purpose as the FFA. The corrective action portion of the permit addresses nine known releases at solid waste management units (SWMUs) and 31 suspected releases of SWMUs. Thus, 17 sites are being handled under CERCLA/SARA with the EPA as the lead regulatory agency and 40 are being addressed under RCRA with the UDEQ as the lead agency. TEAD's RCRA corrective action permit was initially issued in January 1991. It was reissued in 2001, 2005, and 2011, with the next reissue expected in 2015 (TEAD 2013b).

The primary issue affecting the scope and schedule for TEAD North Area's restoration program is the presence of off-site groundwater contamination originating in the former TEAD North Area industrial area (now the UID/PID) (TEAD 2013b).

#### **6.2.1.5 Contaminated Site Restoration**

TEAD North Area SWMUs are being managed under the installation's IRP and include storage areas, discharge areas, spill sites, ranges, and landfills containing hazardous or toxic wastes and substances. A specific SWMU (SWMU 58) has been identified in the northeast portion of TEAD North Area that includes the former industrial/vehicle maintenance area (now the privately owned UID/PID), former TEAD sanitary landfill, and TEAD closed industrial waste lagoons. Historic operations at the UID/PID resulted in VOCs being released to the environment from several known and suspected source areas. These releases resulted in contamination impacting soil and groundwater on- and off-post. Numerous contaminants have been detected in soil and groundwater samples taken from a plume underlying this northeast section of TEAD. Trichloroethylene (TCE), tetrachloroethylene (PCE), and carbon tetrachloride (CTC) are present at the greatest concentrations in soil and groundwater, with TCE being the most predominant. The TCE plume covers approximately 1,700 acres and extends north of the TEAD North Area installation boundary. About 1,200 acres are in the UID/PID. For the purpose of the corrective measures implementation process, the TCE plume has been redefined under the SWMU 58 plume to include the Northeast Boundary groundwater TCE plume (formerly SWMU 58); the Main TCE plume and other VOC releases within the Main TCE plume (formerly SWMU 2); the impacted groundwater beneath the TEAD landfill (formerly SWMU 12/15, comingled with the Main plume) which is on TEAD property just south of the UID/PID southwest boundary; Vadose zone VOC sources that continue to impact groundwater above regulatory limits within the footprint of the plumes just described; and a buffer area (Parsons 2010, 2014).

TEAD is regulated under a RCRA Part B Hazardous Waste Facility Permit issued by the UDEQ. SWMU 58 is included under the permit and consists of released chlorinated solvents into the soil and groundwater. The TEAD RCRA Permit defines the conditions that TEAD must fulfill as part of the RCRA process for investigating, remediating, and closing identified SWMUs at the installation. As one condition of the permit, corrective measures are required for SWMUs where an unacceptable risk has been identified.

Soil investigations identified seven source areas for the SWMU 58 contaminants of concern (TCE, PCE, and CTC). Six of the source areas are associated with the UID/PID, and the seventh is the closed TEAD North Area sanitary landfill. Corrective actions to remediate these soils contaminated by VOCs include installation of full-scale, semipermanent soil vapor extraction (SVE) and air sparging (AS) systems; operation, monitoring, and reporting of these systems; and development of shutdown criteria (Parsons 2010).

The groundwater pump-and-treat remedy implemented at SWMU 2 (now part of SWMU 58) in 1993 has not reduced contaminant of concern concentrations and might not be needed to control plume expansion. Reevaluation of the 1993 remedy in SWMU 58 Corrective Measures Study has determined that a more appropriate remedy would be treatment at known source areas. Based on this Corrective Measures Study, SVE and AS were proposed as a new remedy and were implemented. Until such time that SVE and AS prove to be effective, the pump-and-treat system will continue to be maintained under caretaker status (TEAD 2013b).

In addition to SWMU 58, there is SWMU 10/11, which is along the south central boundary of TEAD North Area. SWMU 10/11 is a former trinitrotoluene (TNT) washout facility where munitions were decommissioned. The facility included two ponds. The ponds, known as the TNT Washout Ponds (a series of ponds connected by overflow pipes), were directly north of the washout building. In 2008, the contaminated soil in the TNT Washout Ponds was remediated using organic and inorganic soil amendments to facilitate degradation of the nitroaromatic compounds (Parsons 2014).

## 6.2.2 TEAD South Area

### 6.2.2.1 Air Emissions

There are several air emission sources at TEAD South Area that are permitted by UDEQ. They include three gas furnaces, one fuel oil furnace, one paint booth, and several emergency generators. The CAMDS and TOCDF incinerators were demolished. Until 1996, TEAD South Area conducted open detonation of conventional munitions. The Depot no longer conducts open detonation on a regular basis; therefore, emissions from this source have stopped. TEAD South Area is no longer a major source of air emissions and the South Area's Title V permit has been closed (Johnson, personal communication, 2015). TEAD South Area 2013 installation-wide air emissions for all significant stationary sources are tabulated in Table 6-4.

**Table 6-4.**  
**Annual emissions for significant stationary sources at TEAD South Area**

<b>Pollutant</b>	<b>Emissions (tons/year)</b>
PM <sub>10</sub>	1.0
PM <sub>2.5</sub>	1.0
SO <sub>2</sub>	0.9
NO <sub>x</sub>	17.2
VOC	1.1
CO	5.1
Lead	6.15

Note: PM<sub>10</sub> = particulate matter less than 10 microns in diameter; PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter; SO<sub>2</sub> = sulfur dioxide; NO<sub>x</sub> = nitrogen oxides; VOC = Volatile Organic Compounds; CO = carbon monoxide.

### 6.2.2.2 Point-Source Water Discharges

Surface water runoff on TEAD South Area is controlled by natural and man-made surface drainage channels. TEAD South Area has a Storm Water Discharge general permit (UTR000175); one outfall is west of the southwest corner of the Area 10 igloo storage (in the Depot's central area), and one discharge is just south of the former CAMDS. Given an adequate supply of water,



both outfalls would eventually drain to the off-post Clover Reservoir wetland near the Depot's west boundary. The topography within TEAD South Area is mostly smooth and uniform, sloping to the southwest (DCD 2009).

The floor of Rush Valley, in general, drains northwest to Rush Lake, which is about 11 miles from TEAD South Area. A perimeter drainage ditch in the southeast portion of the facility diverts flow from Mercur Creek around the Depot. A railroad spur embankment and a man-made channel direct the water flow from Ophir Creek around the industrial areas on the Depot. The drainage system at the former CAMDS consists of asphalt drainage channels that contain surface water runoff and directs the flow to an industrial waste lagoon south of the facility. At the former TOCDF, storm water is collected and directed to a retention pond west of the plant. It is then analyzed and drained into Area 10 in the open drainage channels (DCD 2009).

TEAD South Area had a truck wash facility to wash government vehicles, removing plant material and potentially contaminated soils and dust to prevent transport of these materials off post. This facility was west of Building 5165 and had a sump and drain in the middle of the wash bay. The wastewater associated with the truck wash facility was sent via pipes to the TOCDF wastewater treatment facility. The truck wash is closed and in a mothball state, but could be reopened and become operational if funding is available.

#### **6.2.2.3 Noise**

Noise contours have been established at the TEAD South Area for the TOCDF (centrally located on the Depot) and rifle range (in the southeastern corner of the Depot). The decibel levels in these areas were categorized as Noise Zone III, which ranges from 75 to 85 dB; however, noise levels around the TOCDF have reduced since the facility was closed. The adjacent land is used for grazing, so there is no conflict with land use in these areas. Open detonation was previously the primary source of noise on the Depot, when those activities were part of TEAD South Area's military mission. Other than noise from emergency open detonation of unstable munitions, noise levels are minimal throughout TEAD South Area. When TEAD South Area does have an emergency open detonation of unstable munitions, the Depot must obtain an emergency permit from the UDEQ prior to performing detonations. TEAD is looking into partially moving demolition operations from the North Area to the South Area because of noise levels and conflict with residential land uses near the North Area. The South Area does not have nearby sensitive receptors such as residential homes or schools near the property. TEAD is obtaining permits for TEAD South Area demolition operations and, if all goes as planned, would move some demolition operations from the North to the South Area.

#### **6.2.2.4 Hazardous Materials Storage and Waste**

Past operations at TEAD South Area have resulted in the generation of various types of contaminants and their disposal across the installation. Primary contaminants of concern under the IRP are metals, PCB, and VOC in groundwater and soil. Primary contaminants of concern under the MMRP are chemical weapon munitions, chemical agent, metals, MEC, MC, SVOC, VOC, and white phosphorous in groundwater, sediment, and soil (DCD 2013).

An initial installation assessment in December 1979 and a follow-up investigation exploratory survey in 1982 investigated contamination. The conclusion of these investigations was that TEAD South Area was generally uncontaminated except for arsenic and gross-alpha and gross-beta radiation. The arsenic was hypothesized to be naturally occurring (exacerbated by local flooding that washed mine tailings from nearby mountains). Because there was no evidence or record of use, storage, or disposal of any radioactive material at TEAD South Area, this radiation was attributed to naturally occurring radionuclides (DCD 2013).

The U.S. Army Center for Health Promotion and Preventive Medicine prepared a SWMU evaluation report in 1987 on all SWMUs at TEAD South Area to identify data gaps in the existing database for the RCRA Part B application that was pending for CAMDS. The EPA performed a RCRA facility assessment at TEAD South Area in August 1987 (DCD 2013). Since much information had been discovered since the initial assessment was prepared in 1979, and many changes to environmental laws had been enacted, a site-wide preliminary assessment/site investigation was completed in 1988. Seventeen sites at the Depot were investigated. Four of the highest priority sites recommended for further study in the preliminary assessment/site investigation were included in a remedial investigation in 1990. These sites were CAMDS Sites (TEAD[S]-12, SWMU 13), the Area 2 (TEAD[S]-09, SWMU 9), the Deactivation Furnace (TEAD[S]-14, SWMU 17), and the south general and perimeter areas (DCD 2013).

The CAMDS mission was completed in 2007. The CAMDS incinerator was demolished and its RCRA permit is closed. The RCRA Facility Investigation phase was contracted in FY 2013 with start of field activities in FY 2014. The UDEQ recommends that the CAMDS site contaminated soil should be excavated and disposed of off-site in FY 2015 (DCD 2013).

UDEQ issued TEAD South Area a RCRA hazardous waste permit on June 30, 1989 for the TOCDF. Attached to this permit was a corrective action permit (CAP) for 28 SWMUs. The CAP divided the SWMUs into known releases and suspected releases units and set schedules for the implementation of investigations and cleanups under RCRA. In 1991, a twenty-ninth SWMU was added to the permit. The CAP was requested to be moved from the TOCDF permit to the TEAD South Area RCRA hazardous waste permit and was approved in November 2000. Following the issuance of the CAP in 1989, the focus of the studies changed from CERCLA to RCRA. Of the 29 SWMUs listed in the permit, 2 are categorized as known releases and the remaining 27 are grouped together as suspected releases (DCD 2013).

Installation-wide groundwater monitoring has shown only low levels of contamination. This requires continued monitoring. No off-post contamination has been detected (DCD 2013).

#### **6.2.2.5 Contaminated Site Restoration**

There are 30 SWMUs on TEAD South Area. These SWMUs are being managed under the IRP and include storage areas, discharge areas, spill sites, ranges, and landfills containing hazardous or toxic wastes and substances. All of the SWMUs are fenced (but accessible to wildlife) and are not in the agricultural or grazing lease areas or the Deseret Reservoir recreation area. TEAD South Area Environmental Office installed water guzzlers to draw wildlife away from the SWMU areas.

Given the large number and variation between SWMUs on TEAD South Area, an in-depth description of every SWMU is not provided herein but is available from the TEAD South Area Environmental Management Office. Between 1945 and 1962, various munitions with mustard agents or incendiary materials were either burned or buried in open, aboveground mounds on the Depot. Records were not maintained prior to 1959; therefore, the status of some of these mounds is unknown. A multistep program including long and short term efforts is underway to evaluate, stabilize, and cleanup affected areas including SWMUs that cover large portions of the Depot. The CAMDS and TOCDF chemical weapon demilitarization sites are closed, the incinerators demolished, and remediated in accordance with RCRA permit requirements.

The current action under the IRP for TEAD South Area is to complete the soil gas investigation at SWMU 19 to determine the plan of action for this site, evaluate the excavation data and obtain closure for SWMU 29, complete the Phase II addendum RCRA Facility Investigation for SWMU 26, and complete the RCRA Facility Investigation and evaluate whether removals/Corrective

Measures Study is needed in SWMU 27. SWMU 13 is a diesel fuel spill with two plumes on the groundwater beneath the CAMDS site. One hydrocarbon plume has migrated outside the CAMDS fenced area on the west side. This SWMU has been investigated and has a UDEQ Division of Solid and Hazardous Waste approved CAP. The CAP consists of pumping the floating hydrocarbon off the ground water for disposal, followed by AS to bioremediate the soils in situ. Other SWMUs are being investigated for corrective action; this will be an ongoing process.

TEAD South Area operates under a Permit by Rule for groundwater discharge associated with the operation of a four-cell total contaminant wastewater lagoon. The lagoon was previously operated under an individual groundwater discharge permit. The wastewater treatment facility is used to treat domestic sewage, boiler blowdown, and vehicle wash effluent. The majority of wastewater introduced to the lagoons is domestic sewage. Effluent from the treatment facility is used for industrial cooling or is lost by evapotranspiration. TEAD South Area also has four lagoons associated with the closed CAMDS and the Imhoff tank associated with the administration area. These two facilities are exempt from the Permit by Rule. They are regulated as SWMUs undergoing corrective action through the RCRA program. Three of the CAMDS lagoons are closed and removed and the remaining lagoon is closed and in the process of being removed (Johnson, personal communication, 2014).

There are six monitoring well locations associated with the TEAD South Area wastewater treatment facility. Two wells are upgradient of the lagoons to measure background conditions. The remaining four wells are down gradient and are used for water quality monitoring, background monitoring, groundwater elevation measurement, and as reserve wells. Groundwater monitoring is used to demonstrate integrity of the bentonite lagoon liners and to identify degradation of groundwater quality associated with facility operations. Results of groundwater monitoring indicate that no degradation of groundwater has resulted from operation of the facility (DCD 2009).

### **6.3 POTENTIAL FUTURE IMPACTS**

TEAD's Real Property Master Plan documents the known and projected future land and facilities requirements for the installation. The report provides the installation with a reference to the requirements and the corresponding construction projects, or actions, necessary to achieve anticipated peacetime expansion or contraction requirements (such as under BRAC). The installation's Real Property Master Plan (for North and South Areas) is in the process of being updated, with an anticipated completion in spring 2016.

This INRMP strives to integrate natural resources management with other installation plans and activities, such as the Real Property Master Plan, Integrated Cultural Resources Management Plan, and Integrated Pest Management Plan (IPMP). It also establishes planning goals that represent a long-term vision for the health and quality of TEAD's natural resources. INRMP goals may be revised over time to reflect changing missions and environmental conditions. Any future changes in mission, training activity, or technology should be analyzed to assess its impact on natural resources. As new installation plans and DA guidance and regulations are developed, they will be integrated with the goals and management actions of this INRMP. The INRMP will be reviewed, assessed, and modified as needed regularly to ensure continued integration with other management plans or changes in military mission.

#### **6.3.1 TEAD North Area**

The primary long-range planning goal at TEAD North Area is continuation of the mission to safely store conventional ammunition. At this time, there are no known future changes to the TEAD North Area military mission. There are no known impending BRAC actions. The Depot will

continue its grazing lease program and Alternative Energy Corridor. Therefore, no new sources of impacts are anticipated for the future.

### **6.3.2 TEAD South Area**

The primary long-range planning goal at TEAD South Area is to conduct its mission to safely store conventional ammunition. Now that chemical demilitarization is completed, CAMDS and TOCDF are closed. No new sources of impacts are anticipated for the future from the storage of conventional ammunition, as the storage igloos and warehouses and supporting infrastructure for this mission are already in place.

TEAD South Area is reestablishing grazing and agricultural land uses on the Depot. In the past, the Depot has had agricultural and grazing activity; however, it was stopped due to the chemical demilitarization mission. Now that the chemical demilitarization mission is complete, TEAD South Area has a grazing lease in place (as of November 2013) and is seeking an agricultural lessee (as of November 2014). No new impacts are anticipated in the future, as these activities have historically occurred on the Depot. Preservation and enhancement of the TEAD South Area's natural resources through environmental protection, soil and water conservation, and historic preservation is established in the leases through management measures such as livestock management, range improvements, livestock watering, and field irrigation.

## **6.4 NATURAL RESOURCES NEEDED TO SUPPORT THE MILITARY MISSION**

The Army recognizes that a healthy and viable natural resource base is required to support the military mission. These natural resources support the mission at TEAD by controlling erosion and providing adequate buffer zones around military activities. The natural resources of TEAD also indirectly support the mission by providing an environment for grazing in the North Area and an environment for agriculture, grazing, fisheries, and recreational opportunities for installation personnel and the public in the South Area.

Implementing this INRMP helps to ensure that environmental considerations will continue to be an integral part of planning activities at TEAD and that natural resources will be protected in accordance with Army regulations and policies. Implementing appropriate management measures and considering alternatives to these measures as they are developed limits the potential for serious alterations to natural resources and will result in an effective, long-term approach to natural resource protection and conservation. The resource-specific management measures that will be employed to protect, conserve, and enhance the natural resources and to minimize or prevent environmental degradation at TEAD are discussed in detail in Section 7.

The following natural resources support the military mission at TEAD North and South Areas.

### **6.4.1 TEAD North Area**

#### **6.4.1.1 Non-Forested Land**

Most TEAD North Area land is designated as Minimal Use Areas for the Depot's mission of ammunition storage and demilitarization, which requires large isolated tracts of land. Non-forested, non-paved land at TEAD North Area supports the mission elements of conventional ammunition storage, ammunition maintenance, ammunition demolition, as well as buffer areas, the open burn/open demolition (OB/OD) area, the Alternative Energy Corridor, and grazing leasing fields. Livestock grazing can reduce non-native vegetation, as well as reduce the probability of intense wildfires by reducing fuel loads. Natural resources on the Depot's

undeveloped land also contribute to the positive quality of life for military and civilian personnel, who work on-post and who reside nearby, and provide open space for wildlife habitat.

#### **6.4.1.2 Developed Land**

TEAD North Area developed land accounts for a minor portion (less than 10 percent) of installation land use and consists primarily of the cantonment area in the southeast corner of the Depot. Developed and semi-developed lands at TEAD North Area provide environmental infrastructure for those missions that take place on developed land. These missions include light industrial activities, maintenance activities, administrative functions, tenant organizations, and MWR facilities in the Leaseback Area. The environmental infrastructure in the developed areas provides services that contribute to the Depot's efforts to manage stormwater, conserve soil, maintain and enhance air and water quality, provide comfortable indoor and outdoor temperatures, and maintain an aesthetically pleasing place to live and work.

### **6.4.2 TEAD South Area**

#### **6.4.2.1 Non-Forested Land**

As with TEAD North Area, the majority of TEAD South Area land consists of Minimal Use Areas of large, isolated tracts of land for the Depot's mission of ammunition storage and demilitarization. Non-forested, non-paved land at TEAD South Area supports the mission elements of conventional ammunition storage, ammunition demolition, as well as buffer areas, an OB/OD area, grazing lease fields, and agricultural lease fields. Grazing management and agricultural production are used to optimize the use of the installation's natural resources. Grazing is a means of managing rangeland pasture and improving and maintaining ecosystem viability of the Depot's rangelands and mission readiness for future military use (TEAD Environmental Management Office 2013). Livestock grazing can reduce non-native vegetation, as well as reduce the probability of intense wildfires by reducing fuel loads. Through TEAD South Area's Habitat Program, the installation works to keep habitat on the Depot in healthy ecological condition to improve habitat for mission readiness and ecosystem integrity.

#### **6.4.2.2 Developed Land**

TEAD South Area developed land accounts for less than five percent of installation land use and consists primarily of the cantonment area in the northeast corner of the Depot. Developed and semi-developed lands at TEAD South Area provide environmental infrastructure for those missions that take place on developed land. These missions include light industrial activities, maintenance activities, administrative functions, tenant organizations, and the MWR Deseret Reservoir Recreation Area. The environmental infrastructure in the developed areas provides services that contribute to the Depot's efforts to manage stormwater, conserve soil, maintain and enhance air and water quality, provide comfortable indoor and outdoor temperatures, and maintain an aesthetically pleasing place to live and work.

#### **6.4.2.3 Streams and Impoundments**

Ophir Creek feeds the Deseret Reservoir and the Johnson Ponds, providing a recreation area for fishing at the reservoir; habitat for the least chub in the ponds; and a water source for livestock watering and agricultural irrigation for the grazing and agricultural outleas.

## **6.5 NATURAL RESOURCES CONSTRAINTS TO MISSIONS AND MISSION PLANNING**

### **6.5.1 TEAD North Area**

#### **6.5.1.1 *Habitat for Species of Concern***

TEAD North Area has habitat for species of concern including the bald eagle, golden eagle, ferruginous hawk, and peregrine falcon, species listed as USFWS BCC or Utah species of concern, or protected under the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, or the Lacey Act (UDWR 2011; USFWS 2008, 2015).

#### **6.5.1.2 *Erodible Soils***

Three soil series on TEAD North Area have been identified as severely erodible. These series are Berent-Hiko Peak complex, 2 to 15 percent slopes; Hiko Peak gravelly loam, 2 to 15 percent slopes; and Hiko Peak-Taylorflat complex, 1 to 15 percent slopes. Generally, these soils occur in alluvial fan remnants. The Berent-Hiko Peak complex covers about 21 percent of the installation and is found in the central and southwestern areas of the installation. The Hiko Peak gravelly loam covers about 26 percent of the installation and is found in the western and south/southwestern areas of the installation. The Hiko Peak-Taylorflat complex covers only about two percent of the installation and is found in the northwest corner of the installation. TEAD North Area has management measures in place to minimize soil erosion.

### **6.5.2 TEAD South Area**

#### **6.5.2.1 *Habitat for Species of Concern***

TEAD South Area has habitat for several species of concern including burrowing owl, short-eared owl, ferruginous hawk, long-billed curlew, Brewer's sparrow, sagebrush sparrow, loggerhead shrike, golden eagle, bald eagle, and sage thrasher (TEAD Environmental Management Office 2013). These species are listed as USFWS BCC or Utah species of concern, or protected under the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, or the Lacey Act.

Within the TEAD South Area buffer zones (outside the Minimal Use Areas) the installation has enhanced habitats to draw sensitive species away from mission areas. Habitat enhancement projects include artificial nesting boxes for burrowing owls; nesting platforms and power poles with raptor protective designs for ferruginous hawks; grassland protection benefiting the long-billed curlews and short-eared owls; sagebrush chain harrowing; and replanting 2,100 acres damaged by wildland fire with native plants that provide feed and protection for loggerhead shrikes, sagebrush sparrows, and sage thrashers. These efforts support the installation mission by encouraging species away from hazardous areas and to keep sensitive species from becoming federally listed and protected species (TEAD Environmental Management Office 2014).

#### **6.5.2.2 *Wetlands***

The identified presence of wetlands could limit certain mission activities or proposed actions because of federal, state, and local compliance requirements.

During wet years, spring runoff can result in wet areas in the western portion of TEAD South Area. Since the TEAD South Area INRMP was updated in 2009, the USACE made a determination that TEAD South Area wetlands are not jurisdictional (Johnson, personal communication, 2014).

### **6.5.2.3 Erodible Soils**

Two soil series on TEAD South Area have been identified as severely erodible. These series are Cliffdown gravelly sandy loam, 2 to 15 percent slopes, and Hiko Peak gravelly loam, 2 to 15 percent slopes. Generally, these soils are found in alluvial fan remnants. The Cliffdown gravelly sandy loam complex covers about six percent of the installation and is found in the southcentral area of the installation. The Hiko Peak gravelly loam covers about 29 percent of the installation and is found in the northern, northeastern, and central areas of the installation. TEAD South Area has management measures in place to minimize soil erosion.

### **6.5.2.4 Other Sensitive Habitat Areas**

The TEAD South Area Environmental Management Office, in conjunction with other Depot staff and the UDWR and USFWS, renovated the Johnson Ponds in the Depot's northern area. The ponds provide habitat for the least chub, a fish that was a Federal Endangered Species List candidate species and state-listed conservation agreement species until it was reestablished in the Johnson Ponds. These least chub are now a refuge population providing stock for other ponds, lakes, and wetlands that have historically been native locations for the fish. The ponds are bordered by heavy vegetation and are fenced to protect them from wildlife predators and cattle.

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## **SECTION 7.0 NATURAL RESOURCES PROGRAM MANAGEMENT**

### **7.1 NATURAL RESOURCES PROGRAM MANAGEMENT**

#### **7.1.1 TEAD**

As presented in Section 2, TEAD is ultimately responsible for INRMP implementation. The roles of the organizations at TEAD that are directly responsible for or are providing assistance in this INRMP implementation are described below.

##### **7.1.1.1 Installation Commander**

TEAD (North and South Areas) is a government owned and operated installation under the administration of the Joint Munitions Command, which is under the U.S. Army Materiel Command (AMC). The Installation Commander is directly responsible for operating and maintaining TEAD, including the implementation and enforcement of this INRMP. The Installation Commander is legally liable for complying with the laws involved with implementing this plan.

##### **7.1.1.2 Garrison Operations Directorate**

The Garrison Operations Directorate directs, supervises, and coordinates the planning, organizing, staffing, and controlling of all facilities. Divisions under the supervision and management of Garrison Operations Directorate include Engineering Services Division; Facilities Support Division; Fire and Emergency Services Division; Law Enforcement and Security Division; Logistics Support Division; Master Planning Division; and MWR Division. The Engineering and Planning Division directs and coordinates the management, maintenance, repair, modification, and new construction of Depot real estate, real property, and utilities systems for TEAD. Under the Engineering Services Division is the Environmental Management Office. The Environmental Management Office is responsible for natural resource management and cultural resources management at TEAD, including environmental programs such as the grazing and agricultural outleases, the Deseret Reservoir fish stocking program, the Johnson Ponds habitat restoration, and the sage brush chain harrow habitat restoration project. MWR Division oversees the Deseret Reservoir Recreation Area fishing program.

#### **7.1.2 Other Defense Organizations**

##### **7.1.2.1 AMC**

AMC, as TEAD's Major Command (MACOM), is responsible for requesting and distributing budget for all organizations and installations under its command. The MACOM is the decision-making authority tasked with prioritizing the operational, organizational, material, and environmental needs of these organizations and providing the funds and higher-level support for required equipment and activities. AMC reviews and provides final signatory approval for this INRMP. AMC reviews budget requests and disburses funding to the Depot to administer and implement many of the projects and programs described in this INRMP.

##### **7.1.2.2 USACE, Mobile and Sacramento Districts**

The USACE, Mobile District provides contractor support for the preparation of the INRMP and associated NEPA analysis. The USACE, Sacramento District administers the grazing and agricultural outlease programs for TEAD North and South Areas.

### **7.1.3 Other Federal Agencies**

Several non-DoD federal agencies have an interest or a role in the management of TEAD's natural resources. The involvement of these agencies is based on signatory responsibilities, cooperative agreements, regulatory authority, and technical assistance as required by federal laws and regulations. The agencies and their roles and responsibilities are described below.

#### **7.1.3.1 U.S. Department of the Interior, USFWS**

The USFWS is a signatory to the INRMP and has a vested interest in the conservation, protection, and management of the fish and wildlife resources at TEAD. USFWS is the primary federal agency for issues regarding fish and wildlife management and the regulatory authority for the ESA, the Migratory Bird Treaty Act (16 U.S.C. 703-711), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c), and the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e). The USFWS and DoD signed an MOU to promote the conservation of Migratory Birds pursuant to EO 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds). USFWS was also a signatory on the MOU to restore the Johnson Ponds on TEAD South Area and establish a least chub broodstock and refuge population in the ponds.

#### **7.1.3.2 U.S. Department of Agriculture, Natural Resources Conservation Service**

TEAD consults with the Natural Resources Conservation Service (NRCS) as needed to protect and enhance Depot lands by preventing soil erosion, restoring eroded areas, maintaining vegetative cover, protecting watersheds, and reducing downstream impacts on and off military lands through planned conservation treatments and vegetative surveys of the range.

#### **7.1.3.3 U.S. Department of the Interior, BLM**

TEAD worked with BLM on the TEAD South Area sagebrush chain harrow project. TEAD consulted with BLM to determine a seeding mix that would result in plants beneficial to TEAD South Area habitat. BLM is also a neighboring property owner. BLM manages land to the west and south of TEAD North Area and around TEAD South Area, leasing parcels of the land for agriculture and grazing.

### **7.1.4 State Agencies**

#### **7.1.4.1 UDNR**

UDNR provides signatory agreement concerning the conservation, protection, and management of the fish and wildlife resources presented in the INRMP. UDNR is the primary state agency in Utah for issues regarding fish and wildlife management, as well as the regulatory and enforcement authority for hunting, fishing, and trapping. UDNR is also a consulting agency under the U.S. Fish and Wildlife Coordination Act (48 State, 401, as amended; 16 U.S.C. 661 et. seq.).

#### **7.1.4.2 UDWR**

The UDWR is the primary Utah state agency for issues regarding wildlife management, hunting, and fishing. Ongoing informal and formal dialog occurs among UDWR offices and the TEAD Environmental Management Office. UDWR is a signatory on the MOU to restore TEAD South Area's Johnson Ponds and the least chub. TEAD has a Memorandum of Agreement (MOA) with UDWR to stock Deseret Reservoir with rainbow trout. Licensed trappers working on TEAD report coyote trappings to UDWR.

### **7.1.4.3 UDEQ**

TEAD works with the UDEQ regarding compliance with solid and hazardous waste regulations, air quality regulations, and water quality. UDEQ is the lead agency for the TEAD RCRA permits. UDEQ conducts weekly visits to TEAD South Area to sample the restoration areas.

### **7.1.5 Universities**

Volunteers from Utah Valley University worked with TEAD South Area Environmental Management Office on the burrowing owl habitat enhancement project. Students assisted in attaching geolocators to the owls to track the owl's migration.

### **7.1.6 Contractors**

There is ongoing contractor activity at TEAD North and South Areas. Contractors provide TEAD with technical support for natural resources and environmental management projects. This technical support includes preparing the INRMP, preparing the Integrated Cultural Resources Management Plan, preparing the IPMP, conducting NEPA analyses and preparing documentation, and conducting cultural and biological resource surveys. TEAD also contracts for pest management.

### **7.1.7 Other Interested Parties**

No other organizations conduct natural resource activities on TEAD. Because of the risks associated with the Depot's military mission, involvement by outside organizations is limited.

## **7.2 GEOGRAPHIC INFORMATION SYSTEMS**

TEAD has a Geographic Information System (GIS) database for the installation; however, the information is dated and TEAD is actively working to secure funds to bring the GIS database up to date. The TEAD Environmental Management Office personnel have access to the U.S. Army Environmental Command Army Mapper program, the Army's database of record for installation geospatial data.

## **7.3 FISH AND WILDLIFE COOPERATIVE PLAN**

The Fish and Wildlife Cooperative Plan is the component of the INRMP that describes how the fish and wildlife resources at an installation will be managed. The following management methods and policies collectively constitute the Fish and Wildlife Cooperative Plan in accordance with AR 200-1 and 16 U.S.C. 670a.

## **7.4 FISH AND WILDLIFE MANAGEMENT**

The goals of the wildlife management program at TEAD are to restore and maintain indigenous wildlife species through the use of integrated ecosystem management principles while accommodating military needs. Wildlife resources and habitats for nonconsumptive uses are to be managed in compliance with federal and state laws (e.g., Sikes Act, ESA, Clean Water Act, Migratory Bird Treaty Act, UDWR Administrative Rule R657-16 *Aquaculture and Fish Stocking*) and U.S. Army regulations (e.g., AR 200-1) and guidance. Because of the risks associated with TEAD's military mission, only specific areas that have a history of minimal mission impact, such as some portions of the safety buffer zones, grazing and agricultural lease areas, and riparian corridor, can potentially be managed for wildlife.

There is only one intermittent creek on TEAD North Area, but TEAD South Area has a reservoir, ponds, and several perennial and intermittent streams. The primary goal of managing fish and other aquatic biota species at TEAD South Area is to maintain populations compatible with the range they occupy and the military mission, and to fulfill stewardship objectives of preserving the presence and benefits fish and other aquatic biota species contribute to the aquatic ecosystems. Very little is known about the fish and aquatic biota that may be present at TEAD South Area. Carp have been observed in the ephemeral wetlands, and rainbow trout are stocked at Deseret Reservoir. No data has been gathered on other aquatic biota that may be present in the surface water bodies.

TEAD recognizes that the health of each ecosystem depends on the interplay between the vegetation and animals. The natural biodiversity present in an ecosystem is a measure of the ecosystem's health. The goals of wildlife management are to maintain the biodiversity of the desert wildlife that inhabit the ecosystems on and around TEAD and to restore the biodiversity of wildlife that might have been negatively impacted by mission activities and natural causes. The objective for maintaining the present biodiversity of the wildlife is to preserve the present wildlife habitats from becoming further degraded. The objectives for restoring biodiversity include identifying the current wildlife species that inhabit TEAD; restoring or enhance the habitats for under-represented species to improve the chances to restore their population levels; and ultimately bringing back a more balanced ecosystem.

#### **7.4.1 Non-Game Fish and Wildlife Management**

##### **7.4.1.1 TEAD North Area**

The following management measures are meant to sustain and restore non-game wildlife species on TEAD North Area.

- Maintain and enhance native vegetative cover to provide the habitat complexity necessary to support diverse populations of wildlife.
- Maintain and improve stands of trees, preserve snags and trees with natural cavities, and when replanting is necessary, plant only native trees and shrubs.
- Monitor predators (i.e., coyotes) populations during abnormally high peaks and determine if the population will self-regulate, albeit at higher levels than the historical record would indicate.
- Maintain and protect existing species. Wildlife species at TEAD should be protected to ensure a diverse assemblage of fauna at the installation. Routine installation activities should not negatively affect wildlife species.
- Update PLS for TEAD North Area. The last survey was done in 2001.
- Continue sand excavation only during the non-nesting season. Cliff swallows nesting at the sand pit in Field 2 (previously called Field 5) were potentially affected when sand was removed from the area. Such excavation activities were restricted during the nesting season (April through September). Excavation of sand from the pit in Field 2 now only occurs from October to March. The pit is minimally used, generally one to two times per excavation season.
- Continue to apply for permits for bird takes. Migratory birds are protected through International Treaties and the Migratory Bird Treaty Act. Federal regulations (50 CFR Part 21 *Migratory Birds*) and the EO 13186 (*Responsibility of Federal Agencies to Protect Migratory Birds*) provide the frame work for regulation of migratory bird take and possession. Federal permits are required to take, possess, transport, and dispose of

migratory birds, bird parts, feathers, nests, or eggs. When necessary, application for permits will be made to the USFWS Region 6 Migratory Bird Permit Office in Denver, Colorado.

- Conduct migratory bird survey.
- Conduct activities (e.g., tree or shrub removal, ground disturbing activities) during the non-nesting season (approximately September 1 – April 30) to minimize or avoid impacts on migratory birds protected under the Migratory Bird Treaty Act and meet responsibilities under EO 13186.
- Install raptor safety perches on existing power poles, using the Avian Protection Plan as a guideline. Research DoD Legacy Resource Management Program as potential funding source, and becoming a member of Partners in Flight could also provide a potential funding source for raptor safety perches.
- Install water guzzlers in the range areas (as at TEAD South Area) only in instances where the historic water resource has been reduced or diverted for other purposes and where at-risk native wildlife will not be negatively impacted. Water guzzlers are large tanks that are partially underground and collect water naturally from rain and snow melt (or can be manually filled). The guzzlers provide a water source away from the industrial areas and are shallow enough so animals will not become trapped in the water tank.

#### **7.4.1.2 TEAD South Area**

The following management measures are meant to sustain and restore non-game wildlife species on TEAD South Area.

- Continue supplementary seeding and replanting program to restore habitats by increasing forage, nesting habitat, and cover for animal species that inhabit the Depot property.
- Update PLS for TEAD South Area. The last PLS was done in 1999.
- Continue to establish (such as through a selective seeding program) and repair (if damaged) protective buffers around the surface water bodies to maintain the quality of the aquatic habitats; to provide shelter for waterfowl, aquatic biota, and amphibious species; to increase cover around edges of ponded areas to temper the effects of weather on surface waters; to stabilize the edges of Ophir Creek that are subjected to flash flooding events; and to decrease sedimentation from run off. Coordinate rehabilitation efforts with local UDNR plant specialists to avoid the inadvertent introduction of pest or problem species. Conduct routine surveys of Ophir Creek, Johnson Ponds, and Deseret Reservoir to determine the status of protective buffers and vegetation.
- Conduct a rapid bioassessment survey for fish and aquatic biota on TEAD South Area surface water bodies. The last survey was done in the spring or summer of 1999, but it did not identify the presence of any threatened or endangered species and their habitats or provide a baseline of data to evaluate the diversity of aquatic biota species inhabiting TEAD South Area.
- Perform an amphibian survey in TEAD South Area aquatic habitats in the spring when amphibian species are observable. The last survey was done in the spring of 2000.
- Continue to upgrade power poles by adding conductor covers on existing power poles using the Avian Protection Plan as a guideline. Contracts that are established for the replacement or repair of power and telephone poles will continue to include requirements for raptor safety perches and conductor covers. Although many poles at TEAD South Area are equipped with these devices, some are not. The number of raptors inadvertently electrocuted by perching on unprotected poles has decreased; however, TEAD South

Area personnel still occasionally observe raptors that have been killed in this manner on Depot property. Research DoD Legacy Resource Management Program as a potential funding source, and becoming a member of Partners in Flight could also provide a potential funding source for raptor safety perches.

- Continue to apply for permits for bird takes per the Migratory Bird Treaty Act.
- Conduct migratory bird survey.
- Conduct activities (e.g., tree or shrub removal, ground disturbing activities) during the non-nesting season (approximately September 1 – April 30) to minimize or avoid impacts on migratory birds protected under the Migratory Bird Treaty Act and meet responsibilities under EO 13186.
- Continue the burrowing owl nesting program, with maintenance of nesting boxes in the spring and tracking of owls as feasible. Continue using volunteers from Utah Valley University as available to support the program.
- Continue the Johnson Ponds least chub program. Continue cooperation with UDWR for annual survey of ponds and use of these fish to repopulate the species at other Utah locations.
- Install additional water guzzlers to provide wildlife a water source away from the industrial areas, only in instances where the historic water resource has been reduced or diverted for other purposes and where at-risk native wildlife will not be negatively impacted. These containers are also designed to be shallow enough so animals will not become trapped in the water tank.
- Encourage researchers to conduct bird and other wildlife surveys. Identifying the diversity of species inhabiting TEAD South Area and restoring degraded habitats are essential steps that the Depot will implement, although additional detail might be required to address restoration issues, species diversity (or lack of), and ecosystem health. TEAD South Area will team with private organizations and encourage restricted access for research studies as feasible. This will provide the Depot with a better understanding of the natural resource issues and ecosystem to make more informed decisions and to adapt management measures as needed. This will also reduce management costs when research efforts are conducted through volunteer efforts such as graduate and post graduate studies.

#### **7.4.2 Enforcement of Fish and Wildlife Laws**

TEAD North and South Areas are not open installations and public access is controlled. TEAD does not support a hunting program on the North or South Areas. Fishing is allowed only at TEAD South Area's Deseret Reservoir, which is outside the Main Gate. TEAD fishing regulations and permit requirements are described in the Deseret Reservoir Recreation Area information brochure distributed annually by TEAD MWR, and anglers must follow the Utah fishing regulations in the *Utah Fishing Guidebook* (such as license requirements and allowable fishing methods) (see Appendix O for a copy of the guidebook). TEAD natural resources law enforcement measures focus on the prevention of trespassing and poaching, as described in the following paragraphs.

Security at TEAD North and South Areas is provided by DoD personnel in the TEAD Law Enforcement and Security Division. The division is responsible for all aspects of law enforcement and security at TEAD and acts as a liaison with federal, state, and local law enforcement agencies. TEAD operates under a MOA for mutual assistance in law enforcement and civil emergency assistance with the Grantsville City Police Department, Tooele City Police Department, Tooele County Sheriff's Office, Utah Highway Patrol, and Federal Bureau of Investigation (Salt Lake City office). TEAD also has an MOA with Tooele County, Dugway Proving Ground, and the State of

Utah Division of Emergency Management for the establishment and operation of the Tooele Community Joint Information Center in times of emergency or disaster. Copies of these MOAs are in Appendix P.

Individuals caught trespassing on TEAD are detained by security and checked for outstanding warrants. If the individual has outstanding warrants against them, they are turned over to the Tooele County Sheriff's Department. Otherwise, they are issued an Expulsion Order, which states that if they are caught trespassing again on TEAD they will be prosecuted and may be fined or incarcerated.

Individuals caught poaching game on TEAD are detained by security and arrested by UDWR game officers. Individuals are prosecuted, and if found guilty can be fined, asked to surrender their weapons, and/or have their state hunting privileges rescinded for five years.

TEAD's General Regulations 1-1 provides policies, responsibilities, and procedures for Depot personnel. The regulations do not include a policy on the taking of wildlife. A management goal is to develop a policy for TEAD's General Regulations 1-1 to address the taking of wildlife on TEAD.

EO 13186 outlines the responsibilities of federal agencies to protect migratory birds. EO 13186 further stated that analysis of federal actions required by NEPA or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds with an emphasis on species of concern. A final MOU was finalized between DoD and USFWS to promote the conservation of migratory birds pursuant to EO 13186.

TEAD will follow the intent of EO 13186 (Appendix Q) and the USFWS/DoD MOU (Appendix R). TEAD will focus on the Partners in Flight Bird Conservation Region 9 Great Basin Region, and Utah Partners in Flight Avian Conservation Strategy. TEAD's priority will be habitat protection and restoration; see Appendix E for Utah bird habitat conservation areas map and the Utah Partners in Flight Avian Conservation Strategy mitigation measures.

### **7.4.3 Game Species, Fishing, and Trapping**

As stated above in Section 7.4.2, TEAD does not support a hunting program and fishing is permitted only at the TEAD South Area Deseret Reservoir Recreation Area. Trapping is conducted at North and South Areas. Information on game species, fishing, and trapping for TEAD North and South area follows.

#### **7.4.3.1 Game Species**

Game species are not actively managed on TEAD. Because of the risks associated with the TEAD mission, hunting big or small game species is not considered a potential use of Depot lands. In addition, the particular climate and topography at TEAD are not conducive to supporting large populations of game species relative to other desert areas, and populations of mule deer and small game populations are too small in size to support a regular hunting program.

The goals of big and small game management at TEAD are to maintain populations compatible with the range they occupy and the military mission. Big game species that inhabit TEAD are mule deer and pronghorn antelope. The historical range for bighorn sheep includes the area; however, no bighorn sheep have been observed on North or South Areas, and the supplementation or reintroduction of bighorn sheep is not considered feasible because of the Depot's mission. Several small game species may inhabit TEAD South Area, including mammals such as black-tailed jackrabbit and Townsend's ground squirrel and birds such as sage grouse, California quail, and chukar partridge.

The following management measure for TEAD North and South Areas addresses the game species wildlife management objectives of preserving the current habitats that inhabit Depot lands:

- Continue the supplementary seeding program on TEAD North and South Areas and the chain harrowing on TEAD South Area to restore habitats by increasing forage for big and small game species that may use the Depot property.

#### **7.4.3.2 Fishing**

The construction of the 3.5-acre Deseret Reservoir allowed TEAD to establish on the South Area a catch and keep fishing program. Prior to the construction of the reservoir, there were no fishing opportunities available on TEAD, as it is in a semi-arid climate with primarily intermittent streams. TEAD MWR is responsible for administering the fishing program. MWR has the authority to plan, coordinate, and implement the fish management program in accordance with AR 200-1 and with the cooperation of USFWS and UDWR. The UDWR stocks Deseret Reservoir with rainbow trout under a MOA with TEAD (Appendix S). In return, TEAD agrees to allow the public to fish in the reservoir as well as provide maintenance of the reservoir, fish cleaning area, picnic areas, and camping areas. Anglers are required to have a Utah state fishing license and a TEAD MWR recreation area use permit. The annual use permit allows the holder to use MWR facilities during the fishing season (May to October).

The following management measure is to maintain the TEAD South Area fishing program.

- Maintain the MOA between TEAD and UDWR for UDWR to continue stocking the reservoir and for TEAD to provide public fishing, picnicking, and camping access to Deseret Reservoir Recreation Area.

#### **7.4.3.3 Trapping**

The goals of furbearer management on TEAD are to maintain furbearer populations in a manner consistent with the mission and land use objectives and ensure that healthy populations continue to exist so that they are appreciated for their ecological values. The trapping of furbearer species is permitted on TEAD North and South Areas for nuisance pest control. However, TEAD's objective is to control population levels rather than eradicate nuisance species such as coyote, raccoon, and skunk. Trapping occurs during years when populations are abnormally high. Trapping is performed in coordination with the UDWR by licensed trappers.

The following management measures are meant to maintain and restore the natural habitats of various furbearer species on TEAD North and South Areas and control species that may potentially become nuisance populations.

- Continue the supplementary seeding program away from industrial and administrative use areas to restore and enhance habitats by increasing forage and cover for furbearer species that might inhabit the Depot property.
- Assess trapping on a case-by-case basis and remove animals as necessary in coordination with UDWR and a licensed trapper should furbearer species such as coyotes, raccoons, or skunks become a nuisance. Population levels will be assessed without compromising habitat values or disturbing natural population levels in the area.

### **7.5 THREATENED AND ENDANGERED SPECIES MANAGEMENT**

There are no known endangered, threatened, or rare species inhabiting TEAD North or South Areas; however, should any sensitive species be identified on Depot property, TEAD will prepare an Endangered Species Management Plan and implement the necessary management measures



to preserve these species and their habitats. The goal for sensitive species management on TEAD is to identify and preserve those species on the installation in accordance with applicable laws and regulations and Army policy on responsible stewardship. The ESA requires that all federal agencies conserve listed species. Conservation, as defined by the ESA, means the use of all methods and procedures necessary to bring a listed species to the point where protections pursuant to the ESA are no longer necessary.

The following are management measures for TEAD North and South Areas to protect and preserve endangered, threatened, and rare species.

- Update the PLS for TEAD North and South Areas (the North Area PLS was last done in 2000 and the South Area PLS was in 1999), including the identification of federal- and state-listed endangered and threatened species that might occur on TEAD. Should any listed species be found to occur on the installation, prepare an Endangered Species Management Plan and implement the applicable management measures.
- Coordinate with the USFWS and UDWR to receive updated information concerning recent sightings of sensitive species in the general vicinity of TEAD. TEAD will routinely communicate with these agencies to determine if additional surveys will be necessary.
- Protect rare and unique plant species identified as state or locally rare, but without legal protection status, to the extent practical without restrictions on operations.
- Continue cooperative efforts with UDWR to survey the aquatic habitat at TEAD South Area for the Bonneville cutthroat trout and Columbia spotted frog. This trout and frog are managed under Conservation Agreements. Major threats to these species include present and threatened destruction, modification, degradation, and loss of habitat and predation, competition, and diseases associated with the introduction and presence of nonnative species. If no populations of spotted frog are found during survey efforts, further studies will be performed to reintroduce this species into TEAD South Area. At this time, there are no plans to reintroduce the Bonneville cutthroat trout.

## **7.6 WATER RESOURCE MANAGEMENT**

The ecological and human health importance of maintaining healthy water bodies is reinforced by several federal and state laws and regulations (e.g., the Clean Water Act, EO 11990 *Protection of Wetlands*, Utah Administrative Code R317-6 *Ground Water Quality Protection*). In addition, AR 200-1 promotes the importance of maintaining healthy water body systems on Army installations.

### **7.6.1 TEAD North Area**

The primary goal of water resources management at TEAD North Area is to protect the ground water. There are no perennial streams on the North Area, therefore, management measures are prescribed to minimize the potential for pollutants to impact ground or surface water during periods of flow.

TEAD North Area will implement the following general water resources conservation provisions:

- Continue the installation's ground water monitoring program.
- Apply pollution prevention and watershed protection measures, such as nonpoint source pollution controls, to ensure that pollutants do not convey to washes, ground water systems, or off-site streams during periods of flow.

## 7.6.2 TEAD South Area

The primary goal of water resources management at TEAD South Area is to protect the water bodies on the installation. The objectives defined for meeting this goal are to identify and restore degraded aquatic habitats, protect aquatic and riparian habitats, and prevent degradation of water quality.

Runoff from Mercur Canyon still carries water and sediment contaminated by mine tailings onto the Depot. The drainage ditch along the outside of the east side perimeter road channels most Mercur Canyon runoff along the outside of the installation; however, during heavy thunderstorms the runoff still enters the installation. Mine tailings are proven to have impacted the soils in the southeastern corner and the east central edge of TEAD South Area. The installation performed soil testing for metals contamination in 2001 and in 2004. Both events found metals, arsenic, and mercury in particular, at levels significantly higher than government standards. TEAD South Area has an agreement with Utah State Environmental Division that TEAD will not do further soil sampling or clean-up (as the source of contamination is not on TEAD land, and unless the source is cleaned up, contamination will continue) but TEAD South Area has a RCRA permit and LUCs in place for that southeast area of the Depot.

### 7.6.2.1 Ground Water Management Measures

Ground water is extensively monitored on TEAD South Area. The following management measures are meant to compliment or augment current ground water monitoring and assessment efforts.

- Continue to monitor ground water at the wastewater treatment facility to ensure that the bentonite lining continues to function as designed and that no ground water degradation occurs as a result of operating the facility.
- Continue the installation's ground water monitoring program. Where degradation of natural ground water quality is determined to be occurring, actions will be taken to identify the source of contamination and to clean up the source and any contaminated ground water.
- Maintain the spill prevention and cleanup program to address potential ground water contamination and methods to ensure minimal impacts associated with potential spills. Depot personnel will be trained and equipment maintained to provide a quick response to any spill in order to minimize any potential environmental damage.

### 7.6.2.2 Surface Water Management Measures

The following are management measures for TEAD South Area to protect surface water features.

- Monitor water bodies at TEAD South Area. In-depth baseline water quality data is lacking for TEAD South Area surface water bodies. Comprehensive water quality data will be collected— especially total suspended solids measurements, turbidity, dissolved oxygen, total dissolved solids, and conductivity. Because of the close proximity to mining wastes, metals will also be monitored. In addition, long-term studies are being planned and will be conducted on the water quality of Deseret Reservoir to monitor its health over time.
- Control pollutant inputs to TEAD South Area surface water bodies. The primary water quality pollutants are sediment, metals, and salts. Sediment deposition in surface water bodies will be controlled through implementation of erosion and sediment control best management practices (BMPs). Natural vegetation will be preferred over structural methods of water control. The revegetation program at TEAD South Area will continue, especially along streams to assist with pollutant input control. In instances where

revegetation methods are ineffective or less cost-effective, properly designed, constructed, and engineered erosion controls will be implemented.

### **7.6.2.3 Riparian Habitat Management Measures**

The following are management measures for TEAD South Area to protect riparian habitat.

- Apply Rapid Bioassessment Protocols (RBPs) to collect comprehensive information such as channel width, channel depth, stream velocity, stream channel material, bank material, stream bank hydrology (low flow and high flow), and stream bank vegetation. Detailed characterization of the perennial streams is lacking at TEAD South Area. This information will enable the evaluation of stream stability and overall stream condition. Information will also be gathered for any intermittent streams on the installation. Exact locations will be mapped and water quality and water flow will be monitored for these intermittent streams.
- Maintain riparian areas. Vegetation in riparian areas can stabilize stream banks and intercept surface runoff containing suspended sediments, nutrients, and pollutants. They also help to moderate water temperatures and provide valuable wildlife habitat. Current riparian areas around streams will be monitored and preserved. Additional plantings of native species will occur in the riparian areas so that no bare soil occurs in these areas.
- Maintain species diversity. Diverse species composition will be encouraged in the riparian areas, particularly with respect to canopy species.
- Protect riparian habitat by implementing BMPs to control nonpoint source pollution; limit activities within 100 feet of streams where feasible (Ophir Creek is bordered on one or both sides by a road and/or power line for most of its distance across TEAD South Area); and restore degraded riparian habitats.
- Control invasive species. This will be accomplished by controlling the spread of exotic species including salt cedar, teasel, bull thistle, and Phragmites through a combination of mechanical and chemical control, if needed. In particular, the invasive species salt cedar could pose a significant threat to native vegetative communities on TEAD South Area. The plant has become established in areas along rivers, streams, and irrigation ditches; around lakes; in and around salt flats; and in other waste places throughout the western United States. See following point.
- Continue to monitor the presence of salt cedar. If salt cedar communities begin to spread or are found to dominate areas on TEAD South Area, control methods will be evaluated, as salt cedar produces massive quantities of seeds and can also propagate from buried or submerged stems. Ecological impacts caused by the presence of salt cedar include crowding out native stands of riparian and wetland vegetation; increasing salinity of surface soil causing the soil to be inhospitable to native plant species; providing lower value (less diverse) wildlife habitat than native vegetation; drying up natural springs, wetlands, riparian areas, and small streams by lowering surface water tables; widening floodplains by clogging stream channels; increasing sediment deposition due to the abundance of salt cedar stems in dense stands; and using more water than comparable native plant communities (DCD 2009). Integrated pest management control techniques are available (e.g., chemical, biological, mechanical, and cultural) and will be considered. A combination of mechanical and chemical control is recommended in the USACE Plant Management Information System and has been used by the National Park Service (NPS) to control salt cedar in the national parks in the western United States. The objective in selecting a technique will be to minimize cost, disturbance to native species, and herbicide use. In addition, intensive plantings of native vegetation such as cottonwood and willow species after implementation of salt cedar control techniques will encourage restoration of

the area as well as riparian stabilization. TEAD South Area will partner with the USFWS and UDWR to help eradicate these species.

- Monitor habitat conditions. Habitat conditions as well as the effectiveness of BMPs will be monitored to enable environmental managers to adaptively manage riparian areas.

#### **7.6.2.4 Aquatic Habitat Management Measures**

The following are management measures for TEAD South Area to protect aquatic habitat.

- Conduct aquatic habitat assessments, including in wetlands. Detailed documentation of aquatic habitats and aquatic habitat quality at TEAD South Area is lacking. EPA's RBPs will be used to assess physical characteristics and in stream habitat quality of perennial streams. RBPs also determine whether a stream is supporting a designated aquatic life use.
- Maintain species diversity. Biodiversity is critical in protecting aquatic ecosystems. The area surrounding aquatic environments plays an essential role in protecting the aquatic habitat. The adjacent riparian area provides stream bank stabilization and can serve as a pollutant filter for storm water runoff entering water bodies. When pollutants such as sediment accumulate in the water bodies, aquatic habitat is adversely affected. The amounts of viable fish spawning areas are reduced and the excess sediment can smother aquatic habitat. To protect these areas, activities within 100 feet of the streams on the installation will be limited to those that would cause little or no impact on water quality and aquatic habitats. Current riparian areas around streams will be monitored and preserved. Additional plantings of native species will occur in the riparian area; no bare soil will occur in this area. This will reduce adverse impacts on water quality and protect aquatic habitat from sedimentation.
- Control pollutant inputs to TEAD South Area water bodies. This will be addressed by reducing sediment deposition, limiting off-site mine tailing leachate from entering the Depot, and addressing the chemical leaching from the waste pits in areas adjacent to surface waters as well as in areas whose drainage paths lead to surface waters. Runoff from off-site mine tailings will be prevented from entering the Depot (e.g., a drainage ditch along the outside of the Depot's east side perimeter road channels most Mercur Canyon run off along the outside of the installation) or channeled to filter out in settling basins before joining the surface waters. Monitoring around the TEAD South Area waste pits will continue to document ground water quality and to identify additional pollutants that could adversely affect water quality.
- Monitor habitat conditions. Monitoring habitat conditions as well as the effectiveness of installed BMPs will enable environmental managers to adaptively manage aquatic habitats.

### **7.7 WETLAND PROTECTION**

No wetlands are present on TEAD North Area. During wet years, spring runoff can result in wet areas in the western portion of TEAD South Area. Since the TEAD South Area INRMP was updated in 2009, the USACE made a determination that TEAD South Area wetlands are not jurisdictional (Johnson, personal communication, 2014).

The main goal of the TEAD South Area wetland management approach is to continue to implement a program that is consistent with DoD natural resources policy. A wetland management policy with the objective of maintaining no net loss of wetland habitat will be continued at TEAD South Area. Activities occurring adjacent to wetlands that would result in negative impacts on the

habitats will be avoided, when possible, in a manner consistent with mission objectives. Where impacts on wetlands are not avoidable, mitigation of the impacts will be implemented. In a manner consistent with EO 11990 *Protection of Wetlands*, wetland management objectives at TEAD South Area will take a progressive approach toward protecting existing wetlands, rehabilitating degraded wetlands, and (if applicable) restoring former wetlands.

Wetlands on TEAD South Area occur primarily in the west central section and along the north side of the installation (see Figure 4-4). The wetlands on the north side of Harrison Road are wet year round due to the channelized redirected path of Ophir Creek. The Depot will implement (or continue to implement) the following wetland conservation provisions.

- Develop wetland GIS coverage for TEAD South Area using digital data from NWI. The goal of the management measure is to develop a mapped inventory of wetland resources on the Depot.
- Develop a wetland inventory and assessment database by compiling information on wetland characteristics, as contained in the NWI, or as collected by other efforts, in a format that will enable the addition of new information. This database will be developed and used in conjunction with the map database. The goal of these management measures is to develop a database that will enable TEAD South Area to make management decisions in a manner that will minimize potential impacts on wetland habitats throughout the depot. The database will also be used to track wetland conditions on TEAD South Area and to assist in the identification of potential problems.
- Maintain a minimum of a 100-foot buffer around wetlands, where feasible. Where it is determined that the wetland has, or could have, significant habitat value, buffers of greater than 100 feet will be considered. Activities within buffer zones will be limited to activities that cause little or no impact on, or disturbance to, the wetland.
- Pursue management and monitoring procedures to ensure maintenance of water quality in the wetlands.
- Review operations and maintenance programs that potentially affect wetlands, and develop procedures and guidelines to avoid the loss of wetland functions.
- Evaluate general vegetative characteristics of wetlands to determine where potential future control of invasive species could result in measurable habitat value enhancement.

## 7.8 SOIL MANAGEMENT

The primary goals of soil conservation and management on TEAD North and South Areas are to protect soil resources from natural erosive forces and mission activities and to prevent soil erosion and its potential impacts on water quality, habitat quality, and mission objectives. Problems associated with soil erosion on the Depot are expected to occur in areas where vegetation has been removed or excessively disturbed as a result of grazing or other anthropogenic disturbances. Installation sources of erosion and sedimentation, runoff, and dust need to be controlled to prevent damage to land, water resources, equipment, and facilities on the installations and adjacent properties.

Objectives of soil conservation and management on TEAD North and South Areas are to identify eroded soils, avoid disturbance of soils that are considered to be moderately to severely susceptible to erosion, and stabilize and repair eroded soils in a timely manner to avoid the development of excessive erosion sites. Revegetation and stabilization of eroded areas is necessary to preserve the integrity of the natural resources. Eroded soils that expose underlying soils are poorer substrates for plant establishment. Eroded soils will decrease the quality of down

gradient habitats by sedimentation choking off new plants, leading to a snowball effect of degrading adjacent habitats.

More than 75 percent of the soils on TEAD North Area and about 35 percent of the soils on TEAD South Area are considered to be moderately to severely susceptible to erosion. Soil erosion has the potential to be a problem in localized areas such as disked or graded fire lanes and where overgrazing has occurred, and in the TEAD South Area there are eroded areas along the southeast side of the Depot where sheet flow from Mercur Creek enters the installation. Because of the potential for erosion of disturbed areas, it is necessary that a comprehensive soil resource management approach be followed. A management approach designed to avoid the disturbance of potential problem erosion areas will be developed, when possible, in a manner consistent with mission objectives.

TEAD North and South Areas will implement the following soil conservation provisions.

- Conduct routine soil monitoring to identify eroded areas. These will be conducted seasonally and/or following heavy rainstorms. Use the results of monitoring to determine locations where management practices need to be implemented to rehabilitate impacted resources.
- Implement reseeded and revegetation measures to reduce soil erosion in damaged areas. The revegetation program will attempt to reclaim areas of land that have been stripped of cover at critical locations. These areas will be planted with fast-growing, native species so that soil stabilization may occur in a timely manner. Revegetation will also help to rehabilitate the quality of the wildlife habitats on the Depot. TEAD will consult with UDWR to determine a seeding mix that would result in plants good for terrestrial and wildlife habitat.
- Continue per the grazing leases the proper range management practices to protect soil and its vegetative cover from erosion. Monitor grazing areas to enable early identification of locations where potential problems might occur. If problem areas are identified, implement BMPs, such as shifting of grazing away from the area, or planting of vegetation. Where impacts have or are occurring, implement rehabilitation in a timely manner to reduce the potential for the development of excessive wind erosion or deposition sites.
- Limit traffic in vegetated areas, especially where the vegetation is crucial to stabilizing soils from wind erosion.
- Use soil conservation measures (e.g., wind breaks, diversions, and check dams) to control erosion, sedimentation, and dust when the exposure of soils is necessary to accomplish mission objectives. To limit land maintenance expenditures and minimize environmental impacts, site physically intensive land-disturbing activities, when possible, on the least erodible lands (those requiring the least cover for erosion control).
- Maintain protective vegetative covers over all compatible areas, especially on steeper slopes.
- Maintain roads and fire lanes by grading in a manner to minimize soil erosion. TEAD has found that diverting water flow from the roads and fire lanes by maintaining ditches along the fence lines to act as drainage ways to slow the rate of flow and channel some of the excess water around the outside edge of the installation is effective during smaller rainstorms; however, this measure is ineffective in slowing and diverting the water flow during intense rainfall storms in the region, as soil erosion has continued in these areas. The use of gravel in the ditches, on the roadways, and along the worst impacted safety buffers can also be employed to initially stabilize the soil and remaining vegetation, slow the water as it enters the Depot, and spread the water out to areas that can help absorb it.

## **7.9 TERRESTRIAL HABITAT MANAGEMENT**

The primary goals of terrestrial habitat management at TEAD North and South Areas are to preserve the natural integrity of the habitats for the benefit of native wildlife and flora and restore the biological diversity of native wildlife and flora occurring on the installation, where it has been degraded by non-indigenous weedy species and erosion. Problems associated with habitat degradation on the Depot would be expected to occur in areas where vegetation has been removed or excessively disturbed as a result of grazing or other anthropogenic disturbances. Restoring the diversity of degraded and poor habitats will return the ecosystem to a more stable system that would require less maintenance. These goals are to be achieved without adversely affecting the military mission.

### **7.9.1 TEAD North Area**

Some habitats at TEAD North Area have been degraded by erosion, and terrestrial habitat degradation has the potential to be a problem in localized areas where erosion has occurred. A comprehensive habitat management approach designed to avoid the disturbance of potential problem erosion areas will be developed, when possible, in a manner consistent with mission objectives.

The following management measures are meant to preserve and restore terrestrial habitats throughout TEAD North Area.

- Restore habitat of eroded and disturbed vegetation areas. All disturbed areas will be reseeded with native vegetation to prevent weed invasion.
- Limit traffic in vegetated areas, especially where the vegetation is crucial to stabilizing soils from wind erosion.
- Implement erosion and sediment controls where appropriate. Maintain protective vegetative covers over all compatible areas, especially on steeper slopes.
- Update vegetation surveys. The surveys conducted previously (a PLS was done in 2000) provided a baseline of flora and vegetation present at TEAD North Area. The baseline needs to be updated. The flora and vegetation baseline information can then be applied to more effective management of the terrestrial habitats and identify any potential need for management of threatened and endangered plant species and special natural areas.
- Continue per the grazing leases the proper range management practices to protect soil and its vegetative cover from erosion and overgrazing and to protect existing habitat, promoting rangeland health and ecosystem integrity. Livestock grazing is a tool to manage habitat and maintain mission readiness of the landscape for military purposes and ecosystem integrity.
- Conduct rangeland health assessments and productivity surveys on a yearly basis before grazing begins to determine carrying capacity for the grazing season. These assessments will be scheduled for each of the areas to maintain rangeland health in each grazing area.
- Research potential for installing a vehicle and railcar washing facility (dependent on funding availability). Washing would reduce the transport of invasive plant material and contaminated soils and dust from being transported on- and off-post.

### **7.9.2 TEAD South Area**

There are limited management measures available due to mission risks on disturbed areas and a lack of funding. The areas accessible to management measures include the wetlands during

the dry season; terrestrial habitat bordering Deseret Reservoir, Ophir Creek, and Johnson Ponds; the former housing area; grazing and agricultural lease areas; and large portions of the safety buffer zones adjacent to the edges of the property. Previous assessments have characterized the terrestrial vegetation communities on TEAD South Area as having poor quality (DCD 2009). Many of the dominant plant species identified were non-indigenous weedy species that tend to reduce the natural biodiversity and quality of the habitats. Some habitats have been degraded by erosion and some may be affected by contamination from off-site mine tailings. There is widespread damage to the terrestrial habitats.

The following management measures are meant to preserve and restore terrestrial habitats throughout TEAD South Area.

- Restore native habitat in poor quality vegetated areas. All disturbed areas will be reseeded with native vegetation to prevent weed invasion. Formerly, TEAD South Area performed habitat improvement by supplementary seeding about 15 acres near the agricultural lease area to improve wildlife forage. The Depot will renew these efforts by providing supplemental native seed, specifically to very low quality areas to restore the terrestrial habitats that have been degraded by non-indigenous species.
- Restore native habitat in eroded areas. TEAD South Area will inventory the highly eroded areas and plant native seeds and seedlings to stabilize and restore these areas and stop further degradation of downgradient habitats. Revegetating these areas will also help harden these areas against further damage from sheet flow erosion.
- Update vegetation surveys. The surveys conducted previously (a PLS was done in 1999) have provided a baseline of vegetation present at TEAD South Area. Continued monitoring to identify impacts based on changes in the communities and uptake of chemicals associated with the former CAMDS and TOCDF operations will provide additional detail on the vegetation habitats and their quality. Surveys conducted to supplement the baseline data will focus on the identification of endangered and threatened plant species and their habitats that could potentially be present at the Depot and supplementing the baseline data to include species that were not detected because of seasonal variability in the vegetation. The vegetation baseline information can then be applied to more effective management of the terrestrial habitats and identify any potential need for management of threatened and endangered plant species and special natural areas.
- Continue per the grazing leases the proper range management practices to protect soil and its vegetative cover from erosion and overgrazing and to protect existing habitat, promoting rangeland health and ecosystem integrity. Livestock grazing is a tool to manage habitat and maintain mission readiness of the landscape for military purposes and ecosystem integrity.
- Conduct rangeland health assessments and productivity surveys on a yearly basis before grazing begins to determine carrying capacity for the grazing season. These assessments will be scheduled for each of the areas to maintain rangeland health in each grazing area.
- Establish an agricultural grazing lease with proper management practices to protect soil from nutrient depletion. Agriculture use of military lands is an established practice throughout the Army and promotes good land stewardship.
- Research viability of reopening the vehicle washing station (dependent on funding availability). Washing would reduce the transport of invasive plant material and contaminated soils and dust from being transported on- and off-post.



## 7.10 FIRE MANAGEMENT

Fire management goals at TEAD consist of fire prevention and control. TEAD North and South Areas have on-post fire departments to respond to fires on the Depot as well as on neighboring lands. TEAD operates under the Tooele Army Depot Army Integrated Wildland Fire Management Plan (2010). The plan is available from the TEAD Fire and Emergency Services Division.

TEAD uses prescribed fire to manage for security, habitat improvement, invasive weeds, and vegetative structure. Burns are ignited only by certified personnel and those under supervised training for their certification. Planned burns are evaluated for compliance with the state's burn index and risk assessment before any fire is ignited, and climatic conditions, personnel safety, and fire conditions will be monitored constantly with a minimum hourly recording of conditions for reporting and logbook purposes (TEAD 2010).

Fire prevention and management at TEAD is aided by a system of firebreaks and roadways that have been placed throughout the Depot where the danger of accidental fire and wildfire are greatest or would result in extreme losses and potential hazards from mission activities. The firebreaks are lanes placed at strategic locations to prevent a brush/grass fire from spreading to the administration and operation areas. These fire lanes are constructed to surround the Depot boundary, parallel railroads and strategic roads, and protect storage magazines and strategic structures. TEAD North Area has within the Depot boundaries approximately 49 miles of fire lanes cut to a width of 30 feet. TEAD South Area has within the Depot boundaries approximately 43 miles of fire lanes cut to a width of 30 feet. Firebreaks and lanes will continue to be the main fire management measures implemented by TEAD.

Natural resource fire management measures for TEAD North and South Areas include the following.

- Continue compliance with TEAD's *Integrated Wildland Fire Management Plan*.
- Continue to use firebreaks consisting of disked or graded fire lanes placed at strategic points on the Depots to prevent a brush or grass fire from spreading to administration and operation areas. The drought conditions at the installation make greenstripping an impractical management practice.
- Maintain firebreaks by grading to keep the breaks free of vegetative growth and to minimize the potential for erosion during the dry season. Firebreaks will be graded in early spring before cheatgrass has a chance to set seed.
- Continue to use gravel roadways as fire lanes to prevent the spread of wildfires. Gravel lanes are used along the fence lines and in storage areas to provide firebreaks.
- Continue to use the grazing programs as a method to control the accumulation of fire fuels on the grazing lease acreage.
- Mow plant litter as preventative fire maintenance during years of high vegetation growth that results in excessive amounts of wildfire fuel.

TEAD has developed standard operating procedures (SOPs) to establish the duties and procedures in the event of a wildfire on or adjacent to the North or South Areas that might threaten the safety of personnel or property on the Depot. These SOPs are:

- In the event of a wildland fire, Fire and Emergency Services personnel will respond in accordance with TEAD's *Army Integrated Wildland Fire Management Plan* and Fire and Emergency Services policies, and will use acceptable firefighting tactics and strategy in the suppression of wildland fires.

- The first arriving supervisor at the scene of the fire will evaluate the situation and immediately implement proper fireground procedures using available resources.

In the event additional assistance is required in suppressing wildland fires, one or both of the following options are available: request assistance from the TEAD Facilities Support Division and request mutual aid.

- Upon request, personnel of the Facilities Support Division will respond as expeditiously as possible to the emergency with appropriate equipment and resources. They will report to the Fire and Emergency Services Division supervisor for correlation and fireground activities.
- Request mutual aid assistance from the local area, if needed. TEAD has Mutual Aid Agreements with Tooele City, Grantsville City, Stockton City, North Tooele County, and Dugway Proving Ground (see Appendix T). Upon request, mutual aid companies will assemble at the TEAD North Area Fire Station 1 (Building T-8) or at the TEAD South Area Fire Station and receive instructions from the fireground commander as to assignments.

## **7.11 GRAZING AND AGRICULTURAL LEASING**

### **7.11.1 How Grazing and Agricultural Leases Support INRMP Goals**

The TEAD Garrison Operations Directorate Environmental Management Office manages the grazing and agricultural lease programs. Tracts are leased for five years on a recurring basis. The grazing and agricultural lease program at TEAD optimizes the use of natural resources on the installation, supports ecosystem management goals, supports mission readiness of the land for future military use, generates revenue for natural resources programs, and reduces land management costs. Leasing the land frees the installation from having to maintain the leased land. Leases include provisions requiring that the lessee support the habitat maintenance and conservation practices established for those tracts, such as range seeding and fertilization; identifying and notifying TEAD of certain invasive and noxious weeds; preventing and controlling soil erosion; development of water supplies; and installing and repairing riparian buffer fences. The program also helps reduce the risk of wildfire on TEAD through the reduction of fuel loads from livestock grazing. Grazing and agricultural lease fields are depicted in the lease documents presented in Appendices K, L, and M. Information on the TEAD grazing leases, including livestock carrying capacity and grazing season duration, is in Sections 6.1.1.4 (*TEAD North Grazing Lease*) and 6.1.2.2 (*TEAD South Grazing Lease*) and Appendices K and L, and information on the TEAD South Area agricultural lease is in Section 6.1.2.3 and Appendix M.

### **7.11.2 Lease Land Use Regulations for Lessees and How Compliance with the Land Use Regulations is Monitored**

The TEAD grazing and agricultural leases are executed by the USACE Sacramento District. The lessees use and occupation of the leased land is subject to the general supervision and approval of the TEAD Installation Commander. The lessee is subject to the Depot's rules and regulations regarding ingress, egress, safety, sanitation, and security, and the lessee must comply with all applicable federal, state, county, and municipal laws and ordinances and protect the premises against air, ground, and water pollution. The lessee must comply with the tract management plans and all TEAD land use regulations. These requirements and regulations include grazing and farming in accordance with soil conservation plans; conducting all land preparation, applications of lime, fertilizer, and chemicals, and other operations in accordance with recognized and approved practices and the installation's IPMP. Noncompliance of the policies set forth by the

program is handled directly with the lessee, and blatant violations may be cause for revocation of the lease by the Installation Commander through the USACE Sacramento District.

Monitoring will be conducted by the NRCS Rangeland Management Specialist or the Natural Resource Managers at the Depot. Monitoring will be used to ensure the ecosystem is being managed in the desired manner. The leases require the lessees (or their representatives) to closely coordinate grazing operations with the Installation Commander. While livestock are grazing on Depot lands, the lessee shall contact the Installation Commander at least once every other week to maintain adequate coordination between military uses and the lessee's operations.

### **7.11.3 TEAD North and South Area Grazing Lease Management Measures**

The grazing program at TEAD provides for multiple-use management of the leased premises for military purposes, domestic livestock grazing, and wildlife habitat. The grazing program preserves and enhances natural resources, while ensuring that fire fuel loads do not reach proportions that increase hazards from wildland fires. The leased tracts of land are to be used in accordance with the lease's range management practices and in a manner consistent with the military mission and multiple use management. Management measures for the TEAD North and South Areas grazing lease programs are provided below.

- Limit grazing to levels that do not adversely affect the overall quality of the rangelands. Deterioration of rangeland quality could increase the potential for soil loss through erosion, loss of native vegetative cover, wildfire, and noxious weed infestation.
- Coordinate with NRCS to continue the annual range vegetation surveys to monitor vegetative cover and to evaluate rangeland carrying capacity. The acceptable and sustainable AUMs for each tract as stated in the leases will be determined based on the results of the range vegetation surveys (see leases in Appendices K and L for AUMs).
- Grazing will generally be from 1 November through 31 May of each lease year for the North Area, and from 1 October to 15 June of each lease year for the South Area. However, the grazing season may be shortened if further grazing would be detrimental to the land or vegetation or may be lengthened if there is sufficient forage to sustain additional grazing. The lessee must submit a written request for extension of the grazing season.
- Distribute salt blocks and feed supplements throughout the premises and move as necessary to promote an optimal distribution of livestock. Distribute livestock to achieve uniform range utilization, minimize sacrifice areas, and reduce the overall fire hazard.
- Do not place salt blocks or feed supplements within one-quarter mile of any watering source or surfaced road.
- The lessees will upon request by the District Engineer of the USACE Sacramento District negotiate to perform items of work that support the Army's agricultural leasing objectives in lieu of payment of cash rent. Examples of such work include, but are not limited to, the construction of fencing, gates, and cattle guards; development of water supplies; and range seeding and fertilization.
- The lessees will not discharge waste or effluent from the leased premises in a manner that the discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.
- The lessees will not dispose on the leased premises any materials classified by law or regulation as toxic, hazardous, or restricted.

- The lessees will maintain a clean and hazard free worksite. Cleanup will be daily or more often if directed. All disposable material will be disposed of at a state approved landfill so that the work site is free of debris.
- The lessees will maintain, in a manner satisfactory to the District Engineer of the USACE Sacramento District, all soil and water conservation structures that may be in existence upon the leased premises at the beginning of or that may be constructed by the lessees during the term of the lease, and the lessees will take appropriate measures to prevent or control soil erosion within the leased premises. Any soil erosion occurring outside the leased premises resulting from the activities of the lessees will be corrected by the lessees as directed in writing by the District Engineer.
- The lessees will not knowingly remove or disturb, or cause or permit to be removed or disturbed, any known historical, archeological, architectural or other cultural artifacts, relics, remains, or objects of antiquity. In the event lessees discover such items on the leased premises, the lessees will immediately notify the TEAD Installation Commander and protect the site and the material from further disturbance until the Commander gives clearance to proceed.
- The lessees may use any naturally occurring streams and ponds within the leased lands, with the exception of those that would interfere with the habitat of threatened or endangered species and with the exception of the riparian buffer zone around Ophir Creek and the Johnson Ponds on TEAD South Area.
- The lessees will not conduct grazing on the Army's planned conservation measure sites for range improvement on TEAD as stated in the leases (see Appendices K and L). The lessees, at their own expense, will be responsible for placing and maintaining fences or other structures to keep cattle from entering the conservation sites.

#### **7.11.4 TEAD South Area Agricultural Lease**

The Installation Commander has approved a parcel of TEAD South Area for agricultural purposes. The lease is for five years. The lease holder is responsible to repair and maintain fences surrounding the agricultural parcel; maintain and repair irrigation risers, wheel lines, and piping within the parcel; adjust and ensure sufficient water pressure to support both the agricultural and Johnson Ponds requirements; repair damage caused by incorrect pressure adjustments; cleanout the diversion box as necessary; and ensure the Johnson Ponds are protected during the use and application of herbicides, fertilizers, and any other hazardous substance used during agriculture activities.

#### **7.12 INTEGRATED PEST MANAGEMENT PROGRAM**

TEAD has an IPMP as required per DoDI 4150.07 (*DoD Pest Management Program 29 May 2008*). The IPMP is a framework through which pest management at TEAD North and South Areas is defined and accomplished. The plan identifies elements of the program, including health and environmental safety, pest identification, and pest management, as well as pesticide storage, transportation, use, and disposal. The plan is used as a tool to reduce reliance on pesticides, to enhance environmental protection, and to maximize the use of Integrated Pest Management (IPM) techniques. IPM consists of the judicious use of both chemical and nonchemical control techniques to achieve effective pest management with minimal pesticide use. TEAD's adherence to the plan ensures effective, economical, and environmentally acceptable pest management and will maintain compliance with pertinent laws and regulations. The IPM approach implements four basic IPM principles described below (mechanical/physical, cultural, biological, and chemical), or a combination of these methods, to manage pest species on TEAD North and South Areas.

Although any one of these methods could solve a pest problem, several methods are often used concurrently, particularly if long-term control is needed.

- Mechanical and physical control (physical removal or exclusion of pests)
- Cultural control (altering specific environmental features to make area less suitable for, or attractive to, pests)
- Biological control (use of other organisms, such as natural predators)
- Chemical control (use of pesticides)

Control of invasive and noxious vegetation species is an ongoing initiative at TEAD North and South Areas. A list of invasive species found on the Depot is discussed in Section 5.2 (*Vegetation*), and management measures for certain invasive plants is discussed in Section 7.6.2.3 (*Riparian Habitat Management Measures*). To manage these invasive species, TEAD's IPMP recommends the continued use of IPM practices, especially mechanical and cultural strategies, as an alternative to using chemical pesticides, whenever possible. In addition, TEAD will (per the Measures of Merit listed in DoDI 4150.07) maintain the reduction goal in annual pesticide use by both government and contractor pesticide applicators on DoD installations and all DoD pesticide applicators will be certified. Please refer to the installation's IPMP for detailed information on any specific aspect of pest control operations or pest problems on TEAD North and South Areas. The IPMP is available from the TEAD Environmental Management Office.

### 7.13 OUTDOOR RECREATION

TEAD MWR operates recreational facilities for use by TEAD personnel. These facilities include the Outdoor Recreation Center, fitness center, and an RV park on TEAD North Area's Leaseback Area; however, because of TEAD's mission, outdoor recreation such as hunting, hiking, camping, mountain biking, photography, or nature watching are not permitted on TEAD. Fishing is permitted only at TEAD South Area's Deseret Recreation Area. The Deseret Recreation Area, which includes the Deseret Reservoir, is outside TEAD South Area's Main Gate. TEAD has an MOA with the UDWR to stock the reservoir with rainbow trout. TEAD MWR operates the Deseret Reservoir Recreation Area.

Fishing is permitted generally from May to October with a TEAD MWR permit and Utah state fishing license. TEAD is responsible for maintaining the reservoir water level to sustain the trout and for maintaining the reservoir facilities, including the road to the reservoir, the parking area that has four recreational vehicle hook ups, the fish cleaning station, the picnic area, and the restrooms. Overnight camping is permitted with a TEAD MWR permit (MWR collects the camping fee). No boating or swimming is allowed in the reservoir.

Fishing in the Deseret Reservoir goes back to 1990, when a catch and keep fishing program was put in place in 1990 for rainbow trout. The fishing program experienced a setback in 1991 when it was discovered by the UDWR that TEAD South Area had received a shipment of trout infected with whirling disease. In cooperation with the UDWR, a plan to eradicate the whirling disease was developed and followed. This cooperative program between the UDWR and TEAD South Area solved the whirling disease problem. TEAD South Area restocked the reservoir with rainbow trout and the fishing program resumed in August 1992. The program was discontinued in 1994 because of biopolitical concerns and the potential risks associated with the incinerators of the TOCDF facilities. In 2000, the fishing program was once again started under an MOA with the UDWR, but it was temporarily halted immediately following the events of September 11, 2001 due to security concerns. As these concerns gradually eased in the subsequent months, the fishing program once again resumed and continues to be in place under the current MOA with UDWR.

## 7.14 CULTURAL RESOURCES PROTECTION

Cultural resources is a general overarching term used to identify buildings, structures, objects, sites, and artifacts as they are more specifically defined by the following legislative acts: *historic properties* as defined by the National Historic Preservation Act (NHPA); *cultural items* as defined by the Native American Graves Protection and Repatriation Act (NAGPRA); *archaeological resources* as defined by the Archaeological Resources Protection Act; *sacred sites* as defined in EO 13007 (*Indian Sacred Sites*) to which access is afforded under the American Indian Religious Freedom Act; and *collections and associated records* as defined in 36 CFR 79 (*Curation of Federally Owned and Administered Archaeological Collections*). The primary cultural resources objective is to implement this INRMP in a manner consistent with conservation of cultural resources at TEAD.

### 7.14.1 Cultural and Historic Resources Program

TEAD has an Integrated Cultural Resources Management Plan (ICRMP) for North and South Areas, which outlines the Army's policies, procedures, and responsibilities for meeting cultural resources compliance and management requirements at TEAD. TEAD's ICRMP is being updated, with anticipated completion by the end of 2015. Cultural resources at TEAD are managed by the installation Cultural Resources Manager (CRM) in the Environmental Management Office of the Engineering Services Division. The CRM must be notified regarding any proposed work that might affect significant or potentially significant cultural resources. The CRM will in turn contact the Utah State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation as required.

### 7.14.2 Natural Resources Management Implications

In accordance with the ICRMP, TEAD natural resources personnel will consult and coordinate with the CRM anytime an activity or project is planned that might have the potential to impact historic or cultural resources. For example, if modifications to structures or soil disturbance are to take place, the CRM can determine whether potentially eligible resources might be affected, and whether or not a cultural resources survey is required. The purpose of the survey is to determine whether historic or cultural resources would be adversely affected by the proposed action. To comply with the NHPA (Section 106) and the Archeological Resources Protection Act, the Utah SHPO will be contacted by the CRM to determine whether further action is necessary. The action might require the completion of a Phase I archaeological survey, including background research and archaeological excavations or surface surveys. If archaeological sites considered to be potentially National Register of Historic Places (NRHP)-eligible are found, further excavation work (Phase II and/or Phase III) might be required by the Utah SHPO.

Similarly, historic buildings and structures are subject to NHPA Section 106, and those evaluated as eligible for the NRHP must be taken into account in project planning. Information regarding the Historic American Buildings Survey (HABS) and the Historic American Engineering Record (HAER) is available via internet at this Library of Congress address: [http://memory.loc.gov/ammem/collections/habs\\_haer/](http://memory.loc.gov/ammem/collections/habs_haer/). The NPS HABS/HAER internet address is: [www.cr.nps.gov/habshaer/haer](http://www.cr.nps.gov/habshaer/haer). Several TEAD resources have been documented in the HABS records.

To comply with NAGPRA and the American Religious Freedom Act, federally listed tribes or groups must be notified early in the process. A list of tribes or groups in Utah is available from the NPS or the Utah SHPO. In addition, the NPS, including NAGPRA services, can be accessed on

the Internet at <http://www.nps.gov/history/nagpra/>. This address is the NPS site index, which has links to NAGPRA, HABS/HAER, NRHP, and other sites.

Please refer to the installation's ICRMP for detailed information on cultural resources on TEAD and the cultural resource program goals, objectives, and management measures. The ICRMP is available from the TEAD Environmental Management Office.

## **7.15 PUBLIC OUTREACH**

The Sikes Act requires that military installations provide for public awareness of natural resource use to the extent that public access is appropriate and consistent with the military mission. Although increasing community involvement in activities at TEAD could serve to increase public awareness of the natural resources on the installation, the military mission requires that public access be controlled on TEAD North and South Areas. In consideration of the mission, the opportunity to involve community members in activities on the installation is limited. TEAD South Area has the Deseret Reservoir Recreation Area, where the public has access to fishing, camping, and picnicking facilities (a Utah state fishing license and TEAD MWR fishing permit are required to fish at the facility). Civilian and contractor personnel were invited to participate in the TEAD South Area Ophir Creek and Johnson Ponds habitat restoration, and volunteer students from the Utah Valley University worked with TEAD South Area Environmental Management Office on the burrowing owl habitat enhancement project.

### **7.15.1 Organizations Involved in Public Affairs and Outreach for Natural Resources Programs**

The TEAD Environmental Management Office would initiate and implement any outreach for natural resources awareness and programs. The TEAD MWR handles the public outreach for the Deseret Reservoir Recreation Area.

### **7.15.2 Brochures, Posters, Videos and Other Natural Resources Program Educational Materials**

TEAD MWR annually publishes a poster for the Deseret Reservoir Recreation Area with information on the opening and closing dates, cost of fishing permits and camping sites, and where to purchase permits. TEAD South Area has produced an informational poster on habitat improvement projects including the sagebrush chain harrow mosaics project and a poster about the Johnson Ponds and least chub habitat restoration. See Appendix N for copies of the posters. TEAD South Area also has video of the least chub and the burrowing owls.

## **7.16 SUMMARY OF MANAGEMENT MEASURES**

The overarching goal of the TEAD INRMP is to ensure that the natural resources are managed in such a way as to maintain ecosystem viability and ensure the sustainability of military lands. The management measures, summarized in Table 7-1, in this INRMP have been developed to successfully achieve the stated objectives necessary to meet this goal.

**Table 7-1.  
Summary of Management Measures**

Category	Sub-Category	Location	Management Measures
<b>Fish and Wildlife Management</b>	<b>Non-Game Fish and Wildlife Management</b>	<b>TEAD North Area</b>	<ul style="list-style-type: none"> <li>• Maintain and enhance native vegetative cover.</li> <li>• Maintain and improve stands of trees, preserve snags and trees with natural cavities, and when replanting is necessary, plant only native trees and shrubs.</li> <li>• Monitor predators (i.e., coyotes).</li> <li>• Maintain and protect existing wildlife species.</li> <li>• Update PLS.</li> <li>• Continue sand excavation in Field 2 (previously called Field 5) only during the non-nesting season to avoid disturbing cliff swallows nesting at the sand pit.</li> <li>• Continue to apply for permits for bird takes.</li> <li>• Conduct migratory bird survey.</li> <li>• Conduct activities (e.g., tree or shrub removal, ground disturbing activities) during the non-nesting season (approximately September 1 – April 30) to minimize or avoid impacts on migratory birds protected under the Migratory Bird Treaty Act and meet responsibilities under EO 13186.</li> <li>• Install raptor safety perches on existing power poles.</li> <li>• Install water guzzlers in the range areas, only in instances where the historic water resource has been reduced or diverted for other purposes and where at-risk native wildlife will not be negatively impacted.</li> </ul>
		<b>TEAD South Area</b>	<ul style="list-style-type: none"> <li>• Continue supplementary seeding and replanting program.</li> <li>• Update PLS for TEAD South Area. The last PLS was done in 1999.</li> <li>• Continue to establish (such as through a selective seeding program) and repair (if damaged) protective buffers around the surface water bodies.</li> <li>• Conduct a rapid bioassessment survey for fish and aquatic biota in surface water bodies, including wetlands.</li> <li>• Perform an amphibian survey in aquatic habitats in the spring when amphibian species are observable.</li> <li>• Continue to upgrade power poles by adding conductor covers and installing raptor safety perches.</li> <li>• Continue to apply for permits for bird takes.</li> <li>• Conduct migratory bird survey.</li> <li>• Conduct activities (e.g., tree or shrub removal, ground disturbing activities) during the non-nesting season (approximately September 1 – April 30) to minimize or avoid impacts on migratory birds protected under the Migratory Bird Treaty Act and meet responsibilities under EO 13186.</li> <li>• Continue the burrowing owl nesting program, with maintenance of nesting boxes in the spring and tracking of owls as feasible. Continue using volunteers from Utah Valley University as available to support the program.</li> <li>• Continue Johnson Ponds least chub program.</li> <li>• Install additional water guzzlers, only in instances where the historic water resource has been reduced or diverted for other purposes and where at-risk native wildlife will not be negatively impacted.</li> <li>• Encourage researchers to conduct bird and other wildlife surveys.</li> </ul>



Table 7-1. (continued)

Category	Sub-Category	Location	Management Measures
	<b>Game Species, Fishing, and Trapping</b>	<b>TEAD North Area</b>	<ul style="list-style-type: none"> <li>Continue the supplementary seeding program to restore habitats.</li> <li>Assess trapping on a case-by-case basis and remove animals as necessary in coordination with UDWR and a licensed trapper, should furbearer species such as coyotes, raccoons, or skunks become a nuisance.</li> </ul>
		<b>TEAD South Area</b>	<ul style="list-style-type: none"> <li>Continue the supplementary seeding program and the chain harrow mosaics project to restore habitats.</li> <li>Maintain the MOA between TEAD and UDWR for stocking Deseret Reservoir with rainbow trout.</li> <li>Assess trapping on a case-by-case basis and remove animals as necessary in coordination with UDWR and a licensed trapper, should furbearer species such as coyotes, raccoons, or skunks become a nuisance.</li> </ul>
	<b>Enforcement of Fish and Wildlife Laws</b>	<b>TEAD North and South Areas</b>	<ul style="list-style-type: none"> <li>Develop a policy for TEAD's General Regulations 1-1 to address the taking of wildlife on TEAD.</li> </ul>
<b>Threatened and Endangered Species Management</b>		<b>TEAD North and South Areas</b>	<ul style="list-style-type: none"> <li>Update the PLS for TEAD North and South Areas (the North Area PLS was last done in 2000 and the South Area PLS was in 1999), including the identification of federal- and state-listed endangered and threatened species that might occur on TEAD. Should any listed species be found to occur on the installation, prepare an Endangered Species Management Plan and implement the applicable management measures.</li> <li>Coordinate with the USFWS and UDWR to receive updated information concerning recent sightings of sensitive species in the general vicinity of TEAD. TEAD will routinely communicate with these agencies to determine if additional surveys will be necessary.</li> <li>Protect rare and unique plant species identified as state or locally rare, but without legal protection status, to the extent practical without restrictions on operations.</li> <li>Continue cooperative efforts with UDWR to survey the aquatic habitat at TEAD South Area for the Bonneville cutthroat trout and Columbia spotted frog. If no populations of spotted frog are found during survey efforts, further studies will be performed to reintroduce this species into TEAD South Area. Additional NEPA might be required, and it would be completed when the project details (e.g., funding availability to do the project, methods to be used) are decided upon. At this time, there are no plans to reintroduce the Bonneville cutthroat trout.</li> </ul>
<b>Water Resource Management</b>	<b>Ground Water Management</b>	<b>TEAD North Area</b>	<ul style="list-style-type: none"> <li>Continue the installation's ground water monitoring program.</li> <li>Apply pollution prevention and watershed protection measures, such as nonpoint source pollution controls, to ensure that pollutants do not convey to washes, ground water systems, or off-site streams during periods of flow.</li> </ul>

Table 7-1. (continued)

Category	Sub-Category	Location	Management Measures
	<b>Ground Water Management</b>	<b>TEAD South Area</b>	<ul style="list-style-type: none"> <li>• Continue to monitor ground water at the wastewater treatment facility to ensure that the bentonite lining continues to function as designed and that no ground water degradation occurs as a result of operating the facility.</li> <li>• Continue the installation's ground water monitoring program. Where degradation of natural ground water quality is determined to be occurring, actions will be taken to identify the source of contamination and to clean up the source and any contaminated ground water.</li> <li>• Maintain the spill prevention and cleanup program to address potential ground water contamination and methods to ensure minimal impacts associated with potential spills. Depot personnel will be trained and equipment maintained to provide a quick response to any spill in order to minimize any potential environmental damage.</li> </ul>
	<b>Surface Water Management</b>	<b>TEAD South Area</b>	<ul style="list-style-type: none"> <li>• Monitor TEAD South Area water bodies and collect in-depth baseline water quality data.</li> <li>• Control pollutant inputs to surface water bodies through BMPs.</li> </ul>
	<b>Riparian Habitat Management</b>	<b>TEAD South Area</b>	<ul style="list-style-type: none"> <li>• Apply RBPs to collect comprehensive information such as channel width, channel depth, stream velocity, stream channel material, bank material, stream bank hydrology (low flow and high flow), and stream bank vegetation.</li> <li>• Maintain riparian areas.</li> <li>• Maintain species diversity.</li> <li>• Protect riparian habitat by implementing BMPs to control nonpoint source pollution; limit activities within 100 feet of streams where feasible; and restore degraded riparian habitats.</li> <li>• Control invasive species.</li> <li>• Continue to monitor the presence of salt cedar.</li> <li>• Monitor habitat conditions.</li> </ul>
	<b>Aquatic Habitat Management</b>	<b>TEAD South Area</b>	<ul style="list-style-type: none"> <li>• Conduct aquatic habitat assessments, including wetlands.</li> <li>• Maintain species diversity.</li> <li>• Control pollutant inputs to surface water bodies.</li> <li>• Monitor habitat conditions.</li> </ul>
<b>Wetland Management</b>		<b>TEAD South Area</b>	<ul style="list-style-type: none"> <li>• Develop wetland GIS coverage.</li> <li>• Develop a wetland inventory and assessment database.</li> <li>• Maintain a minimum of a 100-foot buffer around wetlands where feasible.</li> <li>• Pursue management and monitoring procedures to ensure maintenance of water quality in the wetlands.</li> <li>• Review operations and maintenance programs that potentially affect wetlands, and develop procedures and guidelines to avoid the loss of wetland functions.</li> <li>• Evaluate general vegetative characteristics of wetlands to determine where potential future control of invasive species could result in measurable habitat value enhancement.</li> </ul>

Table 7-1. (continued)

Category	Sub-Category	Location	Management Measures
Soil Management		TEAD North and South Areas	<ul style="list-style-type: none"> <li>• Conduct routine soil monitoring to identify eroded areas seasonally and/or following heavy rainstorms.</li> <li>• Implement reseeding and revegetation measures to reduce soil erosion in damaged areas. Consult with UDWR to determine a seeding mix that would result in plants good for terrestrial and wildlife habitat.</li> <li>• Continue per the grazing leases the proper range management practices to protect soil and its vegetative cover from erosion.</li> <li>• Limit traffic in vegetated areas, especially where the vegetation is crucial to stabilizing soils from wind erosion.</li> <li>• Use soil conservation measures (e.g., wind breaks, diversions, check dams) to control erosion, sedimentation, and dust when the exposure of soils is necessary to accomplish mission objectives.</li> <li>• Maintain protective vegetative covers over all compatible areas, especially on steeper slopes.</li> <li>• Maintain roads and fire lanes by grading in a manner to minimize soil erosion.</li> </ul>
Terrestrial Habitat Management		TEAD North Area	<ul style="list-style-type: none"> <li>• Restore habitat of eroded and disturbed vegetation areas. All disturbed areas will be reseeded with native vegetation to prevent weed invasion.</li> <li>• Limit traffic in vegetated areas, especially where the vegetation is crucial to stabilizing soils from wind erosion.</li> <li>• Continue control of invasive species in accordance with TEAD's IPMP.</li> <li>• Research possible installation of a vehicle and railcar washing station to prevent spreading of invasive species on- and off-post. Additional NEPA might be required, and it would be completed when the project details (e.g., funding availability to do the project, location of wash station) are decided upon.</li> <li>• Implement erosion and sediment controls where appropriate.</li> <li>• Update PLS vegetation survey.</li> <li>• Continue proper range management practices per the grazing lease.</li> <li>• Conduct rangeland health assessments and productivity surveys on a yearly basis before grazing begins to determine carrying capacity for the grazing season.</li> </ul>

**Table 7-1. (continued)**

Category	Sub-Category	Location	Management Measures
		<b>TEAD South Area</b>	<ul style="list-style-type: none"> <li>• Restore native habitat in poor quality vegetated areas. All disturbed areas will be reseeded with native vegetation to prevent weed invasion.</li> <li>• Limit traffic in vegetated areas, especially where the vegetation is crucial to stabilizing soils from wind erosion.</li> <li>• Continue control of invasive species in accordance with TEAD's IPMP.</li> <li>• Research viability of reopening the vehicle washing station to prevent spreading of invasive species on- and off-post. Additional NEPA might be required, and it would be completed when the project details (e.g., funding availability to do the project) are decided upon.</li> <li>• Update PLS vegetation survey.</li> <li>• Continue proper range management practices per the grazing lease.</li> <li>• Conduct rangeland health assessments and productivity surveys on a yearly basis before grazing begins to determine carrying capacity for the grazing season.</li> <li>• Establish an agricultural lease with proper management practices to protect soil from nutrient depletion.</li> </ul>
<b>Fire Management</b>		<b>TEAD North and South Areas</b>	<ul style="list-style-type: none"> <li>• Continue to use firebreaks consisting of disked or graded fire lanes placed at strategic points on the Depot to prevent a brush or grass fire from spreading to administration and operation areas.</li> <li>• Maintain firebreaks. Firebreaks will be graded in early spring before cheatgrass has a chance to set seed.</li> <li>• Continue to use gravel roadways as fire lanes to prevent the spread of wildfires.</li> <li>• Continue to use the grazing programs as a method to control the accumulation of fire fuels on the grazing lease acreage.</li> <li>• Mow plant litter as preventative fire maintenance during years of high vegetation growth that results in excessive amounts of wildfire fuel.</li> <li>• Continue following fire management SOPs:             <ul style="list-style-type: none"> <li>○ In the event of a wildland fire, Fire and Emergency Services personnel will respond in accordance with Fire and Emergency Services policies, and will use acceptable firefighting tactics and strategy in the suppression of wildland fires.</li> <li>○ The first arriving supervisor at the scene of the fire will evaluate the situation and immediately implement proper fireground procedures using available resources.</li> <li>○ Request mutual aid assistance from the local area, if needed. TEAD has Mutual Aid Agreements with Tooele City, Grantsville City, Stockton City, North Tooele County, and Dugway Proving Ground.</li> </ul> </li> </ul>

Table 7-1. (continued)

Category	Sub-Category	Location	Management Measures
Grazing and Agricultural Lease Management	Grazing Lease Management	TEAD North and South Areas	<ul style="list-style-type: none"> <li>• Limit grazing to levels that do not adversely affect the overall quality of the rangelands.</li> <li>• Coordinate with NRCS to continue the annual range vegetation surveys to monitor vegetative cover and to evaluate rangeland carrying capacity. The acceptable and sustainable AUMs for each tract as stated in the leases will be determined based on the results of the range vegetation surveys.</li> <li>• Grazing will generally be from 1 November through 31 May of each lease year for the North Area, and from 1 October to 15 June of each lease year for the South Area.</li> <li>• Distribute salt blocks and feed supplements throughout the premises and move as necessary to promote an optimal distribution of livestock. Distribute livestock to achieve uniform range utilization, minimize sacrifice areas, and reduce the overall fire hazard.</li> <li>• Do not place salt blocks or feed supplements within one-quarter mile of any watering source or surfaced road.</li> <li>• The lessees will upon request by the USACE Sacramento District negotiate to perform items of work that support the Army's agricultural leasing objectives (e.g., construction of fencing, gates, and cattle guards; development of water supplies; and range seeding and fertilization) in lieu of payment of cash rent.</li> <li>• The lessees will not discharge waste or effluent from the leased premises in a manner that the discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.</li> <li>• The lessees will not dispose on the leased premises any materials classified by law or regulation as toxic, hazardous, or restricted.</li> <li>• The lessees will maintain a clean and hazard free worksite.</li> <li>• The lessees will maintain all soil and water conservation structures and will take appropriate measures to prevent or control soil erosion within the leased premises.</li> <li>• The lessees will not knowingly remove or disturb, or cause or permit to be removed or disturbed, any known historical, archeological, architectural or other cultural artifacts, relics, remains, or objects of antiquity. In the event lessees discover such items on the leased premises, the lessees will immediately notify the TEAD Installation Commander and protect the site and the material from further disturbance until the Commander gives clearance to proceed.</li> <li>• The lessees may use any naturally occurring streams and ponds within the leased lands, with the exception of those that would interfere with the habitat of threatened or endangered species and with the exception of the riparian buffer zone around Ophir Creek and the Johnson Ponds on TEAD South Area.</li> <li>• The lessees will not conduct grazing on the Army's planned conservation measure sites for range improvement on TEAD as stated in the leases.</li> </ul>
	Agricultural Lease Management	TEAD South Area	<ul style="list-style-type: none"> <li>• This INRMP will be updated to include a copy of the agricultural lease and lease management measures once the agricultural lease is implemented.</li> </ul>

**Table 7-1. (continued)**

<b>Category</b>	<b>Sub-Category</b>	<b>Location</b>	<b>Management Measures</b>
<b>Pest Management Measures</b>		<b>TEAD North and South Areas</b>	<ul style="list-style-type: none"> <li>• Continue to comply with TEAD's IPMP.</li> </ul>
<b>Cultural Resource Management Measures</b>		<b>TEAD North and South Areas</b>	<ul style="list-style-type: none"> <li>• Continue to comply with TEAD's ICRMP.</li> </ul>

## SECTION 8.0 MANAGEMENT GOALS AND OBJECTIVES

The emphasis of an INRMP is to achieve certain goals for maintaining and improving the natural environment at an installation. This chapter lists the goals and objectives for natural resources management on the installation. Preparing these goals and objectives involved the review and analysis of the current conditions of the existing resources as detailed in Section 5 and natural resource management practices as detailed in Section 7. The review process included interviewing TEAD North and South Area personnel; collecting and reviewing existing environmental documentation; and conducting field reconnaissance of the TEAD North and South Areas.

The relationship between goals, objectives, and projects is as follows:

**Goals.** Goals are the primary focal points for the implementation of the INRMP over the five years covered by the plan (this INRMP is for 2015 – 2020). A goal reflects the values of the installation by expressing a vision of a desired condition for the installation's natural resources in the foreseeable future. Each goal is supported by one or more objectives.

The overarching goal established by TEAD for natural resources management program is to maintain ecosystem viability and ensure the sustainability of desired military mission activities. The five-year goals are presented in the specific resource subsections below.

**Objectives.** Each goal is supported by objectives that indicate a management initiative or strategy that will be used to achieve the stated goal. Each objective is supported by one or more projects.

**Projects.** Projects are the individual component actions required to achieve an objective. Project statements describe the specific methods and management measures that will be used to achieve the objective supported. Projects are actions that become line items in the proposed budgets for INRMP implementation. All projects identified in this INRMP have been placed into three priority-based categories: high-priority projects, medium-priority projects, and low-priority projects (see Table 9-1). The prioritization of the projects is based on need, and need is based on the importance of a project in moving the natural resources management program toward successfully achieving its goal.

The goals in this section are presented in the order the topics are presented in Section 7, not in order of importance. Objectives are listed below each goal and are divided, if needed, between TEAD North and South Areas, with the associated projects following the objectives.

### GOAL 1: RESTORE AND MAINTAIN INDIGENOUS FISH AND WILDLIFE SPECIES

#### OBJECTIVE 1.1: Identify Fish and Wildlife Species that Inhabit TEAD

##### TEAD North and South Areas

**PROJECT 1.1.1:** Update PLS.

#### OBJECTIVE 1.2: Restore or Enhance Species Habitat

##### TEAD North Area

**PROJECT 1.2.1:** Become a member of Partners in Flight.

**PROJECT 1.2.2:** Install raptor safety perches on power poles.

**PROJECT 1.2.3:** Install water guzzlers, only in instances where the historic water resource has been reduced or diverted for other purposes and where at-risk native wildlife will not be negatively impacted.

**TEAD South Area**

**PROJECT 1.2.1:** Become a member of Partners in Flight.

**PROJECT 1.2.2:** Continue to install raptor safety perches on power poles.

**PROJECT 1.2.3:** Install additional water guzzlers, only in instances where the historic water resource has been reduced or diverted for other purposes and where at-risk native wildlife will not be negatively impacted.

**PROJECT 1.2.4:** Continue to maintain the burrowing owl nesting program.

**PROJECT 1.2.5:** Continue to maintain Johnson Ponds least chub program.

**PROJECT 1.2.6:** Maintain MOA with UDWR to continue stocking Deseret Reservoir with rainbow trout.

**GOAL 2: IDENTIFY AND PRESERVE THREATENED AND ENDANGERED SPECIES FOUND ON TEAD** (Note: There are no known threatened, endangered, or rare species inhabiting TEAD North or South Areas.)

**OBJECTIVE 2.1: Identify Threatened and Endangered Species**

**TEAD North and South Areas**

**PROJECT 2.1.1:** Update PLS, including surveying on TEAD South Area for Bonneville cutthroat trout and Columbia spotted frog.

**GOAL 3: MAINTAIN, PROTECT, AND RESTORE SURFACE AND GROUND WATER AND AQUATIC, RIPARIAN, AND WETLAND HABITATS**

**OBJECTIVE 3.1: Identify and Restore Degraded Aquatic Habitats, Protect Aquatic and Riparian Habitats, and Prevent Degradation of Water Quality**

**TEAD South Area**

**PROJECT 3.1.1:** Continue to monitor and control invasive plant species in riparian areas, including salt cedar, teasel, bull thistle, and the recently identified Phragmites, through the most appropriate and effective mechanical/physical or chemical IPM method per TEAD's IPMP.

**GOAL 4: PROTECT SOIL RESOURCES FROM SOIL EROSION**

**OBJECTIVE 4.1: Identify Eroded Soils**

**TEAD North and South Areas**

**PROJECT 4.1.1:** Conduct routine soil monitoring seasonally and/or following heavy rainstorms to identify eroded areas.

**GOAL 5: RESTORE AND MAINTAIN TERRESTRIAL HABITAT THROUGH IMPROVING VEGETATION HEALTH AND DIVERSITY, FIRE MANAGEMENT, AND GRAZING AND AGRICULTURAL LEASES**

**OBJECTIVE 5.1: Manage Rangeland for Biodiversity**

**TEAD North Area**

**PROJECT 5.1.1:** Continue the grazing lease.



**TEAD South Area**

**PROJECT 5.1.1:** Continue the grazing lease.

**PROJECT 5.1.2:** Implement an agricultural lease using proper management practices to protect soil from nutrient depletion.

**OBJECTIVE 5.2: Protect Natural Areas from Invasive Species, Pests, Disease, and Wildfire**

**TEAD North and South Areas**

**PROJECT 5.2.1:** Install a vehicle washing station on TEAD North Area and reopen the washing station on TEAD South Area to assist in preventing the spread of invasive species on- and off-post.

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## **SECTION 9.0 IMPLEMENTATION**

The Office of the Secretary of Defense considers funding for preparing and implementing this INRMP, as required by the Sikes Act and the associated NEPA documentation, to be a high priority. However, the economic reality is that not all the projects and programs identified in this INRMP will receive immediate funding. The programs and projects identified in this INRMP are shown in Table 9-1 (at the end of this section) and are organized by the goals listed in Section 8. The projects have been placed into three priority-based categories: high priority, medium priority, and low priority. The prioritization of the projects is based on need, and need is based on the importance of a project in moving the natural resources management program toward successfully achieving its goal.

Successful implementation of this INRMP requires an organizational structure that identifies roles and responsibilities, human resources, prioritization of projects and program objectives, funding, command support, and constant review of the progress made in program implementation. This section describes those elements of the program.

### **9.1 FUNDING**

TEAD, AMC, USFWS, and UDNR recognize that year-to-year congressional appropriations for the implementation of the Army's mission and changes in the TEAD mission may require changes in priorities. If these priorities require deferral, redirection, or cancellation of high priority projects, TEAD, in consultation with AMC, will determine which projects or plans should be implemented first. Projects that require funding will proceed only after funding is obtained. Nothing in this plan can be interpreted to violate the Anti-Deficiency Act. In every case, TEAD and AMC will ensure that constraints on the military mission are minimized and avoided wherever possible.

It is understood that congressional budget constraints will require increased implementation by in-house staff. However, current government-wide goals of reducing the number of federal employees indicate that the employment of additional permanent, full-time, natural resources professionals and paraprofessionals will be severely limited during the life of this plan. It is therefore assumed that some of the professional work required by this plan will be accomplished by contract; through partnerships, including borrowed labor; with universities and other public research institutions; or by limited term or temporary employees.

The natural resources management program at TEAD will receive financial support from appropriated funds (i.e., Operations and Maintenance) and funded reimbursements (i.e., grazing and agricultural ease programs).

The grazing program at TEAD generates revenue by leasing tracts of land to cattle ranchers. The ranchers submit sealed bids for the available tracts of land, and the lease goes to the highest bidder for each tract. The bidding process and the collection of funds from the ranchers is administered by USACE, Sacramento District. The proceeds, which are deposited into the DoD Agriculture/Grazing Account, are to be used for administration and operational expenses of the grazing and agricultural leases and initiation, improvement, and perpetuation of agricultural leases (AR 200-1, Chapter 4-3(d)(8a-q)). The annual budget requirements for the grazing and agricultural lease programs are submitted to AMC.

The revenues from the grazing program are used to fund projects directly related to maintaining and improving the tracts under lease for grazing. The costs of these projects are typically equivalent to the revenue generated by the program. The list of projects that need to be accomplished are determined on a year-by-year basis for each upcoming year. To accomplish

these projects, TEAD provides the scope of work and cost estimate to the USACE, Sacramento District and the District prepares a supplemental agreement to the lease.

The Deseret Reservoir Recreation Area is supported by user fees collected for fishing and camping at the recreation area.

Many projects are done with limited resources using in-house labor and recycled materials left over from other projects. Projects that are considered duties of the TEAD Natural Resources Manager are covered by salary and have minimal to no cost. Some natural resources activities have been supported by volunteer efforts on the part of TEAD personnel and university students. These volunteer hours required no funding. In-house staff and volunteer efforts have contributed to the restoration effort on a section of Ophir Creek (bank restoration and sediment removal), restoration of Johnson Ponds, and the burrowing owl nesting program.

A potential funding source for projects such as the raptor safety perches is the DoD Legacy Resource Management Program. The DoD Legacy Resource Management Program provided funding for the TEAD South Area burrowing owl nesting program.

TEAD has a goal to become a member of Partners in Flight—a cooperative effort involving partnerships among federal, state and local government agencies, philanthropic foundations, professional organizations, conservation groups, industry, the academic community, and private individuals. The central premise of Partners in Flight has been that the resources of public and private organizations in the Western Hemisphere must be combined, coordinated, and increased in order to achieve success in conserving bird populations in this hemisphere. Partners in Flight could be a potential funding source for projects such as raptor safety perches.

The projects identified in this INRMP are classified into two categories: recurring and nonrecurring requirements. Nonrecurring requirements are further classified as current compliance, maintenance requirements, and enhancement actions beyond compliance. *Must fund* requirements are those projects and activities in the recurring and current compliance categories.

Detailed explanations of the funding categories are in Enclosure 4 to DoDI 4715.03, *Natural Resources Conservation Program*, March 18, 2011. These categories are descriptively summarized as the following:

- Recurring Natural Resources Conservation Management Requirements: Administrative, personnel, and other costs associated with managing the DoD Natural Resources Conservation Program that are necessary to meet applicable compliance requirements in federal and state laws, regulations, EOs, and DoD policies, or in direct support of the military mission, with priority given to recurring natural resources conservation management requirements associated with the operation of facilities, installations, and deployed weapons systems.
- Nonrecurring Natural Resources Conservation Management Requirements:
  - Current Compliance: Includes installation projects and activities to support (1) installations out of compliance (e.g., received an enforcement action from an authorized federal or state agency or local authority), (2) signed compliance agreement or consent order, (3) meeting requirements with applicable federal or state laws, regulations, standards, EOs, or DoD policies, (4) immediate and essential maintenance of operational integrity or military mission sustainment, and (5) projects or activities that will be out of compliance if not implemented in the program year.
  - Maintenance Requirements: Includes those projects and activities needed to meet an established deadline beyond the program year and maintain compliance. Examples include (1) compliance with future deadlines, (2) conservation, GIS mapping, and data

management to comply with federal, state, and local regulations, EOs, and DoD policy, (3) efforts undertaken in accordance with non-deadline-specific compliance requirements of leadership initiatives, (4) wetlands enhancement to minimize wetlands loss and enhance existing degraded wetlands, and (5) conservation recommendations in biological opinions issued pursuant to the ESA.

- Enhancement Actions beyond Compliance: Includes those projects and activities that enhance conservation resources or the integrity of the installation mission, or are needed to address overall environmental goals and objectives but are not specifically required by law, regulation, or EO, and are not of an immediate nature. Examples include (1) community outreach activities, (2) educational or public awareness projects, (3) restoration or enhancement of natural resources when no specific compliance requirement dictates a course or timing of action, and (4) management and execution of volunteer and partnership programs.

Must fund projects and actions include those required to (1) meet the USFWS special management criteria for threatened and endangered species management, (2) provide for qualified natural resources personnel, and (3) prevent resource loss or degradation (e.g., soil loss, other maintenance activities) that could affect military readiness.

Not all projects listed in an INRMP are must funds. INRMPs include valid maintenance requirements and enhancement actions beyond compliance.

## 9.2 NATURAL RESOURCES MANAGEMENT STAFFING

The natural resources management staff at TEAD is in the Environmental Management Office, which falls under the Engineering Services Division in the Garrison Operations Directorate. There is one natural resource manager at TEAD North Area and one at TEAD South Area. These employees oversee the programs identified in this INRMP and their implementation. This staff will also oversee the projects identified in this INRMP.

Implementing some projects discussed in the INRMP will require active outside assistance. Outside assistance might come from state and federal agencies, universities, and contractors. The use of these resources is the most efficient and cost-effective method for temporarily acquiring expertise. Some parties will be reimbursed for their assistance according to the terms in MOAs, MOUs, and contractual agreements, whereas others will supply their assistance according to cooperative agreements and volunteer efforts with TEAD.

## 9.3 ANNUAL COORDINATION REQUIREMENTS

Section 101(a)(2) of the Sikes Act states that the INRMP must reflect the mutual agreement of the USFWS and state “concerning conservation, protection, and management of fish and wildlife resources.” In response, the DoD issued the following guidance (DUSD memorandum, October 10, 2002):

“Each DOD installation shall establish and maintain regular communications with the appropriate USFWS and State fish and wildlife agency offices to address issues concerning natural resources management that are not addressed in the INRMP. At a minimum, this shall include annual coordination with all cooperating offices.”

The purpose of this coordination is to facilitate annual review by the USFWS and the UDNR. In accordance with DoD guidance, these annual reviews must verify that

- Current information on all conservation metrics is available.

- All must fund projects and activities have been budgeted for and implementation is on schedule.
- All required trained natural resources positions are filled or are in the process of being filled.
- Projects and activities for the upcoming year have been identified and included in the INRMP. An updated project list does not necessitate revising the INRMP.
- All required coordination has occurred.
- All significant changes to the installation's mission requirements or its natural resources have been identified.

This INRMP was reviewed by the USFWS Utah Field Office. Their July 2015 comment letter and TEAD's responses to those comments are in Appendix U.

#### **9.4 MONITORING INRMP IMPLEMENTATION**

According to DoD guidance, implementation anticipates the execution of all must-fund projects and activities in accordance with specific timeframes identified in the INRMP.

An INRMP is considered to be implemented if an installation

- Actively requests, receives, and uses funds for must fund projects and activities.
- Ensures that sufficient numbers of professionally trained natural resources management personnel are available to perform the tasks required by the INRMP.
- Coordinates annually with all cooperating offices.
- Documents specific INRMP actions accomplished each year.

**Table 9-1.  
Summary of INRMP Projects**

<b>GOAL AND PROJECT NAMES</b>	<b>PRIORITY</b>	<b>PROJECTED COST</b>	<b>IMPLEMENTATION TIME FRAME</b>	<b>RESPONSIBLE OFFICE</b>
<b>GOAL 1: RESTORE AND MAINTAIN INDIGENOUS FISH AND WILDLIFE SPECIES</b>				
<b>TEAD North Area</b>				
<i>Update PLS</i>	Low	\$50,000	2015 – 2020	Environmental Management Office + Contractor
<i>Become a member of Partners in Flight</i>	High	\$0	2015 – 2020	Environmental Management Office
<i>Install raptor safety perches on power poles</i>	High	\$10,000	2015 – 2020	Environmental Management Office
<i>Install water guzzlers (only in instances where the historic water resource has been reduced or diverted for other purposes and where at-risk native wildlife will not be negatively impacted)</i>	Medium	\$4,000 per guzzler	2015 – 2020	Environmental Management Office
<b>TEAD South Area</b>				
<i>Update PLS</i>	Low	\$50,000	2015 – 2020	Environmental Management Office + Contractor
<i>Become a member of Partners in Flight</i>	High	\$0	2015 – 2020	Environmental Management Office
<i>Install additional raptor safety perches on power poles</i>	High	\$10,000	2015 – 2020	Environmental Management Office
<i>Install additional water guzzlers (only in instances where the historic water resource has been reduced or diverted for other purposes and where at-risk native wildlife will not be negatively impacted)</i>	Medium	\$4,000 per guzzler	2015 – 2020	Environmental Management Office
<i>Maintain Burrowing Owl nesting program</i>	High	\$5,000 per season	Ongoing	Environmental Management Office + volunteers
<i>Maintain Johnson Ponds least chub program</i>	High	\$1,000 per season	Ongoing	Environmental Management Office + USFWS + UDWR
<i>Maintain MOA with UDWR for stocking Deseret Reservoir with rainbow trout</i>	High	\$500 per season	Annually	Environmental Management Office + MWR + UDWR

Table 9-1. (continued)

GOAL AND PROJECT NAMES	PRIORITY	PROJECTED COST	IMPLEMENTATION TIME FRAME	RESPONSIBLE OFFICE
<b>GOAL 2: IDENTIFY AND PRESERVE THREATENED AND ENDANGERED SPECIES FOUND ON TEAD</b>				
<b>TEAD North and South Areas</b>				
<i>Update PLS (including surveying TEAD South Area for Bonneville cutthroat trout and Columbia spotted frog)</i>	Low	Included in cost listed above for TEAD North Area PLS.	2015 – 2020	Environmental Management Office + UDWR + Contractor
<b>GOAL 3: MAINTAIN, PROTECT, AND RESTORE SURFACE AND GROUND WATER AND AQUATIC, RIPARIAN, AND WETLAND HABITATS</b>				
<b>TEAD South Area</b>				
<i>Continue to monitor and control invasive plant species in riparian areas</i>	High	\$20,000 per year	Ongoing	Environmental Management Office
<b>GOAL 4: PROTECT SOIL RESOURCES FROM SOIL EROSION</b>				
<b>TEAD North and South Areas</b>				
<i>Conduct routine soil monitoring seasonally and/or following heavy rainstorms to identify eroded areas</i>	High	\$7,500 per year	Ongoing	Environmental Management Office
<b>GOAL 5: RESTORE AND MAINTAIN TERRESTRIAL HABITAT THROUGH IMPROVING VEGETATION HEALTH AND DIVERSITY, FIRE MANAGEMENT, AND GRAZING AND AGRICULTURAL LEASES</b>				
<b>TEAD North Area</b>				
<i>Continue the grazing lease.</i>	High	NA <sup>a</sup>	Annually	Environmental Management Office + USACE Sacramento District + lessee
<i>Install vehicle washing station.</i>	Medium	\$250,000	2015 – 2020	Environmental Management Office
<b>TEAD South Area</b>				
<i>Continue the grazing lease.</i>	High	NA <sup>a</sup>	Annually	Environmental Management Office + USACE Sacramento District + lessee
<i>Implement an agricultural lease</i>	High	NA <sup>a</sup>	Annually	Environmental Management Office + USACE Sacramento District + lessee
<i>Install vehicle washing station</i>	Medium	\$250,000	2015 – 2020	Environmental Management Office

## Notes:

a. The grazing and agricultural lease programs at TEAD generate revenue by leasing tracts of land to cattle ranchers and farmers. The revenues from the grazing and agricultural program are used to fund projects directly related to maintaining and improving the tracts under lease for grazing and farming.



## SECTION 10.0 REFERENCES

- Anderson et al. (Anderson, Kathy, Tony Lopez, and Michael N. Meyer). 2014. *Tooele Army Depot Continues to Pursue Renewable Energy Goals*. Accessed December 2014. [http://www.army.mil/article/132004/Tooele\\_Army\\_Depot\\_continues\\_to\\_pursue\\_renewable\\_energy\\_goals/](http://www.army.mil/article/132004/Tooele_Army_Depot_continues_to_pursue_renewable_energy_goals/).
- BEA (Bureau of Economic Analysis). 2014. *Total full-time and part-time employment by NAICS Industry*. Accessed November 2014. <http://www.bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=5#reqid=70&step=1&isuri=1>.
- BLM (U.S. Department of the Interior, Bureau of Land Management). 2014. Utah Statewide Land Ownership GIS Data. <[http://www.blm.gov/ut/st/en/prog/more/geographic\\_information/gis\\_data\\_and\\_maps.html](http://www.blm.gov/ut/st/en/prog/more/geographic_information/gis_data_and_maps.html)>.
- BLS (Bureau of Labor Statistics). 2014. *Local Area Unemployment Statistics*. Accessed November 2014. <http://www.bls.gov/data/#unemployment>.
- Boal, Jed and Amy Joi O'Donoghue. 2012. *Army Breaks Ground on Major Solar Project in Tooele*. Accessed December 2014. <http://www.ksl.com/?sid=21753389>.
- Bosworth, William R. III. 2003. *Vertebrate Information Compiled by the Utah Natural Heritage Program: A Progress Report*. Publication Number 03-45. Utah Department of Natural Resources, Utah Natural Heritage Program, Salt Lake City, UT.
- Boyce, M.S., and A. Haney. 1997. *Ecosystem Management. Applications for Sustainable Forest and Wildlife Resources*. Yale University Press, New Haven, CT.
- Briggs, M.K. 1996. *Riparian Ecosystem Recovery in Arid Lands: Strategies and References*. The University of Arizona Press, Tucson, AZ.
- Crist, Larry, Utah Field Supervisor, Utah Field Office, U.S. Fish and Wildlife Service. 2015. Personal communication, July 23, 2015.
- DCD (Deseret Chemical Depot). 2009. Revised Integrated Natural Resources Management Plan for Deseret Chemical Depot 2008 through 2012. Deseret Chemical Depot, UT.
- DCD (Deseret Chemical Depot). 2013. *FY 2013 Deseret Chemical Depot Installation Action Plan*. Deseret Chemical Depot, UT.
- DoD (Department of Defense). 1994. *Memorandum on Implementation of Ecosystem Management in the DoD*. <http://www.denix.osd.mil/denix/Public/ESPrograms/Conservation/Statements/note3.html>.
- Ebasco (Ebasco Services, Inc.). 1994. *Tooele Army Depot-South Area Suspected Release Units*. RCRA Facility Release Investigation. Draft Report. Prepared for U.S. Army Environmental Center, Aberdeen Proving Ground, MD.
- EMD TEAD (Environmental Management Division, Tooele Army Depot). 1991. *Memorandum Regarding Threatened and Endangered Species Potentially at Tooele Army Depot*. From A.D. Higley, EMD TEAD. To AMC Rock Island, IL. November 19.
- Encyclopedia Britannica. 2014. *Oquirrh Mountains*. Accessed November 2014. <http://www.britannica.com/EBchecked/topic/767179/Oquirrh-Mountains>.

- Ensign (Ensign Engineering & Land Surveying). 2012. *Ophir Creek Water Company, Deseret Chemical Depot, Ophir Creek Water Rights Study*. Ensign Engineering & Land Surveying, Tooele, UT.
- Environmental Staff Monthly Surveys. 2006-2013. Tooele Army Depot Environmental Staff Monthly Meetings occurring from 2006-2013. Tooele Army Depot, UT.
- ESRI. 2011. World Imagery. ArcGIS Map Service. Accessed January 2015. <<http://www.esri.com/data/basemaps>>.
- FWI (Foster & Wheeler, Inc.). 1994. Tooele Army Depot-South Area Revised Final Phase II RCRA Facility Investigation Report of Known Releases SWMUs 13 and 17, Volumes I and II. April 1997. Foster & Wheeler, Inc., South Jordan, UT.
- FWI (Foster & Wheeler, Inc.). 2000. Cited in DCD (Deseret Chemical Depot). 2009. *Revised Integrated Natural Resources Management Plan for Deseret Chemical Depot 2008 through 2012*. Deseret Chemical Depot, UT.
- Howard, Roland, TEAD Engineering Services Division. 2014. Personal communication, November 4 and 20, 2014.
- HQDA (Headquarters, Department of the Army). 1997. *Army Goals and Implementing Guidance for Natural Resources Planning Level Surveys (PLS) and Integrated Natural Resources Management Plan (INRMP)*. INRMP Policy Memorandum. March 21, 1997. Headquarters, Department of the Army, Washington, D.C.
- IWJV (Intermountain West Joint Venture). 2007. *Utah Bird Habitat Conservation Areas with Ownership*. Accessed January 2015. [http://iwjv.org/sites/default/files/ut\\_bhca\\_map\\_w\\_own.pdf](http://iwjv.org/sites/default/files/ut_bhca_map_w_own.pdf).
- Johnson, Troy, TEAD Environmental Management Office. 2014. Personal communication, November 5, 2014.
- Johnson, Troy, TEAD Environmental Management Office. 2015. Personal communication, February 3, 2015.
- NRCS (National Resources Conservation Service). 2009. Hydrologic Soil Groups. Chapter 7 in *National Engineering Handbook Part 630, Hydrology*. U.S. Department of Agriculture, National Resource Conservation Service, Washington, D.C.
- NRCS (National Resources Conservation Service). 2014a. *Official Soil Series Descriptions*. Accessed November 2014. <https://soilseries.sc.egov.usda.gov/osdname.asp>.
- NRCS (National Resources Conservation Service). 2014b. *Web Soil Survey*. Accessed November 2014. <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- NWS (National Weather Service). 2014. NOWData – NOAA Online Weather Data. Accessed November 2014. <http://www.nws.noaa.gov/climate/xmacis.php?wfo=slc>.
- Parrish et al. (Parrish, J. R., F. P. Howe, R. E. Norvell). 2002. *Utah Partners in Flight Avian Conservation Strategy Version 2.0*. UDWR Publication Number 02-27. Utah Division of Wildlife Resources, Utah Partners in Flight Program, Salt Lake City, UT.
- Parsons. 2010. Tooele Army Depot Final Corrective Measures Implementation Plan for Soils, SWMU-58. Parsons, Salt Lake City, UT.
- Parsons. 2014. Tooele Army Depot Final Corrective Measures Implementation Program for Groundwater. Parsons, Salt Lake City, UT.

- Sabine, N.B. 1987. Aspects of Bald Eagle Winter Behavior in Rush Valley Utah: A Telemetry Study. Department of Zoology, Brigham Young University, UT.
- TEAD (Tooele Army Depot). 1988. Natural Resource Management Plan for the South Depot Area. Tooele Army Depot, UT.
- TEAD (Tooele Army Depot). 1995a. Environmental Assessment of Tooele Army Depot (TEAD) Natural Resources Management Plan. Tooele Army Depot, UT.
- TEAD (Tooele Army Depot). 1995b. Natural Resources Management Plan for the Tooele Army Depot, Tooele, Utah. Tooele Army Depot, UT.
- TEAD (Tooele Army Depot). 2007. Tooele Army Depot's Final Integrated Natural Resources Management Plan. Tooele Army Depot, UT.
- TEAD (Tooele Army Depot). 2010. *Tooele Army Depot Army Integrated Wildland Fire Management Plan*. Tooele Army Depot, Tooele, UT.
- TEAD (Tooele Army Depot). 2013a. FY 2013 Tooele Army Depot Army Defense Environmental Restoration Program Installation Action Plan. Tooele Army Depot, UT.
- TEAD (Tooele Army Depot). 2013b. *FY 2013 Tooele Army Depot Installation Action Plan*. Tooele Army Depot, UT.
- TEAD (Tooele Army Depot) Environmental Management Office. 2011. *Tooele Army Depot 2011 Criteria Pollutant Inventory*. Tooele Army Depot North Area, UT.
- TEAD (Tooele Army Depot) Environmental Management Office. 2013. *Deseret Chemical Depot Grazing and Agricultural Lease Plan*. Tooele Army Depot South Area, Environmental Management Office, UT.
- TEAD (Tooele Army Depot) Environmental Management Office. 2014. *Conservation Partnership for a Proposed Listed Species*. Tooele Army Depot South Area, Environmental Management Office, UT.
- Tetra Tech. 1999a. Record of Telephone Conference Call Regarding Data Gaps for INRMP. Between Mason Walker, Tooele Army Depot, and Celeste Brancel-Brown, Tetra Tech. March 3.
- Tetra Tech. 1999b. *Integrated Natural Resources Management Plan 1999–2003, Deseret Chemical Depot, Utah*. Draft. Prepared for the U.S. Army Materiel Command, Redstone Arsenal, AL.
- Tooele County. 2014. *The Official Website of the Tooele County, Utah Government*. Accessed November 2014. <http://www.co.tooele.ut.us/>.
- Trickler, D.A. 1985. *Soil and Range Survey of the Tooele Army Depot*. United States Department of Agriculture, Natural Resources Conservation Service, Washington, D.C.
- UDWR (Utah Division of Wildlife Resources). 1998. *Inventory of Sensitive Vertebrate and Invertebrate Species: A Progress Report*. Utah Division of Wildlife Resources, Salt Lake City, UT.
- UDWR (Utah Division of Wildlife Resources). 1999. Letter Regarding Threatened and Endangered Species Found in the Proximity of the Deseret Chemical Depot, Tooele County, Utah. From Alan Ward, Information Manager, Utah Natural Heritage Program, UNDR. To Eric Dohner, Tetra Tech, Inc., January 11.

- UDWR (Utah Division of Wildlife Resources). 2003. *Vertebrate Information Compiled by the Utah Natural Heritage Foundation: A Progress Report*. Utah Division of Wildlife Resources, Salt Lake City, UT.
- UDWR (Utah Division of Wildlife Resources). 2010a. Bald Eagle (*Haliaeetus leucocephalus*). *Wildlife Notebook Series No. 3*. Accessed January 2015. [https://wildlife.utah.gov/publications/pdf/2010\\_bald\\_eagle.pdf](https://wildlife.utah.gov/publications/pdf/2010_bald_eagle.pdf).
- UDWR (Utah Division of Wildlife Resources). 2010b. *Bonneville cutthroat* (*Oncorhynchus clarki* Utah). Utah Division of Wildlife Resources. Accessed January 2015. <http://wildlife.utah.gov/cutthroat/BCT/index.html>.
- UDWR (Utah Division of Wildlife Resources). 2011. *Utah's State Listed Species by County*. Accessed December 2014. <http://dwrcdc.nr.utah.gov/ucdc/viewreports/sscounty.pdf>.
- UDWR (Utah Division of Wildlife Resources). 2013. *Utah's Conservation Plan for Greater Sage Grouse. Common questions and answers*. Utah Division of Wildlife Resources. Accessed January 2015. <https://wildlife.utah.gov/uplandgame/sage-grouse/pdf/gsgfaq.pdf>.
- UDWR (Utah Division of Wildlife Resources). 2015a. Wildlife news: see bald eagles on July 16 and 18. Accessed July 2015. <https://wildlife.utah.gov/wildlife-news/1680-see-bald-eagles-on-july-16-and-18.html>.
- UDWR (Utah Division of Wildlife Resources). 2015b. *Draft Utah Wildlife Action Plan 2015 – 2025*. Accessed July 2015. <http://wildlife.utah.gov/wap/wap2015.pdf>.
- UNDR (Utah Department of Natural Resources). 1969. *Hydrologic Reconnaissance of Rush Valley Tooele County, Utah*. Technical Publication No. 23. Utah Department of Natural Resources, Salt Lake City, UT.
- USACE (U.S. Army Corps of Engineers), Sacramento District. 1998. *Department of the Army Lease Agreement DACW05-5-99-002*. U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.
- USACE (U.S. Army Corps of Engineers), Sacramento District. 2013a. *Supplemental Agreement No. 2 to Department of the Army Lease Agreement DACW05-5-99-002*. U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.
- USACE (U.S. Army Corps of Engineers), Sacramento District. 2013b. *Department of the Army Lease for Livestock Grazing on Tooele Army Depot, Tooele County, Utah, DACA05-1-14-500*. U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.
- USACE (U.S. Army Corps of Engineers), Sacramento District. 2013c. *Department of the Army Lease for Livestock Grazing on Deseret Chemical Depot, Tooele County, Utah, DACA05-1-13-511*. U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.
- USACE (U.S. Army Corps of Engineers), Sacramento District. 2014. *Supplemental Agreement No. 1 to Department of the Army Lease No. DACA05-1-14-500*. U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.
- U.S. Army. 2006. Environmental Assessment, Installation of Wind Powered Electrical Generation at Tooele Army Depot. Tooele Army Depot, Environmental Management Office, UT.
- U.S. Census Bureau. 2000. *Census 2000 Summary File 1(SF-1) 100 Percent Data*. Accessed November 2014. <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>.

- U.S. Census Bureau. 2014a. *State & County QuickFacts*. Accessed November 2014. <http://quickfacts.census.gov/qfd/>.
- U.S. Census Bureau. 2014b. *2011 – 2013 American Community Survey 3-year Estimates*. Accessed November 2014. <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t>.
- USDA NRCS (U.S. Department of Agriculture, Natural Resources Conservation Service). 2014. *Web Soil Survey*. Accessed November 2014. <http://websoilsurvey.nrcs.usda.gov>.
- USDA SCS (U.S. Department of Agriculture Soil Conservation Service). 1961. *Land-Capability Classification*. Agriculture Handbook No. 210. U.S. Government Printing Office, Washington, D.C.
- USEPA (U.S. Environmental Protection Agency). 2014. *Level III and IV Ecoregions of the Continental United States*. Accessed January 2015. [http://www.epa.gov/wed/pages/ecoregions/level\\_iii\\_iv.htm](http://www.epa.gov/wed/pages/ecoregions/level_iii_iv.htm).
- USFS (U.S. Forest Service). 2014. *Unita-Wasatch-Cache National Forest*. Accessed November 2014. <http://www.fs.usda.gov/uwcnf>.
- USFWS (U.S. Fish and Wildlife Service). 1999. Letter Regarding Threatened and Endangered Species for Deseret Chemical Depot, Tooele County, Utah. From Reed E. Harris, Field Supervisor. To Eric T. Dohner, Tetra Tech Inc. January 7.
- USFWS (U.S. Fish and Wildlife Service). 2008. *Birds of Conservation Concern 2008*. U.S. Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, VA.
- USFWS (U.S. Fish and Wildlife Service). 2015. *IPaC – Information, Planning, and Conservation System*. Accessed January 2015. <http://ecos.fws.gov/ipac/wizard/trustResourceList!prepare.action>.
- USFWS NWI (U.S. Fish and Wildlife Service, National Wetlands Inventory). 2014. National Wetlands Inventory GIS Layers. Accessed December 2014. <http://www.fws.gov/wetlands/Data/Data-Download.html>.
- USGS (U.S. Geological Survey). 1999. *Geology of the Oquirrh Mountains, Utah*. Abstract. Utah State University Libraries. Accessed November 2014. <http://digitalcommons.usu.edu/govdocs/162/>.
- USGS (U.S. Geological Survey). 2014a. Grantsville quadrangle, Utah. Topographic map 7.5-minute series, scale 1:24,000. U.S. Geological Survey, Reston, VA.
- USGS (U.S. Geological Survey). 2014b. South Mountain quadrangle, Utah. Topographic map 7.5-minute series, scale 1:24,000. U.S. Geological Survey, Reston, VA.
- USGS (U.S. Geological Survey). 2014c. Stockton quadrangle, Utah. Topographic map 7.5-minute series, scale 1:24,000. U.S. Geological Survey, Reston, VA.
- USGS (U.S. Geological Survey). 2014d. Tooele quadrangle, Utah. Topographic map 7.5-minute series, scale 1:24,000. U.S. Geological Survey, Reston, VA.
- Utah AGRC (Automated Geographic Reference Center). 2014. State Geographic Information Database. Accessed December 2014. <http://gis.utah.gov/>.
- Utah Mining Association. 2014. *Utah...The Treasure House of the Nation*. Accessed November 2014. <http://www.utahmining.org/brochure.htm>.

Utah Office of Tourism. 2014. *Official Tourism Website of the State of Utah*. Accessed November 2014. <http://www.visitutah.com/parks-monuments/>.

Woods et. al (Woods, A.J., D.A. Lammers, S.A. Bryce, J.M. Omernik, R.L. Denton, M. Domeier, and J.A. Comstock). 2001. *Ecoregions of Utah*. (Two sided color poster with map, descriptive text, summary tables, and photographs. Scale 1:1,175,000.) U.S. Geological Survey, Reston, VA.

Zeveloff, S.I., and F.R. Collett. 1988. *Mammals of the Intermountain West*. University of Utah Press, Salt Lake City, UT.

**Appendix A**

**Record of Environmental Consideration (REC)**

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**Appendix B**

**Vegetation Species List**

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**Table B-1  
Plant Species List for TEAD North Area**

<b>Species Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Longevity</b>
Fragrant sand verbena	<i>Abronia fragrans</i>	Native	Perennial
Boxelder	<i>Acer negundo</i>	Native	Perennial
Indian ricegrass	<i>Achnatherum hymenoides</i>	Native	Perennial
Russian knapweed	<i>Acroptilon repens</i>	Introduced	Perennial
Jointed goatgrass	<i>Aegilops cylindrica</i>	Introduced	Annual
Mountain dandelion	<i>Agoseris glauca</i>	Native	Perennial
Crested wheatgrass	<i>Agropyron cristatum</i>	Introduced	Perennial
Tapertip onion	<i>Allium acuminatum</i>	Native	Perennial
Alyssum	<i>Alyssum alyssoides</i>	Introduced	Annual
Desert alyssum	<i>Alyssum desertorum</i>	Introduced	Annual
Tumbling pigweed	<i>Amaranthus albus</i>	Native	Annual
Prostrate pigweed	<i>Amaranthus blitoides</i>	Native	Perennial
Redroot pigweed	<i>Amaranthus retroflexus</i>	Introduced	Annual
Bur ragweed	<i>Ambrosia acanthicarpa</i>	Native	Annual
Western ragweed	<i>Ambrosia psilostachya</i>	Native	Perennial
Utah serviceberry	<i>Amelanchier utahensis</i>	Native	Perennial
Fireweed fiddleneck	<i>Amsinckia intermedia</i>	Native	Annual
Western fiddleneck	<i>Amsinckia menziesii</i>	Native	Annual
Devil's lettuce	<i>Amsinckia tessellata</i>	Native	Annual
Low pussytoes	<i>Antennaria dimorpha</i>	Native	Perennial
Spreading dogbane	<i>Apocynum androsaemifolium</i>	Native	Perennial
Common dogbane; Indian hemp	<i>Apocynum cannabinum</i>	Native	Perennial
Mouse-ear cress	<i>Arabidopsis thaliana</i>	Introduced	Annual
Pretty rockcress	<i>Arabis pulchra</i>	Native	Perennial
Armed prickly poppy	<i>Argemone munita</i>	Native	Annual
Purple threeawn	<i>Aristida purpurea</i>	Native	Perennial
Foothill sage	<i>Artemisia ludoviciana</i>	Native	Perennial
Wyoming sagebrush	<i>Artemisia tridentata</i>	Native	Perennial
Sagebrush	<i>Artemisia trident=</i>	Native	Perennial
Spider milkweed	<i>Asclepias asperula</i>	Native	Perennial
Showy or common milkweed	<i>Asclepias speciosa</i>	Native	Perennial
Pacific aster	<i>Aster ascendens</i>	Native	Perennial
Beckwith milkvetch	<i>Astragalus beckwithii</i>	Native	Perennial
Geyer milkvetch	<i>Astragalus geyeri</i>	Native	Annual
Freckled milkvetch	<i>Astragalus lentiginosus</i>	Native	Perennial
Utah milkvetch	<i>Astragalus utahensis</i>	Native	Perennial
Silver orach	<i>Atriplex argentea</i>	Native	Annual
Fourwing saltbush	<i>Atriplex canescens</i>	Native	Perennial
Shadscale	<i>Atriplex confertifolia</i>	Native	Perennial
Fat-hen or spear orach	<i>Atriplex patula</i>	Native	Annual
Tumbling orach	<i>Atriplex rosea</i>	Introduced	Annual

**Table B-1 (continued)**

<b>Species Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Longevity</b>
Oats	<i>Avena sativa</i>	Introduced	Annual
Hairy balsamroot	<i>Balsamorhiza hispidula</i>	Native	Perennial
Smotherweed	<i>Bassia hyssopifolia</i>	Introduced	Annual
Mojave brickellbush	<i>Brickellia oblongifolia</i>	Native	Perennial
Japanese or meadow chess	<i>Bromus japonicus</i>	Introduced	Annual
Red or foxtail brome	<i>Bromus rubens</i>	Introduced	Annual
Cheatgrass; downy chess	<i>Bromus tectorum</i>	Introduced	Annual
Big sandreed	<i>Calamovilfa gigantea</i>	Native	Perennial
Sego lily	<i>Calochortus nuttallii</i>	Native	Perennial
Falseflax	<i>Camelina microcarpa</i>	Introduced	Annual
Diminutive primrose	<i>Camissonia parvula</i>	Native	Annual
Whitetop	<i>Cardaria draba</i>	Introduced	Perennial
Nebraska sedge	<i>Carex nebrascensis</i>	Native	Perennial
Narrow-leaved paintbrush	<i>Castilleja angustifolia</i>	Native	Perennial
Desert paintbrush	<i>Castilleja chromosa</i>	Native	Perennial
Netleaf hackberry	<i>Celtis reticulate</i>	Native	Perennial
Spotted knapweed	<i>Centaurea maculosa</i>	Introduced	Biennial
Yellow starthistle	<i>Centaurea solstitialis</i>	Introduced	Annual
Howell winterfat	<i>Ceratoides Janata</i>	Native	Perennial
Douglas dustymaiden	<i>Chaenactis douglasii</i>	Native	Perennial
Lambsquarter	<i>Chenopodium album</i>	Introduced	Annual
Narrowleaf goosefoot	<i>Chenopodium leptophyllum</i>	Native	Annual
Musk mustard	<i>Chorispora tenella</i>	Introduced	Annual
Rubber rabbitbrush	<i>Chrysothamnus nauseosus</i>	Native	Perennial
Mountain rabbitbrush	<i>Chrysothamnus viscidiflorus</i>	Native	Perennial
Wavyleaf thistle	<i>Cirsium undulatum</i>	Native	Perennial
Bull thistle	<i>Cirsium vulgare</i>	Introduced	Perennial.
Miner's lettuce	<i>Claytonia perfoliata</i>	Native	Annual
Oriental clematis	<i>Clematis orientalis</i>	Introduced	Perennial
Rocky Mountain beeplant	<i>Cleotne serrulata</i>	Native	Annual
Blue-eyed Mary	<i>Collinsia parviflora</i>	Native	Annual
Bastard toadflax	<i>Comandra umbellata</i>	Native	Perennial
Poison hemlock	<i>Conium maculatum</i>	Introduced	Biennial
Field bindweed or creeping Jenny	<i>Convolvulus arvensis</i>	Introduced	Perennial
Canada Horseweed	<i>Conyza canadensis</i>	Native	Annual
Tapertip hawksbeard	<i>Crepis acuminata</i>	Native	Perennial
Gray hawksbeard	<i>Crepis intermedia</i>	Native	Perennial
Wilkes cryptanth	<i>Cryptantha ambigua</i>	Native	Annual
Matted or cushion cryptanth	<i>Cryptantha circumscissa</i>	Native	Annual
Cat's eye	<i>Cryptantha humilis</i>	Native	Perennial
Winged-nut cryptanth	<i>Cryptantha pterocatyta</i>	Native	Annual

**Table B-1 (continued)**

<b>Species Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Longevity</b>
Wide-wing springparsley	<i>Cymopterus purpurascens</i>	Native	Perennial
Hounds tongue	<i>Cynoglossum officinale</i>	Introduced	Biennial
Anderson larkspur	<i>Delphinium andersonit</i>	Native	Perennial
Pinnate tansymustard	<i>Descurainia pinnate</i>	Native	Annual
Desert saltgrass	<i>Distichlis spicata</i>	Native	Perennial
Dwarf draba	<i>Draba reptans</i>	Native	Annual
Spring draba	<i>Draba verna</i>	Introduced	Annual
Barnyard grass	<i>Echinochloa crus-galli</i>	Native	Annual
Russian olive	<i>Elaeagnus angustifolia</i>	Introduced	Perennial
Common spikerush	<i>Eleocharis palustris</i>	Native	Perennial
Great Basin wildrye	<i>Elymus cinereus</i>	Native	Perennial
Tall wheatgrass	<i>Elymus elongatus</i>	Introduced	Perennial
Squirreltail	<i>Elymus elyroides</i>	Native	Perennial
Intermediate wheatgrass	<i>Elymus hispidus</i>	Introduced	Perennial
Thickspike wheatgrass	<i>Elymus lanceolatus</i>	Native	Perennial
Western wheatgrass	<i>Elymus smithii</i>	Native	Perennial
Autumn willowherb	<i>Epilobium brachycarpum</i>	Native	Annual
Northern willowherb	<i>Epilobium ciliatum</i>	Native	Perennial
Mediterranean lovegrass	<i>Eragrostis barrelieri</i>	Introduced	Annual
Silver fleabane	<i>Erigeron argentatus</i>	Native	Perennial
Engelmann fleabane	<i>Erigeron engelmannii</i>	Native	Perennial
Low fleabane	<i>Erigeron pumilus</i>	Native	Perennial
Shortstem buckwheat	<i>Eriogonum. brevicale</i>	Native	Perennial
Nodding buckwheat	<i>Eriogonum cernuum</i>	Native	Annual
Skeletonweed buckwheat	<i>Eriogonum deflocum</i>	Native	Annual
Watson buckwheat	<i>Eriogonum hookeri</i>	Native	Annual
Coin buckwheat	<i>Eriogonum nummulare</i>	Native.	Perennial
Cushion buckwheat	<i>Eriogonum ovalifolium</i>	Native	Perennial
Redroot buckwheat	<i>Eriogonum racemosum</i>	Native	Perennial
Storksbill	<i>Erodium cicutarium</i>	Introduced	Annual
Western wallflower	<i>Erysimum asperum</i>	Native	Biennial
Small wallflower	<i>Erysimum inconspicuum</i>	Native	Perennial.
Ridgeseed spurge	<i>Euphorbia glyptosperma</i>	Native:	Annual
Thymeleaf spurge	<i>Euphorbia serpyllifolia</i>	Native	Annual
Ash	<i>Fraxinits pensylvanica</i>	Introduced	Perennial
Catchweed bedstraw	<i>Galium aparine</i>	Native	Annual
Lizardtail	<i>Gaura parviflora</i>	Native	Annual
Shy gilia	<i>Gilia inconspicua</i>	Native	Annual
Honey locust	<i>Gleditsia triacanthos</i>	Introduced	Perennial
Lowland cudweed	<i>Gnaphalium palustre</i>	Native	Annual
Curlycup gumweed	<i>Grindelia squarrosa</i>	Native	Perennial
Broom snakeweed	<i>Gutierrezia sarothrae</i>	Native	Perennial
Halogeton	<i>Halogeton glomeratus</i>	Introduced	Annual

**Table B-1 (continued)**

<b>Species Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Longevity</b>
Goldenweed	<i>Haplopappus acaulis</i>	Native	Perennial
Watson goldenweed	<i>Haplopappus watsonii</i>	Native	Perennial
Common sunflower	<i>Helianthus annuus</i>	Native.	Annual
Hairy goldenaster	<i>Heterotheca villosa</i>	Native	Perennial
Galleta grass	<i>Hilaria jamesii</i>	Native	Perennial
Umbrella holosteum	<i>Holosteum umbellatum</i>	Introduced	Annual
Foxtail barley	<i>Hordeum jubatum</i>	Native	Perennial
Rabbit barley	<i>Hordeum murinum</i>	Introduced	Annual
Barley	<i>Hordeum vulgare</i>	Introduced	Annual
Dyer's woad	<i>Isatis tinctoria</i>	Introduced	Biennial
Poverty sumpweed	<i>Iva axillaris</i>	Native	Perennial
Wiregrass	<i>Juncus arcticus</i>	Native	Perennial
Toad rush	<i>Juncus bufonius</i>	Native	Annual
Torrey rush	<i>Juncus torreyi</i>	Native	Perennial
Utah juniper	<i>Juniperus osteosperma</i>	Native	Perennial
Gray or green Molly	<i>Kochia americana</i>	Native	Perennial
Summer cypress	<i>Kochia scoparia</i>	Introduced	Annual
Wild or prickly lettuce	<i>Lactuca serriola</i>	Native	Annual
Western stickseed	<i>Lappula redowskii</i>	Native	Annual.
Perennial pepperweed	<i>Lepidium latifolium</i>	Introduced	Perennial
Clasping-leaf pepperweed	<i>Lepidium perfoliatum</i>	Introduced	Annual
Leptodactylon	<i>Leptodactylon pungens</i>	Native	Perennial
Rose heath	<i>Leucelene ericoides</i>	Native	Perennial
Dalmation toadflax	<i>Linaria dalmatica</i>	Introduced	Perennial
Slender woodland star	<i>Lithophragma tenella</i>	Native	Perennial
Ryegrass	<i>Lolium perenne</i>	Introduced	Annual
Milfoil biscuitroot	<i>Lomatium grayi</i>	Native	Perennial
Shortstenri lupine	<i>Lupinus brevicaulis</i>	Native	Annual
Largeflower skeletonweed	<i>Lygodesmia grandiflora</i>	Native	Perennial
African mustard	<i>Malcolmia africana</i>	Introduced	Annual
Cheeses; cheeseweed	<i>Malva neglecta</i>	Introduced	Annual
Alkali mallow; dollar weed	<i>Malvella leprosa</i>	Native	Perennial
Horehound	<i>Marrubium vulgare</i>	Introduced	Perennial
Black medick	<i>Medicago lupulina</i>	Introduced	Annual
Alfalfa or lucerne	<i>Medicago sativa</i>	Introduced	Perennial
White sweetclover	<i>Melilotus alba</i>	Introduced	Annual
Yellow sweetclover	<i>Melilotus officinalis</i>	Introduced	Annual
Whitest blazing star	<i>Mentzelia albicaulis</i>	Native	Annual
Smoothstem blazing star	<i>Mentzelia laevicaulis</i>	Native	Perennial
Little polecat	<i>Microseris gracilis</i>	Native	Annual
Nodding microseris	<i>Microseris nutans</i>	Native	Annual
Narrowleaf or fringecup four o'clock	<i>Mirabilis linearis</i>	Native	Perennial
Scratchgrass	<i>Muhlenbergia asperifolia</i>	Native	Perennial
Watercress	<i>Nasturtium officinale</i>	Introduced	Perennial
Coyote tobacco	<i>Nicotiana attenuata</i>	Native	Annual



**Table B-1 (continued)**

<b>Species Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Longevity</b>
Tufted evening primrose	<i>Oenothera caespitosa</i>	Native	Perennial
Pale evening primrose	<i>Oenothera pallida</i>	Native	Annual
Scotch cotton-thistle	<i>Onopordum acanthium</i>	Introduced	Biennial
Pricklypear	<i>Opuntia polyacantha</i>	Native	Perennial
Flat-topped broomrape	<i>Orobanche corymbosa</i>	Native	Perennial
Clustered broomrape	<i>Orobanche fasciculata</i>	Native	Perennial
Witchgrass	<i>Panicum capillare</i>	Native	Annual
Carpet phlox	<i>Phlox hoodii</i>	Native	Perennial
Wild or longleaf phlox	<i>Phlox longifolia</i>	Native	Perennial
Juniper mistletoe	<i>Phoradendron juni perinum</i>	Native	Perennial
Longleaf groundcherry	<i>Physalis longifolia</i>	Native	Perennial
Virginia nightshade	<i>Physalis virginiana</i>	Native	Perennial
Broadleaf plantain	<i>Plantago major</i>	Introduced	Perennial
Woolly plantain	<i>Plantago patagonica</i>	Native	Annual
Bulbous bluegrass	<i>Poa bulbosa</i>	Introduced	Annual
Muttongrass	<i>Poa fendleriana</i>	Native	Perennial
Kentucky bluegrass	<i>Poa pratensis</i>	Native	Perennial
Sandberg bluegrass	<i>Poa secunda</i>	Native	Perennial
Knotweed	<i>Polygonum arenastrum</i>	Native	Annual
Willow-weed	<i>Polygonum lapathifollum</i>	Introduced	Annual
Ditch polypogon	<i>Polypogon interruptus</i>	Native	Annual
Rabbitfoot grass	<i>Polypogon monspeliensis</i>	Introduced	Annual
Purslane	<i>Portulaca oleracea</i>	Native	Annual
Dune or lemon scurfpea	<i>Psoralea lanceolata</i>	Native	Perennial
Cliffrose/Bitterbrush hybrid	<i>Purshia tridentata</i>	Native	Perennial
Blister buttercup	<i>Ranunculus sceleratus</i>	Native	Annual
Bur buttercup	<i>Ranunculus testiculatus</i>	Introduced	Annual
Squawbush	<i>Rhus trilobata</i>	Native	Perennial
Black locust	<i>Robinia pseudoacacia</i>	Introduced	Perennial
Eglantine sweetbriar	<i>Rosa eglanteria</i>	Introduced	Perennial
Woods rose	<i>Rosa woodsii</i>	Native	Perennial
Madder	<i>Rubia tinctoria</i>	Introduced	Perennial
Curly dock	<i>Rumex crispus</i>	Introduced	Perennial
Sandbar willow	<i>Salix exigua</i>	Native	Perennial
Whiplash willow	<i>Salix lucida</i>	Native	Perennial
Russian thistle; tumbleweed	<i>Salsola iberica</i>	Introduced	Annual
Barbwire Russian thistle	<i>Salsola paulsenii</i>	Introduced	Annual
Blue elderberry	<i>Sambucus cerulea</i>	Native	Perennial
Greasewood	<i>Sarcobatus vermiculatus</i>	Native	Perennial
Hardstem bulrush; tole	<i>Scirpus acutus</i>	Native	Perennial
Alkali bulrush	<i>Scirpus maritimus</i>	Native	Perennial
Rye	<i>Secale cereale</i>	Introduced	Annual

**Table B-1 (continued)**

<b>Species Common Name</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Longevity</b>
Lobeleaf groundsel	<i>Senecio multilobatus</i>	Native	Perennial
Green bristlegrass	<i>Setaria viridis</i>	Introduced	Annual
Jim Hill mustard	<i>Sisymbrium altissimum</i>	Introduced	Annual
European bittersweet	<i>Solanum dulcamara</i>	Introduced	Perennial
Silverleaf nightshade	<i>Solanum elaeagnifolium</i>	Native	Perennial
Cutleaf nightshade	<i>Solanum triflorum</i>	Native	Annual
Fewflowered goldenrod	<i>Solidago sparsiflora</i>	Native	Perennial
Spiny sowthistle	<i>Sonchus asper</i>	Introduced	Annual
Common sowthistle	<i>Sonchus oleraceus</i>	Introduced	Annual
Scarlet globemallow	<i>Sphaeralcea coccinea</i>	Native	Perennial
Gooseberryleaf globemallow	<i>Sphaeralcea grossulariifolia</i>	Native	Perennial
Munroe globemallow	<i>Sphaeralcea munroana</i>	Native	Perennial
Alkali sacaton	<i>Sporobolus airoides</i>	Native	Perennial
Sand dropseed	<i>Sporobolus cryptandrus</i>	Native	Perennial
Small wirelettuce	<i>Stephanomeria exigua</i>	Native	Annual
Needle-and-thread grass	<i>Stipa comata</i>	Native	Perennial
Broom seepweed	<i>Suaeda cakeoliformis</i>	Native	Perennial
Mountain snowberry	<i>Symphoricarpos oreophilus</i>	Native	Perennial
Tamarisk	<i>Tamarix chinensis</i>	Introduced	Perennial
Common dandelion	<i>Taraxacum officinale</i>	Introduced	Perennial
Grey horsebrush	<i>Tetradymia canescens</i>	Native	Perennial
Littleleaf horsebrush	<i>Tetradymia glabrata</i>	Native	Perennial
Nuttall horsebrush	<i>Tetradymia nuttallii</i>	Native	Perennial
Yello salsify or goatsbeard	<i>Tragopogon dubius</i>	Introduced	Annual
Puncture vine	<i>Tribulus terrestris</i>	Introduced	Annual
Strawberry clover	<i>Trifolium fragiferum</i>	Introduced	Perennial
Southern cattail	<i>Typha domingensis</i>	Native	Perennial
Common cattail	<i>Typha latifolia</i>	Native	Perennial
Siberian elm	<i>Ulmus pumila</i>	Introduced	Perennial
Flannel or woolly mullein	<i>Verbascum thapsus</i>	Introduced	Biennial
Wand mullein	<i>Verbascum virgatum</i>	Introduced	Biennial
Prostrate vervain	<i>Verbena bracteata</i>	Native	Annual
Water speedwell	<i>Veronica anagallis-aquatica</i>	Introduced	Perennial
Snow speedwell	<i>Veronica biloba</i>	Introduced	Annual
Nuttall violet	<i>Viola nuttallii</i>	Native	Perennial
Sixweeks fescue	<i>Vulpia octoflora</i>	Native	Annual
Cocklebur	<i>Xanthium strumarium</i>	Introduced	Annual
Foothill death camas	<i>Zigadenus paniculatus</i>	Native	Perennial

Source: TEAD 2001.

**Table B-2  
Plant Species List for TEAD South Area**

<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Source</b>
<b>Trees</b>	English Elm	<i>Ulmus procera</i>	4
	Lombardy Poplar	<i>Populus nigra</i>	4
<b>Shrubs</b>	Iodine bush	<i>Allenrolferia occidentalis</i>	2
	Fringed sagebrush	<i>Artemisia frigida</i>	3
	Bud (Spiny) sagebrush	<i>Artemisia spinescens</i>	1,2
	Wyoming (Big) sagebrush	<i>Artemisia tridentata</i>	1,2,3,4
	Pygmy sagebrush	<i>Artemisia pygmesia</i>	2
	Shad-scale	<i>Atriplex confertifolia</i>	1,2,3
	Sickle saltbrush	<i>Atriplex falcata</i>	1
	Gardner saltbush	<i>Atriplex gardneri</i>	1
	Tumbling saltweed	<i>Atriplex rosea</i>	1
	Trident saltbush	<i>Atriplex tridentata</i>	1
	FourWing Salt Brush	<i>Atriplex canescens</i>	1
	Tall rabbitbrush, gray	<i>Chrysothamnus nauseosus</i>	1,2,3,4
	Sticky-flowered rabbitbrush, Douglas	<i>Chrysothomnus viscidiflorus</i>	1,3
	Mormon tea	<i>Ephedra viridis</i>	1
	Utah juniper	<i>Juniperus osteosperma</i>	1,3
	Single-needled Pinyon Pine	<i>Pinus monophylla</i>	2
	Choke cherry	<i>Prunus virginiana</i>	1,2
	Cliff-rose (Bitterbrush)	<i>Purshia mexicana</i>	1,2
	Antelope bitterbrush	<i>Purshia tridentata</i>	1,2
	Snakeweed	<i>Gutierrezia sarrothrae</i>	1
Coyote willow	<i>Salix exigua</i>	1	
Willow	<i>Salix sp.</i>	4	
Black greasewood	<i>Sarcobatus virmiculatus</i>	1,2,3,4	
Butterweed	<i>Senecio multicapitatus</i>	2	
Copper mallow	<i>Sphaeralcea coccinea</i>	2	
Tamarisk	<i>Tamarix chineusis</i>	1,4	
Littleleaf horsebrush	<i>Tetradymia glabrata</i>	1	
Nuttall horsebrush	<i>Tetradymia nuttalli</i>	3	
Spiny horsebrush (Cottonthorn)	<i>Tetradymia spinosa</i>	1,2	
Siberian elm	<i>Ulmus pumila</i>	1	
<b>Cacti</b>	Plains prickly pear	<i>Opuntia polyacantha</i>	1,3

**Table B-2 (continued)**

<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Source</b>
<b>Forbs</b>	Acrolasia	<i>Acrolasia albicaulis</i>	1
	Pickleweed	<i>Allenrolfea</i>	1
	Geyer onion	<i>Allium geyeri</i>	3
	Onion	<i>Allium nevadense</i>	1,2
	Rosy pussytoes	<i>Antennaria microphylla</i>	1
	Burdock	<i>Arctium minus</i>	1
	Fendler sandwort	<i>Arenaria fendleri</i>	3
	Showy milkweed	<i>Asclepias spp.</i>	1
	Yellow astragalus spp.	<i>Astragalus spp.</i>	3
	Timber milkvetch	<i>Astragalus convallarius</i>	1,2
	Showy milkvetch	<i>Astragalus speciosa</i>	1
	Beckwith milkvetch	<i>Astragalus bekwithii</i>	1,2
	Torrey milkvetch	<i>Astragalus calycosus</i>	1,2
	Hooker's balsamroots	<i>Balsamorhiza hookeri</i>	1
	Maripos (Sego lily)	<i>Calochortus nuttallii</i>	1,2
	False flax	<i>Camelima microcarpa</i>	1
	Shepard's purse	<i>Capsellia bursa-pastoris</i>	1,2
	Whitetop (Peppergrass)	<i>Cardaria draba</i>	1,2
	Paintbrush	<i>Castilleja chromosa</i>	1
	Pincushion	<i>Chaenactis stevioides</i>	1,2
	Purple mustard	<i>Chorispora tenella</i>	1,2
	Bull thistle	<i>Cirsium vulgare</i>	1,2
	Virgin's bower	<i>Clematis virginiana</i>	2
	Hare's ear	<i>Conringia orientalis</i>	1,2
	Creeping Jenny (Bindweed)	<i>Convolvulus arvensis</i>	1,2
	Tapertip hawksbeard	<i>Crepis acuminata</i>	1,2
	American hawksbeard	<i>Crepis occidentalis</i>	1
	Cryptantha	<i>Cryptantha humilis</i>	1,2
	Little cryptantha	<i>Cryptantha nana</i>	3
	Hound's tongue	<i>Cynoglossum officinale</i>	1,2
	Tansy (Pinnate) mustard	<i>Descurainia pinnata</i>	1,2,3
	Flixweed	<i>Descurainia sophia</i>	1
	Teasel	<i>Dipsacus fullonum</i>	2
	Engelmann daisy	<i>Erigeron engelmannii</i>	1,2
	Trailing daisy	<i>Erigeron flagellaris</i>	1,2
	Low fleabane	<i>Erigeron pumilus</i>	3
	Sulfur buckwheat (Sulfur-flower)	<i>Erigonum umbellatum</i>	1,2,3
	Wild buckwheat	<i>Eriogonum ovalifolium</i>	1,2
	Cutleaf filaree (Crane's bill), Redstem	<i>Erodium cicutarium</i>	1,2,3
	Wallflower	<i>Erysimum aperum</i>	1,2

**Table B-2 (continued)**

<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Source</b>
<b>Forbs (cont'd)</b>	Shorthorn spurge	<i>Euphorbia brachycera</i>	3
	Winterfat	<i>Eurotia lanata</i>	1,2
	Scarlet gilia	<i>Gilia aggregata</i>	1,2
	Ball-head gilia	<i>Gilia congesta</i>	3
	Gilia	<i>Gilia leptomeria</i>	1,2
	Curlycup gumweed	<i>Grindelia squarrosa</i>	1,2
	Broom snakeweed	<i>Gutierrezia sarothrae</i>	1,2,3
	Halogeton	<i>Halogeton glomeratus</i>	1,3
	Stemless goldenweed	<i>Haplopappus acaulis</i>	1,2
	Common sunflower	<i>Helianthus annuus</i>	1,2
	Salt heliotrope	<i>Heliotropium curassavicum</i>	2
	Slenderweed	<i>Hutchinsia procumbens</i>	1
	Green molly	<i>Kochia americana</i>	1
	Gray molly	<i>Kochia scoparia</i>	1
	Prickly wild lettuce	<i>Lactuca serriola</i>	1,2
	Shortcalyx peavine	<i>Lathyrus brachycalyx</i>	1,2
	Prairie peppergrass	<i>Lepidium densiflorum</i>	1,2
	Perennial peppergrass	<i>Lepidium latifolium</i>	3
	Peppergrass	<i>Lepidium montanum</i>	1,2
	Clasping peppergrass, shield	<i>Lepidium perfoliatum</i>	1,2,3
	Cockle Burr	<i>Xanthium strumarium</i>	4
	Inkweed	<i>Suaeda frutosa</i>	4
	Knotweed	<i>Polygonum aviculare</i>	4
	Paintbrush	<i>Castilleja coccinea</i>	4
	Smotherweed	<i>Bassia hyssopifolia</i>	4
	Western bladderpod	<i>Lesquerella occidentalis</i>	1,2
	Heath aster	<i>Luecelene ericoides</i>	1
	Rush pink	<i>Lygodesmia grandiflora</i>	1
	Hoary aster	<i>Machaeranthera canesceus</i>	1
	Horehound	<i>Marrubium vulgare</i>	2
	Sweet clover	<i>Melilotus alba</i>	2
	Whitestem blazingstar	<i>Mentzelia albicaulis</i>	1
	Catnip	<i>Nepeta cataria</i>	1,2
	Common Evening Primrose	<i>Oenothera biennis</i>	2
	Evening Primrose, desert	<i>Oenothera caespitosa</i>	2,3
	Creeping penstemon	<i>Penstemon linarioides</i>	1
	Hood phlox	<i>Phlox hoodii</i>	1,2,3
	Longleaf phlox	<i>Phlox longifolia</i>	1,2,3
	Bur buttercup	<i>Ranunculus testiculatus</i>	1
	Black locust	<i>Robina pseudo-acacia</i>	2

**Table B-2 (continued)**

<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Source</b>
<b>Forbs (cont'd)</b>	Western coneflower	<i>Rudbeckia occidentalis</i>	3
	Curly dock	<i>Rumex crispus</i>	1,2
	Russian thistle	<i>Salsola iberica</i>	1
	Desert sage	<i>Salvia dorrii</i>	1
	Broom groundsel	<i>Senecio spartoides</i>	1
	Buffaloberry	<i>Shepherdia argentea</i>	2
	Jim Hill (Tumbling) mustard	<i>Sisymbrium altissimum</i>	1,2,3
	Hedge mustard	<i>Sisymbrium officiale</i>	1
	Scarlet globemallow	<i>Sphaeralcea coccinea</i>	1
	Gooseberryleaf globemallow	<i>Sphaeralcea grossulariifolia</i>	1
	Ute Ladies'-tresses (FT)	<i>Spiranthes diluvialis</i>	5
	Sand dropseed	<i>Sporobolus cryptandrus</i>	1
	Prince's plume	<i>Stanleya pinnata</i>	1,2
	Heartleaf twistflower	<i>Streptanthus cordatus</i>	3
	Western seepweed	<i>Suaeda occidentalis</i>	1
	Littleleaf horsebrush	<i>Tetradymia canesceus</i>	1,2
	Thelypody	<i>Thelypodopsis vermicularis</i>	1,2
	Arrowleaf thelypody	<i>Thelypodium sagittatum</i>	1,2
	Yellow goatsbeard	<i>Tragopogon dubius</i>	1,3
	Western yellow goatsbeard (Oyster	<i>Tragopogon dubius</i>	1,2
	White clover	<i>Trifolium repens</i>	3
	Mullein	<i>Verbascum thapsus</i>	1,2
	Vervain	<i>Verbena bracteata</i>	1,2
	American vetch	<i>Vicia americanus</i>	3
	Snakeweed	<i>Xonothocephalum sarothrae</i>	1
	Foothill death-camas	<i>Zigadenus paniculatus</i>	3
<b>Grasslike</b>	Crested wheatgrass	<i>Agropyron cristatum</i>	1,2
	Wheatgrass	<i>Agropyron desertorum</i>	3
	Quackgrass	<i>Agropyron repens</i>	3
	Western wheatgrass	<i>Agropyron smithii</i>	1
	Bearded wheatgrass	<i>Agropyron subsecundum</i>	3
	Slender wheatgrass	<i>Agropyron trachycaulum</i>	3
	Meadow foxtail	<i>Alopecurus pratensis</i>	1
	Foxtail Barley	<i>Hordeum jabatum</i>	4
	Three-awn	<i>Aristida purpurea</i>	1
	Blue gramagrass	<i>Bouteloua gracilis</i>	1,2,3,4
	Cheatgrass	<i>Bromus tectorum</i>	3
	Longspine sandbur	<i>Cenchrus longespinus</i>	1,2
	Inland saltgrass	<i>Distichlis stricta</i>	4

**Table B-2 (continued)**

<b>Type</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Source</b>
<b>Grasslike (cont'd)</b>	Saltgrass	<i>Distichlis spicata</i>	1
	Basin wildrye	<i>Elymus cineris</i>	1
	Tall wheatgrass	<i>Elymus elongatus</i>	1
	Squirreltail	<i>Sitanion hystrix - Elymus elymoides</i>	1
	Smith's wild rye	<i>Elymus smithii</i>	1
	Bluebunch wheatgrass	<i>Elymus spicatus</i>	1
	Galleta grass	<i>Hilaria jamesii</i>	1
	Wild barley	<i>Hordeum jubatum</i>	1,3
	Artic rush	<i>Juncus arcticus</i>	1
	Baltic rush	<i>Juncus balticus</i>	2,4
	Toad rush	<i>Juncus bufonius</i>	3
	Cattail	<i>Typha angustifolia</i>	4
	Indian rice grass	<i>Oryzopsis hymenoides</i>	3
	Common reed	<i>Phragmites communis</i>	1
	Bulbous bluegrass	<i>Poa bulbosa</i>	1,2
	Cusick bluegrass	<i>Poa cusickii</i>	3
	Canada bluegrass	<i>Poa compressa</i>	1,2
	Skyline bluegrass	<i>Poa epilis</i>	3
	Muttongrass	<i>Poa fendeleriana</i>	1,2,3
	Sandberg bluegrass	<i>Poa secunda</i>	1,2,3
	Alkaligrass	<i>Puccinellia spp.</i>	1
	Bottlebrush, squirreltail	<i>Sitanion hystrix</i>	1,3
	Alkali cordgrass	<i>Spartina gracilis</i>	1
	Alkali sacaton	<i>Sporobolus airoides</i>	1
	Needle-and-thread grass	<i>Stipa comata</i>	1,3,4
	Columbia needlegrass	<i>Stipa columbiana</i>	3
Indian ricegrass	<i>Stipa hymenoides</i>	1,2	

Sources:

1. Ebasco 1994.
2. TEAD 1995.
3. Dames & Moore 1997.

## References

- Ebasco Services, Inc (Ebasco). 1994. *Tooele Army Depot—South Area Suspected Release Units. RCRA Facility Release Investigation*. Draft Report. Prepared for U.S. Army Environmental Center, Aberdeen Proving Ground, MD.
- Dames & Moore. 1997. *Final Technical Report: Environmental Monitoring Baseline Study, Deseret Chemical Depot, Tooele, Utah*. Prepared for Program Manager for Chemical Demilitarization. Contract Number DACA31-94-D-0060. Los Angeles, CA.
- TEAD (Tooele Army Depot). 1995. *Natural Resource Management Plan for the Tooele Army Depot, Tooele County, Utah*. Tooele Army Depot, UT.
- TEAD (Tooele Army Depot). 2001. *Planning Level Surveys for Fauna, Flora, and Vegetative Communities*. Tooele Army Depot, UT.



**Appendix C**

**Faunal Species List**

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**Table C-1  
Mammal Species List for TEAD North Area**

<b>Species Common Name</b>	<b>Scientific Name</b>	<b>Comments</b>
Brazilian free-tailed bat	<i>Tadarida brasiliensi</i>	Detected acoustically
California myotis	<i>Myotis californicus</i>	Probable occurrence
Small-footed myotis	<i>Myotis ciliolabrum</i>	Probable occurrence
Western pipistrelle	<i>Pipistrellus hesperus</i>	Probable occurrence
Valley pocket gopher	<i>Thomomys bottae</i>	Probable occurrence
Antelope ground squirrel	<i>Ammosperinophilus</i>	Probable occurrence
Townsend ground squirrel	<i>Spermophilus townsendii</i>	Probable occurrence
Northern grasshopper mouse	<i>Onychomys leucogaster</i>	Probable occurrence
Deer mouse	<i>Peromyscus maniculatus</i>	Confirmed
Great Basin pocket mouse	<i>Perognathus pavus</i>	Confirmed
Little pocket mouse	<i>Perognathus longimembris</i>	Confirmed
Western harvest mouse	<i>Reithrodontomys mega lotus</i>	Probable occurrence
Sagebrush vole	<i>Lemniscus curtatus</i>	Probable occurrence
Ord's kangaroo rat	<i>Dipodomys ordi</i>	Confirmed
Chisel-toothed kangaroo rat	<i>Dipodomys microps</i>	Probable occurrence
Desert woodrat	<i>Neotoma lepida</i>	Probable occurrence
Bushy-tailed woodrat	<i>Neotoma cinerea</i>	Probable occurrence
Porcupine	<i>Erethzion dorsatum</i>	Confirmed
Mountain cottontail	<i>Sylvilagus nuttalli</i>	Confirmed
Black-tailed jackrabbit	<i>Lepus californicus</i>	Predominant lagomorph
Long-tailed weasel	<i>Mustela frenata</i>	Confirmed (photograph)
Badger	<i>Taxidea taxus</i>	Confirmed
Raccoon	<i>Procyon lotor</i>	Confirmed
Striped skunk	<i>Mephitis mephitis</i>	Probable occurrence
Coyote	<i>Canis latrans</i>	Confirmed
Kit fox	<i>Vulpes macrotis</i>	Presumably kit, not red
Gray fox	<i>Urocyon cineroargenteus</i>	Unlikely occurrence
Red fox	<i>V. vulpes</i>	Probable occurrence
Bobcat	<i>Lynx rufus</i>	Confirmed
Cougar	<i>Puma concolor</i>	Possible visitor
Mule Deer	<i>Odocoileus hemionus</i>	Small resident herd
Elk	<i>Cervus elaphus</i>	Winter visitor

Source: TEAD 2001.

**Table C-2  
Bird Species List for TEAD North Area**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Frequency of Occurrence</b>
American Crow	<i>Corvus brachyrhynchos</i>	0.013
American Kestrel	<i>Falco sparverius</i>	0.013
American robin	<i>Turdus migratorius</i>	0.013
Bald Eagle*	<i>Haliaeetus Leucocephalus</i>	0.000
Bank Swallow	<i>Riparia riparia</i>	0.000
Barn Swallow	<i>Hirundo rustica</i>	0.072
Black-billed Magpie	<i>Pica pica</i>	0.033
Black-necked Stilt	<i>Himantopus mexicanus</i>	0.000
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	0.046
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	0.007
Brewer's Sparrow	<i>Spizella breweri</i>	0.020
Brown-headed Cowbird	<i>Molothrus ater</i>	0.039
Burrowing Owl	<i>Athene cunicularia</i>	0.007
Canada Goose	<i>Branta canadensis</i>	0.007
California Gull	<i>Larus californicus</i>	
Chipping Sparrow	<i>Spizella passerina</i>	0.059
Common Nighthawk	<i>Chordeiles minor</i>	0.000
Common Poorwill	<i>Phalaenoptilus nuttall</i>	
Common Raven	<i>Corvus corax</i>	0.033
European Starling	<i>Sturnus vulgaris</i>	0.020
Golden Eagle	<i>Aquila chrysaetos</i>	0.013
Gray Flycatcher	<i>Empidonax wrightii</i>	0.013
Ferruginous Hawk	<i>Buteo regalis</i>	0.007
Great Blue Heron	<i>Ardea herodias</i>	0.000
Horned Lark	<i>Eremophila alpestris</i>	0.137
House Finch	<i>Carpodacus mexicanus</i>	0.013
House Sparrow	<i>Passer domesticus</i>	0.007
Juniper Titmouse**	<i>Baeolophus griseus</i>	0.000
Killdeer	<i>Charadrius vociferus</i>	0.000
Lark Sparrow	<i>Chondestes grammacus</i>	0.157
Loggerhead Shrike	<i>Lanis ludovicianus</i>	0.013
Long-billed Curlew	<i>Numenius americanus</i>	0.026
Mourning Dove	<i>Zenaida macroura</i>	0.072
Mountain Chickadee	<i>Poecile gambeli</i>	0.007
Northern Flicker	<i>Colaptes auratus</i>	0.007
Northern Harrier	<i>Circus cyaneus</i>	0.013
Northern Mockingbird	<i>Minus polyglottos</i>	0.007
Northern Oriole	<i>Icterus bullock</i>	0.013
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	0.007
Pheasant	<i>Phasianus colchicus</i>	0.007
Red-tailed Hawk	<i>Buteo jamaicensis</i>	0.020
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	0.000
Rock Dove	<i>Columba livia</i>	
Rock Wren	<i>Salpinctes obsoletus</i>	0.013
Rough-legged Hawk*	<i>Buteo lagopus</i>	0.000

<b>Table C-2 (continued)</b>		
<b>Common Name</b>	<b>Scientific Name</b>	<b>Frequency of Occurrence</b>
Say's Phoebe	<i>Sauprmos saya</i>	0.013
Song Sparrow	<i>Melospiza melodia</i>	0.000
Turkey Vulture	<i>Cathartes aura</i>	
Swainson's Hawk	<i>Buteo swainsoni</i>	0.000
Vesper Sparrow	<i>Pooecetes gramineus</i>	0.007
Western Kingbird	<i>Tyrannus verticalis</i>	0.007
Western Meadowlark	<i>Sturnella neglecta</i>	0.353
Western Scrub Jay	<i>Apelocoma californica</i>	0.020
Western Tanager	<i>Piranga ludoviciana</i>	0.007
Source: TEAD 2001.		
Notes:		
* = Winter resident/visitor.		
** = Probable occurrence (i.e., not observed directly).		

**Table C-3  
Animal Species List for TEAD South Area**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Source</b>
<b>Mammals</b>		
Pronghorn antelope	<i>Antilocapra americana</i>	1,3
Coyote	<i>Canis latrans</i>	4,3,6
Boreal redback vole	<i>Clethrionomys gapperi</i>	4
Great Basin (Chiseled-toothed) kangaroo rat	<i>Dipodomys microps</i>	4,3
Ord's kangaroo rat	<i>Dipodomys ordi</i>	4,3,6
Big brown bat	<i>Eptesicus fuscus</i>	4,6
Porcupine	<i>Erethizon dorsatum</i>	4,3,6
Cliff chipmunk	<i>Eutamias dorsalis</i>	4,6
Least chipmunk	<i>Eutamias minimus</i>	4,3
Uinta chipmunk	<i>Eutamias umbrinus</i>	4
Mountain lion	<i>Felis concolor</i>	1,4
Sagebrush vole	<i>Lagurus curtatus</i>	4,3,6
Silver-haired bat	<i>Lasionycteris noctivagans</i>	4,6
Black-tailed jackrabbit	<i>Lepus californicus</i>	4,3,6
Striped skunk	<i>Mephitis mephitis</i>	4
Dark kangaroo mouse	<i>Microdipodops megacephalus</i>	4
Long-tailed vole	<i>Microtus longicaudus</i>	4,3,6
Mountain vole	<i>Microtus montanus</i>	4,3
Meadow vole	<i>Microtus pennsylvanicus</i>	4,3
House mouse	<i>Mus musculus</i>	4,3
California myotis	<i>Myotis californicus</i>	4
Mule deer	<i>Odocoileus hemionus</i>	4
Little pocket mouse	<i>Perognathus longimembris</i>	4
Great Basin pocket mouse	<i>Perognathus parvus</i>	4,3,6
Deer mouse	<i>Peromyscus maniculatus</i>	4,3,6
Pinon mouse	<i>Peromyscus truei</i>	4,3,6
Heather vole	<i>Phenacomys intermedius</i>	4
Western harvest mouse	<i>Reithrodontomys megalotis</i>	4,3,6
Merriam's shrew (R)	<i>Sorex merriami</i>	4,3,5,6
Dusky shrew	<i>Sorex obscurus</i>	4,3,6
Vagrant shrew	<i>Sorex vagrans</i>	4,3
Townsend's ground squirrel	<i>Spermophilus townsendii</i>	4,3,6
Rock squirrel	<i>Spermophilus variegatus</i>	4,3,6
Desert cottontail	<i>Sylvialagus audubonii</i>	4,3
Badger	<i>Taxidea taxus</i>	4,3,6
Northern pocket gopher	<i>Thomomys talpoides</i>	4,3
Valley pocket gopher	<i>Thomomys bottae</i>	4,3
Red fox	<i>Vulpes vulpes</i>	4,6
Western jumping mouse	<i>Zapus princeps</i>	4,6

**Table C-3 (continued)**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Source</b>
<b>Reptiles</b>		
Western yellow-bellied racer	<i>Coluber constrictor</i>	3
Great Basin rattlesnake	<i>Crotalus viridis</i>	1,4,3
Desert-horned lizard	<i>Phrynosoma platyrhinos</i>	1,4,3
Bullsnake	<i>Pituophis melanoleucus</i>	4
Great Basin gopher snake	<i>Pituophis melanoleucus</i>	1,4,3
Sagebrush lizard	<i>Sceloporus graciosus</i>	4
Western fence lizard	<i>Sceloporus occidentalis</i>	3
Side-blotched lizard	<i>Uta stansburiana</i>	1,4,3
<b>Fish</b>		
Carp	<i>Cyprinus carpio</i>	2
Least chub (FPE)	<i>lotichthys plegethontis</i>	5
Rainbow trout	<i>Salmo gairdneri</i>	3
<b>Amphibians</b>		
Western woodhouse's toad	<i>Bufo woodhousei</i>	3
Spotted Frog (CAS)	<i>Rana luteiventris</i>	3,5
Northern leopard frog	<i>Rana pipiens</i>	3
Great Basin spadefoot toad	<i>Scaphiopus intermentanus</i>	3
Sources:		
<ol style="list-style-type: none"> <li>1. EMD TEAD 1991.</li> <li>2. TEAD 1988.</li> <li>3. TEAD 1995.</li> <li>4. Ebasco 1994.</li> <li>5. UDNR 1999.</li> <li>6. Zeveloff and Collett 1988.</li> </ol>		
Notes:		
CAS: Conservation Agreement Species		
FPE: Federal Proposed Endangered		
R: State-listed rare species		

**Table C-4  
Bird Species List for TEAD South Area**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Source</b>
Cooper's hawk	<i>Accipiter cooperii</i>	4,5
Western grebe	<i>Aechmophorus occidentalis</i>	5
Red-winged blackbird	<i>Agelaius phoeniceus</i>	4,5
Great horned owl	<i>Bubo virginianus</i>	4,5
Red-tailed hawk	<i>Buteo jamaicensis</i>	4,5
Rough-legged hawk	<i>Buteo lagopus</i>	4,5
Ferruginous hawk	<i>Buteo regalis</i>	2,4,5
Turkey vulture	<i>Cathartes aura</i>	4,5
Sage grouse	<i>Centrocercus urophasianus</i>	2,4,5
Western snowy plover	<i>Charadrius alexandrius nivosus</i>	1,2,5
Killdeer	<i>Charadrius vociferous</i>	4,5
Common (Northern, Red- shafted, Yellow) flicker	<i>Colaptes auratus</i>	4,5
Yellow-rumped warbler	<i>Dendroica coronata</i>	4,5
Yellow warbler	<i>Dendroica petechia</i>	4,5
<i>Brewer's blackbird</i>	<i>Euphagus cyanocephalus</i>	4,5
Prairie falcon	<i>Falco mexicanus</i>	4,5
American kestrel	<i>Falco sparverius</i>	4,5
Common yellowthroat (S)	<i>Geothlypis trichas</i>	4,6
Peregrin Falcon (FE, SE)	<i>Falco peregrinus</i>	2,3
Bald eagle (FT, ST)	<i>Haliaeetus leucocephalus</i>	1,2,3,4,5,6
Barn swallow	<i>Hirundo rustica</i>	4,5
Yellow-breasted chat	<i>Icteria virens</i>	4
Loggerhead shrike	<i>Lanius ludovicianus</i>	4,5
California gull	<i>Larus californicus</i>	4
Brown-headed cowbird	<i>Molothrus ater</i>	4,5
Screech owl	<i>Otus kennicotti</i>	4
House sparrow	<i>Passer domesticus</i>	4,5
Savannah sparrow	<i>Passerculus sandwichensis</i>	4,5
Black-headed grosbeak	<i>Pheucticus melanocephalus</i>	4
Black-billed magpie	<i>Pica pica</i>	4,5
Downy woodpecker	<i>Picoides pubescens</i>	4
Hairy woodpecker	<i>Picoides villosus</i>	4
Green-tailed towhee	<i>Pipilo chlorurus</i>	4,5
Vesper sparrow	<i>Pooecetes gramineus</i>	4,5
Bushtit	<i>Psaltriparus minimus</i>	4



Table C-4 (continued)		
Common Name	Scientific Name	Source
Rock wren	<i>Salpinctes obsoletus</i>	4
Broad-tailed hummingbird	<i>Selasphorus platycercus</i>	4,5
Mountain bluebird	<i>Sialia currucoides</i>	4,5
Chipping sparrow	<i>Spizella passerina</i>	4,5
Northern rough-winged swallow	<i>Stegidopteryx serripennis</i>	4
Western meadowlark	<i>Sturnella neglecta</i>	4, 5
European starling	<i>Sturnus vulgaris</i>	4, 5
House wren	<i>Troglodytes aedon</i>	4, 5
American robin	<i>Turdus migratorius</i>	4
Western kingbird	<i>Tyrannus verticalis</i>	4, 5
Barn owl	<i>Tyto alba</i>	4
Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>	4
Sage Thrasher	<i>Oreoscoptes montanus</i>	7
Mallard	<i>Anas platyrhynchos</i>	7
Cinnamon Teal	<i>Anas cyanoptera</i>	7
Canada Goose	<i>Branta canadensis</i>	7
American Coot	<i>Fulica americana</i>	7
Black Neck Stilt	<i>Himantopus mexicana</i>	7
Red Tail Hawk	<i>Buteo jamaicensis</i>	7
Golden Eagle	<i>Aquila chrysaetos</i>	7
Loggerhead Shrike	<i>Lanius ludovicianus</i>	7
Horned Lark	<i>Eremophila alpestris</i>	7
Rough-legged Hawk	<i>Buteo lagopus</i>	7
Northern Harrier	<i>Circus cyaneus</i>	7
Mourning Dove	<i>Zenaida macroura</i>	4,5
Sources:		
<ol style="list-style-type: none"> <li>1. APG 1989.</li> <li>2. EMD TEAD 1991.</li> <li>3. FWS 1999.</li> <li>4. Ebasco 1994.</li> <li>5. TEAD 1995.</li> <li>6. UDNR 1999</li> <li>7. Identified by DCD personnel not otherwise identified in the studies.</li> </ol>		
Notes:		
FE: Federally-listed endangered species		
SE: State-listed endangered species		
FT: Federally-listed threatened species		
ST: State-listed threatened species		
S: State-listed sensitive species		

## References

- APG (Aberdeen Proving Ground). 1989. *Disposal of Chemical Agents and Munitions Stored at Tooele Army Depot, Tooele County, Utah—Final Environmental Impact Statement*. Program Management for Chemical Demilitarization, Aberdeen Proving Ground, MD.
- Ebasco Services, Inc. (Ebasco). 1994. *Tooele Army Depot South Area Suspected Release Units. RCRA Facility Release Investigation*. Draft Report. U.S. Army Environmental Center, Aberdeen Proving Ground, MD.
- EMD TEAD (Environmental Management Division Tooele Army Depot). 1991. Memorandum Regarding T&E Species Potentially at Tooele Army Depot. From A.D. Higley, to AMC Rock Island, IL. November 19.
- FWS (Fish and Wildlife Service). 1999. Letter Regarding Threatened and Endangered Species for Deseret Chemical Depot, Tooele County, Utah. From Reed E. Harris, Field Supervisor, to Eric T. Dohner, Tetra Tech, Inc., Fairfax, VA. January 7.
- TEAD (Tooele Army Depot). 1988. *Natural Resource Management Plan for the South Depot Area*. Tooele Army Depot, UT.
- TEAD (Tooele Army Depot). 1995. *Natural Resource Management Plan for the Tooele Army Depot*. Tooele Army Depot, UT.
- TEAD (Tooele Army Depot). 2001. *Planning Level Surveys for Fauna, Flora, and Vegetative Communities*. Tooele Army Depot, UT.
- UDNR. 1999. Letter regarding Threatened and Endangered Species Found in the Proximity of the Deseret Chemical Depot, Tooele County, Utah. From Alan Ward, Information Manager, Utah Natural Heritage Program, UNDR, to Eric T. Dohner, Tetra Tech, Inc., Fairfax, VA. January 11.
- Zeveloff, S.I. and F.R. Collett. 1988. *Mammals of the Intermountain West*. University of Utah Press, Salt Lake City, UT.



U.S. Fish and Wildlife Service

## Trust Resources List

**This resource list is to be used for planning purposes only — it is not an official species list.**

**Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:**

**Utah Ecological Services Field Office**  
2369 WEST ORTON CIRCLE, SUITE 50  
WEST VALLEY CITY, UT 84119  
(801) 975-3330  
<http://www.fws.gov>  
<http://www.fws.gov/utahfieldoffice/>

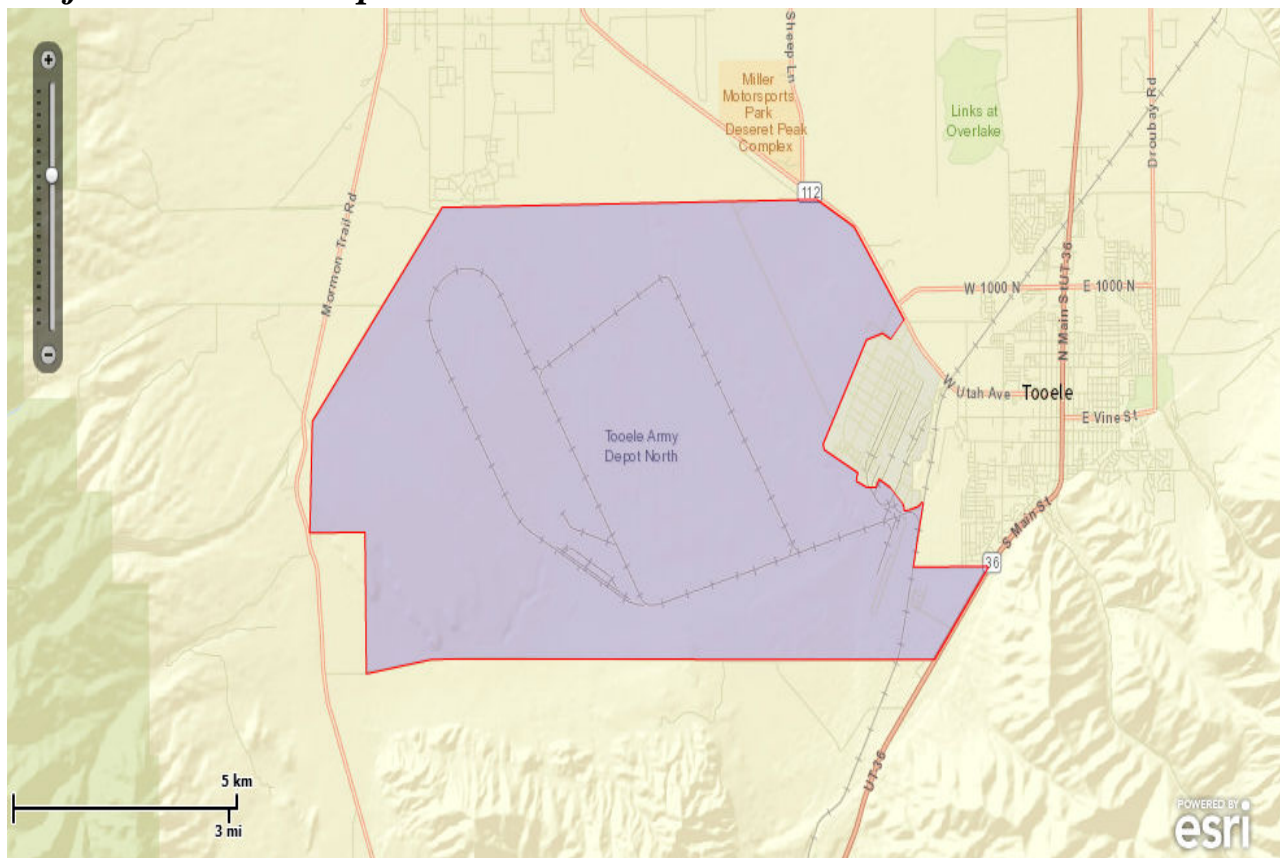
***Project Name:***

TEAD NORTH



## Trust Resources List

### *Project Location Map:*



### *Project Location Measurements:*

Area : 23332.0 ac.

Length : 28.1 mi.

### *Project Counties:*

Tooele, UT



## Trust Resources List

### ***Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):***

MULTIPOLYGON (((-112.3323602 40.4925183, -112.4592607 40.4926337, -112.4656122 40.4925032, -112.4826067 40.4902642, -112.48295 40.5124739, -112.4975412 40.5123238, -112.4968975 40.5298292, -112.4625577 40.5632891, -112.3634833 40.5645272, -112.3536514 40.5603231, -112.3404335 40.5457623, -112.3439504 40.5426772, -112.346182 40.543623, -112.3503459 40.5425761, -112.3618901 40.5261913, -112.3614588 40.5253448, -112.3525775 40.5217564, -112.3529637 40.5210697, -112.3530495 40.5204499, -112.3505583 40.5195691, -112.3478139 40.5196017, -112.3470414 40.5207435, -112.344121 40.5194386, -112.3408036 40.5169697, -112.3404496 40.516464, -112.3402758 40.5157781, -112.3390473 40.515942, -112.3379128 40.5161704, -112.336518 40.5165537, -112.335767 40.5171247, -112.3353056 40.516986, -112.337977 40.5070074, -112.3188255 40.5071461, -112.3184768 40.5071177, -112.3181442 40.5069179, -112.3323602 40.4925183)))

### ***Project Type:***

Guidance

### ***Endangered Species Act Species List ([USFWS Endangered Species Program](#))***

There are a total of 3 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

### **Species that should be considered in an effects analysis for your project:**

Birds	Status		Has Critical Habitat	Contact
Greater sage-grouse ( <i>Centrocercus urophasianus</i> ) Population: entire	Candidate	<a href="#">species info</a>		Utah Ecological Services Field Office
Yellow-Billed Cuckoo ( <i>Coccyzus americanus</i> ) Population: Western U.S. DPS	Threatened	<a href="#">species info</a>	<a href="#">Proposed critical habitat</a>	Utah Ecological Services Field Office
<b>Flowering Plants</b>				
Ute ladies'-tresses ( <i>Spiranthes diluvialis</i> )	Threatened	<a href="#">species info</a>		Utah Ecological Services Field Office



## Trust Resources List

### **Critical habitats within your project area:**

*There are no critical habitats within your project area.*

### ***FWS National Wildlife Refuges ([USFWS National Wildlife Refuges Program](#)).***

*There are no refuges found within the vicinity of your project.*

### ***FWS Migratory Birds ([USFWS Migratory Bird Program](#)).***

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see: <http://www.fws.gov/migratorybirds/RegulationsandPolicies.html>.

All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

For information about Birds of Conservation Concern, go to:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html>.

To search and view summaries of year-round bird occurrence data within your project area, go to the Avian Knowledge Network Histogram Tool links in the Bird Conservation Tools section at: <http://www.fws.gov/migratorybirds/CCMB2.htm>.

For information about conservation measures that help avoid or minimize impacts to birds, please visit:

<http://www.fws.gov/migratorybirds/CCMB2.htm>.

### **Migratory birds of concern that may be affected by your project:**



## Trust Resources List

There are **20** birds on your Migratory birds of concern list. The underlying data layers used to generate the migratory bird list of concern will continue to be updated regularly as new and better information is obtained. User feedback is one method of identifying any needed improvements. Therefore, users are encouraged to submit comments about any questions regarding species ranges (e.g., a bird on the USFWS BCC list you know does not occur in the specified location appears on the list, or a BCC species that you know does occur there is not appearing on the list). Comments should be sent to [the ECOS Help Desk](#).

Species Name	Bird of Conservation Concern (BCC)	Species Profile	Seasonal Occurrence in Project Area
American bittern ( <i>Botaurus lentiginosus</i> )	Yes	<a href="#">species info</a>	Breeding
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	Yes	<a href="#">species info</a>	Wintering
Brewer's Sparrow ( <i>Spizella breweri</i> )	Yes	<a href="#">species info</a>	Breeding
Burrowing Owl ( <i>Athene cunicularia</i> )	Yes	<a href="#">species info</a>	Breeding
Calliope Hummingbird ( <i>Stellula calliope</i> )	Yes	<a href="#">species info</a>	Breeding
Cassin's Finch ( <i>Carpodacus cassinii</i> )	Yes	<a href="#">species info</a>	Year-round
Eared Grebe ( <i>Podiceps nigricollis</i> )	Yes	<a href="#">species info</a>	Breeding
Ferruginous hawk ( <i>Buteo regalis</i> )	Yes	<a href="#">species info</a>	Year-round
Fox Sparrow ( <i>Passerella liaca</i> )	Yes	<a href="#">species info</a>	Breeding
Golden eagle ( <i>Aquila chrysaetos</i> )	Yes	<a href="#">species info</a>	Year-round
Lewis's Woodpecker ( <i>Melanerpes lewis</i> )	Yes	<a href="#">species info</a>	Breeding
Loggerhead Shrike ( <i>Lanius ludovicianus</i> )	Yes	<a href="#">species info</a>	Year-round
Long-Billed curlew ( <i>Numenius americanus</i> )	Yes	<a href="#">species info</a>	Breeding
Olive-Sided flycatcher ( <i>Contopus cooperi</i> )	Yes	<a href="#">species info</a>	Breeding



## Trust Resources List

Peregrine Falcon ( <i>Falco peregrinus</i> )	Yes	<a href="#">species info</a>	Year-round
Pinyon Jay ( <i>Gymnorhinus cyanocephalus</i> )	Yes	<a href="#">species info</a>	Year-round
Sage Thrasher ( <i>Oreoscoptes montanus</i> )	Yes	<a href="#">species info</a>	Breeding
Short-eared Owl ( <i>Asio flammeus</i> )	Yes	<a href="#">species info</a>	Wintering
Swainson's hawk ( <i>Buteo swainsoni</i> )	Yes	<a href="#">species info</a>	Breeding
Williamson's Sapsucker ( <i>Sphyrapicus thyroideus</i> )	Yes	<a href="#">species info</a>	Breeding

### ***NWI Wetlands ([USFWS National Wetlands Inventory](#)).***

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

### **Data Limitations, Exclusions and Precautions**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.





## Trust Resources List

Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

**Exclusions** - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

**Precautions** - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

**The following wetland types intersect your project area in one or more locations:**

Wetland Types	NWI Classification Code	Total Acres
Freshwater Emergent Wetland	<a href="#">PEM1Kx</a>	8.7945
Freshwater Emergent Wetland	<a href="#">PEM1K</a>	10.8093
Freshwater Pond	<a href="#">PUSJh</a>	3.862
Freshwater Pond	<a href="#">PUSCx</a>	0.416
Freshwater Pond	<a href="#">PABFx</a>	0.4015

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U.S. Fish and Wildlife Service

## Trust Resources List

**This resource list is to be used for planning purposes only — it is not an official species list.**

**Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:**

**Utah Ecological Services Field Office**  
2369 WEST ORTON CIRCLE, SUITE 50  
WEST VALLEY CITY, UT 84119  
(801) 975-3330  
<http://www.fws.gov>  
<http://www.fws.gov/utahfieldoffice/>

***Project Name:***

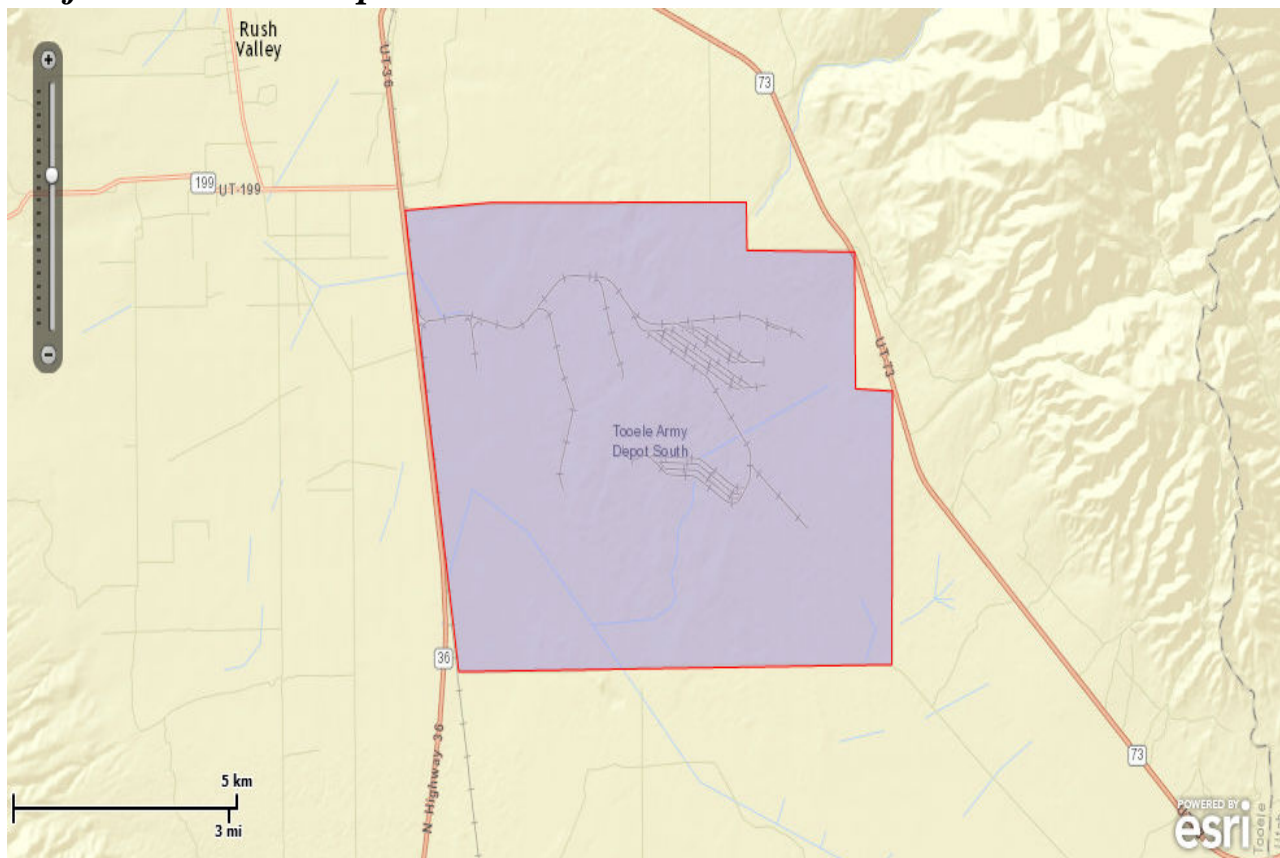
TEAD SOUTH



U.S. Fish and Wildlife Service

## Trust Resources List

### *Project Location Map:*



### *Project Location Measurements:*

Area : 19576.0 ac.

Length : 22.8 mi.

### *Project Counties:*

Tooele, UT



## Trust Resources List

### ***Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):***

MULTIPOLYGON (((-112.3935948 40.2608644, -112.4070788 40.3294521, -112.4077655 40.3333125, -112.3856984 40.3344902, -112.3175488 40.334621, -112.3173857 40.3270115, -112.28889 40.3267497, -112.2887011 40.3052838, -112.2789164 40.3048911, -112.2791374 40.2619402, -112.3935948 40.2608644)))

### ***Project Type:***

Guidance

### ***Endangered Species Act Species List (USFWS Endangered Species Program).***

There are a total of 3 threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

### **Species that should be considered in an effects analysis for your project:**

Birds	Status		Has Critical Habitat	Contact
Greater sage-grouse ( <i>Centrocercus urophasianus</i> ) Population: entire	Candidate	<a href="#">species info</a>		Utah Ecological Services Field Office
Yellow-Billed Cuckoo ( <i>Coccyzus americanus</i> ) Population: Western U.S. DPS	Threatened	<a href="#">species info</a>	<a href="#">Proposed critical habitat</a>	Utah Ecological Services Field Office
Flowering Plants				
Ute ladies'-tresses ( <i>Spiranthes diluvialis</i> )	Threatened	<a href="#">species info</a>		Utah Ecological Services Field Office

### **Critical habitats within your project area:**

*There are no critical habitats within your project area.*



## Trust Resources List

### ***FWS National Wildlife Refuges ([USFWS National Wildlife Refuges Program](#))***

*There are no refuges found within the vicinity of your project.*

### ***FWS Migratory Birds ([USFWS Migratory Bird Program](#))***

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see: <http://www.fws.gov/migratorybirds/RegulationsandPolicies.html>.

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For information about Birds of Conservation Concern, go to:

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### **Migratory birds of concern that may be affected by your project:**

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## Trust Resources List

Species Name	Bird of Conservation Concern (BCC)	Species Profile	Seasonal Occurrence in Project Area
American bittern ( <i>Botaurus lentiginosus</i> )	Yes	<a href="#">species info</a>	Breeding
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	Yes	<a href="#">species info</a>	Wintering
Brewer's Sparrow ( <i>Spizella breweri</i> )	Yes	<a href="#">species info</a>	Breeding
Burrowing Owl ( <i>Athene cunicularia</i> )	Yes	<a href="#">species info</a>	Breeding
Calliope Hummingbird ( <i>Stellula calliope</i> )	Yes	<a href="#">species info</a>	Breeding
Cassin's Finch ( <i>Carpodacus cassinii</i> )	Yes	<a href="#">species info</a>	Year-round
Eared Grebe ( <i>Podiceps nigricollis</i> )	Yes	<a href="#">species info</a>	Breeding
Ferruginous hawk ( <i>Buteo regalis</i> )	Yes	<a href="#">species info</a>	Year-round
Fox Sparrow ( <i>Passerella iliaca</i> )	Yes	<a href="#">species info</a>	Breeding
Golden eagle ( <i>Aquila chrysaetos</i> )	Yes	<a href="#">species info</a>	Year-round
Lewis's Woodpecker ( <i>Melanerpes lewis</i> )	Yes	<a href="#">species info</a>	Breeding
Loggerhead Shrike ( <i>Lanius ludovicianus</i> )	Yes	<a href="#">species info</a>	Year-round
Long-Billed curlew ( <i>Numenius americanus</i> )	Yes	<a href="#">species info</a>	Breeding
Olive-Sided flycatcher ( <i>Contopus cooperi</i> )	Yes	<a href="#">species info</a>	Breeding
Peregrine Falcon ( <i>Falco peregrinus</i> )	Yes	<a href="#">species info</a>	Year-round
Pinyon Jay ( <i>Gymnorhinus cyanocephalus</i> )	Yes	<a href="#">species info</a>	Year-round
Sage Thrasher ( <i>Oreoscoptes montanus</i> )	Yes	<a href="#">species info</a>	Breeding



## Trust Resources List

Short-eared Owl ( <i>Asio flammeus</i> )	Yes	<a href="#">species info</a>	Wintering
Swainson's hawk ( <i>Buteo swainsoni</i> )	Yes	<a href="#">species info</a>	Breeding
Williamson's Sapsucker ( <i>Sphyrapicus thyroideus</i> )	Yes	<a href="#">species info</a>	Breeding

### ***NWI Wetlands ([USFWS National Wetlands Inventory](#)).***

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

### **Data Limitations, Exclusions and Precautions**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

**Exclusions** - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and





## Trust Resources List

nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

**Precautions** - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

**The following wetland types intersect your project area in one or more locations:**

Wetland Types	NWI Classification Code	Total Acres
Freshwater Emergent Wetland	<a href="#">PEM1C</a>	54.5671
Freshwater Emergent Wetland	<a href="#">PEM1A</a>	189.3031
Freshwater Emergent Wetland	<a href="#">PEM1/SS1A</a>	105.0359
Freshwater Forested/Shrub Wetland	<a href="#">PSS1/EM1A</a>	50.2894
Freshwater Forested/Shrub Wetland	<a href="#">PSS1A</a>	20.6879
Freshwater Forested/Shrub Wetland	<a href="#">PFO1/SS1A</a>	1.1195
Freshwater Pond	<a href="#">PUS/SS1A</a>	9.207
Freshwater Pond	<a href="#">PUSAh</a>	0.3482
Freshwater Pond	<a href="#">PUSJh</a>	0.3984
Freshwater Pond	<a href="#">PUSCh</a>	1.0047
Freshwater Pond	<a href="#">PUSC<sub>x</sub></a>	0.5464
Freshwater Pond	<a href="#">PUSK<sub>x</sub></a>	10.3141
Freshwater Pond	<a href="#">PUBK<sub>x</sub></a>	3.8494

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**Appendix D**

**Utah Comprehensive Wildlife Strategy Faunal Species List**

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**DCD Species Identified In The Utah Comprehensive Wildlife Strategy**

Columbia Spotted Frog	Rana luteiventris	Tier I	Amphibian	<b>Priority</b>
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	<p>Spotted frogs along the Wasatch Front generally possess a salmon color ventrally and yellow to yellow-orange coloration ventrally in the West Desert and Sanpete County, however coloration can be quite variable between populations in Utah. Specific characteristics which distinguish the spotted frog from the sympatric leopard frog include: rougher skin, shorter limbs, larger webs between the toes, smaller tympanum, and the smooth round eyes which are turned slightly upward. Other distinguishing characteristics of the leopard frog are very large conspicuous spots and a mostly white ventral surface compared to the pigmented ventral surfaces of the spotted frog. The spotted frog tends to be more of an aquatic specialist than most ranids. Spotted</p>	<p>In the west desert, populations are stable within the Tule Valley and Gandy Marsh sites and are declining at Bishop Springs, Leland-Miller and Iapah. The long-term viability of all of the west desert populations are threatened by ongoing habitat degradation from improper grazing and de-watering due to agricultural diversions. Along the Wasatch Front, populations are increasing in Heber Valley and above the Jordanelle Reservoir, stable at Diamond Fork, and are unstable at Mona/Burraston, Holladay Springs, and Springville. There is only one population, the San Pitch population, within the Sevier River Drainage and it is currently stable.</p>	<p>Columbia spotted frogs along the Wasatch Front are thought to have historically occurred in the San Pitch River, Spanish Fork River, Utah Lake, Provo River, Jordan River, and Upper Weber River Drainages. Results of a survey conducted in 1992 indicated that the distribution of spotted frogs along the Wasatch Front had declined. Spotted frogs currently occur within San Pitch River (Sanpete Valley), Spanish Fork River (Holladay Springs), Utah Lake (near Mona), Provo River (Heber Valley), and in the Upper Weber River (Francis) drainages.</p>	

**DCD Species Identified In The Utah Comprehensive Wildlife Strategy**

	frog typically inhabit a variety of habitat types including cold water ponds, streams, lakes, and springs adjacent to mixed coniferous and subalpine forest, grassland and brush land. Breeding sites are predominantly associated with a spring or some other permanent water source.			
Disease	Risk of infection by chytrid fungus, a known lethal pathogen of amphibians worldwide	Test and Monitor disease	Monitor for chytrid fungus infection	H
Invasive Animal Species	Competition with and predation by mosquitofish ( <i>Gambusia affinis</i> )	Control and Monitor invasive species	Monitor and manage mosquitofish	M
Water Development	Habitat fragmentation due to development of streams and rivers (dams, diversions)	Restore Degraded Habitats	Habitat restoration in wetlands and along riparian corridors	M
Limited Distribution	Occurs in limited numbers	Increase Distribution	Augment populations, expand range into historical areas	H
Habitat Loss	Destruction, degradation and fragmentation of habitat	Permanent Conservation of Habitat	Pursue of conservation easements for Columbia spotted frog habitats	H
Current Management	1. The Planning Level Survey did not identify fish or other vertebrates in the aquatic survey of Ophir Creek or the wetlands. 2. The DCD INRMP requires best management practice within a 100 foot buffer for any action that could			

**DCD Species Identified In The Utah Comprehensive Wildlife Strategy**

	impact riparian or wetlands areas. 3. Pesticides/Herbicides are not used in riparian, water, wet meadows or wetland habitats.			
<b>Northern Leopard Frog</b>	Rana pipiens	Tier III	Amphibian	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	Found in grasslands, brush lands, woodlands and forest	Population size and trends unknown.	Occurs throughout Utah.	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
<b>Lack of Information</b>	Status in Utah unknown	Determine and Map Distribution	Determine distribution in Utah	M
<b>Water Development</b>	Water development for agricultural or municipal uses may reduce available habitat	Control and Monitor Disturbance	Monitor populations at greatest risk from water or other developments; provide water and/or habitat if needed	M
<b>Disease</b>	Chitrydiomycosis (chytrid fungus) may negatively affect populations	Monitor Population Responses to Disease	Monitor populations and submit to testing if signs of chytrid found; prevent translocations from infected populations	M
<b>Current Management</b>	1. The Planning Level Survey did not identify fish or other vertebrates in the aquatic survey of Ophir Creek or the wetlands. 2. The DCD INRMP requires the best management practice within a 100 foot buffer for any action that could impact riparian or wetlands areas. 3. Pesticides/Herbicides are not used in riparian, water, wet meadows or wetland habitats			

<b>Bald Eagle</b>	Haliaeetus leucocephalus	Tier I	Bird	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	Matures at 4 -6 years old; life span around 30 years	Bald Eagles have been down listed from endangered and Threatened (currently a Utah Species of Concern) as a result (USFWS 1995a). Bald Eagles winter in the thousands in Utah, but the nesting population (6 active nests in 2005) has not reached the recovery goal of 10.	Bald Eagles nest across the United States and Canada; eagles winter across the U.S. but are most abundant in the West and Midwest (USFWS 1983). In Utah, birds winter along open water bodies and rivers, in canyons along the Wasatch front and in groves of large trees in the west desert.	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
Habitat Loss	Loss of lowland riparian habitats which serve as both nest and roost habitat	Implement Existing Conservation Plan (Northern States Bald Eagle Recovery Plan)	Develop and implement nest management plans for all active nests; provide artificial nests where natural nests are threatened; protect known winter roosts	M
Habitat Loss	Loss of lowland riparian habitats which serve as both nest and roost habitat	Implement Existing Conservation Plan	Implement riparian restoration in areas near existing nest and roost sites	H
Human Disturbance	Nest and roost abandonment for excessive human disturbance	Control and Monitor Disturbance	Provide seasonal and spatial buffers; regulate activities likely to cause site abandonment	M



<b>Broad-tail Hummingbird</b>	Selasphorus platycercus	Tier III	Bird	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	Dependent on nectar-bearing flowering plants. Females will abandon nesting attempt if resources decline substantially	BBS data indicate a stable population trend; Utah point count data indicates significant declining trend throughout Utah . Common in Utah.	Eastern Guatemala north through Mexico, western United States north to southwestern Montana. Occurs statewide in Utah	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
Lack of Information	Additional information needed on population declines and response to habitat alteration	Implement Existing Conservation Plan	Determine effectiveness of population monitoring techniques and response to habitat alteration	M
Habitat Loss	Alteration/ degradation of mountain riparian and lowland riparian habitats and removal of nectar-bearing flowering plants	Habitat Monitoring and Research	Determine factors impacting suitable habitats and nectar bearing flowers	M
Current Management	<ol style="list-style-type: none"> <li>1. The DCD INRMP requires the best management practice within a 100 foot buffer for any action that could impact riparian or wetlands area.</li> <li>2. Pesticides/Herbicides are not used in riparian, water, wet meadows or wetland habitats.</li> </ol>			

<b>Burrowing Owl</b>	Athene cunicularia	Tier II	Bird	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	Burrow nester usually relying on other animals to make burrows	Range wide non-significant population decline but western population significantly increasing. Rare in Utah.	Historically more extensive in Utah. Occurs statewide in shrubsteppe habitat.	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
Development	Urbanization destroying nesting habitat	Population Monitoring and Research	Determine response to habitat alteration, human disturbance, and prairie dog control	H
Lack of Information	Further information is needed on population, productivity and relationship to prairie dog colonies	Population Monitoring and Research	Monitor population, productivity, and survival	H
Lack of Information	Further information is needed on genetic distribution	Population Monitoring and Research	Determine genetic relationship among Utah populations and other population across the range	M
Current Management	Eleven owls were trapped, banded, sampled for blood, feathers, and morphological data during late spring early summer (2008) as part of a DOD Legacy Management Program. Five owls were trapped and processed just north of the DCD property in this same manner. Historically Burrowing Owls utilize DCD for nesting and brood rearing each year; more owls were on the property during this period but nest burrows were not located.			

<b>Ferruginous Hawk</b>	Buteo regalis	Tier II	Bird	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	Nests in ecotone between pinyon-juniper and shrubsteppe habitats	Rare in Utah, productivity may not be sufficient to maintain state's population	Summer resident in lowland desert terrain throughout Utah	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
Human Disturbance	Species is prone to abandon nest sites with even low level of human disturbance	Control and Monitor Disturbance	Manage and/or mitigate disturbance from recreation near nest sites	H
Lack of Information	Need further information on population status and productivity	Population Monitoring and Research	Conduct surveys on population, productivity and distribution	H
Habitat Loss	Nest site reduction from removal of natural nesting areas	Implement Existing Conservation Plan	Discourage clearing of juniper woodlands; Determine importance of alternate nests; Augment nest availability with artificial nests where appropriate. Avoid impact to nesting sites during habitat management activities	H
Energy Development	Loss of habitat and disturbance on breeding grounds from oil and gas extraction activities	Implement Existing Conservation Plan	Establish buffer zones around nests; Determine effects of oil and gas activities on	H
Habitat Loss	Destruction of preferred habitats due to chaining, timber harvest, fire management, and livestock grazing	Education and Outreach	Prepare Pinyon-Juniper Bird Management Manual in cooperation with adjacent states and federal agencies	H
Current Management	<ol style="list-style-type: none"> <li>1. There was one nesting pair on DCD in 2008</li> <li>2. Powerline poles are fitted with triangle roost protection devices</li> </ol> 2008/2009 powerline pole will be fitted with conductor protection devices			

<b>Greater Sage-grouse</b>	Centrocercus urophasianus	Tier II	Bird	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	Ground nester in sagebrush habitat and is susceptible to native and non-native predation. Recovery from population declines is hindered by small clutch size	Dramatic population decline throughout range in the last 70 years, and number of males at lek sites continues to decrease. Utah populations have decreased by approximately 90%	Current range includes western and northwestern states and parts of Canada. In Utah, they are found primarily in Box Elder, Uintah, Rich and Wayne Counties.	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
Disease	West Nile Virus	Implement Existing Conservation Plan (UTACS, DWRSGP)	Monitor and control disease	M
Habitat Loss	Loss of shrubsteppe from improper grazing, invasive plants, disrupted fire regimes and other factors; lack of herbaceous understory in sagebrush habitats	Implement Existing Conservation Plan (UTACS, DWRSGP)	Establish local working groups who will complete local conservation plans	H
Habitat Loss	Pinyon-Juniper succession in sagebrush habitats	Implement Existing Conservation Plan (UTACS, DWRSGP)	Identify and enhance fragmented and degraded habitats	H
Development	Expansion by oil and gas industries	Implement Existing Conservation Plan (UTACS, DWRSGP)	Identify and protect existing habitat	H
Limited Distribution	Species is restricted to portion of historic range	Implement Existing Conservation Plan (UTACS, DWRSGP)	Monitor population trends	H
Invasive Animal Species	Predation by Red fox and Common Raven	Control and Monitor Invasive Species	Monitor and control predation	M

<b>Peregrine Falcon</b>	Falco peregrinus	Tier III	Bird	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	Nesting dates vary with changes in elevation and latitude, though courtship displays in the breeding area usually begin around late March and early April. In mid to late April, the female scrapes a shallow depression in which she lays 3 - 4 (sometimes 5) eggs.	Peregrine Falcon populations declined dramatically from the 1940s to the 1960s, attributed to the residues of DDT. Population has increased since DDT ban, but species is rare in Utah. Population increased in southern portion of the state but not recovered	Utah, Peregrine Falcon breeding sites occur in the Utah Mountain (i.e., Wasatch and Uinta Mountains), Basin and Range, Mojave, and Colorado Plateau ecoregions. The largest concentrations are along the Colorado River (including Lake Powell) and its tributaries in the southeastern portion of the state. Current distribution is more limited than in the past	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
Lack of Information	Information needed on population and productivity	Implement Existing Conservation Plan (USFWS Peregrine Falcon Monitoring Plan)	Determine current population status, productivity, and distribution	H
Human Disturbance	Disturbance from recreation and harvest	Control and Monitor Disturbance	Determine impact of human disturbance from harvest and recreation	H
Habitat Loss	Human encroachment along the Wasatch Front	Habitat Monitoring and Research	Determine why many historical nest sites remain vacant	M
Environmental Contaminant	Exposure to pesticides and organochlorines, especially on wintering grounds	Education and Outreach	Educate public on proper use and disposal of pesticides	L
Current Management	<ol style="list-style-type: none"> <li>1 There are no known nesting sites within DCD boundaries</li> <li>2 This species is not confirmed at DCD</li> </ol>			

<b>Sage Thrasher</b>	Oreoscoptes montanus	Tier III	Bird	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	Considered a shrubsteppe obligate. Requires healthy stands of mature sagebrush.	In North America, appears to be stable in areas where it has suitable habitat. In areas with extensive loss of sagebrush, the species' numbers have greatly declined and some local populations have been eliminated. Breeding Bird Survey shows a 3.4% per year decline in Utah, though the trend may be imprecise. Species common in Utah.	Breeds from extreme southern British Columbia, southward through the western United States to northern Arizona and New Mexico. Common resident of lowland desert in Utah.	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
Lack of Information	Information needed on population and productivity	Population Monitoring and Research	Determine current population status and productivity in Utah.	H
Lack of Information	Information needed on habitat requirements	Habitat Monitoring and Research	Determine habitat requirements (patch size, percent shrub cover) and response to habitat alteration	H
Habitat Loss	Destruction and modification of suitable habitat from various shrubsteppe impacting factors	Habitat Monitoring and Research	Evaluate species responses to restoration treatments as part of shrubsteppe monitoring program	H

<b>Dark Kangaroo Mouse</b>	Microdipodops megacephalus	Tier II	Mammal	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	The two races that occur in Utah are endemic to the state	Seemingly rare in Utah, with only eight localities in the state. Population appears to have declined since 1960	Occurs only in the desert areas of Tooele, Juab, Millard and Beaver counties. Overall range is patchy and somewhat discontinuous. Substantial amount of overall range occurs in Utah	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
High Percent of Global Population	Substantial amount of overall range occurs in Utah; Drastic large-scale habitat change has occurred in known areas of occurrence	Population Monitoring and Research	Determine current population status and distribution	H
Lack of Information	Information needed on impacts of habitat changes on population viability	Population Monitoring and Research	Evaluate effect of large scale habitat changes on populations in Utah	M
Habitat Loss	Drastic habitat changes due to invasive grass species and increase in wildfire frequency	Habitat Monitoring and Research	Evaluate effect of large scale habitat changes on populations in Utah	M

<b>Merriam's Shrew</b>	Sorex merriami	Tier III	Mammal	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	Typically prefers dry habitats, some association with vole colonies.	Nine specimens reported for Utah (Osgood 1909). Population trend unknown.	Presumed statewide. Confirmed in Beaver, San Juan, and Rich counties.	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
Lack of Information	Only nine specimens reported in Utah; presumed statewide but actual distribution unknown; overgrazing may be a potential threat	Population Monitoring and Research	Determine population distribution and status and response to grazing practices	M



<b>Mule Deer</b>	Odocoileus hemionus	Tier III	Mammal	
	<b>Biology and Life History</b>	<b>Population</b>	<b>Distribution</b>	
	Mating occurs in late fall, and females may produce a litter of one or two fawns in late spring or early summer. Mule deer are browsers that primarily eat shrubs and other woody material, although grasses are also consumed	Widespread throughout Utah in high numbers. Species has experienced recent declines.	Occurs in the western half of North America, from southeastern Alaska to Mexico. The species is common state-wide in Utah, where it can be found in many types of habitat, ranging from open deserts to high mountains to urban areas	
<b>General Threats</b>	<b>Specific Threats</b>	<b>General Conservation Actions</b>	<b>Specific Conservation Actions</b>	<b>Priority</b>
Lack of Information	Populations have experienced recent declines	Population Monitoring and Research	Determine population status and trend; explore possible reasons for decline	H
Habitat Loss	Loss of lower elevation winter range can devastate this species	Habitat Monitoring and Research	Protect and rehabilitate remaining low elevation habitat	H
Current Management	The mule deer are a permanent resident of DCD; populations increase during the fall and winter. 1. DCD has a posted 10 mph speed limit when wildlife is present. 2. Predation control is utilized when the deer population in the Oquirrh district is in decline.			

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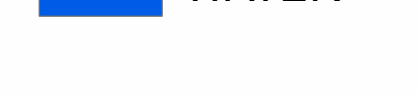
## **Appendix E**

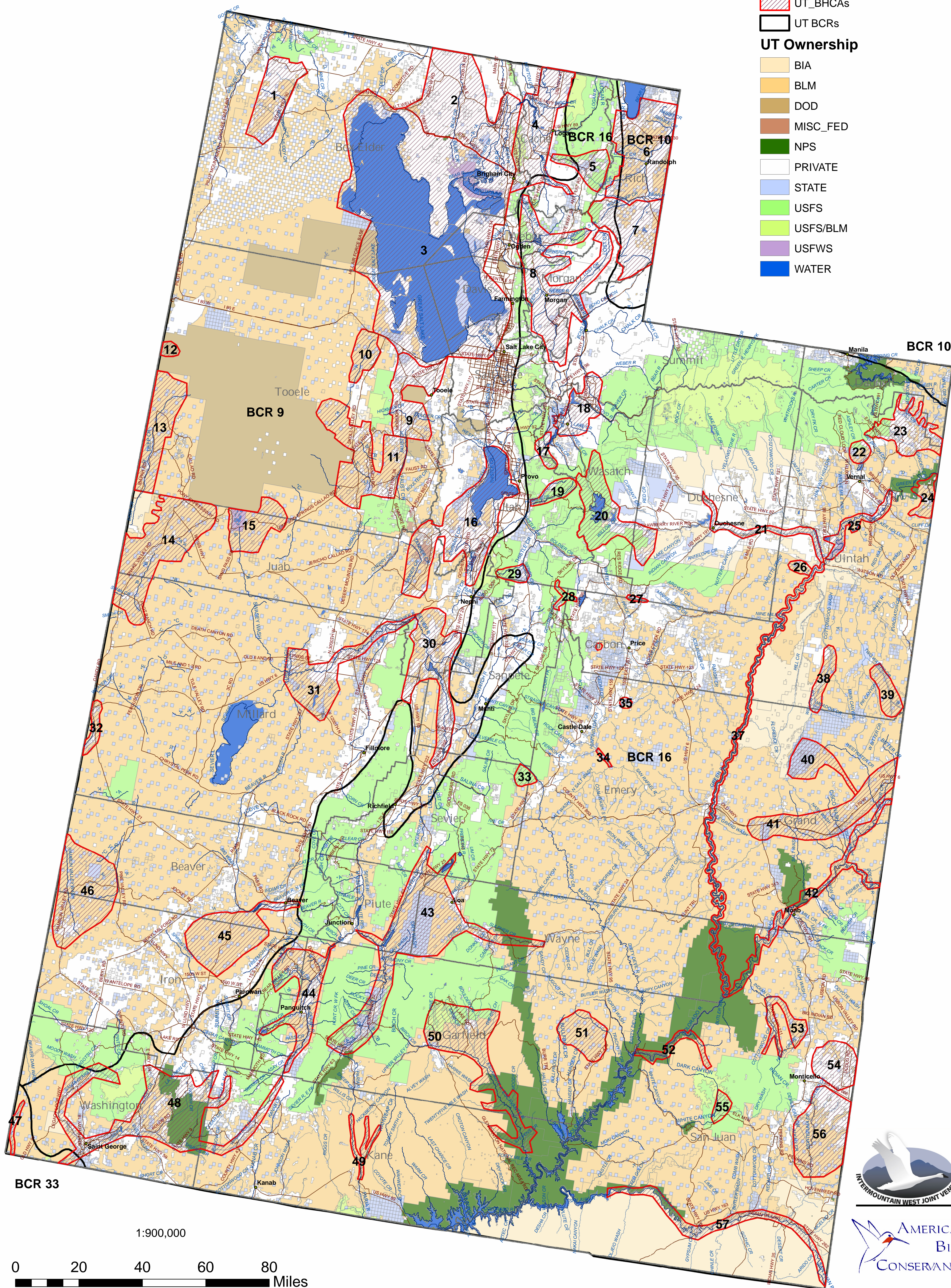
### **Utah Bird Habitat Conservation Areas Map and Utah Partners in Flight Avian Conservation Strategy Mitigation Measures**

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# Utah Bird Habitat Conservation Areas with Ownership

- |                                       |   |                                  |                                   |
|---------------------------------------|---|----------------------------------|-----------------------------------|
| 1. Dove Creek                         | 17. Bridal Veil & Stewart Falls/Aspen Grove Area    | 31. Delta                        | 43. Parker Mountain               |
| 2. Blue Creek/Bear River              | 18. Upper Heber Valley/Jordanella-Upper Provo River | 32. Preuss Lake                  | 44. Panguitch Valley              |
| 3. Great Salt Lake                    | 19. Upper and Lower Hobbie Creek Drainage           | 33. The Pines                    | 45. Bald Hills                    |
| 4. Cache Valley                       | 20. Upper Strawberry/Avintaquin                     | 34. San Rafael River Bottoms     | 46. Hamlin Wash                   |
| 5. Blacksmith Fork                    | 21. Duchesne River                                  | 35. Desert Lake                  | 47. Beaver Dam Wash               |
| 6. North Rich                         | 22. Red Mountain                                    | 36. Summerhouse Spring           | 48. Virgin River                  |
| 7. South Rich                         | 23. Diamond Mountain                                | 37. Green River                  | 49. Paria River                   |
| 8. Ogden/Weber River                  | 24. Blue Mountain                                   | 38. Willow Creek                 | 50. Escalante River               |
| 9. Rush Valley/Tooele Valley          | 25. Upper Green River                               | 39. Bitter Creek                 | 51. Henrys Mountains              |
| 10. Horseshoe Springs                 | 26. Pariette Wetlands                               | 40. Cottonwood and Willow Creeks | 52. Indian Creek and Fable Valley |
| 11. Skull Valley                      | 27. Emma Park                                       | 41. Cisco Desert                 | 53. Hart Draw                     |
| 12. Blue Lake                         | 28. Upper Fish Creek                                | 42. Colorado River               | 54. East Canyon/Sage Flat         |
| 13. Deep Creek Valley                 | 29. Nebo Creek                                      |                                  | 55. South Elk Ridge               |
| 14. Snake Valley                      | 30. Sevier Bridge/Chicken Creek Reservoirs          |                                  | 56. Montezuma Canyon              |
| 15. Fish Springs NWR                  |   |                                  | 57. San Juan River                |
| 16. Utah Lake/Mona Lake/Tintic Valley |   |                                  |                                   |

-  UT\_BHCAs
-  UT\_BCRs
- UT Ownership**
-  BIA
-  BLM
-  DOD
-  MISC\_FED
-  NPS
-  PRIVATE
-  STATE
-  USFS
-  USFS/BLM
-  USFWS
-  WATER



**<sup>1</sup>Utah Partners in Flight Avian Conservation Strategy - Table 15-Management Recommendations Summary**

<b>LOWLAND RIPARIAN HABITAT</b>		<b>Current Mitigation Measures</b>
Habitat Loss and Modification	Discourage the clearing of riparian (native and nonnative) habitat.	Best management practices within 100 foot set back of riparian habitat.
	Encourage the replacement of salt cedar with native cottonwood-willow vegetation	Addressed by the Pest Management Plan for Tooele Army Depot - Salt Cedar control.
	Establish a "no net loss" policy for riparian habitats	Best management practices within 100 foot set back of riparian habitat.
	Eliminate destruction of existing native cottonwood-willow dominated riparian forests and restore riparian habitats where possible	Best management practices within 100 foot set back of riparian habitat.
	Eliminate loss of dense shrub layers in existing riparian areas and restore shrub layers where absent	Best management practices within 100 foot set back of riparian habitat.
	Encourage the use of buffer zones to insure connectivity between riparian habitats and adjacent uplands	Best management practices within 100 foot set back of riparian habitat. Bounded by road/power line.
	Establish corridors between patches of suitable habitat.	Best management practices
	Manage for large, contiguous blocks of habitat (>10 ha) in conjunction with removal of competing exotic Species	Addressed by the Pest Management Plan for Tooele Army Depot.
	Design developments, i.e., roads, trails, pipelines, housing, etc., to avoid or minimize impacts to riparian habitats	No additional development expected at DCD
	Mitigate all riparian losses at 2:1 ratio.	Best management practices within 100 foot set back of riparian habitat.
Livestock Grazing	Manage grazing practices to promote the growth of native riparian vegetation	There is no livestock grazing at DCD

**<sup>1</sup>Utah Partners in Flight Avian Conservation Strategy - Table 15-Management Recommendations Summary**

<b>LOWLAND RIPARIAN HABITAT</b>		<b>Current Mitigation Measures</b>
	and reduce grazing impacts during the nesting season. Restrict livestock grazing in riparian habitats from April through July nesting season.	
Pesticide Use	Avoid use of pesticides in Mountain Riparian habitats and areas adjacent to riparian areas.	Addressed by the Pest Management Plan for Tooele Army Depot. 50% reduction from 1993 by 2000
<b>WETLAND HABITAT</b>		<b>Mitigation measures</b>
Habitat Loss and Degradation	Develop local and regional Wetland conservation plans with the cooperation of local government, resource managers, and landowners	BLM does not have a management plan for Clover wetlands
Contaminants	Require contaminant discharges to provide mitigation habitat targeted for American Avocets and other shorebirds.	TOCDF soils/vegetation contaminant studies FNSI. Ground water pump and treat of diesel contamination plume. Other SWMU remediation with approval by the DSHW.
Habitat Distribution	Consider large-scale habitat connectivity strategies for Great Basin Wetland ecosystems	NA
	Conduct long-term monitoring of American Avocet breeding, migrating, and wintering populations	NA
Setting Management Priorities	Develop an organization dedicated to establishing regional and local priorities based upon the potential contribution of different areas to global biodiversity	Partners in Flight - DoD/FWS MOU.
<b>WET MEADOW HABITAT</b>		
Habitat Loss and Fragmentation	Increase Wet Meadow habitats statewide by 50%.	NA
	Manage for contiguous patches (patch size of 10-30 ha) of suitable Wet Meadow, Wet Grassland, or Wet hay	BMP to maintain current Wet Meadow.

**<sup>1</sup>Utah Partners in Flight Avian Conservation Strategy - Table 15-Management Recommendations Summary**

<b>LOWLAND RIPARIAN HABITAT</b>		<b>Current Mitigation Measures</b>
	field habitats	
	Design developments, i.e., roads, trails, pipelines, housing, etc., to avoid or minimize impacts to Wet Meadow habitats.	BMP - no development planned.
	Blocks of habitat consisting of 4 or more contiguous patches located within 5 km of each other should be established.	NA
Agricultural Impacts	Delay hay cutting of suitable patches until mid July. Cutting on a 1-2 year rotation will help to maintain habitat suitability.	NA
	Discourage heavy grazing of suitable habitats. Grazing should be timed to avoid the nesting season (early May through mid July) and may be used to maintain suitable habitats	NA
Pesticide Use	Avoid broad-scale use of pesticides during the nesting and brood-rearing season (mid-May through July).	Manual controls are used to control noxious weeds at DCD in sensitive environment areas. Herbicides/Pesticides use is controlled by Risk Management in DCD environmentally sensitive areas.
	If used, avoid persistent pesticides and those that bioaccumulate.	
	Avoid use of pesticides in years of low food abundance.	
<b>SHRUB STEPPE HABITAT</b>		<b>Mitigation measures</b>
Habitat Loss and Fragmentation Habitat Loss and Fragmentation	Establish a "no net loss" policy for Shrubsteppe and High Desert Scrub (sagebrush and sagebrush plus grass) habitats	CAMDS/TOCDF closed by 2015. DCD footprint transitioning to administrative areas - storage in Area 10 and Area 2. Excepting regulation driven remediation "No Net Loss" of this habitat is expected. Post 2015 real property transition/use is not known.
	Maintain or modify existing	Grazing is no longer practiced on



**<sup>1</sup>Utah Partners in Flight Avian Conservation Strategy - Table 15-Management Recommendations Summary**

LOWLAND RIPARIAN HABITAT	Current Mitigation Measures
	site.
<p>grazing regimes to promote growth of native shrubs and grasses. Temporarily remove grazing from degraded habitats and habitats recovering from fire or other detrimental factors.</p>	
<p>Promote use of grazing to reduce cheatgrass dominance and prepare areas for native grass and shrub reseedings</p>	
<p>Promote reestablishment of native Shrubsteppe and High Desert Scrub habitats through the use of prescribed fire and revegetation. Burns should be timed to promote growth of native grasses, minimize loss of sagebrush, and minimize establishment/regrowth of exotic annuals; revegetation should promote native grass and shrub reestablishment</p>	<p>Planned burns are not expected. Select areas of DCD are to be reseeded - plan/funding to be determined.</p>
<p>Avoid road and right-of-way construction in large, contiguous patches of Shrubsteppe and High Desert Scrub habitat. Construction footprints should be minimized and all rights-of-way should be revegetated with native grasses and shrubs.</p>	<p>DCD army operations footprint will be reduced through 2015 - as army operations dictate revegetation will be considered for existing roads/demolition areas.</p>
<p>Manage large blocks of land for contiguous Shrubsteppe and High Desert Scrub habitat and avoid activities that cause fragmentation. Revegetate old roads and other disturbance corridors</p>	<p>See above</p>

**<sup>1</sup>Utah Partners in Flight Avian Conservation Strategy - Table 15-Management Recommendations Summary**

<b>LOWLAND RIPARIAN HABITAT</b>		<b>Current Mitigation Measures</b>
	to native grasses and shrubs	
	Avoid conversion of existing Shrubsteppe and High Desert Scrub habitats to croplands, urban areas, etc.. Maintain or reestablish native Grassland/shrubland open spaces in urbanized areas	DCD army operations footprint will be reduced through 2015 - as army operations dictate revegetation will be considered for existing roads/demolition areas.
	Monitor all revegetation efforts for success and enhance areas with poor native plant reestablishment	Revegetated areas will be monitored and enhanced if required.
	Establish economic and reliable sources of native seeds for revegetation efforts and stockpile native seeds whenever possible	Seed mix request in consultation with DWR.
	Eliminate large-scale chaining and chemical control of Shrubsteppe and High Desert Scrub habitats and eliminate large scale establishment of nonnative grasses in disturbed areas	No large-scale chaining, chemical control or planned burns of Shrubsteppe and High Desert Scrub habitats are expected. No plan to reseed past <i>Agropyron cristatum</i> seeded areas.
Habitat Conversion	Discourage clearing of juniper woodlots and sagebrush shrublands	See above.
	Encourage maintenance of native Grasslands for cattle grazing where prey populations may be maintained.	Grazing is no longer practiced on site.
Fire Management and Exotic Plant Invasion	Promote use of prescribed burning and revegetation to avoid catastrophic wildfires	Planned burns are not expected. Select areas of DCD are to be reseeded - plan/funding to be determined.
	Post-wildfire revegetation should focus on reestablishment of native grasses and shrubs, avoid use of nonnative and	Seed mix request from BLM.

**<sup>1</sup>Utah Partners in Flight Avian Conservation Strategy - Table 15-Management Recommendations Summary**

<b>LOWLAND RIPARIAN HABITAT</b>		<b>Current Mitigation Measures</b>
	aggressive Species and strive to exclude cheatgrass.	
	Use green-stripping, if necessary, to prevent stand-replacing fires in High quality Shrubsteppe and High Desert Scrub patches.	Addressed by the Pest Management Plan for Tooele Army Depot.
Pesticide Use	Avoid broad-scale use of pesticides during the nesting and brood-rearing season (mid-May through July).	Addressed by the Pest Management Plan for Tooele Army Depot. Herbicides/Pesticides use is controlled by Risk Management in DCD environmentally sensitive areas.
	If used, avoid persistent pesticides and those with High Bioaccumulation potential	
	Avoid use of pesticides in years of low food abundance	
Prey Base Conservation	Encourage change in attitude towards jackrabbits and their wanton killing	Hunting is not allowed on site.
Artificial Habitat Enhancement and Reduction of Industrial Activities	Where nesting trees have been removed near good foraging lands, erect artificial nesting platforms	Currently every fifth power pole is fitted a roost and each pole is fitted with a triangle phase protection anti-perching device. Conducting insulators are planned to be installed in 2009. Upon removal of an unused power line, every fifth pole will be left in place and fitted with a roost or nesting platform. Consideration will be given for excess poles to be installed at other locations for roosting/nesting platforms.
	Encourage adequate buffer zones around nests in areas of land development (oil, mining etc.).	
	Increase public awareness of conservation issues in areas of development	
<b>WATER HABITAT</b>		
Habitat Loss	<ol style="list-style-type: none"> <li>1. Develop a sustainable water use plan for Bear River Bay.</li> <li>2. Work with salt industries to eliminate, reduce or mitigate impacts to the Gunnison Island colony in</li> </ol>	NA

**<sup>1</sup>Utah Partners in Flight Avian Conservation Strategy - Table 15-Management Recommendations Summary**

<b>LOWLAND RIPARIAN HABITAT</b>		<b>Current Mitigation Measures</b>
	<p>the north arm and foraging sites in Bear River Bay.</p> <p>3. Work with the Division of State Lands to protect American White Pelican habitats within state land holdings.</p> <p>4. Work with Wetland managers within the greater Great Salt Lake ecosystem to manage for pelican habitat as part of their comprehensive management plans.</p>	
Human Disturbance	<p>1. Provide modification to the railroad causeway that allows for better Great Salt Lake brine distribution, but precludes boat travel into the north arm of the Great Salt Lake.</p> <p>2. Maintain and enforce Division of Wildlife Resources rule restricting human disturbance of Gunnison and Bird Islands during the American White Pelican breeding season</p>	NA
<b>Playa</b>		
	<p>Playa not found in Utah Partners in Flight Avian Conservation Strategy - Table 15-Management Recommendations Summary</p>	Addressed as Shrubsteppe habitat.

<sup>1</sup>This table has been modified to remove species; DCD INRMP to focus on habitat.

## **Appendix F**

### **Aquatic Invertebrate Biota Species List**

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## 1.0 PLANNING LEVEL SURVEY

A planning level survey (PLS) was completed between June 7 and 10, 1999, at the Deseret Chemical Depot (DCD) in Tooele County, Utah. DCD is operated by the U.S. Department of Defense and is located in the Rush Valley approximately 52 miles southwest of Salt Lake City, Utah. The purpose of the PLS was to obtain data on the diversity of aquatic fauna and the presence or absence of federal and state threatened and endangered species at the facility. PLS data will supplement existing data being used to develop the Integrated Natural Resource Management Plan for DCD. The sections below discuss the surveys completed at DCD and present conclusions and recommendations based on the data generated.

The aquatic habitats at DCD include Ophir Creek, Mercur Creek, Faust Creek, Rainbow Reservoir (a man-made reservoir), and an unnamed seasonal wetland. Riparian (streamside) areas of DCD comprise only 4 percent of the land at the facility. Riparian habitat at DCD is located primarily along Ophir Creek.

The terrestrial environment at DCD is comprised of the following 4 dominant plant communities:

- Upland Shrub – dominated by sagebrush (*Artemisia* sp.), greasewood (*Sarcobatus* sp.), grasses, and annual forbs
- Upland Grass – dominated by bunchgrass (*Andropogon* sp.) and annual forbs
- Salt Shrub – dominated by saltbush (*Atriplex* sp.), snakeweed (*Gutierrezia* sp.), grasses, and greasewood
- Alkali Meadow – dominated by alkali grasses and foxtail grasses (*Alopecurus* sp., *Hordeum* sp., and *Setaria* sp.)

During the survey the temperature ranged from near 50° F in the mornings to the low 70s in the afternoon. The skies were clear to partly cloudy and a moderate to strong wind existed throughout the survey. No precipitation occurred during the survey, although it rained at the facility the day before the survey team arrived at the site.

A permit was obtained from the Utah Division of Wildlife Resources (UDWR) to complete the surveys. The permit allowed the capture and release of mammals, reptiles, amphibians, fish, and invertebrates, and visual observations of birds. The annual report of permit activities was submitted to UDWR on December 29, 1999.

## 2.0 AQUATIC SURVEY

The aquatic survey was conducted using a rapid bioassessment protocol as described in “*Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers*” (U.S. Environmental Protection Agency 1999) with modifications to accommodate site-specific features of the DCD facility. Two aquatic habitats at DCD were surveyed. The first habitat is Ophir Creek that traverses the facility’s north side, generally from east to west. Ophir Creek originates from snow melt and springs in the Ophir Canyon north of the facility; the creek has a smaller volume and a slower velocity following the spring snow melt. Ophir Creek was approximately 2 to 3 feet deep at the time of the PLS and was flowing rapidly. The predominant vegetation along Ophir Creek includes saltbrush, sagebrush, and willows (*Salix*

sp.). This vegetation was approximately 1 to 4 feet tall at the time of the survey.

The second aquatic habitat is an unnamed wetland located along the facility's western boundary. The wetland does not appear to be fed by any surface water inputs, such as creeks or point source discharges; the wetland is therefore assumed to result from surface runoff and shallow ground water at the site. The wetland covers more area and is deeper during years when there is abundant rainfall and the ground water table is high. The wetland was approximately 1 to 3 feet deep at the time of the PLS and no flow was observed. There is no known hydrologic connectivity between Ophir Creek and the wetlands. The predominant vegetation in the wetland includes alkali grass and other alkali meadow species which thrive in soils with high moisture and high salinity. This vegetation was submerged at the time of the survey and was approximately 1 foot tall.

## **2.1 CREEK SURVEY PROCEDURES**

The creek was visually inspected to identify its course, surrounding habitats and vegetation, nearby roadways and structures, accessibility, and other unique characteristics. The creek was flowing at a high velocity at the time of the survey and was bordered by saltbush and willow vegetation along its length. Based on the visual inspection of the creek and its surrounding features, three distinct 100-meter reaches (C-1, C-2, and C-3) were surveyed. The three reaches were selected for assessment based on their likelihood of providing representative samples of the faunal populations throughout the creek. A reference 100-meter reach (R-C), located where the creek first enters the installation, upstream from the other reaches, was also selected and surveyed.

A 1-meter-wide kick net was used to collect samples in each reach surveyed. Samples were collected by moving from downstream to upstream within each reach with the kick net positioned perpendicular to the creek banks in the flow of the water. Organisms collected in the kick net during each pass were transferred to a plastic bucket containing fresh creek water. Sampling with the kick net was repeated in each reach until 100 organisms were collected. The organisms were then sorted by class, order, family, genus, and species when possible. The number of organisms within each category was then recorded. When necessary, a microscope was used to identify the organisms to the lowest taxonomic level possible. All organisms collected were released live back into the creek after completing the assessment at each reach. No voucher specimens were collected and preserved. A dip net was also used to sample for fish and other aquatic vertebrates. The dip net was used along the creek banks and in areas of the creek with low flow velocity.

## **3.1 WETLAND SURVEY PROCEDURES**

The wetland was visually inspected to identify its boundaries, surrounding habitats and vegetation, nearby roadways and structures, accessibility, and other unique characteristics. Based on the inspection, three distinct, 100-meter transects within the wetland (W-1, W-2, and W-3) were surveyed. The three transects were selected based on their likelihood of providing representative samples of faunal populations throughout the wetland. No reference wetland location was available for the survey.

Samples were collected from the wetland using the kick net procedure described above. The only exception to the previously described procedure was that there was no flow upstream-downstream within the wetland. The organisms were then sorted by class, order, family, genus, and species when possible. The number of organisms within each category was then



recorded. When necessary, a microscope was used to identify the organisms to the lowest taxonomic level possible. All organisms were released live back into the wetland after completing the assessment at each transect. No voucher specimens were collected and preserved. A dip net was also used to sample for fish and other aquatic vertebrates.

## **2.3 RESULTS**

Table G-1 summarizes the aquatic invertebrates observed in the creek and wetland samples. No fish or signs of fish were noted during the visual inspection of the creek or wetland, and no fish or other vertebrates were present in the kick net or dip net samples.

Samples collected from the creek and the wetland contained similar invertebrate species. The wetland samples contained many more invertebrates per kick net pass than the creek samples, and the wetland samples contained higher numbers of mosquito larvae than the creek samples. Both the creek and the wetland appeared to sustain abundant invertebrate populations.

**TABLE G-1 AQUATIC INVERTEBRATE SURVEY RESULTS DESERET CHEMICAL DEPOT**

<b>Date</b>	<b>Map Location</b>	<b>UTM Coordinates</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Number of Organisms</b>
6/9/99	R-C	X 385700 E Y 4465550 N	Riffle beetle Riffle beetle larvae Diving beetle larvae Damselfly larvae Crane fly larva Stonefly Beetle	Coleoptera Elmidae Coleoptera Elmidae Coleoptera Dysticidae Odonata Zygoptera Lestidae Diptera Nematocera Tipulidae <i>Tipulinae</i> sp. Plecoptera Nemouridae <i>Nemoura</i> Coleoptera	1 1 25 2 1 51 1
6/9/99	C-1	X 380810 E Y 4464350 N	Snail Copepod Diving beetle Diving beetle larvae Horse fly larva Fly larvae Damselfly larvae Water-loving beetle	Gastropoda Pulmonota Copepoda Coleoptera Dysticidae Coleoptera Dysticidae Diptera Brachycera-Orthorrhapa Tabanidae Diptera Metretopodidae Odonata Zygoptera Lestidae Coleoptera Haliplidae	9 1 1 23 18 8 2 1
6/9/99	C-2	X 383050 E Y 4463600 N	Damselfly Beetle Riffle beetle Diving beetle Crane fly larvae Worm Slug	Odonata Zygoptera Lestidae Coleoptera Coleoptera Elmidae Coleoptera Dysticidae Diptera Nematocera Tipulidae <i>Tipulinae</i> sp. Undetermined Gastropoda Mollusca	1 4 5 37 2 20 5
6/9/99	C-3	X 384650 E Y 4464450 N	<b>Fly</b> Diving beetle larvae Crane fly larvae Worm Snail Slug	Diptera Coleoptera Dysticidae Diptera Nematocera Tipulidae <i>Tipulinae</i> sp. Unknown Gastropoda Pulmonota Gastropoda Mollusca	2 8 1 47 20 1

**TABLE G-1 (Continued)**  
**AQUATIC INVERTEBRATE SURVEY RESULTS DESERET CHEMICAL DEPOT**

Date	Map Location	UTM Coordinates	Common Name	Scientific Name	Number of Organisms
6/8/99	W-1	X 381500 E Y 4461250 N	Soldier fly Mosquito larvae Beetle Water-loving beetle True bug Copepod Isopod	Diptera Brachycera-Orthorrhapa Stratiomyidae Diptera Nematocera Culicidae <i>Aedes sp.</i> Coleoptera Coleoptera Haliplidae Hemiptera Copepoda Isopoda	51 78 4 2 4 61 43
6/8/99	W-2	X 381410 E Y 4461350 N	Water-loving beetle Beetle True bug Soldier fly Mosquito larvae Copepod	Coleoptera Haliplidae Coleoptera Amphizoidae Hemiptera Diptera Brachycera-Orthorrhapa Stratiomyidae Diptera Nematocera Culicidae <i>Aedes sp.</i> Copepoda	2 2 1 48 41 6
6/8/99	W-3	X 381100 E Y 4461750 N	Dragonfly Soldier fly Copepod Mosquito larvae Diving beetle Beetle	Odonata Anisoptera Coenagnonidae Diptera Brachycera-Orthorrhapa Stratiomyidae Copepoda Diptera Nematocera Culicidae <i>Aedes sp.</i> Coleoptera Dystiscidae Coleoptera Amphizoidae	1 46 3 >100 44 7

Notes:

UTM Universal transverse mercator; obtained from topographic map.

### **3.0 THREATENED AND ENDANGERED SPECIES SURVEY**

A survey of federal and state threatened and endangered species (TES) was completed at DCD. The purpose of the TES survey was to assess the presence or absence of TES at the site, not to determine their abundance or specific locations.

Requests for information on threatened and endangered species in and around the DCD facility were submitted to the U.S. Fish and Wildlife Service (USFWS) and the Utah Department of Natural Resources (UDNR) in January 1999. USFWS and UDNR reported the potential presence of the following TES species at DCD:

- Bald Eagle – *Haliaeetus leucocephalus*; Bald and Golden Eagle Protection Act, Utah Species of Concern, migratory bird treaty act.
- Peregrine Falcon – *Falco peregrinus*; Federal and State Endangered
- Ute Ladies'-tresses – *Spiranthes diluvialis*; Federal Threatened

These three species were the focus of the TES survey at DCD.

### **3.1 AVIAN TES SURVEY PROCEDURES AND RESULTS**

DCD personnel have reportedly observed bald eagles in flight at the facility but have not observed them nesting. In addition, DCD personnel reportedly observed a falcon species flying at the site; however, they were unable to identify it further. Therefore, a visual survey was conducted of raptors and their potential nesting sites at the facility to assess the presence or absence of the bald eagle and peregrine falcon.

#### **3.1.1 Avian Survey Procedures**

A roadside survey was completed to identify raptor species present at the site. The interior and perimeter roadways of the facility were traversed to visually identify avian species. In addition, several nests in trees and on electrical poles were observed for signs of current nesting activity and species (see Figure G-1). The areas surrounding unoccupied nests were observed for feathers and other indications of species recently using the nests.

#### **3.1.2 Avian Survey Results**

Raptors observed at the site included 2 adult and 1 juvenile red-tailed hawk (*Buteo jamaicensis*), 2 northern harrier (*Circus cyaneus*), 2 american kestrel (*Falco sparverius*), and 1 prairie falcon (*Falco mexicanus*). No bald eagles or peregrine falcons were observed.

The trees at the site are sparsely scattered throughout the facility and are generally less than 30 feet tall. The nests observed were less than 3 feet in diameter. The nests that were occupied at the time of the survey were being used by red-tailed hawks and northern harriers. Feathers found near unoccupied nests indicated they had likely been used by hawks.

### **3.2 FLORAL TES SURVEY PROCEDURES AND RESULTS**

The Ute Ladies'-tresses is a federally threatened species potentially present at DCD. The Ute ladies'-tresses is an orchid native to Utah that is typically found along streams and other wetland habitats. In Utah it is primarily found in the northeast portion of the state, although it was found near Callao, Tooele County, in 1994. The aquatic habitats at DCD provide potential habitat for the Ute Ladies'-tresses.

Visual observations of Ute Ladies'-tresses were attempted of the vegetated areas along Ophir Creek and the unnamed wetland. No observations of this species were noted.

### **4.0 CONCLUSIONS AND RECOMMENDATIONS**

The aquatic survey results indicate that the on-site reach of Ophir Creek is populated with numerous classes and orders of invertebrates and that similar invertebrates are present throughout its length. The lack of vertebrate species in samples from the creek may indicate that vertebrate populations are small or ephemeral, possibly due to the high flow velocity of the Creek during heavy spring snow melt.

The aquatic survey results indicate that the wetland is abundantly populated with aquatic invertebrates and that similar invertebrates are present throughout its area. Invertebrates were more abundant in wetland samples than in creek samples, possibly because of the high flow velocity in the creek. The lack of vertebrate species in the wetland samples does not preclude their presence in the wetland, but may indicate that vertebrate populations are small or ephemeral, possibly due to seasonal low water levels in the wetland.

The avian survey indicated no observations of bald eagles, peregrine falcons, or signs of their nests at DCD. Trees at DCD are sparsely scattered and are generally less than 30 feet tall. The peregrine falcon prefers to nest on cliffs or other multi-story habitats and structures. Therefore, the facility apparently lacks appropriate nesting habitat for these raptors, which minimizes their likelihood of nesting at the facility in the future. However, mountainous areas surrounding the facility provide potential nesting habitat for the peregrine falcon, and they often utilize shrub-type habitats for foraging during, especially during their migration. Therefore, the facility may provide extensive foraging areas for these falcons. It is recommended that falcon-like birds observed at DCD continue to be identified to maintain accurate records of potential peregrine falcon use of facility lands.

The nests observed at DCD were less than 3 feet in diameter, which is smaller than typical bald eagle nests. In addition, DCD does not contain large stands of trees or wooded riparian areas, which are the preferred nesting habitats of bald eagles. Therefore, the facility apparently lacks appropriate nesting habitat for the bald eagle, which minimizes their likelihood of nesting at the facility in the future. However, the upland shrub and grass habitats at DCD provide forage and cover for small animals which can provide a food source for these eagles, especially during their migration. It is recommended that eagle-like birds observed at DCD continue to be identified to maintain accurate records of

potential bald eagle use of facility lands.

It is recommended that DCD personnel be trained in raptor identification to enable on-going tracking of the potential presence of peregrine falcon or bald eagle at the facility, especially during spring and fall migratory seasons. An observation tracking and reporting system should be implemented at DCD to ensure consistent and accurate records are maintained. Observations of these raptors and their activities at DCD should be reported to the USFWS and the UDNR for use in tracking their populations within the State of Utah and the United States.

The survey resulted in no observations of Ute Ladies'-tresses at DCD. However, on-going observations should be made of the areas along Ophir Creek and the unnamed wetland to document the potential future presence of this species. Observations of Ute Ladies'-tresses at DCD should be reported to the USFWS and the UDNR for use in tracking locations of this species within the State of Utah and the United States.

## **5.0 REFERENCES**

U.S. Environmental Protection Agency. 1999. "Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers: Periphyton, Benthic Macroinvertebrates, and Fish." Review Draft. June.

U.S. Geological Survey (USGS). 1993. 7.5 Minute Quadrangle Topographic Map of Ophir and St. Johns, Utah.

## **Appendix G**

### **UDWR Record of Occurrence of Species within Ten-Mile Radius of TEAD South Area**

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State of Utah

Department of Natural Resources

MICHAEL R. STYLER  
Executive Director

Division of Wildlife Resources

JAMES F. KARPOWITZ  
Division Director

JON M. HUNTSMAN, JR.  
Governor

GARY R. HERBERT  
Lieutenant Governor

June 20, 2005

James Hoggard  
EarthFax Engineering  
7324 South Union Park Avenue, Suite 100  
Midvale, Utah 84047

Dear Mr. Hoggard:

I am writing in response to your faxed request dated June 16, 2005 regarding species of special concern in proximity to the Deseret Chemical Depot, Tooele County, Utah [Sections 4-6, 15-22, and 27-30 of Township 6 S, Range 4 W, and Sections 1-3, 10-15, and 22-27 of Township 6 S, Range 5 W, SLB&M].

The Utah Division of Wildlife Resources (UDWR) has recent records of occurrence for greater sage-grouse, and bald eagle (a species federally listed as threatened in Utah) within the project area noted above. In addition, the Utah Division of Wildlife Resources (UDWR) has records of occurrence for the following species within a ten-mile radius of the project area:

Scientific Name	Common Name	SPROT*	USESAs**
Numenius americanus	Long-billed Curlew	SPC	
Haliaeetus leucocephalus	Bald Eagle	S-ESA	LT
Centrocercus urophasianus	Greater Sage-grouse	SPC	
Buteo regalis	Ferruginous Hawk	SPC	
Athene cunicularia	Burrowing Owl	SPC	
Asio flammeus	Short-eared Owl	SPC	
Corynorhinus townsendii	Townsend's Big-eared Bat	SPC	
Oreohelix haydeni	Lyrate Mountainsnail	SPC	
Pyrgulopsis transversa	Southern Bonneville Springsnail	SPC	

\* SPROT denotes species listed as "sensitive" by the Utah Division of Wildlife Resources in the Utah Sensitive Species List.

Abbreviation

S-ESA

SPC

CS

Status

Federally-listed or candidate species under the Endangered Species Act.

Wildlife species of concern.

Species receiving special management under a Conservation Agreement in order to preclude the need for Federal listing.

Page 2  
June 20, 2005  
Subject: Request for Sensitive Species

\*\* USESA denotes species listed by the U.S. Fish and Wildlife Service under the Endangered Species Act, and their respective status.

<u>Abbreviation</u>	<u>Status</u>
LE	Listed as endangered.
LT	Listed as threatened.
C	Candidate for listing in Utah.
XN	Listed as experimental, non-essential.

The information provided in this letter is based on data existing in the Utah Division of Wildlife Resources' central database at the time of the request. It should not be regarded as a final statement on the occurrence of any species on or near the designated site, nor should it be considered a substitute for on-the-ground biological surveys. Moreover, because the Utah Division of Wildlife Resources' central database is continually updated, and because data requests are evaluated for the specific type of proposed action, any given response is only appropriate for its respective request.

In addition to the information you requested, other significant wildlife values might also be present on the designated site. Please contact UDWR's habitat manager for the central region, Ashley Green, at (801) 491-5654 if you have any questions.

Please contact our office at (801) 538-4759 if you require further assistance.

Sincerely,



Lenora B. Sullivan  
Information Manager  
Utah Natural Heritage Program

cc: Ashley Green, CRO

## **Appendix H**

### **Least Chub MOUs**

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REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
US ARMY CONTRACTING COMMAND (ACC)  
TOOELE CHEMICAL AGENT DISPOSAL FACILITY  
11620 STARK ROAD  
STOCKTON, UTAH 84071-9712

**MEMORANDUM OF UNDERSTANDING  
BETWEEN  
DESERET CHEMICAL DEPOT, UTAH DIVISION OF WILDLIFE RESOURCES  
AND  
U.S. FISH AND WILDLIFE SERVICE**

**SUBJECT:** Development of Conservation Brookstock and Refuge Population for Least Chub

**1. PURPOSE:**

a. The purpose of this MOU is to provide conservation measures at Deseret Chemical Depot (DCD) to make least chub populations more resilient to impacts upon their populations and prevent this species from becoming a priority as a listed species to the Endangered Species Act.

b. The Conservation Agreement and Strategy for Least Chub (*Iotichthys phlegethontis*) in the State of Utah requires identification and development of broodstock sources and the establishment of refuge populations for least chub. Development of least chub broodstock sources and refuge populations would contribute to the conservation of least chub by:

- (1) preserving an important component of species diversity;
- (2) providing a source of least chub to augment wild populations; and
- (3) providing a source of least chub for re-introduction into other historic habitats ~~and~~.

Airport Road Ponds 1 and 2 provide suitable sites to establish least chub broodstock and/or refuge populations, where least chub would not adversely impact the existing biota and/or mission of DCD.

**2. AUTHORITY:**

a. The Sikes Act 1962 (Amended 1993) calls for Department of Defense (DoD) Installations "to provide for – the conservation and rehabilitation of natural resources on military installations."

b. The State of Utah's Comprehensive Wildlife Strategy calls for the Conservation Agreement and Strategy for Least Chub (*Iotichthys phlegethontis*). "To restore and maintain self-sustaining populations throughout its historic range that will ensure the continued existence of least chub.

c. Title 23 Chapter 22.1 of the Utah Code stating the "Division of Wildlife Resource may enter

into cooperative agreements and programs with other state agencies, federal agencies, ..., for the purposes of wildlife conservation.”

d. The purposes of the Endangered Species Act (1973) are to provide a program for the conservation of such endangered...and threatened species. Conservation defined as: “the use of all methods and procedures which are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary.”

3. COORDINATION REPRESENTATIVES: This MOU is made and entered into by and between:

a. Commander  
Deseret Chemical Depot (DCD)  
Bldg. 5108  
11500 Stark Road  
Stockton, UT 84071  
Representatives: D. Troy Johnson, Martin Barth, Boyd White

b. Utah Division of Wildlife Resources (UDWR)  
1115 North Main Street  
Springville, UT 84663  
Representatives: Mark Grover and Chris Crockett

c. United States Fish and Wildlife Service (USFWS)  
2369 Orton Circle #50  
West Valley City, UT 84119-7603  
Representative: Larry Crist

These three entities are referred to herein collectively as a “Party” or the “Parties”.

4. LOCATION: DCD owns certain ponds known as “Airport Road Pond 1” WGS84 UTM Zone 12N, (N 0387353, E 4464927) and “Airport Road Pond 2” (N 0387275, E 4464880), all located in Tooele County, State of Utah;

5. RESPONSIBILITIES: The Parties enter into this MOU and agree to the duties, responsibilities and obligations of each party set forth below:

a. UDWR shall have the right to introduce least chub into the above mentioned ponds to establish least chub broodstocks and/or refuge populations.

b. UDWR shall have the right to annually monitor least chub in the above mentioned ponds during the months of August-October, or as arranged, in order to facilitate monitoring without impeding DCD operations.

c. DCD will permit least chub to remain in the above mentioned ponds for an indefinite term, but revocable at will by the commander of DCD. Any modification or changes to this MOU will

only be made by the agencies designated representative and coordinated by all participants. Prior to the end of ten years, the Parties shall determine whether or not to maintain populations for an additional period of time. If, at the end of the ten years, the Parties decide to terminate use of the site, the UDWR shall remove the least chub from the ponds.

d. DCD may immediately modify the ponds to suppress wildland fires, structural fires, or any other emergency. Prior to modification of the ponds for any other purpose, DCD shall consult the UDWR to determine how to minimize potential impacts to least chub. DCD shall not introduce any other fish species into ponds containing least chub on their property. The Parties also hereby acknowledge that DCD intends to develop a Wet Meadow Habitat which exits Airport Road Pond 2 and to create wildlife habitat on property owned by DCD. DCD may not collect or possess least chub prior to obtaining a Certificate of Registration from the UDWR.

e. The UDWR will not hold DCD responsible for any least chub mortalities that occur within the ponds on their property.

f. In the event that the U.S. Fish and Wildlife Service begins preparation for a final listing rule (in the form of a proposed rule under the Endangered Species Act of 1973), as amended, DCD may request removal of all least chub from ponds on their property. Upon receipt of a written request, the UDWR shall remove the least chub from the property within 30 days.

6. SIGNATORIES: This Memorandum of Understanding is executed this 2nd day of February, 2011, by and between the Parties.

Mark Pomeroy                      1 MARCH 11  
 MARK B. POMEROY              (Date)  
 COL, CM  
 Commanding  
 Deseret Chemical Depot

James F. Karpowitz              4/12/11  
 JAMES F. KARPOWITZ              (Date)  
 Director of Wildlife Resources  
 Utah Division of Wildlife Resources

**ACTING DIRECTOR**

\_\_\_\_\_  
 LARRY CRIST                      (Date)  
 Field Office Supervisor  
 Utah Field Office  
 U.S. Fish and Wildlife Service

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**SECRET**





Reply to  
Attention of:

## DEPARTMENT OF THE ARMY

Tooele Army Depot  
Tooele, Utah 84074-5000

### MEMORANDUM OF UNDERSTANDING BETWEEN TOOELE ARMY DEPOT, UTAH DIVISION OF WILDLIFE RESOURCES AND U.S. FISH AND WILDLIFE SERVICE

SUBJECT: Development of Conservation Brookstock and Refuge Population for Least Chub

#### 1. PURPOSE:

a. The purpose of this MOU is to provide conservation measures at Tooele Army Depot South Area (TEAD-S) to make least chub populations more resilient to impacts upon their populations and prevent this species from becoming a priority as a listed species to the Endangered Species Act.

b. The Conservation Agreement and Strategy for Least Chub (*Jotichthys phlegethontis*) in the State of Utah requires identification and development of broodstock sources and the establishment of refuge populations for least chub. Development of least chub brood stock sources and refuge populations would contribute to the conservation of least chub by:

- (1) preserving an important component of species diversity;
- (2) providing a source of least chub to augment wild populations; and
- (3) providing a source of least chub for re-introduction into other historic habitats.

Airport Road Ponds 1 and 2 provide suitable sites to establish least chub broodstock and/or refuge populations, where least chub would not adversely impact the existing biota and /or mission of TEAD-S.

#### 2. AUTHORITY:

a. The Sikes Act 1962 (Amended 1993) calls for Department of Defense (DoD) Installations "to provide for - the conservation and rehabilitation of natural resources on military installations."

b. The State of Utah's Comprehensive Wildlife Strategy calls for the Conservation Agreement and Strategy for Least Chub (*Jotichthys phlegethontis*). "To restore and maintain self-sustaining populations throughout its historic range that will ensure the continued existence of least chub.

c. Title 23 Chapter 22.1 of the Utah Code stating the "Division of Wildlife Resource may enter into cooperative agreements and programs with other state agencies, federal agencies, ..., for the purposes of wildlife conservation."

d. The purposes of the Endangered Species Act (1973) are to provide a program for the conservation of such endangered ... and threatened species. Conservation defined as: "the use of all methods and procedures which are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary."

3. COORDINATION REPRESENTATIVES: This MOU is made and entered into by and between:

a. Commander  
Tooele Army Depot  
1 Tooele Army Depot  
Tooele, UT 84074  
Representatives: D. Troy Johnson, Russ Smalling

b. Utah Division of Wildlife Resources (UDWR)  
1115 North Main Street  
Springville, UT 84663  
Representatives: Mark Grover and Chris Crockett

c. United States Fish and Wildlife Service (USFWS)  
2369 Orton Circle #50  
West Valley City, UT 84119-7603  
Representative: Larry Crist

These three entities are referred to herein collectively as a "Party" or the "Parties".

4. LOCATION: TEAD-S owns certain ponds known as "Airport Road Pond 1" WGS84 UTM Zone 12N, (N 0387353, E 4464927) and "Airport Road Pond 2" (N 0387275, E 4464880), all located in Tooele County, State of Utah;

5. RESPONSIBILITIES: The Parties enter into this MOU and agree to the duties, responsibilities and obligations of each party set forth below:

a. UDWR shall have the right to introduce least chub into the above mentioned ponds to establish least chub broodstocks and/or refuge populations.

b. UDWR shall have the right to annually monitor least chub in the above mentioned ponds during the months of August-October, or as arranged, in order to facilitate monitoring without impeding TEAD operations.

c. TEAD will permit least chub to remain in the above mentioned ponds for an

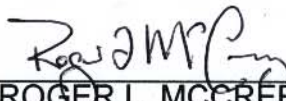
indefinite term, but revocable at will by the commander of TEAD. Any modification or changes to this MOU will only be made by the agencies designated representative and coordinated by all participants. Prior to the end of ten years, the Parties shall determine whether or not to maintain populations for an additional period of time. If, at the end of the ten years, the Parties decide to terminate use of the site, the UDWR shall remove the least chub from the ponds.

d. TEAD may immediately modify the ponds to suppress wildland fires, structural fires, or any other emergency. Prior to modification of the ponds for any other purpose, TEAD shall consult the UDWR to determine how to minimize potential impacts to least chub. TEAD shall not introduce any other fish species into ponds containing least chub on their property. The Parties also hereby acknowledge that TEAD intends to develop a Wet Meadow Habitat, Agriculture crop area and livestock grazing adjacent to Airport Road Ponds and to create wildlife habitat on the property owned by TEAD. TEAD may not collect or possess least chub prior to obtaining a Certificate of Registration from the UDWR.

e. The UDWR will not hold TEAD responsible for any least chub mortalities that occur within the ponds on their property.

f. In the event that the U.S. Fish and Wildlife Service begins preparation for a final listing rule (in the form of a proposed rule under the Endangered Species Act of 1973), as amended, TEAD may request removal of all least chub from ponds on their property. Upon receipt of a written request, the UDWR shall remove the least chub from the property within 30 days.

6. SIGNATORIES: This Memorandum of Understanding is executed this 1st day of September, 2013, by and between the Parties.

  
\_\_\_\_\_  
ROGER L. MCCREERY (Date)  
Colonel, LG Commanding  
Tooele Army Depot

\_\_\_\_\_  
JAMES F. KARPOWITZ (Date)  
Director of Wildlife Resources  
Utah Division of Wildlife Resources

\_\_\_\_\_  
LARRY CRIST (Date)  
Field Office Supervisor  
Utah Field Office  
U.S. Fish and Wildlife Service

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**Appendix I**

**USFWS 2000 TEAD South Area NWI Data**

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Deseret Chemical Depot

## Linear Data

### Palustrine Scrub-Shrub Wetlands

<i>NWI Attributes</i>	<i>Frequency</i>	<i>Length (miles)</i>
PSS1A	5	1.48

### Riverine Wetlands

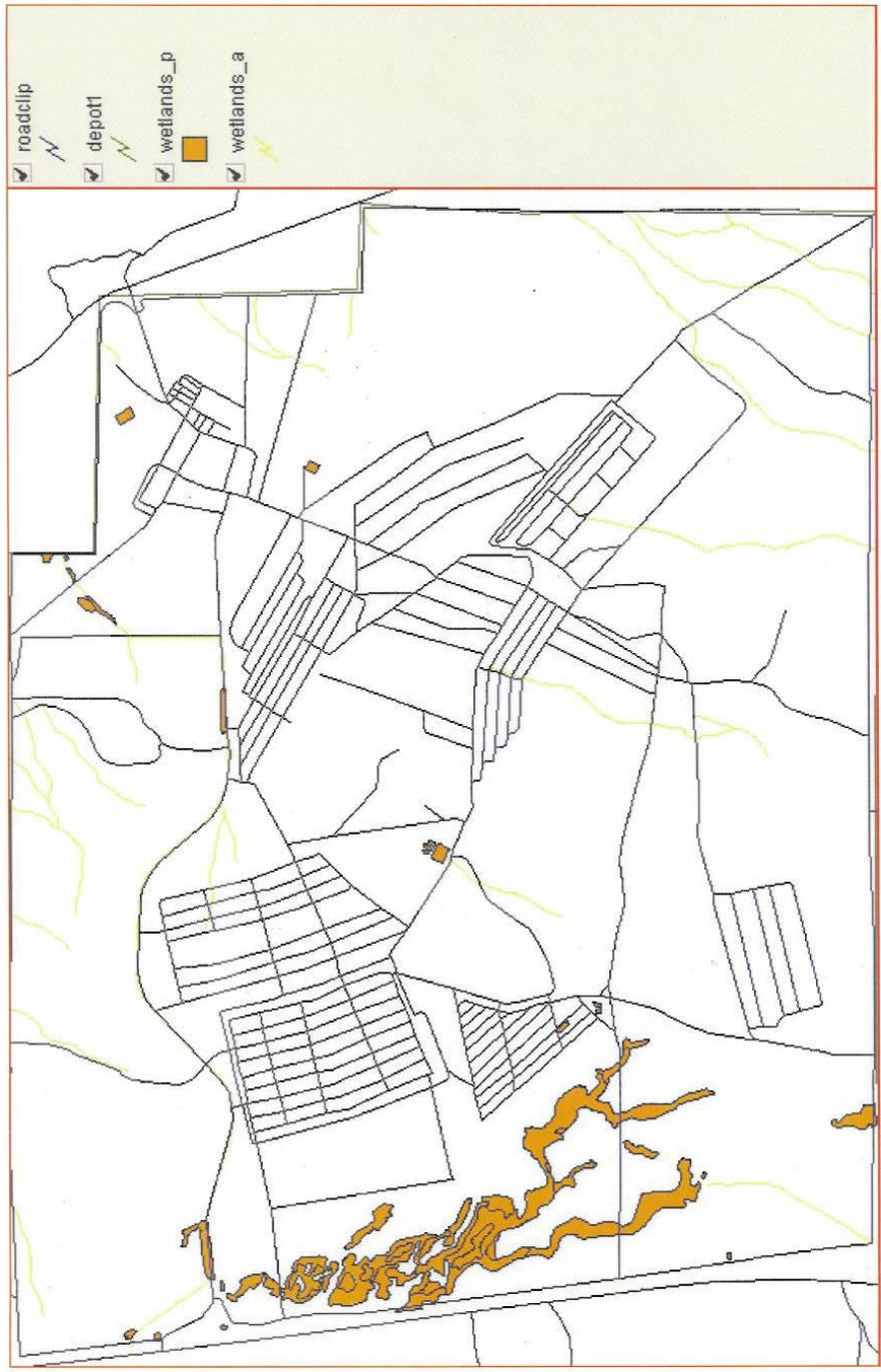
<i>NWI Attributes</i>	<i>Frequency</i>	<i>Length (miles)</i>
R4SBC	6	0.31
R2UBHx	6	1.82
R4SBCx	2	1.71
R4SBJ	30	18.48
R4SBJx	3	1.56
subtotal	47	23.88

### Riverine Wetlands - Riparian Habitat

<i>NWI Attributes</i>	<i>Frequency</i>	<i>Length (miles)</i>
R2UBHx-R2-Rp1SS6	4	1.50
R2UBHx-Rp1SS6SC	1	0.36
R4SBC-Rp1SS6SC	5	0.39
subtotal	10	2.25

### **Summary Linear totals**

<i>NWI Attribute</i>	<i>Frequency</i>	<i>Length (miles)</i>
Total Palustrine miles	5	1.48
Riverine Wetland miles	47	23.88
Total Riverine Wetlands/Riparian miles	10	2.25
Total Linear miles		25.36





## **Appendix J**

### **TEAD North Area Leaseback Area Lease and Map**

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WHEN RECORDED RETURN TO:

No Documentary transfer tax due

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Attorney

### **LEASE AGREEMENT**

This Agreement is entered into between the Redevelopment Agency of Tooele City, (the RDA) , and the United States of America (the Army).

#### **Recitals**

A. The RDA and the Army have previously entered into a Memorandum of Agreement/Contract to Purchase/Sell No. DACA05-9-96-548 dated May 15, 1996, as amended, (hereafter "MOA"); any reference to the MOA shall be deemed to include all of its provisions, together with all exhibits, amendments and attachments, and the Deeds also executed by the parties in furtherance of the MOA relating to the Economic Development Conveyance (EDC) of the realigned portion (also known as the BRAC parcels) of Tooele Army Depot (TEAD) to the RDA (herein referred to as the EDC area).

B. Pursuant to the National Defense Authorization Act for FY 1996, Public Law 104-106, Section 2837, the Army may transfer to the RDA base closure

property that is still needed by the Army or another Federal agency provided the property is leased back on favorable terms and with no requirement for rental payment by the United States.

C. In the MOA the RDA agreed to lease to the Army that part of the EDC area required for the Army's ongoing mission. The EDC area included in this lease to the Army consists of certain buildings and the adjacent land and parking areas, (herein referred to as the "Premises"), including access over roads within the Premises, upon the terms and conditions to be specified herein. The description of the Premises is as set forth in Exhibit A, attached hereto and incorporated herein by this reference.

D. The RDA and the Army now desire to enter into a lease of the Premises, and have agreed upon the terms and conditions for such a lease.

### **Terms of Agreement**

**Now, therefore, the RDA and the Army agree as follows:**

1. **Lease of Premises.** The RDA hereby leases the Premises to the Army, and grants to the Army the right of ingress and egress to and from the Premises, upon the terms and conditions set forth in this Lease.

2. **Term.** The term of this Lease shall be for fifty (50) years from the date of execution by the Army, with options to renew for subsequent 50 year terms. Should the Army elect not to exercise its option to renew the term of this Lease at the end of a lease term, the Army shall give written notice to the RDA six months in advance of its intention not to renew.

3. **Consideration.** As long as the Army is not in material default under this Lease, or under the provisions of the MOA, or any other agreement between the RDA and the Army relating to the EDC, the rental for the Premises shall be one

dollar (\$1.00) for the term of this Lease, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged.

**4. Use of Premises.**

a. The Army shall have full-time exclusive use of the Premises. The Army shall use the Premises solely for the purpose of conducting activities related to the military purposes for which the Army is responsible, and uses reasonably incidental thereto. Provided, however, that under no circumstances shall such use be conducted in a manner which is dangerous or hazardous to the health and safety of the public using the EDC area, and/or employees working in or about the EDC area. The Army shall at all times have the right to quiet enjoyment of the Premises, but shall not disturb the quiet enjoyment of any other tenant or owner in or about the Premises. That portion of the Premises situated within the administrative area of TEAD may be used by the Army for general administrative, military troop housing, recreation, military and civilian training, and all activities related thereto. That portion of the Premises situated within the industrial area of TEAD may be used by the Army for typical heavy industrial and related activities, including but not limited to warehousing, and the use, maintenance and storage of heavy vehicles and equipment, and all activities related thereto. The foregoing uses by the Army shall not be considered as disturbances to the quiet enjoyment of others in or about the Premises. Notwithstanding the foregoing, the manufacture, handling and storage of conventional, nuclear, biological and chemical arms, explosives and munitions on the Premises, shall not be authorized; except that, subject to applicable law, the possession and handling by the Army of small arms, ammunition and explosives typically associated with Army police and security enforcement and training related to TEAD Army mission activities shall be authorized.

b. The Army shall be solely responsible for obtaining at its cost and expense any environmental permits and other licenses required for its operations under this Lease and shall comply with all applicable Federal and state environmental laws and regulations. In the event of a release of toxic or hazardous substances, pollutants, contaminants, or petroleum products by the Army, or any of its employees, officers, agents, contractors or other persons using the Premises, which release occurs on the

Premises during the term of this Lease, the Army shall notify the RDA and shall comply with applicable Federal and state laws relating to remediation.

c. It is further provided that if the Army no longer needs the Premises before the expiration of the term of this Lease, the Army shall notify the RDA and may terminate this Lease and the remainder of the lease term may be satisfied by the Army or another Federal department or agency that will use the Premises for a use similar to the use specified under this Lease. The Army or another Federal department or agency shall be bound by the same terms and conditions as the original lease and shall consult with the RDA regarding its reuse of the Premises, which reuse must be compatible with the RDA's redevelopment efforts.

5. **Alterations.** The Army may make reasonable alterations to the Premises, erect structures thereon, and/or attach fixtures and signs thereto after consultation with the RDA. The Army agrees (a) that the RDA will not be responsible for any of the cost of such alteration(s); and (b) only with respect to actions of the Army, its officers, employees, agents and contractors, to maintain the Premises free and clear of any mechanics' liens. Upon termination, all such alterations, structures, fixtures, and signs shall become the property of the RDA; provided, however that, after notification to the RDA, the Army shall have the right to remove any item qualifying as a trade fixture or personal property. The Non-appropriated Fund Instrumentality (NAFI) equipment will be removed by the NAFI. Any such removal by the Army and/or the NAFI shall be conducted in such a manner as to minimize damage to the remaining buildings and facilities.

6. **Termination.** The Army shall have the right to terminate all or any portion of this Lease at any time by giving at least thirty (30) days written notice to the RDA.

7. **Damage by Fire or Other Casualty.** If the Premises are destroyed by fire or other casualty, the Army may, at its option, immediately terminate this Lease without the need for notice. In the event of partial destruction or damage, so as to render the Premises untenable, as determined by the Army, the Army may terminate this Lease by giving written notice to the RDA within thirty (30) days from

the date of destruction or damage. Subject to the availability of funds, the Army will clear the Premises of the results of a fire or casualty. The foregoing is not intended to require the Army to rebuild or replace structures but only to clear the Premises after damage or destruction to the Premises. The Army shall have the option to rebuild or repair, or to terminate use of the destroyed or damaged Premises. Nothing herein is intended to waive any right or remedy to which the RDA and the Army are entitled at law or in equity.

8. **Utilities.** The Army shall be responsible for obtaining utilities required for the Premises, including but not limited to water, electricity, gas, waste/refuse removal, drainage fees, sewer fees and telephone. Payment for such utilities shall be pursuant to separate contracts with the appropriate utility providers. The Army shall not be required to participate in the cost of upgrading any facility required for delivery of utilities to the Premises; provided, however, if the Army requires additional capacity, and provision of such additional capacity requires upgrading or other alteration of facilities for delivery thereof, the utility provider shall be under no obligation to furnish such additional capacity unless the Army pays the entire cost of the additional capacity, upgrading and/or alteration of facilities as required.

9. **Maintenance and Condition of Premises.** The Army shall maintain the Premises, including the buildings, the land, and any and all equipment, fixtures, and appurtenances in good repair. Maintenance includes, but is not limited to, snow removal and groundskeeping on the Premises. The Army may repair and improve the premises at its expense after consultation with the RDA. The Army shall not be responsible for building modifications or other actions necessary to meet local building codes or other state or local laws.

10. **Default.** In the event of material default by the Army under this Lease, the RDA shall notify the Army of the non-compliance, which notice shall be in writing or shall be confirmed in writing, giving a reasonable period of time appropriate for the nature of the non-compliance, in which to correct the non-compliance. Material default, for the purpose of this paragraph, shall mean any failure to comply with applicable Federal and state environmental laws and regulations or any persistent or recurring non-compliance with any other terms and

conditions of this Lease. If any non-compliance occurs which cannot reasonably be remedied within the proposed cure period, the RDA shall afford such additional time, not to exceed one hundred eighty (180) days, as may reasonably be required to cure such non-compliance, providing the Army proceeds with reasonable diligence to cure such non-compliance. Failure to satisfactorily correct any substantial non-compliance within the specified time is grounds for revocation of the lease, after notice in writing of such intent. The RDA shall give the Army sixty (60) days written notice of termination, during which notification period the Army may cure its non-compliance and thereby negate the termination action by the RDA.

**11. Expiration Remediation.** Upon expiration of this Lease, the Army shall perform an environmental inspection of the Premises. Any environmental remediation action required as a result of the Army's activities on the Premises will be accomplished by the Army as required by and in accordance with applicable Federal and state laws and regulations.

**12. Remedies.**

a. The RDA and the Army reserve unto themselves all rights and remedies to which each is entitled at law or in equity. The failure to exercise any such rights and remedies shall not constitute a waiver of such rights and remedies.

b. The Army recognizes its obligation to hold harmless, defend, and indemnify the RDA and any successor, assignee, transferee, lender, or lessee of the RDA or its successors and assigns, as provided in Section 330 of the Department of Defense Authorization Act of 1993, 10 U.S.C. Section 2687 (note entitled "Indemnification of Transferees of Closing Defense Property"), as amended, and to otherwise meet its obligations under law.

**13. RDA's Successors.** The terms and provisions of this Lease and the conditions herein shall bind the RDA, and the RDA's heirs, executors, administrators, successors, and assigns. The parties agree that this Lease will be placed of record in the land records of Tooele County. By written notice to the



Army, the RDA will furnish notification of any change of address, ownership of the Premises, name of new lessor or line of succession.

14. **Restoration.** The RDA hereby waives the right to require the Army to pay any restoration costs at the time the Army vacates the Premises except environmental remediation as discussed herein.

15. **Officials Not to Benefit.** No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this contract, or to any benefit arising from it. However, this clause does not apply to this contract to the extent that this contract is made with a corporation for the corporation's general benefit.

16. **Covenant Against Contingent Fees.** The RDA warrants that no person or selling agency has been employed or retained to solicit or secure this Lease upon an agreement or understanding for a commission, percentage, brokerage or contingency fee; excepting bona fide employees or bona fide established commercial or selling agencies maintained by the RDA for the purpose of securing business. For breach or violation of this warranty the Army shall have the right to annul this Lease without liability or in its discretion to deduct from the rental price or consideration, or otherwise recover the full amount of such commission, percentage, brokerage or contingency fee. (Licensed real estate agents or brokers having listings on property for rent in accordance with general business practice and who have not obtained such licenses for the sole purpose of effecting this Lease, may be considered as bona fide employees or agencies within the exception contained in this clause.)

17. **Disputes.**

a. This contract is subject to the Contract Disputes Act of 1978. Except as provided in the Act, all disputes arising under or relating to this Lease shall be resolved under this clause or in accordance with the existing Federal law at the time of the dispute.

b. "Claim", as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment of interpretation of lease terms, or other relief arising under or relating to this contract.

c. A claim arising under a contract, unlike a claim relating to that contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. However, a written demand or written assertion by the RDA seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified as required by the following paragraph. A voucher, invoice or other routine request for payment that is not in dispute is not a claim under the Act. The submission may be converted to a claim under the Act by complying with the submission and certification requirement of this clause, if it is disputed either as a liability or amount or is not acted upon in a reasonable time.

d. A claim by the RDA shall be made in writing and submitted to the Army for a written decision. A claim by the Army against the RDA shall be subject to a written decision by the Army. For RDA claims exceeding \$100,000, the RDA shall submit with the claim a certification that the claim is made in good faith, supporting data are accurate and complete to the best of the RDA's knowledge and belief and the amount requested accurately reflects the lease adjustment for which the RDA believes the Army is liable.

e. The certificate shall be executed by a senior RDA official in charge at the RDA's location involved or an officer of the RDA having overall responsibility for the conduct of the RDA's affairs.

f. For RDA claims of \$100,000 or less, the Army must, if requested in writing by the RDA, render a decision within 60 days of the request. For RDA certified claims over \$100,000, the Army must, within 60 days, decide the claim or notify the RDA of the date by which the decision will be made.

g. The Army's decision shall be final unless the RDA appeals or files a suit as provided in the Act.

h. The Army shall pay interest or the amount found due and unpaid from (1) the date the Army received the claim (properly certified if required), or (2) the date payment otherwise would be due - if that date is later, until the date of payment. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury as provided in the Act, which is applicable to the period during which the Army receives the claim and then at the rate applicable for each 6-month period as fixed by the Treasury Secretary during the pendency of the claim.

i. The RDA shall proceed diligently with the performance of this contract, pending final resolution of any request for relief, claim, appeal or action arising under the contract and comply with any decision of the Army.

**18. Anti-Deficiency Act.** The Army's obligation to pay or reimburse any money under this Lease is subject to the availability of appropriated funds, and nothing in this Lease shall be interpreted to require obligations or payments by the United States in violation of the Anti-Deficiency Act 31 U.S.C. Section 1341.

**19. Entire Agreement.** This Lease, except as otherwise set forth in the text, contains all of the agreements of the parties with respect to the terms and conditions of Army's tenancy.

**20. Notices.** All correspondence and notices to be given pursuant to this Lease shall be addressed as follows:

If to the Army:

District Engineer  
Attention: Chief, Real Estate Division  
1325 J Street, Room 1380  
Sacramento, CA 95814-2922

If to the RDA:

Redevelopment Agency of Tooele City  
Tooele City Hall  
90 North Main Street  
Tooele, Utah 84074

Notice shall be deemed to have been duly given if and when enclosed in a properly sealed envelope, or wrapper, addressed as aforesaid, and deposited, postage prepaid, in a post office regularly maintained by the U.S. Postal Service.

21. **Amendment.** This Lease may be amended only by written agreement executed by both parties.

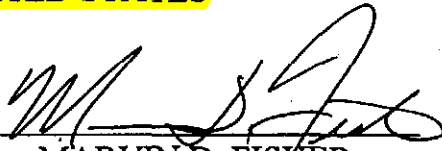
22. **Binding Effect.** The terms and conditions of this Lease shall bind and inure to the benefit of the respective assignees or transferees of the parties.

23. **Assignment.** This Lease shall not be assignable by the Army to any party not an agency of the Federal government.

24. **Effective Date.** This Lease shall not become effective until full execution by both parties.

IN WITNESS WHEREOF, I have hereunto set my hand by authority of the  
Secretary of the Army, this 15<sup>th</sup> day of December, 1998.

UNITED STATES OF AMERICA  
Acting by and through the  
Secretary of the Army,  
UNITED STATES

By:   
MARVIN D. FISHER  
Chief, Real Estate Division  
U.S. Army Engineer District,  
Sacramento

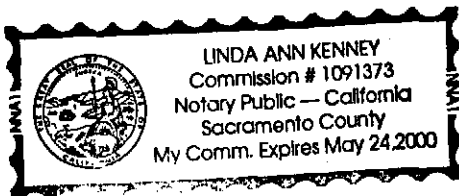
ACKNOWLEDGMENT

STATE of CALIFORNIA

COUNTY OF SACRAMENTO

On 15<sup>th</sup> December 1998 before me, Linda Ann Kenney,  
personally appeared Marvin D. Fisher, personally known to me to be the  
person whose name is subscribed to the within instrument and acknowledged to me that he  
executed the same in his authorized capacity, and that by his signature on the instrument  
the person or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.



Linda Ann Kenney  
NOTARY PUBLIC

## ACCEPTANCE

The REDEVELOPMENT AGENCY OF TOOEELE CITY, the RDA, a political subdivision of the State of Utah, hereby accepts and approves this Lease and agrees to all the terms and conditions contained therein.

IN WITNESS WHEREOF, the RDA has caused these presents to be executed by the Chairman of the Board of Directors on this 11<sup>th</sup> day of DECEMBER 1998.

### REDEVELOPMENT AGENCY OF TOOEELE CITY

By: Charlie Roberts  
Chairman, Board of Directors

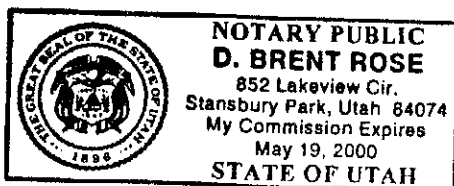
## ACKNOWLEDGMENT

STATE OF UTAH

COUNTY OF TOOEELE

On this 11<sup>th</sup> day of December 1998, before me personally appeared Charlie Roberts, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged to me that he executed same for and on behalf of the Redevelopment Agency of Tooele City and that the Redevelopment Agency of Tooele City executed same.

WITNESS my hand and official seal.



D Brent Rose  
NOTARY PUBLIC



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO  
CORPS OF ENGINEERS  
1325 J STREET  
SACRAMENTO, CALIFORNIA 95814-2922

December 16, 1998

Management and Disposal Branch  
Base Realignment and Closure Section

Mr. D. Brent Rose  
Clyde, Snow, Sessions and Swenson  
One Utah Center, Suite 1000  
201 South Main Street  
Salt Lake City, Utah 84111-2208

Dear Mr. Rose:

Enclosed is a fully executed copy of leaseback agreement DACW05-5-99-002. Request that this document be recorded along with the executed transfer documents you should receive by separate correspondence in the near future. We have included a cover sheet for the leaseback to be completed by the recorder and returned with the recorded leaseback to this office.

After recording, please also provide this office with a recorded copy of the transfer documents.

Point of contact remains Ms. Julie Bowen who may be reached at the above letterhead address or at (916) 557-6795 or 557-6815.

Sincerely,

Ken Fox  
Chief, Management and Disposal Branch

Enclosure

Copy Furnished:

✓ Commander, Tooele Army Depot, Attention: STSTE-PWE (Ms. Dorinda Benson),  
Tooele, Utah 84074-5000

business day with respect to actions as deferrals requested by a Committee, releases by a Committee of previously deferred transactions or withdrawals of reports by the Army.

(d) The Chief of Engineers will represent the Secretary of the Army in any hearings held by the Committees in connection with the Title 10 U.S.C. 2662 reports. The Chief of Engineers will request the Office of the Chief of Legislative Liaison to provide competent witnesses from the Army Staff element responsible for the accomplishment of the mission of the Army agency requiring the use of the real estate.

c. If it is considered to be to the best interest of the Government to place Government financed permanent construction on a leasehold or other lesser interest, the Chief of Engineers will submit through the appropriate Assistant Secretary of the Army, a request to the Assistant Secretary of Defense (I & L) that an exception to be made to the general policy that the Government must hold or acquire either fee title or a permanent easement interest in the land. The request for an exception will be in the form of a detailed report of the facts with comments and recommendations. The request will include a summary of the lease terms to which the proposed lessor will agree and a proximity map depicting sites surveyed. The request will also include details on each site as to its availability for purchase, estimated values, disqualifying factors, estimated fee value of the property proposed for lease, estimated cost of existing and/or proposed construction by the Government (excluding Government overhead costs and contingencies), estimated period of time property will be required, and estimated net cost of ultimate restoration thereof.

d. Paragraph 1-5i discusses cases in which it is general policy to hold or acquire fee title or a permanent easement interest in land, even though permanent construction is not proposed. In some of such cases, however, based upon favorable lease terms, public relations considerations, or other circumstances, it may be considered to be in the best interest of the Government to obtain a leasehold or other lesser interest. In the latter cases, the Chief of Engineers will determine if an exception is to be granted to said general policy. The request for an exception will be in the form prescribed in c above.

e. In the process of obtaining the clearances outlined in a through d above, and in other cases as appropriate, the Chief of Engineers will prepare a real estate directive. When the cost or value exceeds \$25,000, the directive will be submitted to the appropriate Assistant Secretary of the Army for approval. The real estate directive constitutes a formal determination of military necessity for the proposed acquisition. Exceptions to obtaining a formal real estate directive or an authorization to lease are set forth in paragraph 2-9 c.

f. Obtaining a Certificate of Necessity from the Secretary of the Army or his designee during war or national emergency.

(1) Section 322 of the Act of 30 June 1932 (47 Stat. 412) (The Economy Act), as amended by the Act of 3 March 1933 (47 Stat. 1517; 40 U.S.C. 278a), prohibits the leasing of any building or part of a building (as distinguished from land only) where—

(a) The annual rental exceeds 15 percent of the fair market value of the leased property as of the date of leasing, if the rental exceeds \$2,000 per annum. The Comptroller General has held (35 CG 713) that where nominal consideration or rent-free leases are involved, the amounts expended by the Government for alterations and improvements to the premises may be considered as the cost of occupancy, i.e., in lieu of rent, for each year of the rental term. However, the total cost of alterations or improvements plus the nominal rental during any year of the rental term may not exceed 15 percent of the fair market value of the leased premises at date of the lease, unless the total cost plus nominal rental does not exceed \$2,000 per annum.

(b) The cost of permanent alterations, improvements, and repairs exceeds 25 percent of the rental for the first year of the rental term or for the rental term if less than 1 year.

(2) Under the Act of 28 April 1942 (56 Stat. 247; 40 U.S.C. 278b) during war or a national emergency declared by Congress or by the President, the provisions of Section 322 of the Act of 30 June 1932 may be waived by the Secretary of the Army or his designee by certification that the leased premises are necessary for prosecution of the war or are vital in the national emergency.

(3) When a state of war or national emergency exists and the Lease Planning Report or narrative report on site selection indicates that terms of the proposed leasing exceed the limitations of Section 322 of the Act of 30 June 1932, and it is considered to be in the best interest of the Government to proceed with the proposed leasing, the Chief of Engineers will prepare a "Certificate of Necessity" which he will submit to the appropriate Assistant Secretary of the Army for approval and signature. When required, the Chief of Engineers will also initiate action to obtain "Certificates of Necessity" for renewal of existing leases.

(4) Comptroller General's Decision No. B-34851, 17 June 1943, (22 CG 1112), holds that the provisions of Section 322 of the Act of 30 June 1932 (47 Stat. 412), as amended by the Act of 3 March 1933 (47 Stat. 1517; 40 U.S.C. 278), are not applicable in cases where the use of property is acquired by the Government through condemnation proceedings.

(5) For additional policy and procedural information, see AR 420-71.

g. Prior Department of Defense clearance is required to establish bakeries, laundries, dry-cleaning facilities and other commercial and industrial type facilities.

(1) The Department of the Army policy relative to the establishment or continued use of Government-owned commercial or industrial type activities and a definition thereof is contained in paragraph 1-5k.





DEPARTMENT OF THE ARMY  
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO  
CORPS OF ENGINEERS  
1325 J STREET  
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO  
ATTENTION OF

August 12, 2013

Acquisition and Management Branch

Mathew R. Arbshay  
P O Box 399  
Tooele, UT 84074

Dear Mr. Arbshay:

Enclosed for your records is an executed copy of Supplemental Agreement No. 2 to Lease No. DACW05-5-99-002 removing approximately 12.37 acres from the lease.

Should you have any future questions regarding this agreement please contact Yvonne Bush, Realty Specialist, at (916) 557-7989 or [Yvonne.d.bush@usace.army.mil](mailto:Yvonne.d.bush@usace.army.mil).

Sincerely,

A handwritten signature in black ink, appearing to read "Stan Wallin", is written over the word "Sincerely,".

Stan Wallin

Chief, Acquisition and Management Branch

Enclosure

SUPPLEMENTAL AGREEMENT NO. 2  
TO  
DEPARTMENT OF THE ARMY  
LEASE NO. DACW05-5-99-002  
TOOELE ARMY DEPOT, UTAH

By this Supplement Agreement No. 2, made and entered into by and between the Secretary of the Army and Cyrus Land Investment LLC, Mathew R. Arbshay, its member and manager, hereinafter referred to as the lessor,

WITNESSETH THAT:

WHEREAS, the Secretary of the Army entered into lease DACW05-5-99-002 to lease back, for military and other purposes, certain parcels within the property transferred to the Redevelopment Agency of Tooele City (RDA), shown on Exhibit "A" of the lease; and

WHEREAS by Supplement Agreement No. 1, the Secretary and Mr. Mathew R. Arbshay modified boundaries of the lease back on the parcels south of Commander Boulevard to release certain areas from the obligations and included other areas in this lease; and

WHEREAS, the Secretary and Mr. Mathew R. Arbshay are interested in modifying the lease to remove certain property from the lease; and

WHEREAS, Mr. Mathew R. Arbshay attests that he has the authority to act on behalf of the various organizations controlling the property, and authority to modify the boundary of the leased premises.

NOW THEREFORE, the lease premises are hereby modified as shown on Exhibit "D" attached hereto and made apart hereof.

Exhibit "B" to lease DACW05-5-99-002 is hereby removed from Lease No. DACW05-5-99-002 and replaced by Exhibit "D", reflecting the property under this lease subject to the modification.

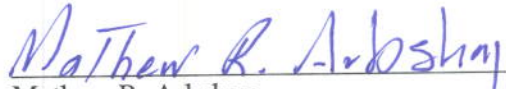
The boundary of the premises is modified only in the location specified in Exhibit "D". All other boundaries remain the same.

Said lease is modified in the preceding particulars only, and all other provisions and conditions thereof, including any previous modifications thereto, shall remain binding and in full force and effect.

-----NO OTHER MODIFICATIONS FOLLOW-----

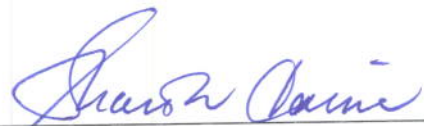
This Supplemental Agreement No. 2 to Lease No. DACW05-5-99-002 is hereby executed by the

Lessor this 14<sup>th</sup> day of Aug, 2013.

  
Mathew R. Arbshay  
Manager of Cyrus Land Investment, LLC

IN WITNESS WHEREOF, I have hereunto set my hand by authority of the Secretary of the  
Army

This 20<sup>th</sup>  
14<sup>th</sup> day of Aug, 2013.

  
Sharon Caine  
Chief, Real Estate Division  
U.S. Army Engineer District, Sacramento

STATE OF UTAH )  
 )SS.  
County of TOOELE )

On 14<sup>TH</sup> Day of AUGUST, 2013 Before me, the undersigned Notary Public, personally appeared MATHEW R. ARBSHAY known to me to be the member(s) or designated agents of the limited liability company that executed the above and acknowledged to be the free and voluntary act and deed of the limited liability company, by authority of statute, its articles of organization or its operating agreement, for the uses and purposes therein mentioned, and on oath stated that they are authorized to execute said instrument freely and voluntarily for the purpose and use herein mentioned on behalf of the limited liability company.

  
NOTARY PUBLIC

My Commission Expires: 2/1/2014



# CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

County of Sacramento }

On 8/20/2013 before me, Linda A. Shannon, Notary Public,  
Date Here Insert Name and Title of the Officer

personally appeared Sharon Caine  
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Linda A. Shannon  
Signature of Notary Public



Place Notary Seal Above

## OPTIONAL

*Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.*

### Description of Attached Document

Title or Type of Document: Sup Agreement to Lease <sup>Toolbox AD</sup> ADAC05-5-99-002

Document Date: 20 August 2013 Number of Pages: 4

Signer(s) Other Than Named Above: \_\_\_\_\_

### Capacity(ies) Claimed by Signer(s)

Signer's Name: Sharon Caine  
 Individual  
 Corporate Officer — Title(s): Chief  
 Partner —  Limited  General  
 Attorney in Fact  
 Trustee  
 Guardian or Conservator  
 Other: \_\_\_\_\_



Signer Is Representing: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Signer's Name: \_\_\_\_\_  
 Individual  
 Corporate Officer — Title(s): \_\_\_\_\_  
 Partner —  Limited  General  
 Attorney in Fact  
 Trustee  
 Guardian or Conservator  
 Other: \_\_\_\_\_



Signer Is Representing: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



## **Appendix K**

### **TEAD North Area Grazing Lease and Map**

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DEPARTMENT OF THE ARMY  
LEASE  
FOR LIVESTOCK GRAZING  
ON  
TOOELE ARMY DEPOT  
TOOELE COUNTY, UTAH

61.5/ann

THIS LEASE, made between the **Secretary of the Army**, hereinafter designated as Secretary, and **3 String Cattle Company, LLC**, hereinafter designated as lessee,

WITNESSETH:

That the Secretary, by virtue of the authority contained in Title 10, United States Code, Section 2667, having determined that the property hereby leased is not excess property as defined by Section 3 of the Federal Property and Administrative Act of 1949, as amended (40 U.S.C. 472), is not for this time needed for public use, and the leasing thereof will be advantageous to the United States and in the public interest, hereby leases to the lessee the property hereinafter identified on Exhibit "A" hereinafter referred to as the premises, containing approximately 17,515 acres, for livestock grazing purposes only; and that this lease is granted subject to the provisions of the Land Use Regulations, identified as Exhibit "B". Exhibits "A" and "B" are attached hereto and made a part hereof. This lease is subject to the following terms and conditions:

**1. TERM**

Said premises is hereby leased for a term of five (5) years beginning October 1, 2013 and ending September 30, 2018, but revocable at will by the Secretary.

**2. CONSIDERATION**

a. The lessee shall pay rental in advance to the United States in the amount of TWO HUNDRED FIFTY SIX THOUSAND EIGHT HUNDRED TWENTY FOUR AND NO/100 DOLLARS (\$256,824) per annum; payable as follows:

- (1) the amount of \$85,608.00 due on 1 November of each lease year; and
- (2) the amount of \$85,608.00 due on 1 January of each lease year; and
- (3) the amount of \$85,608.00 due on 1 March of each lease year.

Compensation shall be made payable to: FAO-USAED, SACRAMENTO and forwarded by the lessee direct to the District Engineer, U.S. Army Engineer District, Sacramento, ATTN: CESPK-RE-AM, 1325 J Street, Sacramento, California 95814-2922.

b. The lessee shall also pay to the United States on demand any sum that may have to be expended after the expiration, revocation, or termination of this lease in restoring the said

premises to the condition required by the lease Condition on Restoration.

c. All rent and other payments due under the terms of this lease must be paid on or before the date they are due in order to avoid the mandatory sanctions imposed by the Debt Collection Act of 1982, (31 U.S.C. Section 3717). This statute requires the imposition of an interest charge for the late payment of debts owed to the United States; an administrative charge to cover the costs of processing and handling delinquent debts; and the assessment of an additional penalty charge on any portion of a debt that is more than 90 days past due. The provisions of the statute will be implemented as follows:

(1) The United States will impose an interest charge, the amount to be determined by law or regulation, on late payment of rent. Interest will accrue from the due date. An administrative charge to cover the cost of processing and handling each late payment will also be imposed.

(2) In addition to the charges set forth above, the United States will impose a penalty charge of six percent (6%) per annum on any payment or portion thereof more than ninety (90) days past due. The penalty shall accrue from the date of delinquency and will continue to accrue until the debt is paid in full.

(3) All payments received will be applied first to any accumulated interest, administrative, and penalty charges, and then to any unpaid rental or other payment balance. Interest will not accrue on any administrative or late payment penalty charge.

### 3. NOTICES

All correspondence and notices to be given pursuant to this lease shall be addressed, if to the lessee, to **3 String Cattle Company LLC, attention Mr. R. Probst, 1980 W. Main Canyon Road, Wallsburg, Utah 84082; and if to the United States, to the District Engineer, U.S. Army Engineer District, Sacramento, ATTN: CESP-K-RE-B, 1325 J Street, Sacramento, California 95814-2922**, or as may from time to time otherwise be directed by the parties. Notice shall be deemed to have been duly given if and when enclosed in a properly sealed envelope, or wrapper, addressed as aforesaid, and deposited, postage prepaid (or, if mailed by the United States, deposited under its franking privilege) in a post office regularly maintained by the United States Postal Service.

### 4. AUTHORIZED REPRESENTATIVES

Except as otherwise specifically provided, any reference herein to "Secretary", "District Engineer", "said officer", "Installation Commander", and "lessee" shall include their successors and duly authorized representatives.

## **5. SUPERVISION BY THE INSTALLATION COMMANDER**

The lessee's use and occupation of the said premises shall be subject to the general supervision and approval of the Installation Commander, Tooele Army Depot, Utah, hereinafter designated as said officer, and to such rules and regulations regarding ingress, egress, safety, sanitation and security as may be prescribed by the said officer from time to time.

## **6. APPLICABLE LAWS AND REGULATIONS**

The lessee shall comply with all applicable Federal, state, county and municipal laws, ordinances and regulations wherein the said premises is located.

## **7. CONDITION OF PREMISES**

The lessee has inspected the said premises, knows its condition, and understands that the same is leased without any representation or warranties whatsoever and without obligation on the part of the United States to make any alterations, repairs or additions thereto.

## **8. TRANSFERS AND ASSIGNMENTS**

Without prior written approval of the District Engineer, U.S. Army Engineer District, Sacramento, hereinafter designated as District Engineer, the lessee shall neither transfer nor assign this lease, nor sublet the said premises or any part thereof, nor grant any interest, privilege or license whatsoever in connection with this lease. Failure to comply with this condition shall constitute a noncompliance for which the lease may be revoked immediately by the District Engineer.

## **9. COST OF UTILITIES**

The lessee shall pay the cost, as determined by the said officer, of producing and/or supplying any utilities and other services furnished by the United States or through United States-owned facilities for the use of the lessee, including the lessee's proportionate share of the cost of operation and maintenance of the United States-owned facilities by which such utilities or services are produced or supplied. The United States shall be under no obligation to furnish utilities or services. Payment shall be made in the manner prescribed by the said officer.

## **10. PROTECTION OF PERSONAL PROPERTY**

Subject to the limitations of the lease Condition on Restoration herein with respect to restoration, the lessee shall at all times exercise due diligence in the protection of all United States personal property used or occupied by the lessee under this lease against damage or destruction and shall maintain such property in good order and condition by and at the expense of the lessee. Any personal property of the United States damaged or destroyed by the lessee

incident to the exercise of the privileges granted herein shall be promptly repaired or replaced by the lessee to a condition satisfactory to the District Engineer, or at the election of the District Engineer, reimbursement made therefor by the lessee in an amount necessary to restore or replace the property to a condition satisfactory to the District Engineer.

## **11. RENTAL ADJUSTMENT**

In the event the United States revokes this lease or in any other manner materially reduces the leased area or materially affects its use by the lessee prior to the expiration date, an equitable adjustment in the rental paid or to be paid under this lease shall be made. Such adjustment of rent shall be evidenced by a written supplemental agreement, executed by the District Engineer; **PROVIDED, HOWEVER**, that none of the provisions of this condition shall apply in the event of revocation because of noncompliance by the lessee with any of the terms and conditions of this lease.

## **12. RIGHT TO ENTER**

a. In addition to the rights reserved in the Land Use Regulations, the right is hereby reserved to the United States, its officers, agents, and employees, to enter upon the said premises at any time for the purpose of inspection and inventory and when otherwise deemed necessary for the protection of the interest of the United States; to perform any work necessary for flood control operations or other authorized project purposes and to flood the said premises whenever necessary. The lessee shall have no claim for damages of any character on account thereof against the United States or any officer, agent, or employee thereof.

b. The lessee hereby agrees to make no claim under flood insurance issued under any United States program for loss to any property of the lessee located on the said premises which arises from or is incident to the flooding of the said premises by the United States.

## **13. INDEMNITY**

a. The lessee agrees to assume all risks of loss, damage to property, or personal injury or death to persons by reason of or incident attributable or incident to the use of the said premises or activities conducted under this lease. The lessee expressly waives all claims against the United States for any such loss, damage, personal injury, or death caused by or occurring as a consequence of use of the said premises by the lessee, or the conduct of activities, or the performance of responsibilities under this lease by the lessee. The lessee further agrees to indemnify and hold harmless the United States and its officers, agents, and employees, from and against all suits, claims, demands or actions, liabilities, judgements, costs and attorneys' fees arising out of, or in any manner predicated upon, personal injury, death, or property damage resulting from, related to, caused by, or arising out of the use of the said premises by the lessee. The United States will give the lessee notice of any claim against it covered by this indemnity as soon after learning of such claim as practicable.

b. The lessee shall indemnify and hold harmless the United States from any costs, expenses, liabilities, fines, or penalties resulting from discharges, releases, emissions, spills, storage, disposal, or any other action by the lessee giving rise to United States liability, civil or criminal, or responsibility under Federal, state, or local environmental laws.

c. Subparagraphs "a" and "b" of this condition and the obligations of the lessee hereunder shall survive the expiration or termination of the lease and any conveyance of the said premises. The lessee's obligations hereunder shall apply whenever the United States incurs costs or liabilities for the lessee's actions giving rise to liability under this condition.

#### 14. INSURANCE

a. At the commencement of this lease, the lessee shall obtain, from an approved insurance company(ies), comprehensive liability insurance. The insurance shall provide an amount not less than a combined single limit of ***FIVE HUNDRED THOUSAND AND NO/100 DOLLARS (\$500,000.00)***, for any number of persons or claims arising from any one incident with respect to bodily injuries or death resulting therefrom, property damage, or both, suffered or alleged to have been suffered by any person or persons resulting from the operations under the terms of this lease.

b. The liability insurance policy shall insure against contractual liability specified in the Condition on Indemnity herein. The policy shall name the United States as an insured party. Each policy shall be reasonably satisfactory to the United States in all respects and will provide that any losses shall be payable, notwithstanding any act or failure to act, or negligence of the lessee, the United States, or any other person. The insurer will have no right of subrogation against the United States. Under no circumstances will the lessee be entitled to assign to any third party rights of action that it may have against the United States arising out of this lease.

c. The lessee shall require that its insurance company(ies) provide the District Engineer ***thirty (30) days*** written notice of any cancellation or change in such insurance. The District Engineer may require closure of any or all of the said premises during any period for which the lessee does not have the required insurance coverage. The lessee shall require their insurance company(ies) to furnish the District Engineer a copy of the policy(ies), or if acceptable to the District Engineer, certificates of insurance

#### 15. RESTORATION

On or before the expiration of this lease or its termination by the lessee, the lessee shall vacate the said premises, remove the property of the lessee therefrom, and restore the said premises to as good order and condition as that existing upon the date of commencement of the term of this lease, damages beyond the control of the lessee and due to fair wear and tear excepted. If, however, this lease is terminated in accordance with the Condition on Termination by the lessee hereof, or revoked, the lessee shall vacate the said premises, remove the property of the lessee therefrom, and restore the said premises to the aforesaid condition within such time as

the District Engineer may designate. If the lessee shall fail or neglect to remove the property of the lessee and so restore the said premises, then, at the option of District Engineer, the property of the lessee shall either become the property of the United States without compensation therefor, or the District Engineer may cause the property to be removed and said premises so to be restored at the expense of the lessee, and no claim for damages against the United States or its officers or agents shall be created by or made on account of such removal and restoration work. The Lessee shall also pay the United States on demand any sum that may be expended by the United States after the expiration, revocation or termination of this lease in restoring the premises.

#### **16. NON-DISCRIMINATION**

The lessee shall not discriminate against any person or persons or exclude them from participation in the lessee's operations, programs or activities conducted on the said premises, because of race, color, religion, sex, age, handicap or national origin.

#### **17. SUBJECT TO OUTGRANTS**

This lease is subject to all existing and future issuances of easements, licenses, and permits for roadways, pipelines, and utilities on said premises. In the event that future grants for the aforesaid purposes materially affect the lessee's use of the said premises, an equitable adjustment will be made in the rental paid or to be paid under this lease.

#### **18. SUBJECT TO MINERAL INTERESTS**

This lease is subject to all outstanding mineral interests. As to United States-owned mineral interests, it is understood that they may be included in present or future mineral leases issued by the Bureau of Land Management (BLM). The Secretary will provide lease stipulations to BLM for inclusion in said mineral leases, which stipulations are designed to protect the said premises from activities that would interfere with the lessee's operations or would be contrary to local law.

#### **19. TERMINATION BY THE LESSEE**

a. This lease may be terminated by the lessee at any time by giving at least sixty (60) days notice thereof, in writing, to the District Engineer. In the case of such termination, no refund by the United States of any rental previously paid shall be made and payment in full of all rent becoming due during the period of notice will be required. If the effective date of termination is not at least sixty (60) days prior to the annual rental due date the lessee shall be required to pay the rental for the period or term shown in the Condition on Consideration hereof. In the event the effective date of termination occurs after the start of the grazing season as specified in the Land Use Regulations, any rent due for the balance of the annual term, or the rental due for the remaining term if the lease is for less than one year, shall be due and payable

on or before the date of such termination.

b. If the lessee exercises the right to terminate this lease as provided for herein, the lessee shall be ineligible to bid on the said premises until after the ending date specified in the granting clause of this lease; however, the District Engineer reserves the right to waive the ineligibility if he determines such waiver would be in the interest of the United States.

## **20. PROHIBITED USES**

In addition to the requirements specified in the Land Use Regulations hereof, the lessee shall not:

a. construct or place any permanent or temporary structure, improvement, or advertising sign or permit such construction or placement without prior written approval of the District Engineer;

b. commit or permit any unlawful acts, activities, or nuisances upon said property;

c. cut timber;

d. conduct mining operations, or remove sand, gravel, or kindred substances from the ground; or

e. in any manner substantially change the contour of the said premises, except as may be authorized by the District Engineer.

## **21. CONSERVATION PAYMENTS**

The lessee agrees that he will not accept any federal cost-sharing payments for soil conservation practices required by the lease which will result in a duplicate payment for such practices.

## **22. DISPUTES**

a. Except as provided in the Contract Disputes Act of 1978 (41 U.S.C. 601-613) (the Act), all disputes arising under or relating to this lease shall be resolved under this condition and the provisions of the Act.

b. "Claim," as used in this condition, means a written demand or written assertion by the lessee seeking, as a matter of right, the payment of money in a sum certain, the adjustment of interpretation of lease terms, or other relief arising under or relating to this lease. A claim arising under this lease, unlike a claim relating to this lease, is a claim that can be resolved under a lease condition that provides for the relief sought by the lessee. However, a written demand or written assertion by the lessee seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified as required by subparagraph "d" of this condition. The routine request for

rental payment that is not in dispute is not a claim under the Act. The request may be converted to a claim under the Act, by this condition, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

c. (1) A claim by the lessee shall be made in writing and submitted to the District Engineer for a written decision. A claim by the United States against the lessee shall be subject to a written decision by the District Engineer.

(2) For lessee claims exceeding \$100,000, the lessee shall submit with the claim a certification that:

(i) the claim is made in good faith;

(ii) supporting data are accurate and complete to the best of the lessee's knowledge and belief; and

(iii) the amount requested accurately reflects the amount for which the lessee believes the United States is liable.

(3) if the lessee is an individual, the certificate shall be executed by that individual. If the lessee is not an individual, the certification shall be executed by:

(i) a senior company official in charge at the lessee's location involved; or

(ii) an officer or general partner of the lessee having overall responsibility of the conduct of the lessee's affairs.

d. For lessee claims of \$100,000 or less, the District Engineer must, if requested in writing by the lessee, render a decision within 60 days of the request. For lessee certified claims over \$100,000, the District Engineer must, within 60 days, decide the claim or notify the lessee of the date by which the decision will be made.

e. The District Engineer's decision shall be final unless the lessee appeals or files a suit as provided in the Act.

f. At the time a claim by the lessee is submitted to the District Engineer or a claim by the United States is presented to the lessee, the parties, by mutual consent, may agree to use alternative means of dispute resolution. When using alternate dispute resolution procedures, any claim, regardless of amount, shall be accompanied by the certification described in subparagraph "c" of this condition and executed in accordance with either subparagraph "c (3)" of this condition.

g. The United States shall pay interest on the amount found due and unpaid by the United States from (1) the date the District Engineer received the claim (properly certified if required), or (2) the date payment otherwise would be due, if that date is later, until the date of



payment. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury, as provided in the Act, which is applicable to the period during which the District Engineer receives the claim and then at the rate applicable for each six-month period as fixed by the Secretary of the Treasury during the pendency of the claim. Rental amounts due to the United States by the lessee will have interest and penalties as set out in the Condition on Consideration herein.

h. The lessee shall proceed diligently with performance of the lease, pending final resolution of any request for relief, claim, appeal, or action arising under the lease, and comply with any decision of the District Engineer.

### **23. ENVIRONMENTAL PROTECTION**

a. Within the limits of their respective legal powers, the parties to this lease shall protect the said premises against pollution of its air, ground, and water which is incident to the lessee's use and occupation of said premises. The lessee shall comply with existing and future issuances of any laws, regulations, conditions, or instructions affecting the activity hereby authorized which are issued by any Federal, state, interstate or local governmental agency having jurisdiction to abate or prevent pollution.

b. The lessee shall not discharge waste or effluent from the said premises in such a manner that the discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.

c. The disposal on said premises of any materials classified by law or regulation as "toxic", "hazardous", or "restricted" is prohibited.

d. The Lessee shall maintain a clean and hazard free worksite. Cleanup shall be daily or more often if directed. All removed and salvageable material and equipment are to remain the property of the Government, are to be sorted and then transported by the Lessee to an On-Depot site as directed by the Installation Commander. All disposable material shall be disposed of at a state approved landfill so that the work site is free of debris.

### **24. HISTORIC PRESERVATION**

The lessee shall not knowingly remove or disturb, or cause or permit to be removed or disturbed, any known historical, archeological, architectural or other cultural artifacts, relics, remains, or objects of antiquity. In the event such items are discovered on the premises, the lessee shall immediately notify the said officer and protect the site and the material from further disturbance until said officer gives clearance to proceed.

### **25. SOIL AND WATER CONSERVATION**

The lessee shall maintain, in a manner satisfactory to the District Engineer, all soil and water conservation structures that may be in existence upon the said premises at the beginning of

or that may be constructed by the lessee during the term of this lease, and the lessee shall take appropriate measures to prevent or control soil erosion within the premises. Any soil erosion occurring outside the said premises resulting from the activities of the lessee shall be corrected by the lessee as directed in writing by the District Engineer.

## **26. TAXES**

The lessee shall pay to the proper authority all taxes, assessments, or similar charges imposed by the state or its political subdivisions upon the United States or the lessee with respect to or upon said premises. In the event any taxes, assessments, or similar charges are imposed with the consent of Congress upon said premises (as opposed to a leasehold interest of the lessee therein), this lease shall be renegotiated so as to accomplish an equitable reduction in the rental provided for in the Condition on Consideration herein.

## **27. COVENANT AGAINST CONTINGENT FEES**

The lessee warrants that no person or selling agency has been employed or retained to solicit or secure this lease upon an agreement or understanding for a commission, percentage, brokerage or contingent fees, excepting bona fide employees or established commercial or selling agencies maintained by the lessee for the purpose of securing business. For breach or violation of this warranty, the United States shall have the right to annul this lease without liability or, in its discretion, to require the lessee to pay, in addition to the lease rental or consideration, the full amount of such commission, percentage, brokerage or contingent fee.

## **28. OFFICIALS NOT TO BENEFIT**

No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this lease or to any benefits to arise therefrom. However, nothing herein contained shall be construed to extend to any incorporated company if this lease is for the general benefit of such corporation or company.

## **29. SEVERAL LESSEES**

If more than one lessee is named in this lease, the obligations of said lessees herein named shall be joint and several obligations.

## **30. MODIFICATIONS**

This lease contains the entire agreement between the parties hereto, and no modifications of this agreement, or waiver, or consent hereunder shall be valid unless the same be in writing, signed by the parties to be bound or by a duly authorized representative and this provision shall apply to this condition as well as other conditions of this lease.

**31. DISCLAIMER**

This lease is effective only insofar as the rights of the United States in the said premises are concerned. The lessee shall obtain any permit or license that may be required by Federal, state or local statute in connection with the use of the said premises.

**32. WORK IN LIEU OF CASH RENT**

The lessee shall upon request by the District Engineer negotiate to perform items of work in lieu of payment of cash rent which support the Army's agricultural leasing objectives. Examples of such work include, but are not limited to, the construction of fencing, gates, and cattle guards; development of water supplies; and range seeding and fertilization. The identification of such work, the cost for performance thereof, and the payment schedule therefor shall be contained in a separate negotiated written supplemental agreement between the lessee and the District Engineer prior to commencement of each project. The lessee shall be compensated in an amount not to exceed the lessee's actual cost for performance of the specified work or the amount specified in the supplemental agreement, whichever is less. Compensation allowed by the United States may be in the form of credit applied toward future rent, a cash refund from previously paid rent, or a combination thereof.

**33. REVOCATION**

Any breach by the lessee of any condition of this lease including the Land Use Regulations, or the falsification of reports required herein, or the failure to complete the work as specified and scheduled by supplemental agreement is sufficient grounds for revocation of this lease by the United States.

**34. LIMITS OF RESPONSIBILITY**

All references in this lease to the responsibilities and obligations of the lessee apply only to those activities related to the rights granted in this lease, or which are incidental to the lessee's use and occupation of the said premises, and over which the lessee would normally exercise control in exercising the rights granted in this lease.

**35. ANTI-DEFICIENCY ACT NOTICE**

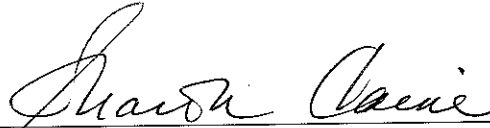
The obligation of the United States to perform, pay or reimburse any money under this lease is subject to the availability of appropriated funds, and nothing in this lease shall be interpreted to require obligations or payments by the United States in violation of the Anti-Deficiency Act, Public Law 97-258.

-----NO CONDITIONS FOLLOW-----

3 STRING CATTLE CO.  
LEASE No. DACA05-1-14-500  
TOOELE ARMY DEPOT, UTAH

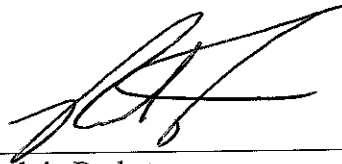
**THIS LEASE** is not subject to Title 10, United States Code, Section 2662, as amended.

**IN WITNESS WHEREOF** I have hereunto set my hand by direction of the Secretary of the Army this 3<sup>rd</sup> day of October, 2013.



Sharon Caine  
Chief, Real Estate Division  
U.S. Army Engineer District, Sacramento

**THIS LEASE** is also executed by the lessee this 30<sup>th</sup> day of September, 2013.



Redgie Probst  
3 String Cattle Co.

## LAND USE REGULATIONS

### GRAZING LEASE DACA05-1-14-500 EXHIBIT "B" TOOELE ARMY DEPOT, UTAH 2013 - 2018

#### 1. PURPOSE

The purpose of these Land Use Regulations is to ensure that all grazing activities on Tooele Army Depot lands are conducted in a manner consistent with national policy intended to: (a) provide for the multiple-use of the subject lands for military purposes, domestic livestock grazing, public recreation, water conservation, and wildlife habitat; and (b) to preserve and enhance the natural resources.

#### 2. DEFINITIONS

The following definitions shall apply for the purposes of this lease:

- a. **Commander:** shall mean the Installation Commander, Tooele Army Depot, Utah, or his authorized representatives.
- b. **District Engineer:** shall mean the District Engineer, U.S. Army Corps of Engineers Sacramento District, Sacramento, California, or his authorized representative.
- c. **Exclosure:** shall mean an area from which livestock are excluded.
- d. **Animal Unit Month (AUM):**
  - i. **0.65 AUM** - one bovine weighing less than 600 pounds upon entry to the leased lands and grazing for one month. Calves born during the grazing season are excluded from this definition.
  - ii. **1.0 AUM** - one bovine weighing 600 pounds or more upon entry to the leased lands and grazing for one month; one cow with unweaned calf not more than two months of age upon entry to the premises and grazing for one month.
  - iii. **1.25 AUM** - one equine one year of age or older grazing for one month; one mare with unweaned foal not more than two months of age upon entry to the leased lands and grazing for one month.
- e. **AUM Rate:** shall mean the amount of annual cash rent that the Lessee shall pay per AUM.
- f. **Nominal Carrying Capacity:** shall mean the total number of animal unit months that Lessee can reasonably expect to obtain during a typical grazing season.

### 3. COORDINATION

a. The lands of the Tooele Army Depot are subject to multiple uses and are managed by the United States in a manner which gives consideration to all demands for use of the land and water resources consistent with the military mission, conservation, and environmental concerns.

b. The lands of the Tooele Army Depot are used primarily for military activities. The Lessee's use of grazing lands within the Depot is subordinate to military requirements, and all of the Lessee's operations shall be conducted in a manner that will not interfere with or disrupt military activities.

c. The Lessee, or his representative, shall closely coordinate grazing operations with the Commander. While livestock are grazing on Depot lands, the Lessee shall contact the Commander at least once every other week in order to maintain adequate coordination between military uses and the Lessee's operation. In the event of a conflict, Lessee shall temporarily adjust the location and number of livestock, as directed by the District Engineer. Upon the Commander's request, Lessee shall attend occasional meetings which may be called for the purpose of discussing the Lessee's operation. Lessee shall address any emergency situations associated with this lease within four hours of notice of the emergency. If the Commander contacts Lessee about an emergency or a potential emergency associated with this lease, Lessee shall commence remedial steps within four hours of such notice and shall maintain close contact and coordination with the Commander until the emergency is resolved. The Lessee shall provide the Commander with current emergency telephone number(s) where the Lessee may be contacted on a 24-hour basis.

d. The route of ingress and egress for livestock through the installation to the Depot grazing lands shall be designated by the Commander. Transportation of livestock on the installation shall be by vehicle only. Herding of livestock outside the grazing lands identified in Exhibit "A" is prohibited without the consent of the Commander.

### 4. EXCLUSIONS

The United States expressly reserves the rights enumerated in paragraphs (a) through (g), below. The Lessee shall have no claim of any character against the United States or any of its officers, agents or employees on account of any alleged loss suffered as a result of the Government's exercise of any of these rights; provided, however, that if the District Engineer determines, that the exercise of such rights has adversely affected the Lessee's reasonable use of the leased lands, the District Engineer shall, provide Lessee with an appropriate rental adjustment in accordance with Condition No. 11 of the lease:

a. The right to permit use of Depot lands, including grazing lands leased hereunder, by the general public for outdoor recreational purposes including, but not limited to, hunting and fishing.

b. The right to conduct, or to permit others to conduct, range management studies, conservation programs, firebreak maintenance, fire control, fire prevention, range improvement programs and pest and weed control programs on the leased grazing lands.

c. The right to undertake controlled burns of vegetation on leased grazing lands when such burning is determined to be necessary to support military operations, or wildlife habitat improvement projects. The Commander shall provide the Lessee a minimum of 72 hours advance notice of all controlled burning to support military operations. The District Engineer shall provide the Lessee a minimum of 30 days advance written notice of burning for wildlife habitat improvement.

d. The right to require the Lessee to remove and withhold all livestock from any designated area within the premises when the District Engineer or the Commander has determined that such areas are required for military purposes; provided, however, that the Lessee shall receive a minimum of 72 hours advance notice of such requirements and shall be allowed sufficient time to relocate livestock. No reduction in rent will be allowed for such movement of livestock. The Lessee shall hold the United States harmless for any weight loss in livestock or inconvenience incurred pursuant to this condition.

e. The Lessee is prohibited from using or permitting the use of any and all existing livestock enclosures maintained by, or on behalf of, the United States for wildlife, forestry, weather station, bivouac and other purposes. Livestock straying therein shall be immediately removed and fences repaired by the Lessee. The United States reserves the right to erect additional livestock enclosures. The District Engineer shall notify the Lessee at least 30 days prior to the construction of any enclosure more than one-quarter (0.25) acre in area.

f. The Lessee shall not construct, erect, modify or dismantle any facility on Depot lands without prior written approval of the District Engineer.

g. The Lessee shall not use United States buildings, water wells, or other facilities not specifically provided herein to support livestock grazing without the prior written approval of the District Engineer.

## **5. AUTHORIZED USE**

Unless otherwise authorized in writing by the District Engineer, use of the lands leased hereunder is limited to the grazing of cattle and up to 100 horses. The number of horses permitted is subject to approval by the District Engineer and may be restricted to less than 100 head if necessary to protect either the natural resources or Government structures or facilities. The Lessee shall not be entitled to any reduction in rent for any restriction on the number of horses permitted on the leased land.

## **6. AVAILABILITY OF WATER**

Water for livestock is currently provided by Tooele Army Depot (see Exhibit "A" for

stock water locations) on an "as available" basis, at no additional charge to Lessee. The Lessee may use any naturally occurring streams and ponds within the leased lands that do not interfere with the habitat of threatened or endangered species

The United States does not guarantee that water will be available for watering of livestock at all times and at all locations. The Lessee shall have no claim of any character against the United States, its officers, agents, or employees, in the event of a shortage of water available to livestock on the leased lands. Water is presently provided to Lessee without additional cost, and no change to this policy is contemplated, however, the United States hereby reserves the right to impose a reasonable additional charge for Depot water consumed by Lessee's livestock, in accordance with the terms of Condition 9 of the Lease

## 7. RANGE AND LIVESTOCK MANAGEMENT

a. **General:** It is the express intent of the United States that the leased lands shall be utilized in accordance with proper range management practices consistent with concurrent multiple purpose use. The Lessee is expected to be familiar with and to conduct grazing operations in accordance with the usual, customary, and accepted practices of grazing on perennial grasslands. In particular, the Lessee must conduct his grazing operation in a manner that gives full consideration to the significant variation in the availability of forage that can occur from year to year and within a grazing season due to the amount and distribution of precipitation. The protection of the soil and its vegetative cover from deterioration by erosion, overgrazing, wildfire, noxious weed infestation, or other causes is part of proper range management.

b. **Forage Availability:** The United States does not guarantee or imply in any manner that the premises will have sufficient forage to sustain livestock grazing during any portion or all of the specified grazing season. Except as provided for in Section 7, Paragraphs "d(i)" and "f(i)" of these Land Use Regulations, the Lessee is not entitled to any reduction in annual rent due to insufficient forage to support livestock grazing during any portion or all of the specified grazing season.

c. **Grazing Season:** The grazing season shall be from *1 November to 31 May* of each lease year; however, the grazing season may be modified in accordance with the following provisions:

- i. The District Engineer may *curtail* the grazing season when, in his opinion, accessible forage has been utilized to the extent where further grazing would be detrimental to the land or vegetative resources; and
- ii. The District Engineer may *extend* the grazing season when, in his opinion, sufficient forage exists to sustain additional grazing and the Lessee has submitted a *written* request to the District Engineer for an extension of the grazing season. The extension of a grazing season is a determination made exclusively by the District Engineer within his discretion and nothing herein shall be construed to obligate the District Engineer to extend a grazing season,



regardless of the availability of forage.

d. **Carrying Capacity:** The *nominal carrying capacity* is the total number of animal unit months of grazing that the Lessee can reasonably expect to obtain during a typical grazing season. The nominal carrying capacity for each field of the premises is shown on Table:

**Table 1**

Field	Acres	AUM	Key Species
1	1198	143	Crested Wheat Grass
2	896	187	Cheatgrass
3	2072	430	Cheatgrass
4	0	0	Cheatgrass
5	1437	139	Crested Wheat Grass
6	564	92	Crested Wheat Grass
7	1324	448	Cheatgrass
8	776	91	Cheatgrass
9	1383	612	Intermediate Wheat Grass
10	7865	2034	Crested Wheat/Needlethread Grass
11	0	0	
12	0	0	
13	0	0	
14	0	0	
<b>Total</b>	<b>17515</b>	<b>4176</b>	

Notwithstanding the stated nominal carrying capacity, the availability of forage and the general condition of the range shall determine the number of animal unit months permitted during each grazing season; *therefore*, the nominal carrying capacity may be modified by the District Engineer as follows:

- i. The nominal carrying capacity may be reduced prior to the beginning of any grazing season by notifying the Lessee of such reduction in writing not later than *1 August* of the calendar year in which the affected grazing season commences. In such event, the annual rent for that year shall be computed by multiplying the reduced carrying capacity expressed in AUMs by the *AUM Rate*.
- ii. An increase in the nominal carrying capacity may be authorized upon *written* request by the Lessee, provided adequate forage is available. If the District Engineer elects to grant a temporary waiver allowing the Lessee to exceed the nominal carrying capacity for a specified period of time, the District Engineer's *permission must be in writing and must be granted before the Lessee takes any action that would cause Lessee to exceed the nominal*

*carrying capacity of the leased lands. Additional rent shall be due when the nominal carrying capacity is exceeded.* The additional rent shall be computed by subtracting the nominal carrying capacity from the total number of AUMs utilized during the grazing season, and multiplying the difference by the AUM Rate. Additional rent shall be due and payable upon written demand by the District Engineer, provided that the Lessee is notified at least 10 days prior to the date payment is required. Increasing the nominal carrying capacity is wholly within the discretion of the District Engineer and nothing herein shall be construed to obligate the District Engineer to increase the nominal carrying capacity of any portion of the leased lands, regardless of the availability of forage.

e. ***Stocking Density:*** The number of head of livestock grazing on the leased lands may be reduced at any time during the grazing season if the District Engineer determines such reduction is necessary to prevent damage to rangeland or riparian resources. Livestock removals may be temporary, with the period of time designated by the District Engineer. The Lessee shall be notified in writing by the District Engineer if the removal of livestock is necessary. Livestock shall be removed by the date specified by the District Engineer; provided, however, that the Lessee shall be permitted a minimum of 15 calendar days to effect the removal of livestock.

f. ***Adjustments to Rent:***

- i. If the District Engineer determines that as the result of complying with written instructions from the District Engineer: (1) the total number of livestock permitted on the said premises during the grazing season was insufficient for the Lessee to obtain the nominal carrying capacity of 4179 AUMs (or a reduction thereto made in accordance with Section 7, Paragraph "*d(i)*" hereof) by the end of the grazing season; or (2) based on the usual and customary grazing practices for perennial grasslands, the grazing season was not of sufficient length to permit the Lessee to obtain the nominal carrying capacity of 4176 AUMs (or a reduction thereto made in accordance with Section 7, paragraph "*e*" hereof) by the end of the grazing season, the Lessee shall be entitled to a rental rebate. The amount of the rebate shall be determined by multiplying the number of AUMs that could not be obtained by the end of the grazing season, as the result of complying with written instructions from the District Engineer, by the AUM Rate. This determination is not dependent on whether or not the Lessee had livestock available to utilize all of the permitted AUMs
- ii. The determination of the amount of any rebate and its payment shall be made after the end of the affected grazing season. The rebate may be in the form of either a refund from previously paid rent, credit applied toward future rent, or a combination thereof. The District Engineer shall determine the method of rebate. The Lessee shall have no claim of any character against the United States or any officer, agent or employee thereof for any cost or expense

incurred for complying with instructions issued by District Engineer pursuant to the provisions of Section 7 hereof. Nothing herein shall be construed as abrogating the responsibility of the lessee to pay rent as specified in Condition 2 of the lease.

The amount of any rebate due to the Lessee shall be determined by multiplying the number of AUMs forfeited by the Lessee as a result of complying with written instructions from the District Engineer by the AUM Rate, without regard for the Lessee's actual usage of AUMs, as follows:

- iii. If the Lessee exceeds the nominal carrying capacity (or any adjustments thereto made in accordance with the Section 7, paragraphs "d(i)" or "d(ii)" hereof) without approval by the District Engineer, the lessee shall owe additional rent computed by multiplying those AUMs in excess of the nominal carrying capacity (or any adjustments thereto made in accordance with the Section 7, paragraph "d(i)" or "d(ii)" hereof) **by the AUM Rate, and then by 1.25**. The additional rent shall be due and payable upon written demand by the District Engineer. Payment of additional rent for unauthorized grazing does not abrogate the District Engineer's right to revoke the lease.

**g. Distribution of Livestock:** The Lessee shall make every effort to maintain a distribution of livestock over the leased lands which will achieve uniform range utilization, minimize sacrifice areas, and reduce the overall fire hazard. Accordingly, unless otherwise directed in writing by the District Engineer, the Lessee shall ensure that:

- i. salt blocks and feed supplements are distributed throughout the premises and moved as necessary to promote an optimal distribution of livestock; and
- ii. salt blocks and feed supplements are not placed within one-fourth (1/4) mile of any watering source or surfaced road.

**h. Supplemental Feeding:** Feeding of protein, salt, minerals, or trace additives whether singly or in combination shall be allowed to supplement the animals' daily food requirements only. Feeding of grains, hay, silage, or similar feeds imported by Lessee shall not be allowed. In the event of short-term emergency feeding, Lessee may import forage as necessary to protect livestock health, but only with the prior written permission of the District Engineer. If permission is granted, Lessee must use certified weed free forage only. The location and timing of feeding of livestock, when permitted, shall be determined by the Commander.

**i. Animal Health:** The Lessee shall comply with all federal, state, and local animal health laws and regulations with respect to livestock grazing and, upon request, shall furnish written evidence of compliance to the Commander. In accordance with Army Regulation 40-905 the District Engineer reserves the right to impose quarantine, immunization, or other health requirements deemed necessary to prevent or control zoonotic diseases.

j. **Dead Livestock:** The Lessee shall promptly comply with all instructions issued by the Commander concerning disposition of dead livestock. If not otherwise instructed, dead livestock that present no hazard to health or do not constitute a nuisance may be left to decompose naturally, except that *carcasses shall be immediately removed from all water sources* or from any areas adjacent to a water source when contamination of the water source may result from natural decomposition of the carcass.

k. **Livestock Identification:** If the Lessee claims two weight classes (see Section 2, Paragraph "d", herein) on monthly AUM reports (see Section 8, Paragraph "a(iv)", herein), one weight class will be identified with an ear tag. The District Engineer may approve alternative identification methods.

l. **Working of Livestock:** The Lessee shall notify the Commander at least 48 hours in advance of working (branding, sorting, weaning, etc.) livestock. The Commander is authorized to invite other lessees and adjacent ranchers to be present at the time such work is conducted for the purpose of reclaiming stray livestock. If a dispute arises concerning ownership, the matter shall be submitted to the District Engineer for resolution.

m. **Stray Livestock:** It is the Lessee's responsibility to confine livestock to the leased lands and to facilitate the removal of strays coming from adjoining leases or private lands. The Lessee shall determine how strays exited or entered the leased area and initiate corrective action in accordance with Section 9, herein. Lessee or the Lessee's representative shall be able to respond within 30 minutes of notification of loose livestock or other emergencies and take necessary action to secure livestock.

n. **Movement of Livestock:** From 15 March to 30 May, the primary growing season for key rangeland plants, the Lessee shall group the cattle so they will graze each field until the cattle have eaten 65% of the key vegetation designated for the field (See Table 1). No field shall be grazed more than once during this period. Additionally, the allowable AUMs will not be exceeded for each field during the entire grazing season. Field 10 is subdivided generally into three sections, northern, middle and southern. Livestock shall be controlled by the use of the water troughs located in each section of the field. Fencing is not a practical way to divide field 10 so, livestock movement will be controlled by the operation of the water troughs and placement of minerals.

o. **Grazing Plans Required:** The Lessee shall provide a grazing plan that will meet the objective of Section 7, Paragraph "n" by 30 September each lease year. No livestock may be placed on the leased lands until the grazing plan has been accepted by the District Engineer. The Lessee may place electrical fences during the grazing season in the fields that do not store ammunition to help rotate the animals within each field or from one field to another.

p. **Harvesting of Predators:** Control of predators causing excessive livestock losses may be permitted, as determined by the Commander. The Lessee may make written requests for predator control to the District Engineer. The District Engineer, in consultation with the Commander, will determine the reasonableness and practicality of harvesting predators. Any

harvesting of predators, including coyotes and mountain lions, will be conducted by the Department of Agriculture Wildlife Services or another agency designated by the Commander. The United States, its employees, and contractors will not be liable for losses of livestock due to predation.

## 8. LIVESTOCK REPORTING REQUIREMENTS

a. The District Engineer reserves the right to verify the numbers and weights of livestock brought on to and removed from the leased lands. Accordingly, the Lessee shall provide notice of livestock placements and removals, shall provide weight certificates and other documentation, as specified below:

- i. **Notification:** In order to avoid conflicts with military activities the Lessee shall obtain written prior permission from the Commander confirming the calendar dates that placement, movement or removal of livestock may be conducted.
- ii. **Weight Certificates:** If Lessee claims 0.65 AUM for some or all cattle (see Section 2, Paragraph "c", herein) on any monthly AUM report (see Section 8, Paragraph "a(iv)", herein), Lessee must ensure all arriving cattle shipments for which 0.65 AUM are to be claimed are accompanied by properly completed weight certificates, to be made available for inspection by the Commander or the District Engineer at the time of livestock delivery to the leased lands, or thereafter. The Commander or District Engineer may elect to calculate livestock weight on the alternative basis of the average weight per head, excluding unweaned calves, for each truckload, at the Lessor's discretion.
- iii. **Documents:** Lessee shall make available for inspection upon request by the Commander or District Engineer pertinent documents including, but not limited to, weight certificates, health certificates, brand inspection reports, and shipping documents.
- iv. **Reports:** Lessee shall submit a report to the District Engineer for each month of the grazing season, enumerating the number of animal unit months (AUMs) consumed during the prior month. ***Each report shall be submitted not later than the seventh day following the end of the month for which the report is prepared.*** The report shall contain separate sections for each class (bovine or equine) of livestock occupying the leased lands and for each field identified in Section 7, Paragraph "d", herein. This report is required even if no livestock have been placed on the leased lands during the grazing season. The report form, which specifies the method for computing AUMs, will be provided to the Lessee by the District Engineer. Additionally, for any month during which the Lessee claims 0.65 AUMs, ***weight certificates*** for cattle placed on the leased lands must accompany the Lessee's report. In the absence of weight certificates (or an alternative weight verification methodology

approved by District Engineer), each bovine will be considered to weigh a minimum of 600 pounds upon entry to the leased lands for the purpose of computing the AUM utilization. Lessee shall mail a separate copy of the completed monthly report to both the District Engineer and the Commander, at the following addresses:

District Engineer  
U.S. Army Engineer District, Sacramento  
ATTN: CESPK-RE-B  
1325 J Street  
Sacramento, CA 95814-2922

Commander  
Tooele Army Depot  
ATTN: Director, Public Works  
Tooele Army Depot, Bldg. 501  
Tooele, Utah 84074-5000

b. Failure of the Lessee to comply with the foregoing provisions of Section 8 hereof shall constitute sufficient justification for the District Engineer to order all livestock to be gathered and counted. In lieu of assigning all cattle a minimum weight classification of 600 pounds, as provided for in Section 8, Paragraph "a(iv)", herein, the Lessee may elect to have all cattle weighed and assigned a weight classification based on the results of the weighing. All costs associated with gathering, counting, and weighing, including costs incurred by the United States, shall be paid by the Lessee who shall have no claim of any character against the United States or its officers, agents, or employees on account of such an assessment of livestock weight. In the alternative the District Engineer may exercise his right to revoke the lease.

## 9. MAINTENANCE

- a. The *Lessee*, at its *own cost and expense*, shall:
- i. during the grazing season, perform routine maintenance and repair (except as stated in Section 9, Paragraph "b", below) to maintain in a livestock-tight condition those fences and gates intended to confine livestock within defined fields of the leased lands; except that this condition shall not apply to such fences and gates that, in the opinion of the District Engineer, have deteriorated to the point of un-serviceability;
  - ii. drain, clean, and refill watering troughs at least every other year, or as directed by the Commander or District Engineer, and shall maintain float valves in an operating condition, and maintain all plumbing downstream from the stop and waste valve;
  - iii. during the grazing season, perform emergency repairs to fences and gates on the leased lands that have been damaged or destroyed by accidents, vandalism, or the forces of nature. Such repairs may be temporary but must be sufficient to confine livestock to the appropriate fields. Unless otherwise directed by the Commander or District Engineer, repairs must be completed within 48 hours after notification by the Commander or District Engineer that repairs are needed. Lessee's failure to perform repairs as directed is sufficient

cause for the District Engineer to require removal of livestock from the affected grazing lands until repairs are completed. The District Engineer may elect to negotiate a supplemental agreement in accordance with *Condition No. 32* of the lease for the permanent repair or replacement of damaged or destroyed fences or gates. Reasonable costs and expenses, as determined by the District Engineer, incurred by the Lessee while performing such emergency repairs may be included in the supplemental agreement; and

iv. ensure proper maintenance and cleanup of all areas used by Lessee's personnel and will dispose of refuse and debris generated by Lessee's activities on the leased lands in a manner consistent with military policy and to the satisfaction of the Commander.

b. The United States shall repair facilities damaged by activities of the United States, its contractors or employees, and fire fighting activities at its sole cost.

c. *The Lessee shall obtain written approval from the Commander prior to using any pesticides on the premises.* As used herein, the term pesticide includes herbicides, insecticides, fungicides, and rodenticides but do not include products commonly known as medicines. Lessee's request must include all relevant information, including types of pesticides proposed, estimated quantities to be used, duration of use, acreage to be treated and location. Should Commander approve use of pesticides as detailed in Lessee's request, or as modified by Commander, Lessee shall report all pesticide usage in accordance with the instructions of the Commander. At minimum, reports shall be submitted monthly to the Commander for each month of the term for which the permission is granted. Reports must be submitted for all months during which a pesticide use plan is in effect, including months when no chemicals are applied.

## 10. EMPLOYEE CONDUCT

The Lessee shall be responsible for the conduct of Lessee's employees, agents, representatives and invitees when on the Tooele Army Depot, and shall inform each individual of the relevant laws, rules, and regulations applicable to the Lessee's use of the leased lands. Security background checks are required for the Lessee, all of Lessee's personnel, and contractors entering Tooele Army Depot. The Lessee shall complete all security documents in form and manner as required by the Commander. Entry onto the premises shall be denied to any persons failing to complete a security background check, or persons who do not pass the security check and this lease may be revoked for failure of the Lessee to pass the security background check. The Lessee and the Lessee's employees, contractors and agents entering onto the Tooele Army Depot must speak English, or must be under direct control of someone who does.

## 11. RANGE IMPROVEMENT

a. The Army plans to undertake various range conservation measures during the lease period. The general locations of the conservation measures are shown on Exhibit "A".

b. Conservation measures shall be limited to a maximum of 500 acres per year. The Commander shall determine the location and timing of all invasive and noxious plant control measures.

c. No grazing shall occur on the treated site for a minimum of two years, or as determined by the District Engineer, in consultation with the Natural Resource Conservation Service. The Lessee, at its own expense, shall be responsible for placing and maintaining fences or other structures to keep cattle from entering treated areas. Electric fences may be used for this purpose.

d. A rental reduction or rebate shall be applied to the lease commensurate with the number of AUMs associated with the acreage removed from grazing during the period of time conservation measures are conducted. The number of AUMs upon which a rental reduction would be calculated shall be determined by dividing the total AUMs of the field in which the conservation measures are to be conducted (taking into account the time period that conservation measures are expected to require) by the same field's total acreage and then multiplying the result by the acres removed from grazing for conservation measures. The resulting number of AUMs shall be multiplied by the AUM rate as determined in the section on Range and Livestock Management.

e. At the end of the treatment period, an assessment shall be made as to the available AUMs and the key vegetation species. The nominal carrying capacity of the field shall be adjusted accordingly. Should the nominal carrying capacity increase, additional rent shall be due commensurate with the additional AUMs.

## **12. LESSEE PARTICIPATION IN RANGE IMPROVEMENTS**

The Lessee shall participate in various range improvements through the work-in-lieu of cash rent program, when requested by the District Engineer. The Lessee's participation may include but is not limited to fence building, water trough improvements, waterline construction or repair, and corral construction.

## **13. NOXIOUS AND INVASIVE WEEDS**

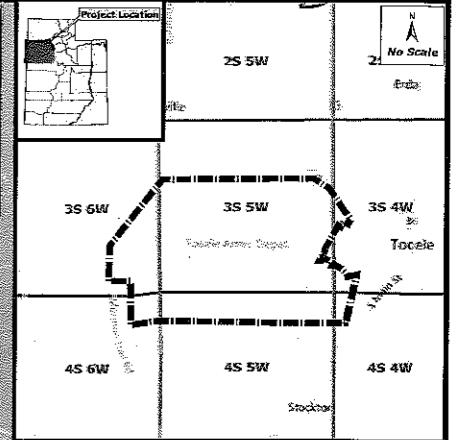
The Lessee shall be shown how to identify certain noxious and invasive weeds, and in the event Lessee comes upon these plants while traversing the leased lands, Lessee shall take note of the location and apparent extent of the undesirable plant species. Lessee shall promptly notify the Commander and if requested, shall show the representative of the Commander the locations of noxious and invasive plants on the leased lands.

----- *SECTION 13 IS THE LAST ITEM* -----



Field	Acres	AUM	Key Species
1	1,198	143	Crested Wheat Grass 8.5
2	896	187	Cheat Grass 4.7
3	2,072	430	Cheat Grass 8.9
4	2,013	332	NO GRAZING 12.06
5	1,437	139	Crested Wheat Grass 10.3
6	564	92	Crested Wheat Grass 6.1
7	1,324	448	Cheat Grass 2.9
8	776	91	Cheat Grass 8.5
9	1,383	612	Intermediate Wheat Grass 2.25
10	7,865	2,034	Crested Wheat/Needlethread Grass 3.8
11	158	70	NO GRAZING
12	115	51	NO GRAZING
13	108	48	NO GRAZING
14	1,373		NO GRAZING
Total	17,515	4,176	

**Exhibit "A"**  
**DACA05-1-14-500**



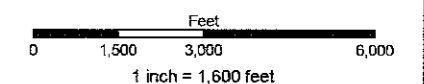
**Legend**

- Tooele Boundary
- Fields
- No Grazing
- Conservation Treatments
- Corral
- Roads
- Troughs
- RG Gates
- Ag Gates
- Demo Gates
- OG Gates

**TOOELE ARMY DEPOT**

Tooele County, Utah  
Created May 22, 2013  
H.A.D.

DEPARTMENT OF THE ARMY  
SOUTH PACIFIC DIVISION  
SACRAMENTO DISTRICT  
REAL ESTATE DIVISION  
CADASTRAL SECTION



COORDINATE SYSTEM:  
MADE2 STATE PLANE UTAH CENTRAL, FIPS 4302 (US FEET)  
PROJECTION: LAMBERT CONFORMAL CONIC  
DATUM: NORTH AMERICAN 1983

Path: G:\MILITARY\Tooele\_Army\_Depot\Project\Tooele\_Updated\_Grazing\_20130510\20130521\_Tooele\_Grazing.mxd



**DEPARTMENT OF THE ARMY**  
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO  
CORPS OF ENGINEERS  
1325 J STREET  
SACRAMENTO, CALIFORNIA 05814-2922

REPLY TO  
ATTENTION OF

**JUL 8 2014**

Acquisition and Management Disposal Branch

SUBJECT: Tooele Army Depot, Utah; Supplemental Agreement No. 1 to Lease No.  
DACA05-1-14-500

3 String Cattle Company, LLC  
ATTN: R. Probst  
1980 W. Main Canyon Road  
Wallsburg, Utah 84082

Mr. Probst:

Enclosed is your copy of the fully executed Supplemental Agreement No. 1 to Lease No.  
DACA05-1-14-500.

If you have any questions regarding this request or would like further information, please  
contact Yvonne Bush, Realty Specialist, at (916) 557-7989 or via e-mail  
Yvonne.d.bush@usace.army.mil.

Sincerely,

Stan Wallin

Chief, Acquisition and Management Branch

Enclosure

Copy Furnished:  
Commander, Tooele Army Depot, ATTN: SDSTE-PWE-E, B. Watson, Tooele, UT  
84074-5000

**SUPPLEMENTAL AGREEMENT No. 1  
TO  
DEPARTMENT OF THE ARMY  
LEASE No. DACA05-1-14-500  
TOOELE ARMY DEPOT, TOOELE COUNTY, UTAH**

This Supplemental Agreement No. 1, made and entered into by and between the Secretary of the Army and 3 String Cattle Company, LLC, hereinafter referred to as the "lessee",

**WITNESSETH THAT:**

**WHEREAS**, certain property within the lease area is needed for environmental remediation; and

**WHEREAS**, Condition Number 7 of Land Use Regulations provides for adjustments to the acreage and rental of the lease.

**Now Therefore**, Lease Number DACA05-1-14-500 is modified in the following particulars:

1. The acreage and Animal Unit Months (AUMs) of field Number 2 are hereby reduced by 180 acres and 48 AUMs to allow for the necessary environmental remediation. The reductions are shown in the table below.

<b>Field</b>	<b>Original Acres</b>	<b>Original AUM(s)</b>	<b>Acres After the Adjustment</b>	<b>AUM(s) After the Adjustment</b>
2	896	187	716	139

2. Exhibit "A", attached to Lease No. DACA05-1-14-500, is hereby removed and replaced by Exhibit "A-1" indicating the location of the reduction in acreage.

3. Condition Number 2a. is modified to read:

"The lessee shall pay rental in the amount of TWO HUNDRED FIFTY-THREE THOUSAND EIGHT HUNDRED SEVENTY TWO AND NO/100 DOLLARS (\$253,872.00) per annum; payable as follows:

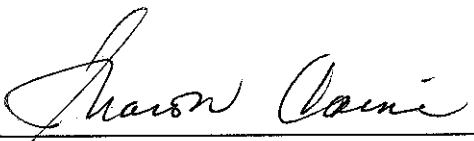
- (1) the amount of \$84,624.00 due on 1 November of each lease year; and
- (2) the amount of \$84,624.00 due on 1 January of each lease year; and

SUPPLEMENTAL AGREEMENT No. 1  
LEASE No. DACA05-1-14-500  
TOOELE ARMY DEPOT, UTAH


(3) the amount of \$84,624.00 due on 1 March of each lease year.”

Said lease is modified in the preceding particulars only, and all other provisions and conditions thereof, including any previous modifications thereto, shall remain binding and in full force and effect.

IN WITNESS WHEREOF, I have hereunto set my hand by authority of the Secretary of the Army this \_\_\_\_\_ day of \_\_\_\_\_ 2014.

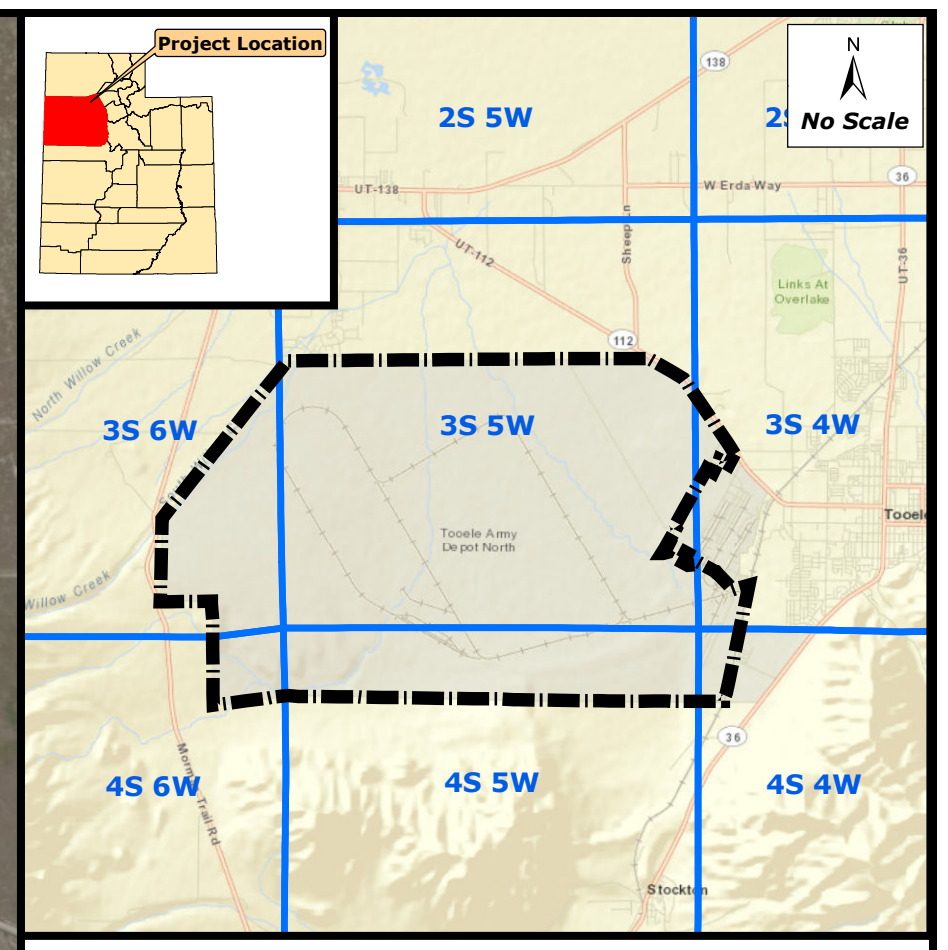
By:   
Sharon Caine  
Chief, Real Estate Division  
U.S. Army Engineer District, Sacramento

This Supplemental Agreement No. 1 to Lease No. DACA05-1-14-500 is hereby executed by the lessee this 26<sup>th</sup> day of June 2014.

By:   
Reggie Probst  
3 String Cattle Company, LLC

Field	Acres	AUM	Key Species
1	1,198	143	Crested Wheat Grass
2	716	139	Cheat Grass
3	2,072	430	Cheat Grass
4	2,013	332	NO GRAZING
5	1,437	139	Crested Wheat Grass
6	564	92	Crested Wheat Grass
7	1,324	448	Cheat Grass
8	776	91	Cheat Grass
9	1,383	612	Intermediate Wheat Grass
10	7,865	2,034	Crested Wheat/Needlethread Grass
11	158	70	NO GRAZING
12	115	51	NO GRAZING
13	108	48	NO GRAZING
14	1,373		NO GRAZING
Total	17,335	4,128	

**Exhibit "A-1"**  
**DACA05-1-14-500**



### Legend

- Tooele Boundary
- Fields
- No Grazing
- Conservation Treatments
- Corral
- Roads
- Troughs
- RG Gates
- Ag Gates
- Demo Gates
- OG Gates

# TOOELE ARMY DEPOT

Tooele County, Utah  
Created May 22, 2013  
H.A.D.

DEPARTMENT OF THE ARMY  
SOUTH PACIFIC DIVISION  
SACRAMENTO DISTRICT  
REAL ESTATE DIVISION  
CADASTRAL SECTION

0 1,500 3,000 6,000  
1 inch = 1,600 feet

Feet

N

COORDINATE SYSTEM:  
NAD83 STATE PLANE UTAH CENTRAL, FIPS 4302 (US FEET)  
PROJECTION: LAMBERT CONFORMAL CONIC  
DATUM: NORTH AMERICAN 1983

Path: G:\WILLIAMS\Tooele\_Army\_Depot\Project\Tooele\_Updated\_Grazing\_20130510\20130521\_Tooele\_Grazing.mxd

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**Appendix L**

**TEAD South Area Grazing Lease and Map**

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DEPARTMENT OF THE ARMY  
LEASE  
FOR LIVESTOCK GRAZING  
ON  
DESERET CHEMICAL DEPOT  
TOOELE COUNTY, UTAH

THIS LEASE, made between the Secretary of the Army, hereinafter designated as Secretary, and the Wine Cup Cattle Company, Inc., hereinafter designated as lessee,

WITNESSETH:

That the Secretary, by virtue of the authority contained in Title 10, United States Code, Section 2667, having determined that the property hereby leased is not excess property as defined by Section 3 of the Federal Property and Administrative Act of 1949, as amended (40 U.S.C. 472), is not for this time needed for public use, and the leasing thereof will be advantageous to the United States and in the public interest, hereby leases to the lessee the property hereinafter identified on Exhibit "A" hereinafter referred to as the premises, containing approximately 10,920 acres, for livestock grazing purposes only; and that this lease is granted subject to the provisions of the Land Use Regulations, identified as Exhibit "B". Exhibits "A" and "B" are attached hereto and made a part hereof. This lease is subject to the following terms and conditions:

**1. TERM**

Said premises is hereby leased for a term of five (5) years beginning with the date of the signing of this instrument by the representative of the Secretary of the Army, but revocable at will by the Secretary.

**2. CONSIDERATION**

a. The lessee shall pay rental in advance to the United States in the amount of \$46.86 per AUM, per annum; payable as follows:

- (1) 1/3 of the annual amount due on 1 November of each lease year; and
- (2) 1/3 of the annual amount due on 1 January of each lease year; and
- (3) 1/3 of the annual amount due on 1 March of each lease year.

Compensation shall be made payable to: FAO-USAED, SACRAMENTO and forwarded by the lessee direct to the District Engineer, U.S. Army Engineer District, Sacramento, ATTN: CESPCK-RE-AM, 1325 J Street, Sacramento, California 95814-2922.

b. The lessee shall also pay to the United States on demand any sum that may have to be expended after the expiration, revocation, or termination of this lease in restoring the said

premises to the condition required by the lease Condition on Restoration.

c. All rent and other payments due under the terms of this lease must be paid on or before the date they are due in order to avoid the mandatory sanctions imposed by the Debt Collection Act of 1982, (31 U.S.C. Section 3717). This statute requires the imposition of an interest charge for the late payment of debts owed to the United States; an administrative charge to cover the costs of processing and handling delinquent debts; and the assessment of an additional penalty charge on any portion of a debt that is more than 90 days past due. The provisions of the statute will be implemented as follows:

(1) The United States will impose an interest charge, the amount to be determined by law or regulation, on late payment of rent. Interest will accrue from the due date. An administrative charge to cover the cost of processing and handling each late payment will also be imposed.

(2) In addition to the charges set forth above, the United States will impose a penalty charge of six percent (6%) per annum on any payment or portion thereof more than ninety (90) days past due. The penalty shall accrue from the date of delinquency and will continue to accrue until the debt is paid in full.

(3) All payments received will be applied first to any accumulated interest, administrative, and penalty charges, and then to any unpaid rental or other payment balance. Interest will not accrue on any administrative or late payment penalty charge.

### **3. NOTICES**

All correspondence and notices to be given pursuant to this lease shall be addressed, if to the lessee, to the Wine Cup Cattle Company, Inc., attention: Monty Weston, Post Office Box 175, Randolph, Utah 84064; and if to the United States, to the District Engineer, U.S. Army Engineer District, Sacramento, ATTN: CESP-K-RE-B, 1325 J Street, Sacramento, California 95814-2922, or as may from time to time otherwise be directed by the parties. Notice shall be deemed to have been duly given if and when enclosed in a properly sealed envelope, or wrapper, addressed as aforesaid, and deposited, postage prepaid (or, if mailed by the United States, deposited under its franking privilege) in a post office regularly maintained by the United States Postal Service.

### **4. AUTHORIZED REPRESENTATIVES**

Except as otherwise specifically provided, any reference herein to "Secretary", "District Engineer", "said officer", "Installation Commander", and "lessee" shall include their successors and duly authorized representatives.

## **5. SUPERVISION BY THE INSTALLATION COMMANDER**

The lessee's use and occupation of the said premises shall be subject to the general supervision and approval of the Installation Commander, Tooele Army Depot, Utah, hereinafter designated as said officer, and to such rules and regulations regarding ingress, egress, safety, sanitation and security as may be prescribed by the said officer from time to time.

## **6. APPLICABLE LAWS AND REGULATIONS**

The lessee shall comply with all applicable Federal, state, county and municipal laws, ordinances and regulations wherein the said premises is located.

## **7. CONDITION OF PREMISES**

The lessee has inspected the said premises, knows its condition, and understands that the same is leased without any representation or warranties whatsoever and without obligation on the part of the United States to make any alterations, repairs or additions thereto.

## **8. TRANSFERS AND ASSIGNMENTS**

Without prior written approval of the District Engineer, U.S. Army Engineer District, Sacramento, hereinafter designated as District Engineer, the lessee shall neither transfer nor assign this lease, nor sublet the said premises or any part thereof, nor grant any interest, privilege or license whatsoever in connection with this lease. Failure to comply with this condition shall constitute a noncompliance for which the lease may be revoked immediately by the District Engineer.

## **9. COST OF UTILITIES**

The lessee shall pay the cost, as determined by the said officer, of producing and/or supplying any utilities and other services furnished by the United States or through United States-owned facilities for the use of the lessee, including the lessee's proportionate share of the cost of operation and maintenance of the United States-owned facilities by which such utilities or services are produced or supplied. The United States shall be under no obligation to furnish utilities or services. Payment shall be made in the manner prescribed by the said officer.

## **10. PROTECTION OF PERSONAL PROPERTY**

Subject to the limitations of the lease Condition on Restoration herein with respect to restoration, the lessee shall at all times exercise due diligence in the protection of all United States personal property used or occupied by the lessee under this lease against damage or destruction and shall maintain such property in good order and condition by and at the expense of the lessee. Any personal property of the United States damaged or destroyed by the lessee incident to the exercise of the privileges granted herein shall be promptly repaired or replaced by

the lessee to a condition satisfactory to the District Engineer, or at the election of the District Engineer, reimbursement made therefor by the lessee in an amount necessary to restore or replace the property to a condition satisfactory to the District Engineer.

## **11. RENTAL ADJUSTMENT**

In the event the United States revokes this lease or in any other manner materially reduces the leased area or materially affects its use by the lessee prior to the expiration date, an equitable adjustment in the rental paid or to be paid under this lease shall be made. Such adjustment of rent shall be evidenced by a written supplemental agreement, executed by the District Engineer; **PROVIDED, HOWEVER**, that none of the provisions of this condition shall apply in the event of revocation because of noncompliance by the lessee with any of the terms and conditions of this lease.

## **12. RIGHT TO ENTER**

a. In addition to the rights reserved in the Land Use Regulations, the right is hereby reserved to the United States, its officers, agents, and employees, to enter upon the said premises at any time for the purpose of inspection and inventory and when otherwise deemed necessary for the protection of the interest of the United States; to perform any work necessary for flood control operations or other authorized project purposes and to flood the said premises whenever necessary. The lessee shall have no claim for damages of any character on account thereof against the United States or any officer, agent, or employee thereof.

b. The lessee hereby agrees to make no claim under flood insurance issued under any United States program for loss to any property of the lessee located on the said premises which arises from or is incident to the flooding of the said premises by the United States.

## **13. INDEMNITY**

a. The lessee agrees to assume all risks of loss, damage to property, or personal injury or death to persons by reason of or incident attributable or incident to the use of the said premises or activities conducted under this lease. The lessee expressly waives all claims against the United States for any such loss, damage, personal injury, or death caused by or occurring as a consequence of use of the said premises by the lessee, or the conduct of activities, or the performance of responsibilities under this lease by the lessee. The lessee further agrees to indemnify and hold harmless the United States and its officers, agents, and employees, from and against all suits, claims, demands or actions, liabilities, judgements, costs and attorneys' fees arising out of, or in any manner predicated upon, personal injury, death, or property damage resulting from, related to, caused by, or arising out of the use of the said premises by the lessee. The United States will give the lessee notice of any claim against it covered by this indemnity as soon after learning of such claim as practicable.

b. The lessee shall indemnify and hold harmless the United States from any costs, expenses, liabilities, fines, or penalties resulting from discharges, releases, emissions, spills,

storage, disposal, or any other action by the lessee giving rise to United States liability, civil or criminal, or responsibility under Federal, state, or local environmental laws.

c. Subparagraphs "a" and "b" of this condition and the obligations of the lessee hereunder shall survive the expiration or termination of the lease and any conveyance of the said premises. The lessee's obligations hereunder shall apply whenever the United States incurs costs or liabilities for the lessee's actions giving rise to liability under this condition.

#### **14. INSURANCE**

a. At the commencement of this lease, the lessee shall obtain, from an approved insurance company(ies), comprehensive liability insurance. The insurance shall provide an amount not less than a combined single limit of ***FIVE HUNDRED THOUSAND AND NO/100 DOLLARS (\$500,000.00)***, for any number of persons or claims arising from any one incident with respect to bodily injuries or death resulting therefrom, property damage, or both, suffered or alleged to have been suffered by any person or persons resulting from the operations under the terms of this lease.

b. The liability insurance policy shall insure against contractual liability specified in the Condition on Indemnity herein. The policy shall name the United States as an insured party. Each policy shall be reasonably satisfactory to the United States in all respects and will provide that any losses shall be payable, notwithstanding any act or failure to act, or negligence of the lessee, the United States, or any other person. The insurer will have no right of subrogation against the United States. Under no circumstances will the lessee be entitled to assign to any third party rights of action that it may have against the United States arising out of this lease.

c. The lessee shall require that its insurance company(ies) provide the District Engineer ***thirty (30) days*** written notice of any cancellation or change in such insurance. The District Engineer may require closure of any or all of the said premises during any period for which the lessee does not have the required insurance coverage. The lessee shall require their insurance company(ies) to furnish the District Engineer a copy of the policy(ies), or if acceptable to the District Engineer, certificates of insurance

#### **15. RESTORATION**

On or before the expiration of this lease or its termination by the lessee, the lessee shall vacate the said premises, remove the property of the lessee therefrom, and restore the said premises to as good order and condition as that existing upon the date of commencement of the term of this lease, damages beyond the control of the lessee and due to fair wear and tear excepted. If, however, this lease is terminated in accordance with the Condition on Termination by the lessee hereof, or revoked, the lessee shall vacate the said premises, remove the property of the lessee therefrom, and restore the said premises to the aforesaid condition within such time as the District Engineer may designate. If the lessee shall fail or neglect to remove the property of the lessee and so restore the said premises, then, at the option of District Engineer, the property of the lessee shall either become the property of the United States without compensation

therefor, or the District Engineer may cause the property to be removed and said premises so to be restored at the expense of the lessee, and no claim for damages against the United States or its officers or agents shall be created by or made on account of such removal and restoration work. The Lessee shall also pay the United States on demand any sum that may be expended by the United States after the expiration, revocation or termination of this lease in restoring the premises.

#### **16. NON-DISCRIMINATION**

The lessee shall not discriminate against any person or persons or exclude them from participation in the lessee's operations, programs or activities conducted on the said premises, because of race, color, religion, sex, age, handicap or national origin.

#### **17. SUBJECT TO OUTGRANTS**

This lease is subject to all existing and future issuances of easements, licenses, and permits for roadways, pipelines, and utilities on said premises. In the event that future grants for the aforesaid purposes materially affect the lessee's use of the said premises, an equitable adjustment will be made in the rental paid or to be paid under this lease.

#### **18. SUBJECT TO MINERAL INTERESTS**

This lease is subject to all outstanding mineral interests. As to United States-owned mineral interests, it is understood that they may be included in present or future mineral leases issued by the Bureau of Land Management (BLM). The Secretary will provide lease stipulations to BLM for inclusion in said mineral leases, which stipulations are designed to protect the said premises from activities that would interfere with the lessee's operations or would be contrary to local law.

#### **19. TERMINATION BY THE LESSEE**

a. This lease may be terminated by the lessee at any time by giving at least sixty (60) days notice thereof, in writing, to the District Engineer. In the case of such termination, no refund by the United States of any rental previously paid shall be made and payment in full of all rent becoming due during the period of notice will be required. If the effective date of termination is not at least sixty (60) days prior to the annual rental due date the lessee shall be required to pay the rental for the period or term shown in the Condition on Consideration hereof. In the event the effective date of termination occurs after the start of the grazing season as specified in the Land Use Regulations, any rent due for the balance of the annual term, or the rental due for the remaining term if the lease is for less than one year, shall be due and payable on or before the date of such termination.

b. If the lessee exercises the right to terminate this lease as provided for herein, the lessee shall be ineligible to bid on the said premises until after the ending date specified in the granting

clause of this lease; however, the District Engineer reserves the right to waive the ineligibility if he determines such waiver would be in the interest of the United States.

## **20. PROHIBITED USES**

In addition to the requirements specified in the Land Use Regulations hereof, the lessee shall not:

a. construct or place any permanent or temporary structure, improvement, or advertising sign or permit such construction or placement without prior written approval of the District Engineer;

b. commit or permit any unlawful acts, activities, or nuisances upon said property;

c. cut timber;

d. conduct mining operations, or remove sand, gravel, or kindred substances from the ground; or

e. in any manner substantially change the contour of the said premises, except as may be authorized by the District Engineer.

## **21. CONSERVATION PAYMENTS**

The lessee agrees that he will not accept any federal cost-sharing payments for soil conservation practices required by the lease which will result in a duplicate payment for such practices.

## **22. DISPUTES**

a. Except as provided in the Contract Disputes Act of 1978 (41 U.S.C. 601-613) (the Act), all disputes arising under or relating to this lease shall be resolved under this condition and the provisions of the Act.

b. "Claim," as used in this condition, means a written demand or written assertion by the lessee seeking, as a matter of right, the payment of money in a sum certain, the adjustment of interpretation of lease terms, or other relief arising under or relating to this lease. A claim arising under this lease, unlike a claim relating to this lease, is a claim that can be resolved under a lease condition that provides for the relief sought by the lessee. However, a written demand or written assertion by the lessee seeking the payment of money exceeding \$100,000 is not a claim under the Act until certified as required by subparagraph "d" of this condition. The routine request for rental payment that is not in dispute is not a claim under the Act. The request may be converted to a claim under the Act, by this condition, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.

c. (1) A claim by the lessee shall be made in writing and submitted to the District

Engineer for a written decision. A claim by the United States against the lessee shall be subject to a written decision by the District Engineer.

(2) For lessee claims exceeding \$100,000, the lessee shall submit with the claim a certification that:

- (i) the claim is made in good faith;
- (ii) supporting data are accurate and complete to the best of the lessee's knowledge and belief; and
- (iii) the amount requested accurately reflects the amount for which the lessee believes the United States is liable.

(3) if the lessee is an individual, the certificate shall be executed by that individual. If the lessee is not an individual, the certification shall be executed by:

- (i) a senior company official in charge at the lessee's location involved; or
- (ii) an officer or general partner of the lessee having overall responsibility of the conduct of the lessee's affairs.

d. For lessee claims of \$100,000 or less, the District Engineer must, if requested in writing by the lessee, render a decision within 60 days of the request. For lessee certified claims over \$100,000, the District Engineer must, within 60 days, decide the claim or notify the lessee of the date by which the decision will be made.

e. The District Engineer's decision shall be final unless the lessee appeals or files a suit as provided in the Act.

f. At the time a claim by the lessee is submitted to the District Engineer or a claim by the United States is presented to the lessee, the parties, by mutual consent, may agree to use alternative means of dispute resolution. When using alternate dispute resolution procedures, any claim, regardless of amount, shall be accompanied by the certification described in subparagraph "c" of this condition and executed in accordance with either subparagraph "c (3)" of this condition.

g. The United States shall pay interest on the amount found due and unpaid by the United States from (1) the date the District Engineer received the claim (properly certified if required), or (2) the date payment otherwise would be due, if that date is later, until the date of payment. Simple interest on claims shall be paid at the rate, fixed by the Secretary of the Treasury, as provided in the Act, which is applicable to the period during which the District Engineer receives the claim and then at the rate applicable for each six-month period as fixed by the Secretary of the Treasury during the pendency of the claim. Rental amounts due to the United States by the lessee will have interest and penalties as set out in the Condition on Consideration herein.

h. The lessee shall proceed diligently with performance of the lease, pending final resolution of any request for relief, claim, appeal, or action arising under the lease, and comply



with any decision of the District Engineer.

### **23. ENVIRONMENTAL PROTECTION**

a. Within the limits of their respective legal powers, the parties to this lease shall protect the said premises against pollution of its air, ground, and water which is incident to the lessee's use and occupation of said premises. The lessee shall comply with existing and future issuances of any laws, regulations, conditions, or instructions affecting the activity hereby authorized which are issued by any Federal, state, interstate or local governmental agency having jurisdiction to abate or prevent pollution.

b. The lessee shall not discharge waste or effluent from the said premises in such a manner that the discharge will contaminate streams or other bodies of water or otherwise become a public nuisance.

c. The disposal on said premises of any materials classified by law or regulation as "toxic", "hazardous", or "restricted" is prohibited.

d. The Lessee shall maintain a clean and hazard free worksite. Cleanup shall be daily or more often if directed. All removed and salvageable material and equipment are to remain the property of the Government, are to be sorted and then transported by the Lessee to an On-Depot site as directed by the Installation Commander. All disposable material shall be disposed of at a state approved landfill so that the work site is free of debris.

### **24. HISTORIC PRESERVATION**

The lessee shall not knowingly remove or disturb, or cause or permit to be removed or disturbed, any known historical, archeological, architectural or other cultural artifacts, relics, remains, or objects of antiquity. In the event such items are discovered on the premises, the lessee shall immediately notify the said officer and protect the site and the material from further disturbance until said officer gives clearance to proceed.

### **25. SOIL AND WATER CONSERVATION**

The lessee shall maintain, in a manner satisfactory to the District Engineer, all soil and water conservation structures that may be in existence upon the said premises at the beginning of or that may be constructed by the lessee during the term of this lease, and the lessee shall take appropriate measures to prevent or control soil erosion within the premises. Any soil erosion occurring outside the said premises resulting from the activities of the lessee shall be corrected by the lessee as directed in writing by the District Engineer.

### **26. TAXES**

The lessee shall pay to the proper authority all taxes, assessments, or similar charges imposed by the state or its political subdivisions upon the United States or the lessee with respect

to or upon said premises. In the event any taxes, assessments, or similar charges are imposed with the consent of Congress upon said premises (as opposed to a leasehold interest of the lessee therein), this lease shall be renegotiated so as to accomplish an equitable reduction in the rental provided for in the Condition on Consideration herein.

## **27. COVENANT AGAINST CONTINGENT FEES**

The lessee warrants that no person or selling agency has been employed or retained to solicit or secure this lease upon an agreement or understanding for a commission, percentage, brokerage or contingent fees, excepting bona fide employees or established commercial or selling agencies maintained by the lessee for the purpose of securing business. For breach or violation of this warranty, the United States shall have the right to annul this lease without liability or, in its discretion, to require the lessee to pay, in addition to the lease rental or consideration, the full amount of such commission, percentage, brokerage or contingent fee.

## **28. OFFICIALS NOT TO BENEFIT**

No Member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this lease or to any benefits to arise therefrom. However, nothing herein contained shall be construed to extend to any incorporated company if this lease is for the general benefit of such corporation or company.

## **29. SEVERAL LESSEES**

If more than one lessee is named in this lease, the obligations of said lessees herein named shall be joint and several obligations.

## **30. MODIFICATIONS**

This lease contains the entire agreement between the parties hereto, and no modifications of this agreement, or waiver, or consent hereunder shall be valid unless the same be in writing, signed by the parties to be bound or by a duly authorized representative and this provision shall apply to this condition as well as other conditions of this lease.

## **31. DISCLAIMER**

This lease is effective only insofar as the rights of the United States in the said premises are concerned. The lessee shall obtain any permit or license that may be required by Federal, state or local statute in connection with the use of the said premises.

## **32. WORK IN LIEU OF CASH RENT**

The lessee shall upon request by the District Engineer negotiate to perform items of work in lieu of payment of cash rent which support the Army's agricultural leasing objectives. Examples of such work include, but are not limited to, the construction of fencing, gates, and cattle guards; development of water supplies; and range seeding and fertilization. The

identification of such work, the cost for performance thereof, and the payment schedule therefor shall be contained in a separate negotiated written supplemental agreement between the lessee and the District Engineer prior to commencement of each project. The lessee shall be compensated in an amount not to exceed the lessee's actual cost for performance of the specified work or the amount specified in the supplemental agreement, whichever is less. Compensation allowed by the United States may be in the form of credit applied toward future rent, a cash refund from previously paid rent, or a combination thereof.

**33. REVOCATION**

Any breach by the lessee of any condition of this lease including the Land Use Regulations, or the falsification of reports required herein, or the failure to complete the work as specified and scheduled by supplemental agreement is sufficient grounds for revocation of this lease by the United States.

**34. LIMITS OF RESPONSIBILITY**

All references in this lease to the responsibilities and obligations of the lessee apply only to those activities related to the rights granted in this lease, or which are incidental to the lessee's use and occupation of the said premises, and over which the lessee would normally exercise control in exercising the rights granted in this lease.

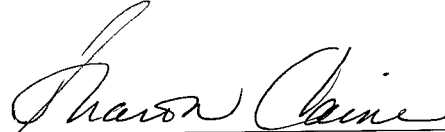
**35. ANTI-DEFICIENCY ACT NOTICE**

The obligation of the United States to perform, pay or reimburse any money under this lease is subject to the availability of appropriated funds, and nothing in this lease shall be interpreted to require obligations or payments by the United States in violation of the Anti-Deficiency Act, Public Law 97-258.

----- NO CONDITIONS FOLLOW -----

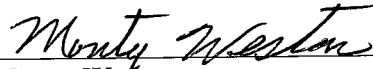
**THIS LEASE** is not subject to Title 10, United States Code, Section 2662, as amended.

**IN WITNESS WHEREOF** I have hereunto set my hand by direction of the Secretary of the Army this 13<sup>th</sup> day of November, 2013.



Sharon Caine  
Chief, Real Estate Division  
U.S. Army Engineer District, Sacramento

**THIS LEASE** is also executed by the lessee this 17<sup>th</sup> day of Oct., 2013.



Monty Weston  
Wine Cup Cattle Company, Inc.

**LAND USE REGULATIONS**

**GRAZING LEASE DACA05-1-13-511  
EXHIBIT "B"  
DESERET CHEMICAL DEPOT, UTAH  
2013 - 2018**

**1. PURPOSE**

The purpose of these Land Use Regulations is to ensure that all grazing activities on Deseret Chemical Depot lands are conducted in a manner consistent with national policy intended to: (a) provide for the multiple-use of the subject lands for military purposes, domestic livestock grazing, public recreation, water conservation, and wildlife habitat; and (b) to preserve and enhance the natural resources.

**2. DEFINITIONS**

The following definitions shall apply for the purposes of this lease:

- a. **Commander:** shall mean the Installation Commander, Tooele Army Depot, Utah, or his authorized representatives.
- b. **District Engineer:** shall mean the District Engineer, U.S. Army Corps of Engineers Sacramento District, Sacramento, California, or his authorized representative.
- c. **Exclosure:** shall mean an area from which livestock are excluded.
- d. **Animal Unit Month (AUM):**
  - i. **0.65 AUM** - one bovine weighing less than 600 pounds upon entry to the leased lands and grazing for one month. Calves born during the grazing season are excluded from this definition.
  - ii. **1.0 AUM** - one bovine weighing 600 pounds or more upon entry to the leased lands and grazing for one month; one cow with unweaned calf not more than two months of age upon entry to the premises and grazing for one month.
  - iii. **1.25 AUM** - one equine one year of age or older grazing for one month; one mare with unweaned foal not more than two months of age upon entry to the leased lands and grazing for one month.
- e. **AUM Rate:** shall mean the amount of annual cash rent that the Lessee shall pay per AUM.

- f. **Nominal Carrying Capacity:** shall mean the total number of animal unit months that Lessee can reasonably expect to obtain during a typical grazing season.

### 3. COORDINATION

a. The lands of the Deseret Chemical Depot are subject to multiple uses and are managed by the United States in a manner which gives consideration to all demands for use of the land and water resources consistent with the military mission, conservation, and environmental concerns.

b. The lands of the Deseret Chemical Depot are used primarily for military activities. The Lessee's use of grazing lands within the Depot is subordinate to military requirements, and all of the Lessee's operations shall be conducted in a manner that will not interfere with or disrupt military activities.

c. The Lessee, or his representative, shall closely coordinate grazing operations with the Commander. While livestock are grazing on Depot lands, the Lessee shall contact the Commander at least once every other week in order to maintain adequate coordination between military uses and the Lessee's operation. In the event of a conflict, Lessee shall temporarily adjust the location and number of livestock, as directed by the District Engineer. Upon the Commander's request, Lessee shall attend occasional meetings which may be called for the purpose of discussing the Lessee's operation. Lessee shall address any emergency situations associated with this lease within four hours of notice of the emergency. If the Commander contacts Lessee about an emergency or a potential emergency associated with this lease, Lessee shall commence remedial steps within four hours of such notice and shall maintain close contact and coordination with the Commander until the emergency is resolved. The Lessee shall provide the Commander with current emergency telephone number(s) where the Lessee may be contacted on a 24-hour basis.

d. The route of ingress and egress for livestock through the installation to the Depot grazing lands shall be designated by the Commander. Transportation of livestock on the installation shall be by vehicle only. Herding of livestock outside the grazing lands identified in Exhibit "A" is prohibited without the consent of the Commander.

### 4. EXCLUSIONS

The United States expressly reserves the rights enumerated in paragraphs (a) through (g), below. The Lessee shall have no claim of any character against the United States or any of its officers, agents or employees on account of any alleged loss suffered as a result of the Government's exercise of any of these rights; provided, however, that if the District Engineer determines, that the exercise of such rights has adversely affected the Lessee's reasonable use of the leased lands, the District Engineer shall, provide Lessee with an appropriate rental adjustment in accordance with Condition No. 11 of the lease:

a. The right to permit use of Depot lands, including grazing lands leased hereunder, by the general public for outdoor recreational purposes including, but not limited to, hunting and fishing.

b. The right to conduct, or to permit others to conduct, range management studies, conservation programs, firebreak maintenance, fire control, fire prevention, range improvement programs and pest and weed control programs on the leased grazing lands.

c. The right to undertake controlled burns of vegetation on leased grazing lands when such burning is determined to be necessary to support military operations, or wildlife habitat improvement projects. The Commander shall provide the Lessee a minimum of 72 hours advance notice of all controlled burning to support military operations. The District Engineer shall provide the Lessee a minimum of 30 days advance written notice of burning for wildlife habitat improvement.

d. The right to require the Lessee to remove and withhold all livestock from any designated area within the premises when the District Engineer or the Commander has determined that such areas are required for military purposes; provided, however, that the Lessee shall receive a minimum of 72 hours advance notice of such requirements and shall be allowed sufficient time to relocate livestock. No reduction in rent will be allowed for such movement of livestock. The Lessee shall hold the United States harmless for any weight loss in livestock or inconvenience incurred pursuant to this condition.

e. The Lessee is prohibited from using or permitting the use of any and all existing livestock enclosures maintained by, or on behalf of, the United States for wildlife, forestry, weather station, bivouac and other purposes. Livestock straying therein shall be immediately removed and fences repaired by the Lessee. The United States reserves the right to erect additional livestock enclosures. The District Engineer shall notify the Lessee at least 30 days prior to the construction of any enclosure more than one-quarter (0.25) acre in area.

f. The Lessee shall not construct, erect, modify or dismantle any facility on Depot lands without prior written approval of the District Engineer.

g. The Lessee shall not use United States buildings, water wells, or other facilities not specifically provided herein to support livestock grazing without the prior written approval of the District Engineer.

## **5. AUTHORIZED USE**

Unless otherwise authorized in writing by the District Engineer, use of the lands leased hereunder is limited to the grazing of cattle and associated activities.

## **6. AVAILABILITY OF WATER**

Water for livestock is currently provided by Deseret Chemical Depot (see Exhibit "A" for

stock water locations) on an "as available" basis, at no additional charge to Lessee. The Lessee may use any naturally occurring streams and ponds within the leased lands that do not interfere with the habitat of threatened or endangered species. Lessee is prohibited from allowing livestock to use the riparian buffer zone around Ophir Creek and the chub ponds. The riparian buffer zone is indicated on Exhibit "A".

The United States does not guarantee that water will be available for watering of livestock at all times and at all locations. The Lessee shall have no claim of any character against the United States, its officers, agents, or employees, in the event of a shortage of water available to livestock on the leased lands. Water is presently provided to Lessee without additional cost, and no change to this policy is contemplated, however, the United States hereby reserves the right to impose a reasonable additional charge for Depot water consumed by Lessee's livestock, in accordance with the terms of Condition 9 of the Lease.

## 7. RANGE AND LIVESTOCK MANAGEMENT

**a. General:** It is the express intent of the United States that the leased lands shall be utilized in accordance with proper range management practices consistent with concurrent multiple purpose use. The Lessee is expected to be familiar with and to conduct grazing operations in accordance with the usual, customary, and accepted practices of grazing on perennial grasslands. In particular, the Lessee must conduct his grazing operation in a manner that gives full consideration to the significant variation in the availability of forage that can occur from year to year and within a grazing season due to the amount and distribution of precipitation. The protection of the soil and its vegetative cover from deterioration by erosion, overgrazing, wildfire, noxious weed infestation, or other causes is part of proper range management.

**b. Forage Availability:** The United States does not guarantee or imply in any manner that the premises will have sufficient forage to sustain livestock grazing during any portion or all of the specified grazing season. Except as provided for in Section 7, Paragraphs "**d(i)**" and "**f(i)**" of these Land Use Regulations, the Lessee is not entitled to any reduction in annual rent due to insufficient forage to support livestock grazing during any portion or all of the specified grazing season.

**c. Grazing Season:** The grazing season shall be from **1 October to 15 June** of each lease year; however, the grazing season may be modified in accordance with the following provisions:

- i.** The District Engineer may *curtail* the grazing season when, in his opinion, accessible forage has been utilized to the extent where further grazing would be detrimental to the land or vegetative resources; and
- ii.** The District Engineer may *extend* the grazing season when, in his opinion, sufficient forage exists to sustain additional grazing and the Lessee has submitted a *written* request to the District Engineer for an extension of the grazing season. The extension of a grazing season is a determination made



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exclusively by the District Engineer within his discretion and nothing herein shall be construed to obligate the District Engineer to extend a grazing season, regardless of the availability of forage.

d. **Carrying Capacity:** The *nominal carrying capacity* is the total number of animal unit months of grazing that the Lessee can reasonably expect to obtain during a typical grazing season. The nominal carrying capacity of the premises is shown on the **Grazing Rotation Table** below and varies with each grazing season. The nominal carrying capacity for each field is as follows:

PLEASE SEE GRAZING ROTATION TABLE ON NEXT PAGE  
NO FUTHER CONDITIONS ON THIS PAGE

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**Grazing Rotation Table**

Area	Acres	Stocking Rate	Days	Troughs	Field	AUMs	YEAR							
							2013	2014	2015	2016	2017	2018	2019	
1	650	200	10	0&1	1	65		65	65	65	65	65	65	65
2	650	200	10	2&3	2	65	65		65		65	65	65	65
3	650	200	10	4&5	3	65	65	65				65	65	65
4	650	200	10	6&7	4	65	65	65	65					65
5	650	200	19	8&9	5	130	130	130	130					
6	650	200	19	10&11	6	130	130	130	130	130				
7	500	200	15	12&13	7	100	100	100	100	100	100			
8	650	200	10	16&17	8	65	65	65	65	65	65	65	65	65
9	600	200	9	18&19	9	60	60	60	60	60	60	60	60	60
10	500	200	7	20&21	10	50	50	50	50	50	50	50	50	50
11	600	200	9	22&23	11	60	60	60	60	60	60	60	60	60
12	600	200	9	24&25	12	60	60	60	60	60	60	60	60	60
13	600	200	18	26&27	13	120			120	120	120	120	120	120
14	700	200	10	28&29	14	70	70	70	70	70	70	70	70	70
15	600	200	9	30&31	15	60			60	60	60	60	60	60
16	500	200	7	32&33	16	50			50	50	50	50	50	50
17	332	200	5	34&35	17	33			33	33	33	33	33	33
18	154	200	5	36&37	18	31			31	31	31	31	31	31
19	320	200	10	38&39	19	64			64	64	64	64	64	64
20	114	200	3	40&41	20	23			23	23	23	23	23	23
21	250	200	7	42&43	21	50	50	50	50	50	50	50	50	50
22	510	200	15	44&45	22	102		102	102	102	102	102	102	102
23	510	200	15	46&47	23	102		102	102	102	102	102	102	102
24	328	200	10	48&49	24	65		65	65	65	65	65	65	65
25	700	200	10	14&15	25	70		70	70	70	70	70	70	70
<b>Total</b>	<b>10,920</b>	<b>200</b>	<b>261</b>				<b>1035</b>	<b>1374</b>	<b>1374</b>	<b>1625</b>	<b>1560</b>	<b>1560</b>	<b>1375</b>	

- Rest, No grazing in that field during that year.
- Start, Grazing will commence each season in the field indicated in dark green.
- Graze, This field will be grazed in the year indicated at the top of this table.

Field 21 is an irrigated agricultural field and may be grazed except during the growing and harvest months, subject to the approval of the District Engineer.

When field improvements are administered, the field is to be rested a minimum of two years in order to allow plant establishment.

The Depot has roads into every field to allow for drop-off and pick-up each year.

The grazing period is from October 1st through June 15<sup>th</sup> each year.

Notwithstanding the stated nominal carrying capacity, the availability of forage and the general condition of the range shall determine the number of animal unit months permitted during each grazing season; *therefore*, the nominal carrying capacity may be modified by the District Engineer as follows:

- i. The nominal carrying capacity may be reduced prior to the beginning of any grazing season by notifying the Lessee of such reduction in writing not later than *1 August* of the calendar year in which the affected grazing season commences. In such event, the annual rent for that year shall be computed by multiplying the reduced carrying capacity expressed in AUMs by the *AUM Rate*.
  - ii. An increase in the nominal carrying capacity may be authorized upon *written* request by the Lessee, provided adequate forage is available. If the District Engineer elects to grant a temporary waiver allowing the Lessee to exceed the nominal carrying capacity for a specified period of time, the District Engineer's *permission must be in writing and must be granted before the Lessee takes any action that would cause Lessee to exceed the nominal carrying capacity of the leased lands. Additional rent shall be due when the nominal carrying capacity is exceeded.* The additional rent shall be computed by subtracting the nominal carrying capacity from the total number of AUMs utilized during the grazing season, and multiplying the difference by the AUM Rate. Additional rent shall be due and payable upon written demand by the District Engineer, provided that the Lessee is notified at least 10 days prior to the date payment is required. Increasing the nominal carrying capacity is wholly within the discretion of the District Engineer and nothing herein shall be construed to obligate the District Engineer to increase the nominal carrying capacity of any portion of the leased lands, regardless of the availability of forage.
- e. ***Stocking Density:*** The number of head of livestock grazing on the leased lands may be reduced at any time during the grazing season if the District Engineer determines such reduction is necessary to prevent damage to rangeland or riparian resources. Livestock removals may be temporary, with the period of time designated by the District Engineer. The Lessee shall be notified in writing by the District Engineer if the removal of livestock is necessary. Livestock shall be removed by the date specified by the District Engineer; provided, however, that the Lessee shall be permitted a minimum of 15 calendar days to effect the removal of livestock.
- f. ***Adjustments to Rent:*** If the District Engineer determines that Lessee's compliance with written instructions from the District Engineer has caused either of the following consequences, then the Lessee shall be entitled to a proportional rental rebate:
- i. the total number of livestock permitted on the premises during the grazing season was insufficient for the Lessee to obtain the nominal carrying capacity as shown on the ***Grazing Rotation Table***, (or a reduction thereto made in

accordance with Section 7, Paragraph "**d(i)**" hereof) by the end of the grazing season; or

- ii. based on the usual and customary grazing practices for perennial grasslands, the grazing season was not of sufficient length to permit the Lessee to obtain the nominal carrying capacity as shown on the ***Grazing Rotation Table*** (or a reduction thereto made in accordance with Section 7, Paragraph "**e**" hereof) by the end of the grazing season,

The amount of any rebate due to the Lessee shall be determined by multiplying the number of AUMs forfeited by the Lessee as a result of complying with written instructions from the District Engineer by the AUM Rate, without regard for the Lessee's actual usage of AUMs, as follows:

- iii. The determination of the amount of any rebate and its payment shall be made after the end of the affected grazing season. The rebate may be in the form of either a refund from previously paid rent, credit applied toward future rent, or a combination thereof. The District Engineer shall determine the method of rebate. The Lessee shall have no claim of any character against the United States or its officers, agents or employees for any cost or expense incurred as a result of complying with instructions issued by the District Engineer pursuant to the provisions of Section 7 of this Regulation. Nothing herein shall be construed as abrogating the responsibility of the Lessee to pay rent as specified in Condition No. 2 of the lease.
- iv. If the Lessee exceeds the nominal carrying capacity (or any adjustments thereto made in accordance with the Section 7, Paragraphs "**d(i)**" or "**d(ii)**" hereof) without approval by the District Engineer, the ***Lessee shall owe additional rent*** computed by multiplying those AUMs in excess of the nominal carrying capacity (or any adjustments thereto made in accordance with the Section 7, Paragraphs "**d(i)**" or "**d(ii)**" hereof) ***by the AUM Rate, and then by 1.25***. The additional rent shall be due and payable upon written demand by the District Engineer. Payment of additional rent for unauthorized grazing does not abrogate the District Engineer's right to revoke the lease.

**g. Distribution of Livestock:** The Lessee shall make every effort to maintain a distribution of livestock over the leased lands which will achieve uniform range utilization, minimize sacrifice areas, and reduce the overall fire hazard. Accordingly, unless otherwise directed in writing by the District Engineer, the Lessee shall ensure that:

- i. salt blocks and feed supplements are distributed throughout the premises and moved as necessary to promote an optimal distribution of livestock; and
- ii. salt blocks and feed supplements are not placed within one-fourth (1/4) mile of any watering source or surfaced road.

**h. Supplemental Feeding:** Feeding of protein, salt, minerals, or trace additives whether singly or in combination shall be allowed to supplement the animals' daily food requirements only. Feeding of grains, hay, silage, or similar feeds imported by Lessee shall not be allowed. In the event of short-term emergency feeding, Lessee may import forage as necessary to protect livestock health, but only with the prior written permission of the District Engineer. If permission is granted, Lessee must use certified weed free forage only. The location and timing of feeding of livestock, when permitted, shall be determined by the Commander.

**i. Animal Health:** The Lessee shall comply with all federal, state, and local animal health laws and regulations with respect to livestock grazing and, upon request, shall furnish written evidence of compliance to the Commander. In accordance with Army Regulation 40-905 the District Engineer reserves the right to impose quarantine, immunization, or other health requirements deemed necessary to prevent or control zoonotic diseases.

**j. Dead Livestock:** The Lessee shall promptly comply with all instructions issued by the Commander concerning disposition of dead livestock. If not otherwise instructed, dead livestock that present no hazard to health or do not constitute a nuisance may be left to decompose naturally, except that *carcasses shall be immediately removed from all water sources* or from any areas adjacent to a water source when contamination of the water source may result from natural decomposition of the carcass.

**k. Livestock Identification:** If the Lessee claims two weight classes (see Section 2, Paragraph "d", herein) on monthly AUM reports (see Section 8, Paragraph "a(iv)", herein), one weight class will be identified with an ear tag. The District Engineer may approve alternative identification methods.

**l. Working of Livestock:** The Lessee shall notify the Commander at least 48 hours in advance of working (branding, sorting, weaning, etc.) livestock. The Commander is authorized to invite other lessees and adjacent ranchers to be present at the time such work is conducted for the purpose of reclaiming stray livestock. If a dispute arises concerning ownership, the matter shall be submitted to the District Engineer for resolution.

**m. Stray Livestock:** It is the Lessee's responsibility to confine livestock to the leased lands and to facilitate the removal of strays coming from adjoining leases or private lands. The Lessee shall determine how strays exited or entered the leased area and initiate corrective action in accordance with Section 9, herein.

**n. Movement of Livestock:** The Lessee shall adhere to the Grazing Rotation Table set forth in Section 7, Paragraph "d". Grazing will commence in the field indicated in the dark green box under the appropriate year. Lessee shall monitor grazing and move livestock in accordance with the Grazing Rotation Table, or upon notice from the District Engineer, shall move livestock out of a field when its forage has been grazed to within 3 inches of the ground, in the opinion of the District Engineer. Lessee shall move livestock to the next designated field and shall turn off the water supply to the watering trough(s) in the area that has been sufficiently

grazed, while turning on water to watering trough(s) in the successor field so that livestock may be efficiently herded to the new grazing lands. If a successor field is not contiguous to a grazed field, water troughs along the transit pathways will not be turned on, to encourage livestock to move through any fallow areas without lingering. The nominal carrying capacity will not be exceeded for each field during the entire grazing season, unless a written exception is granted by the District Engineer, pursuant to Section 7, Paragraph "d(ii)".

**o. Grazing Plans Required:** The Lessee shall provide a grazing plan that will meet the objective of Section 7, Paragraph "n" by 30 September each lease year. No livestock may be placed on the leased lands until the grazing plan has been accepted by the District Engineer. The Lessee may place electrical fences during the grazing season in the fields that do not store ammunition to help rotate the animals within each field or from one field to another.

**p. Harvesting of Predators:** Control of predators causing excessive livestock losses may be permitted, as determined by the Commander. The Lessee may make written requests for predator control to the District Engineer. The District Engineer, in consultation with the Commander, will determine the reasonableness and practicality of harvesting predators. Any harvesting of predators, including coyotes and mountain lions, will be conducted by the Department of Agriculture Wildlife Services or another agency designated by the Commander. The United States, its employees, and contractors will not be liable for losses of livestock due to predation.

## 8. LIVESTOCK REPORTING REQUIREMENTS

**a.** The District Engineer reserves the right to verify the numbers and weights of livestock brought on to and removed from the leased lands. Accordingly, the Lessee shall provide notice of livestock placements and removals, shall provide weight certificates and other documentation, as specified below:

- i. Notification:** In order to avoid conflicts with military activities the Lessee shall obtain written prior permission from the Commander confirming the calendar dates that placement, movement or removal of livestock may be conducted.
- ii. Weight Certificates:** If Lessee claims 0.65 AUM for some or all cattle (see Section 2, Paragraph "c", herein) on any monthly AUM report (see Section 8, Paragraph "a(iv)", herein), Lessee must ensure all arriving cattle shipments for which 0.65 AUM are to be claimed are accompanied by properly completed weight certificates, to be made available for inspection by the Commander or the District Engineer at the time of livestock delivery to the leased lands, or thereafter. The Commander or District Engineer may elect to calculate livestock weight on the alternative basis of the average weight per head, excluding unweaned calves, for each truckload, at the Lessor's discretion.

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- iii. **Documents:** Lessee shall make available for inspection upon request by the Commander or District Engineer pertinent documents including, but not limited to, weight certificates, health certificates, brand inspection reports, and shipping documents.
- iv. **Reports:** Lessee shall submit a report to the District Engineer for each month of the grazing season, enumerating the number of animal unit months (AUMs) consumed during the prior month. ***Each report shall be submitted not later than the seventh day following the end of the month for which the report is prepared.*** The report shall contain separate sections for each class (bovine or equine) of livestock occupying the leased lands and for each field identified in Section 7, Paragraph "d", herein. This report is required even if no livestock have been placed on the leased lands during the grazing season. The report form, which specifies the method for computing AUMs, will be provided to the Lessee by the District Engineer. Additionally, for any month during which the Lessee claims 0.65 AUMs, ***weight certificates*** for cattle placed on the leased lands must accompany the Lessee's report. In the absence of weight certificates (or an alternative weight verification methodology approved by District Engineer), each bovine will be considered to weigh a minimum of 600 pounds upon entry to the leased lands for the purpose of computing the AUM utilization. Lessee shall mail a separate copy of the completed monthly report to both the District Engineer and the Commander, at the following addresses:

District Engineer  
U.S. Army Engineer District, Sacramento  
ATTN: CESPK-RE-B  
1325 J Street  
Sacramento, CA 95814-2922

Commander  
Tooele Army Depot  
ATTN: Director, Public Works  
Tooele Army Depot, Bldg. 501  
Tooele, Utah 84074-5000

b. Failure of the Lessee to comply with the foregoing provisions of Section 8 hereof shall constitute sufficient justification for the District Engineer to order all livestock to be gathered and counted. In lieu of assigning all cattle a minimum weight classification of 600 pounds, as provided for in Section 8, Paragraph "a(iv)", herein, the Lessee may elect to have all cattle weighed and assigned a weight classification based on the results of the weighing. All costs associated with gathering, counting, and weighing, including costs incurred by the United States, shall be paid by the Lessee who shall have no claim of any character against the United States or its officers, agents, or employees on account of such an assessment of livestock weight. In the alternative the District Engineer may exercise his right to revoke the lease.

## 9. MAINTENANCE

a. The *Lessee*, at its *own cost and expense*, shall:

- i. during the grazing season, perform routine maintenance and repair (except as stated in Section 9, Paragraph "*b*", below) to maintain in a livestock-tight condition those fences and gates intended to confine livestock within defined fields of the leased lands; except that this condition shall not apply to such fences and gates that, in the opinion of the District Engineer, have deteriorated to the point of un-serviceability;
- ii. drain, clean, and refill watering troughs at least every other year, or as directed by the Commander or District Engineer, and shall maintain float valves in an operating condition, and maintain all plumbing downstream from the stop and waste valve;
- iii. during the grazing season, perform emergency repairs to fences and gates on the leased lands that have been damaged or destroyed by accidents, vandalism, or the forces of nature. Such repairs may be temporary but must be sufficient to confine livestock to the appropriate fields. Unless otherwise directed by the Commander or District Engineer, repairs must be completed within 48 hours after notification by the Commander or District Engineer that repairs are needed. Lessee's failure to perform repairs as directed is sufficient cause for the District Engineer to require removal of livestock from the affected grazing lands until repairs are completed. The District Engineer may elect to negotiate a supplemental agreement in accordance with *Condition No. 32* of the lease for the permanent repair or replacement of damaged or destroyed fences or gates. Reasonable costs and expenses, as determined by the District Engineer, incurred by the Lessee while performing such emergency repairs may be included in the supplemental agreement; and
- iv. ensure proper maintenance and cleanup of all areas used by Lessee's personnel and will dispose of refuse and debris generated by Lessee's activities on the leased lands in a manner consistent with military policy and to the satisfaction of the Commander.

b. The United States shall repair facilities damaged by activities of the United States, its contractors or employees, and fire fighting activities at its sole cost.

c. *The Lessee shall obtain written approval from the Commander prior to using any pesticides on the premises.* As used herein, the term pesticide includes herbicides, insecticides, fungicides, and rodenticides but do not include products commonly known as medicines. Lessee's request must include all relevant information, including types of pesticides proposed, estimated quantities to be used, duration of use, acreage to be treated and location. Should Commander approve use of pesticides as detailed in Lessee's request, or as modified by



Commander, Lessee shall report all pesticide usage in accordance with the instructions of the Commander. At minimum, reports shall be submitted monthly to the Commander for each month of the term for which the permission is granted. Reports must be submitted for all months during which a pesticide use plan is in effect, including months when no chemicals are applied.

## **10. EMPLOYEE CONDUCT**

The Lessee shall be responsible for the conduct of Lessee's employees, agents, representatives and invitees when on the Deseret Chemical Depot, and shall inform each individual of the relevant laws, rules, and regulations applicable to the Lessee's use of the leased lands. Security background checks are required for the Lessee, all of Lessee's personnel, and contractors entering Deseret Chemical Depot. The Lessee shall complete all security documents in form and manner as required by the Commander. Entry onto the premises shall be denied to any persons failing to complete a security background check, or persons who do not pass the security check and this lease may be revoked for failure of the Lessee to pass the security background check. The Lessee and the Lessee's employees, contractors and agents entering onto the Deseret Chemical Depot must speak English, or must be under direct control of someone who does.

## **11. RANGE IMPROVEMENT**

- a.** The Army plans to undertake various range conservation measures during the lease period. The general locations of the conservation measures are shown on Exhibit "A".
- b.** Conservation measures shall be limited to a maximum of 700 acres per year. The Commander shall determine the location and timing of all invasive and noxious plant control measures.
- c.** No grazing shall occur on the treated site for a minimum of two years, or as determined by the District Engineer, in consultation with the Natural Resource Conservation Service. The Lessee, at its own expense, shall be responsible for placing and maintaining fences or other structures to keep cattle from entering treated areas. Electric fences may be used for this purpose.
- d.** A rental reduction or rebate shall be applied to the lease commensurate with the number of AUMs associated with the acreage removed from grazing during the period of time conservation measures are conducted. The number of AUMs upon which a rental reduction would be calculated shall be determined by dividing the total AUMs of the field in which the conservation measures are to be conducted (taking into account the time period that conservation measures are expected to require) by the same field's total acreage and then multiplying the result by the acres removed from grazing for conservation measures. The resulting number of AUMs shall be multiplied by the AUM rate as determined in the section on Range and Livestock Management.

e. At the end of the treatment period, an assessment shall be made as to the available AUMs and the key vegetation species. The nominal carrying capacity of the field shall be adjusted accordingly. Should the nominal carrying capacity increase, additional rent shall be due commensurate with the additional AUMs.

## **12. LESSEE PARTICIPATION IN RANGE IMPROVEMENTS**

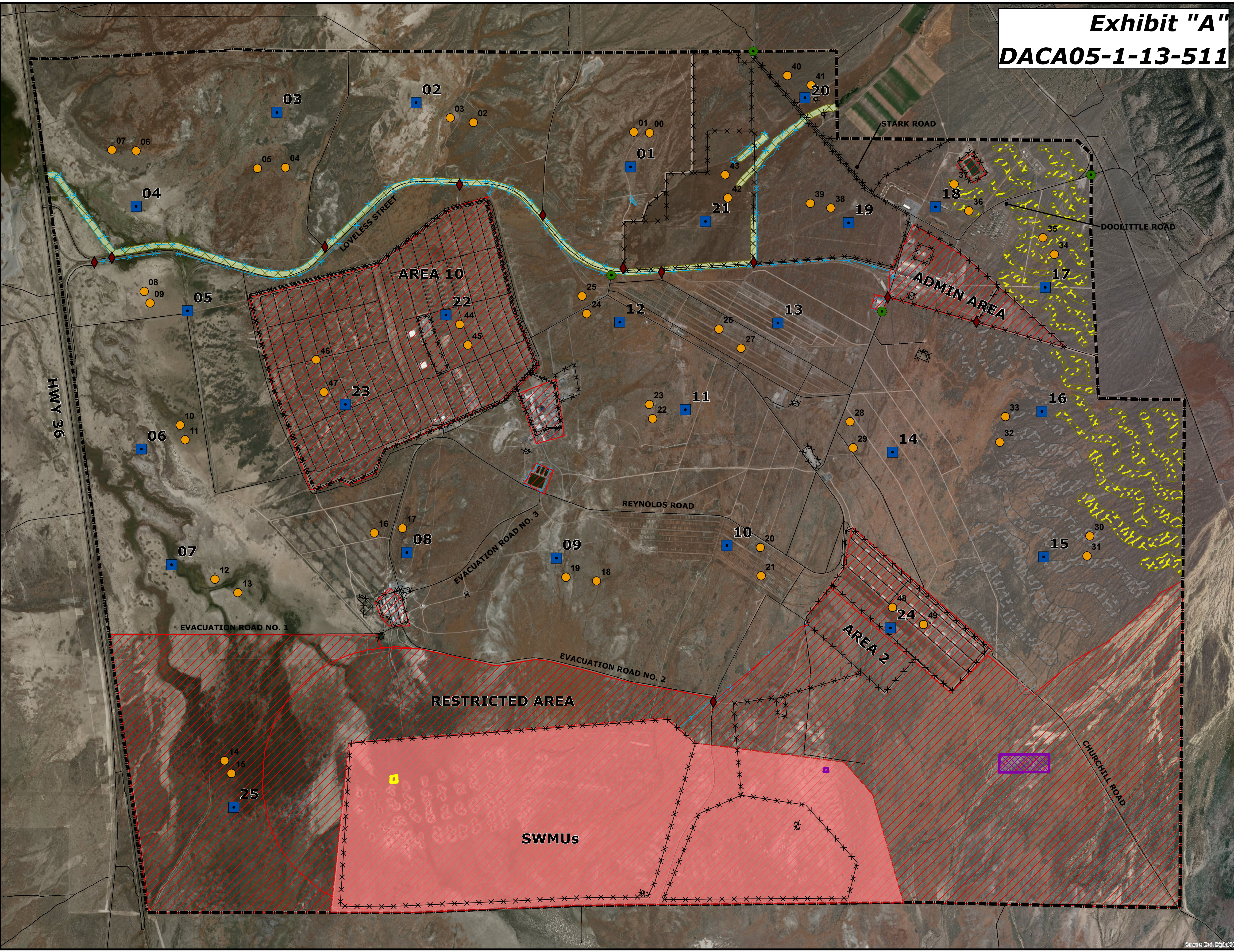
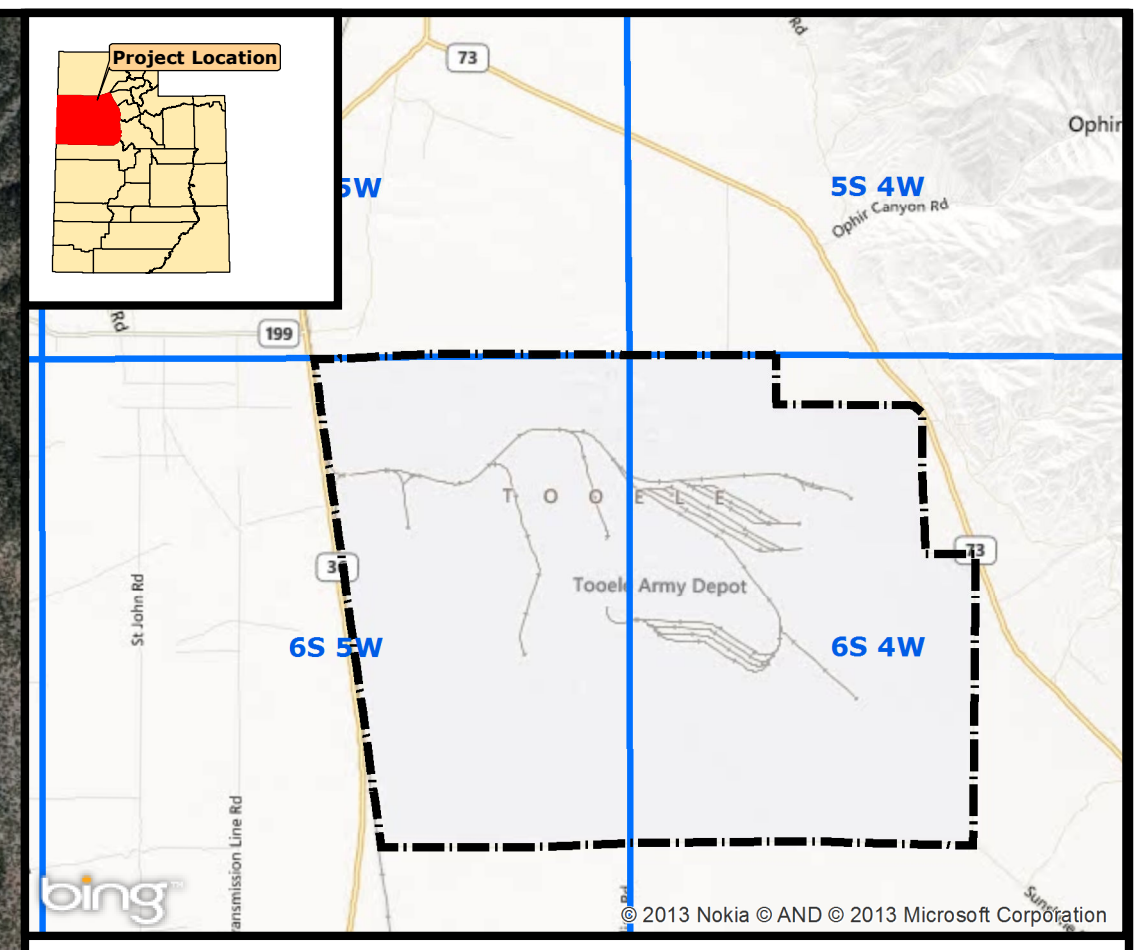
The Lessee shall participate in various range improvements through the work-in-lieu of cash rent program, when requested by the District Engineer. The Lessee's participation may include but is not limited to fence building, water trough improvements, waterline construction or repair, and corral construction.

## **13. NOXIOUS AND INVASIVE WEEDS**

The Lessee shall be shown how to identify certain noxious and invasive weeds, and in the event Lessee comes upon these plants while traversing the leased lands, Lessee shall take note of the location and apparent extent of the undesirable plant species. Lessee shall promptly notify the Commander and if requested, shall show the representative of the Commander the locations of noxious and invasive plants on the leased lands.

----- *SECTION 13 IS THE LAST ITEM* -----

# Exhibit "A" DACA05-1-13-511



### Legend

- DCD Boundary
- No Grazing
- SWMUs - No Grazing
- Chain Harrows - Completed
- Chain Harrows - To Be Completed
- OBOD Area
- Explosive Test Range Area
- Riparian Buffer - 100'
- Existing Fence
- New Fence to be Constructed
- Roads
- Location of Field
- Cattle Guard Locations
- Water Troughs
- Gates

## DESERET CHEMICAL DEPOT

Tooele County, Utah  
Created May 20, 2013  
H.A.D.

DEPARTMENT OF THE ARMY  
SOUTH PACIFIC DIVISION  
SACRAMENTO DISTRICT  
REAL ESTATE DIVISION  
CADASTRAL SECTION

Feet  
0 1,400 2,800 5,600  
1 inch = 1,400 feet

COORDINATE SYSTEM:  
NAD83 STATE PLANE UTAH CENTRAL, FIPS 4302 (US FEET)  
PROJECTION: LAMBERT CONFORMAL CONIC  
DATUM: NORTH AMERICAN 1983

Path: G:\WILLIAMS\Deseret\_Chemical\_Depot\Projects\Grazing\_20130418\30130508\_DCD\_Grazing.mxd

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**Appendix M**

**TEAD South Area Agricultural Lease Determination of Availability (DOA) and Report of  
Availability (ROA)**

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**SECTION A**

**DETERMINATION OF AVAILABILITY**

**Part 1. REGION CERTIFICATION:**

The information furnished in Sections B and C has been fully coordinated with BRAC, if applicable, environmental, legal, and real estate and is accurate and complete. I recommend the Report of Availability be approved.

Date: J. RANDALL ROBINSON  
Director  
IMCOM Central

I have reviewed Section C, Environmental Considerations, including all attachments and have determined the environmental considerations to be legally sufficient.


Date: PHILLIP A. SAVOIE  
Region Counsel  
IMCOM-Central

## DETERMINATION OF AVAILABILITY

### Part 2. APPROVAL

1. Based upon the attached Report of Availability (ROA) and its findings, which have been reviewed for accuracy and completeness, I have determined the intended use of this property, as set forth in the attached Report of Availability (ROA), is in the public interest or promotes national defense and is consistent with delegated authorities, applicable laws and regulations.
2. I have determined the proposed use is compatible with the installation mission and with the installation Master Plan. The use will directly support or further the installation mission.
3. (NON-BRAC) I have determined the property is not excess to the overall installation purpose and has not been identified as not utilized in an Installation Commander's Annual Real Property Utilization Survey (ICARPUS).
4. The proposed outgrant action described in the ROA is approved, subject to:
5. I determine the property available for the proposed use with the restrictions as stated in the Report of Availability (and as added above, if any) and hereby authorize negotiation and execution of an outgrant in accordance with the attached ROA and applicable laws, regulations, and policy guidance.

Date: 11 APR 13

  
\_\_\_\_\_  
MARK B. POMEROY  
COL, CM  
Commanding



## SECTION B

### REPORT OF AVAILABILITY

**Installation: Deseret Chemical Depot, Stockton, UT**

#### GENERAL AND OPERATIONAL INFORMATION

##### SECTION I. OUTGRANT ADMINISTRATION.

1. Name, address and telephone number of applicant:

Technical POC: Boyd White, Deseret Chemical Depot, 11500 Stark Road, Stockton, UT 84071, 435-833-4316

Real Property POC: Joy Chamberlin, Deseret Chemical Depot, 11500 Stark Road, Stockton, UT 84071, 435-833-4231

2. Proposed use:

Deseret Chemical Depot has approximately 240 acres of land available for agricultural purposes. This is an established practice throughout the Army and promotes good land stewardship. This is not a request from outside the installation. This is an opportunity to lease agricultural land.

3. Proposed type of outgrant:

- Lease
- Enhanced Use Lease (EUL)
- Easement
- Permit or License
- For BRAC:  Interim Lease
- Lease in Furtherance of Conveyance

4. Start date requested: 1 May 2013

5. Recommended term of outgrant:

- Five (5) years
- Twenty-five (25) years
- Fifty (50) years
- Other (Explain Below)

##### SECTION II. PROPERTY INFORMATION:

1. General property identification. Provide sufficient information to locate the property for environmental reviews and for the USACE District to develop a legal description to include in the outgrant document. Provide legal descriptions, if available. Attach existing maps or aerial photographs. Map(s) should also be attached to the Finding of Suitability to Lease (FOSL), if a lease, showing the nearest installation boundary.

The land use plan contains a map with acreages pertaining to the agricultural field. There is no legal description for the area comprising the greater lease area.

2. Acreage:

The approximate number of acres available to the lease will vary according to the Land Use Plan. The number of acres available to the lease is 240 acres.

3. General character of the property (short description of the uses of the property; i.e., industrial, residential, warehouse, etc.):

The type of landscape is very common in Utah. It encompasses sagebrush steppe, native grasslands, scrub desert, and wetland vegetation types. Approval of this request will not adversely affect the ammunition storage mission at Deseret Chemical Depot. The land identified is within Quantity Distances Arcs used as storage buffers zones therefore not inhabitable by humans, although it can be used as intended and noted in the ROA.

4. Are Government buildings and improvements included in the area?

No.

Yes. If yes, identify and describe all buildings, facilities and improvements, e.g., Identification Nos., square footage outgranted/percentage of building, type of construction, and condition:

5. Existing or preceding property use (Provide a description below for each building, facility, area, etc. in either list or table format. If the overall use is the same, i.e. industrial, then a general description is sufficient.):

*The type of landscape is very common in Utah. It encompasses sagebrush steppe, native grasslands, scrub desert, and wetland vegetation types. Approval of this request will not adversely affect the ammunition storage mission at Deseret Chemical Depot.*

6. United States property interest:

Fee simple title

easement

in lease

other.

7. Is the property subject to a reversionary interest which would be violated by the proposed use?

No.

Information not known. USACE District should check title documents.

Yes. If yes, describe:

---

8. Army interest:

Direct control

permit from a Federal Agency

withdrawn from the public domain.

9. Type of jurisdiction:

Exclusive Federal Jurisdiction

Concurrent Federal Jurisdiction

Proprietary status

10. If Exclusive or concurrent, does jurisdiction need to be retroceded to allow for the proposed use?

No

Yes, Explain. If a retrocession action is pending, identify the status of that effort:

---

---

**SECTION III. OPERATIONAL FACTORS:**

1. Will the proposed use require utilities?

No. If no, go to question 2.

Yes. Will Army be providing required utilities or services on a reimbursable basis?

If yes, identify the type, quantity, and provider of such services:

Irrigation water from the Ophir Creek Water Company. Lessee will purchase materials and maintain the system in-lieu of rent specified in grazing plan for water delivery system.

Are utilities, e.g. electricity, natural gas/propane/heating oil, potable water, wastewater treatment, telephone, etc., available from public utility companies?

No

Yes. If yes, identify the instrument to be used to establish the terms under which such services will be provided and the type, quantity, and estimated cost. Note that this instrument should be executed prior to execution of the outgrant.

---

2. Will the proposed use require destruction, relocation, modification, or replacement of Government facilities?

No

Yes. If yes, please explain:

---

3. The grant of the proposed use:

is compatible with the operation of the installation,

is compatible with the BRAC Implementation Plan, if BRAC,

is compatible with contemplated development and other activities as shown in an approved Master Plan, or

is in support of the installation mission.

4. If it is not compatible with any of the above or in support of the installation missions, please explain why the use should be approved or list the site specific limitations, restrictions, or conditions to be included in the outgrant to make the proposed use compatible, e.g., security, access, parking, hours of operation:

N/A

---

5. Non-Environmental Safety Issues and Concerns, if any:

N/A

---

6. Airfields and Airspace:

a. Will the planned use of the property affect the airspace over or near the property or military installation?

No

Yes. If yes, the proposed occupancy or modification may be allowed subject to the following restrictions being incorporated in the outgrant:

---

Yes, near the property or military installation but affecting property not owned by the United States. If yes, does the United States have a potential taking of private property issue? Explain.

---

b. Will the outgrant of the property require the notification of the FAA?

No

Yes. If yes, please explain who will notify the FAA and when:

---

c. Will structures be built on the property which will require an airspace study?

No

Yes. If yes, please explain who will do the study and any other requirements:

---

7. REMARKS include any legal, policy, or mission factors you are aware of which may affect the proposed use of the property:

None

---

**SECTION IV. PRELIMINARY PROCEDURES:**

1. Inventory and Condition Reports: A recent inventory showing the condition of the property is available:

No

Yes. Give date and location of the document:

2. Consideration:

For BRAC, less than fair market value is recommended for this action under authority of 10 USC 2667(f). Provide justification. Current estimated caretaker or operational costs are \_\_\_\_\_ Provide any specific recommendations:

USACE district is requested to determine fair market value for the outgranted interest.

Consideration should be collected in cash.

Consideration should be in cash or in-kind as set out in the attached discussion of possible in-kind consideration.

Consideration should be offset for the improvement, maintenance, protection, repair or restoration of the property outgranted, as shown in an attached offset plan.

3. Waiver of Competition:

Competition is not required in accordance with AR 405-80.

A waiver of competition is not recommended.

A waiver of competition is recommended. Provide full justification and proposed grantee, if waiver is recommended.

4. Other applicable laws, regulations, MOA/MOU's, etc. requiring consideration for processing this action:

None

5. Additional information that will assist in processing this application/ action:

The lease is in-lieu-of rent i.e. the biofuel created from this ag lease will be utilized by the depot to offset operating costs.

6. Stewart B. McKinney Homeless Requirements:

McKinney Act requirements do not apply to this action.

McKinney Act requirements apply, necessary screening has been completed, and no interest was expressed. Give dates.

7. Estimated Costs to further process the outgrant:

USACE District costs: Funding has already been received from The Army Environmental Command

Installation costs: None.

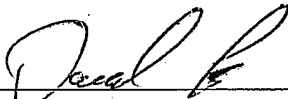
Funds are currently available  Yes  No

If No, how will costs be funded? *In-lieu of Rent from the leasee*

8. I certify that I have reviewed Section B, that it has been coordinated in accordance with applicable command guidance, and that it is accurate and complete. Based on the information provided above, I recommend that the outgrant be

APPROVED       DENIED

4/10/13  
Date

  
\_\_\_\_\_  
DORYL M. LISH, P.E.  
Director, Public Works

Enclosures:

1. Map – Proposed agricultural area
2. Record of Environmental Consideration

**SECTION C**  
**REPORT OF AVAILABILITY**  
**ENVIRONMENTAL CONSIDERATIONS**

**1. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) REQUIREMENTS:**

a. The requirements under NEPA for the proposed outgranting action have been met as follows:

CX/REC. This action falls under one of the Categorical Exclusions (CX) contained in AR 200-2 (Environmental Effects of Army Actions). The environmental effect of the action has been considered. A Record of Environmental Consideration (REC) is attached, indicating the CX pursuant to which the proposed outgrant is authorized. [If the ROA is required to be forwarded to HQDA, and the CX is based on a pre-existing NEPA analysis, then state:

for BRAC, NEPA document is on file at HQDA (Identify location, title and date: \_\_\_\_\_)

pertinent extracts are attached from the applicable NEPA analysis.]

EA/FONSI. The impact of this action is considered to be minimal or insignificant. The Environmental Assessment (EA) with Finding of No Significant Impact (FONSI) is: The environmental affect of this action have been considered in an environmental assessment contained in section 3.18.3 of the Deseret Chemical Depot Integrated Natural Resource Management Plan (INRMP), dated February 2009 (enclosure 1). A finding of No Significant Impact for implementation of the INRMP, which includes an Agricultural Lease Plan is included in Appendix R of the INRMP.

for BRAC, on file at HQDA (Identify location, title and date: \_\_\_\_\_)

attached.

EIS/ROD. The impact of this action is considered to be significant. An Environmental Impact Statement (EIS), or supplement thereto, along with the Record of Decision (ROD) is:

for BRAC, on file at HQDA (Identify location, title and date: \_\_\_\_\_)

attached. (IF the EIS is too large to attach, then state where it can be viewed)

b. For EA and EIS, identify mitigation actions, if any, which are required, costs, and responsible party for the mitigation:



No adverse environmental effects will result from the proposed agricultural lease, nor will any mitigation actions be required.

c. If the EIS or EA covers more than the proposed outgranting action, explain how and where the outgranting action is analyzed and considered in the NEPA documentation:

Section 1.4 of the Deseret Chemical Depot Integrated Natural Resource Management Plan addresses NEPA compliance and integration. Elements of the NEPA analysis, as integrated with the management plan are presented in table 1-1, Roadmap Indicating NEPA Analysis and Corresponding Integrated Natural Resource Management Plan Sections.

2. COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA), For Leases only:

a. Environmental Baseline Study:

An EBS has been conducted and no hazardous, toxic, radiological waste (HTRW) substances were identified as released, stored, or disposed on the property in the threshold quantities. Go to question 3. A draft FOSL is attached. A copy of the EBS is:

- on file at HQDA (Identify location, title and date: \_\_\_\_\_)  
 attached.

An EBS has been conducted which indicates HTRW substances were released, stored, or disposed on the property in the threshold quantities. Hazardous storage, disposal, or release notification must be included in the outgrant document (reference 40 CFR Part 373). A draft FOSL is attached. A copy of the EBS containing the details is:

- on file at HQDA (Identify location, title and date: \_\_\_\_\_)  
 attached. An ECP Report entitled, Environmental Condition of Property Report for the Grazing and Agricultural Lease Program, Deseret Chemical Depot, Utah is provided as an enclosure 2. In accordance with Section 15.5, d (1) of AR 200-1, a FOSL is not required for active installation non-BRAC lease.

b. Choose the appropriate status of remedial actions:

- Remedial actions have been completed so that the property is considered safe for the proposed use.  
 Remedial actions are not required.  
 Remedial actions have not been completed. Estimate the time to complete such action: \_\_\_\_\_. Provide details and justification for outgranting in the current condition, if applicable. Attach any land use restrictions and access clauses that must be put into the outgrant.
-

3. REAL PROPERTY CONTAMINATED WITH AMMUNITION, EXPLOSIVES OR CHEMICAL WEAPONS.

a. Does the property contain ammunition, explosives or chemical weapons?

No. If no, go to question 4.

Yes. If yes, Reference AR 385-64, "US Army Explosives Safety Program."

Has a Land Disposal Site Plan (LDSP) to clean up the property been submitted through the MACOM and HQDA, DACS-SF and DAMO-SWS, the U. S. Army Technical Center for Explosives Safety, to the Department of Defense Explosives Safety Board (DDESB) for approval before cleanup and outgrant?

No.

Yes.

If yes, have the ammunition, explosives, or chemical weapons been removed using the most appropriate technology consistent with the proposed use of the property?

Yes

No. Provide date when property will be cleared:

b. Will access rights to implement any monitoring plan or use restrictions be required?

No.

Yes. Describe. (Set out proposed language to be inserted in outgrant):

c. If outgrant is to another Federal agencies for compatible use of surface decontaminated real property, list limitations, restrictions and prohibitions concerning the use of the property, to ensure personnel and environmental protection:

4. WASTE DISPOSAL (The Solid Waste Recovery Act, as amended; Resource Conservation and Recovery Act (RCRA)).

a. Choose one:

The applicant will not generate hazardous waste or will not treat, dispose or store waste defined by EPA or State with RCRA primacy.

The applicant will generate hazardous waste or will produce waste defined by EPA or State with RCRA primacy. Identify all waste streams and quantities:

The applicant will treat or temporary store, for less than 90 days, hazardous waste as defined by EPA or State with RCRA primacy. Identify all waste streams and quantities.

b. If applicable, choose the appropriate: Not applicable to the proposed action.

The applicant has obtained a hazardous waste generator identification number from EPA. ID No. \_\_\_\_\_

The applicant has established records, waste management requirements, and a Spill Prevention Plan.

c. Will the grantee be required to comply with an installation's Hazardous Waste Management Plan?

No The installation's Hazardous Waste Management Plan is not applicable to the proposed action which consists of agricultural production.

Yes, provide date and location of plan.

5. COMPLIANCE WITH 10 USC 2692:

The applicant will not store or dispose of non-DOD toxic or hazardous materials pursuant to 10 USC 2692.

Storage or disposal of non-DOD toxic or hazardous materials has been authorized pursuant to 10 USC 2692. (Attach copy of authorization).

6. UNDERGROUND/ABOVE GROUND STORAGE TANKS.

a. Underground storage tanks:

There are no Underground Storage Tanks (USTs) on the property and the applicant will not be installing such tanks. Go to question 7.

There are no above ground storage tanks for fuel or other regulated substances and the applicant will not be installing such tanks. Go to question 7.

There are USTs on the property and/or the applicant will be installing such tanks.

Existing underground storage tanks are in compliance with current laws and regulations:

Yes

No. Explain: \_\_\_\_\_

Construction of proposed underground storage tanks have been certified for such compliance:

Yes

No. Explain: *There are no proposed underground storage tanks on the property.*

b. Aboveground storage tanks:

There are above ground storage tanks for fuel or other regulated substances on the property and/or the applicant will be installing such tanks.

Existing above ground storage tanks are in compliance with current laws and regulations:

Yes

No. Explain: \_\_\_\_\_

Construction of proposed above ground storage tanks have been certified for such compliance:

Yes

No. Explain: \_\_\_\_\_

#### 7. CLEAN WATER ACT (FEDERAL WATER POLLUTION CONTROL ACT):

This action will not involve the discharge of any pollutants into the waters of the United States or less than one million gallons of discharge per day will be made.

This action will entail the discharge of any pollutants into the waters of the United States or it is more than one million gallons into the waters of the United States per day.

Will the grantee's activities on the outgranted property result in a discharge of wastewater to an accumulation, collection, or drainage system?

No.

Yes. If yes, can the existing wastewater collection system and treatment system accommodate such discharge without adverse operational or environmental impacts?

Yes.

No. If not, are there other options? Describe.

Has the applicant applied for or obtained a National Pollutant Discharge Elimination System (NPDES) Permit or State equivalent from the EPA/appropriate state agency?

Yes.

No. If not, state whether the grantee must have a NPDES Permit or State equivalent to operate.  No.  Yes. If not received, state circumstances:

---

Would the grantee's operations result in a violation of a NPDES permit or State equivalent held by the United States?

No.

Yes. Explain.

The Grantee is complying with the requirements of a NPDES Permit and the Grantee has a monitoring and reporting procedure.

#### 8. CLEAN AIR ACT (FEDERAL CONFORMITY REQUIREMENTS):

This action does not require a written conformity determination in accordance with EPA's rule because:

The installation is in an attainment area. NOTE: The EA or EIS must contain a statement that the action conforms to the applicable State or Federal Implementation Plan, if any, with adequate supporting analysis.

The installation is in a non-attainment or maintenance area and the action falls within an exemption in the rule. Attach a Record of Non-Applicability (RONA) in accordance with Army Guidance. List pollutants: \_\_\_\_\_

This action is not exempt from the conformity regulation. Attach conformity determination. Describe the mitigation requirements or other restrictions, if any, which must be incorporated in the outgrant: \_\_\_\_\_

---

---

#### 9. ENDANGERED SPECIES:

Coordination with the USFWS to determine the possible presence of any federally listed endangered, threatened, or candidate species in the action area has occurred (attach correspondence). Provide date of last coordination and describe results of coordination: *USFWS coordination correspondence is contained in Appendix A of the INRMP provided as enclose 1. Dated 7 January 1999.*

This action will not jeopardize the habitat of any endangered, threatened or candidate species of fish, wildlife, or plants pursuant to the Endangered Species Act or a state listed species.

This action may jeopardize or affect: (identify on an attached map.)

a federally listed endangered or threatened species; list: \_\_\_\_\_

a federal candidate species; list:

a state listed species: \_\_\_\_\_

] designated critical habitat; describe: \_\_\_\_\_

] This outgranting action may affect a federally listed endangered, threatened, or candidate species and required consultation with the USFWS has been completed. Attach any biological assessment, opinion, and correspondence with the USFWS. Accordingly, the following restrictions must be incorporated in the outgrant to protect the affected species and its habitat:

---

---

9. FISH AND WILDLIFE COORDINATION ACT (FWCA):

] This action will not jeopardize fish and wildlife species or habitat integral to Congressionally authorized mitigation or General Plans, or Army agreed to recommendations in Fish and Wildlife reports prepared under the provisions of the FWCA.

] This action will jeopardize fish and wildlife species or habitat integral to Congressionally authorized mitigation or General Plans, or Army agreed to recommendations in Fish and Wildlife reports prepared under the provisions of the FWCA. Impact description, and recommended actions prior to availability:

---

10. COASTAL ZONE MANAGEMENT (CZM) (if applicable):

] CZM is not applicable.

] CZM is applicable, and a CZM Act determination with the approved state CZM Plan has/will be obtained.

11. FLOODPLAIN:

] This property is not located within the 100 year floodplain and does not fall under the purview of Executive Order 11988.

] This property is located within the 100 year floodplain and does fall under the purview of Executive Order 11988 and (check the appropriate):

] The proposed occupancy or modification will not adversely impact the floodplain.

] There is no other practicable alternative available for this intended use.

] The proposed occupancy or modification may be allowed subject to the following restrictions being incorporated in the outgrant document:

---

12. WETLANDS:

Does the property to be outgranted contain wetlands regulated under Section 404 of the Clean Water Act (CWA) or falling under the purview of Executive Order 11990:

No.

Yes. Attach map showing wetland areas. The following restrictions must be incorporated in the outgrant document:

---

---

Does the action require a 404 Permit?

No

Yes. State status of Section 404 permit process: \_\_\_\_\_

### 13. HISTORICAL AND CULTURAL RESOURCES:

No historical, cultural, or archaeological sites or resources have been identified on this property.

Historical and/or cultural resources may be present on this property. This action has been coordinated with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation, if applicable, in accordance with 36 CFR 800, and not restrictions apply. (Attach relevant correspondence).

Historical and/or cultural resources have been identified by a survey of this property. This action has been coordinated with the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation, if applicable, in accordance with 36 CFR 800. The following restrictions must be incorporated into the outgrant document to protect the property (attach any Programmatic Agreement, MOA, and relevant correspondence): \_\_\_\_\_

Native American graves have been identified on this property. (Refer to requirements of the American Indian Religious Freedom Act and Native American's Graves Protection and Repatriation Act). Consultation on the disposition of Native American graves and objects has been initiated with interested Native American organizations; correspondence attached.

Archaeological sites or resources have been identified on this property. Refer to the Antiquities Act; Archaeological and Historical Preservation Act; and Archaeological Resources Protection Act. The plan for curation and disposition of these resources is attached.

### 14. LEAD-BASED PAINT:

a. Are there improvements constructed prior to 1960 which are considered to contain lead-based paint or which have been determined to contain lead-based paint?

No No buildings are involved in this outlease.

Yes. If there has been a survey, attach.

b. Are there improvements constructed between 1960 and 1978 which are considered to contain lead-based paint or which have been determined to contain lead-based paint?

- No  
 Yes. If there has been a survey, attach.

c. Are these improvements the type that children under age seven frequently inhabit, e.g. housing, child care?  No  Yes, lead-based paint notice is required.

15. OTHER ENVIRONMENTAL CONSIDERATIONS:

a. Is there any Asbestos Containing Material (ACM) on the property?

- No. No buildings are involved in this outlease.  
 Yes. If yes, attach any surveys, condition and type.

b. Will the proposed outgrant activity impact an area designated under the Wild and Scenic Rivers Act?

- No  
 Yes. If yes, what conditions may need to be included in the outgrant?

---

c. Will the proposed outgrant activity involve the use of insecticide, fungicide, and rodenticide so that compliance with the Federal Insecticide, Fungicide, and Rodenticide Act is necessary, e.g. Agricultural, golf courses, restaurants?

- No  
 Yes. If yes, list: Agricultural lease may require use of pesticides but only approved substances for federal installations and only in allowable quantities.

d. Are there polychlorinated biphenyls (PCBs) present?

- No  
 Yes.

e. Has a radon survey been completed for the buildings to be outgranted?

- No. No buildings are involved in this outlease.  
 Yes. Choose one:

- no buildings have radon in excess of applicable standards.  
 the following buildings exceed standards: List with appropriate use restrictions:
-



4 5 10  
f. Are there any other special-purpose environmental laws applicable to the proposed activity?

No  
 Yes. Explain:

---

g. Is further environmental study required?

No  
 Yes. Explain:

---

16. ADDITIONAL COMMENTS:

---

17. I certify that I have reviewed Section C, that it has been coordinated in accordance with applicable command guidance, and that it is accurate and complete. Based on the information provided above, I recommend that the outgrant be

APPROVED     DENIED.

10 Apr 13  
Date

  
\_\_\_\_\_  
TROY JOHNSON  
Chief, Environmental Office

18. I have reviewed Section C, Environmental Considerations, including all attachments, and, if this is a lease action, the draft FOSL and EBS, and have determined that the environmental considerations are legally sufficient.

\_\_\_\_\_  
Date

\_\_\_\_\_  
RUTH FLANDERS  
(Installation JAG/Counsel)

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**Appendix N**

**Habitat Improvement Poster and  
Johnson Homestead Ponds Restoration Poster**

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# Habitat Improvement

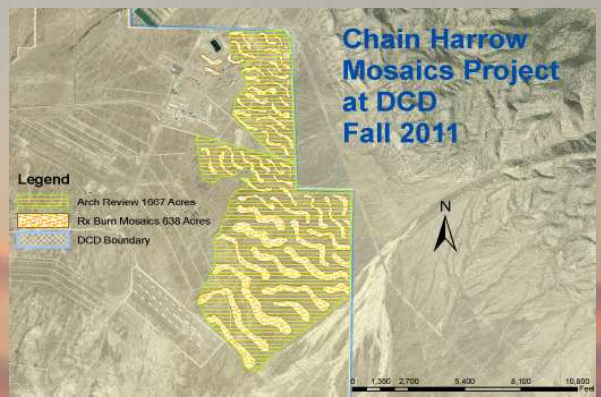
“It’s all about habitat”

Working to improve habitat for mission readiness and ecosystem integrity



## Habitat Program

- To keep all habitats at DCD in healthy ecological condition to benefit the Army and wildlife.
- To mitigate invasive weed species.
- To reduce fuels that could cause a catastrophic wildfire fire event.
- To enhance some of Utah’s rare habitat at DCD such as Ophir Creek and Johnson Homestead Ponds.
- Good habitats allow sensitive species a place to live and breed and help keep them from becoming threatened and endangered species.
- When fires do occur, reseeding helps to mitigate soil erosion and weed invasion and pushes the system in the desired direction.
- When systems begin to reach a climax condition we can push it back to a desirable condition through mechanical treatment such as the Sage Brush Chain Harrow Project.





# Johnson Homestead Pond Restoration

“It’s all about habitat”

*Working to improve habitat for mission readiness and ecosystem integrity*



## Pond Restoration Project

- To restore the Johnson Homestead pond riparian habitat for Least Chub.
- To improve the dikes and seal the floors for the ponds.
- To celebrate Earthday with URS in a conservation project to transplant riparian vegetation to the ponds.
- To create a Memorandum of Agreement with the Utah Division of Wildlife Resources and the US Fish and Wildlife Service to establish a refuge population of Least Chub at DCD.
- Establish a wet meadow habitat from pond effluent.
- To stock the Ponds with Least Chub.
- Unexpectedly we received a recognition award to Deseret Chemical Depot for our conservation project for the Least Chub.



**Appendix O**

**Utah Fishing Guidebook**

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# 2015 UTAH FISHING GUIDEBOOK

UTAH DIVISION OF WILDLIFE RESOURCES



## CONTACT US

### Turn in a poacher

Phone: 1-800-662-3337

Email: [turninapoacher@utah.gov](mailto:turninapoacher@utah.gov)

Online: [wildlife.utah.gov/utip](http://wildlife.utah.gov/utip)

### Division offices

Offices are open 8 a.m.—5 p.m.,  
Monday through Friday.

#### *Salt Lake City*

1594 W North Temple  
Box 146301  
Salt Lake City, UT 84114-6301  
801-538-4700

#### *Central Region*

1115 N Main Street  
Springville, UT 84663  
801-491-5678

#### *Northeastern Region*

318 N Vernal Avenue  
Vernal, UT 84078  
435-781-9453

#### *Northern Region*

515 E 5300 S  
Ogden, UT 84405  
801-476-2740

#### *Southeastern Region*

319 N Carbonville Road, Ste A  
Price, UT 84501  
435-613-3700

#### *Southern Region*

1470 N Airport Road  
Cedar City, UT 84721  
435-865-6100

#### *Washington County Field Office*

451 N SR-318  
Hurricane, UT 84737  
435-879-8694



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**On the cover:** Jordan Clark holds a black crappie he caught at Willard Bay Reservoir.

## HOW TO USE THIS GUIDEBOOK

1. Review the general rules, starting on page 7. These rules explain the licenses you need, the fishing methods you may use, and when you can transport and possess fish.
2. Check general season dates, daily limits and possession limits, starting on page 18.
3. Look up a specific water in the section that starts on page 23. (If the water you're looking for is not listed there, it is subject to the general rules.)

## WHAT'S NEW?

**Possession limit changes:** Starting in 2015, the fish you keep at your permanent residence will not count toward your possession limit. For details, see the article on page 42.

**No permit needed to fish with two poles:** Utah's second-pole permit has been discontinued. Licensed anglers and children younger than 12 no longer need a second pole permit in order to fish with two fishing poles. For details, see page 12.

**Free Fishing Day:** This year, Free Fishing Day will be held on June 6. This annual event is a great opportunity to share fishing fun with a friend or family member. For more information, see page 7.

**Regulation changes at popular fisheries:** Regulations have changed at a handful of popular Utah fisheries, including the lakes on Boulder Mountain, Fish Lake and Lake Powell. For details, see *Rules for specific waters* on page 23.

**New license fees:** New license fees went into effect last July. Some fees have increased, while others have decreased. We are also offering multi-year licenses for the first time. For details, see page 6.

**One new community fishery:** A new community fishery, Knight-Ideal Community Fishing Pond, will open in Carbon County in 2015. For a complete list of Utah's community fisheries, see the information box on page 26.

**Battling invasive mussels in Lake Powell:** The Division is taking steps to keep quagga mussels contained within Lake Powell. For more information on this effort, see page 40.

**New consumption advisories:** In 2014, the Utah Department of Health issued new fish-consumption advisories. For details, visit [fishadvisories.utah.gov](http://fishadvisories.utah.gov) or see the article on page 21.

### Keep your license on your phone or tablet

We've made it easier for you to keep track of your fishing license and know when it's about to expire.

With our new mobile app, you can now download your license to a smartphone or tablet.

If a conservation officer asks to see your license, you can easily produce the digital copy, which is just as valid as a paper license. You also have the option of taking a photo of your paper license and storing that on your phone or tablet.

If you use the app, you will be able to easily see when your license expires. Then, you can use the app to quickly renew it.

The app is available for both Apple and Android devices. You can download it at [wildlife.utah.gov/mobileapp](http://wildlife.utah.gov/mobileapp).

## A closer look at the rules

This guidebook summarizes Utah's fishing laws and rules. Although it is a convenient quick-reference document for Utah fishing regulations, it is not an all-encompassing resource.

For an in-depth look at Utah's fishing laws and rules, visit [wildlife.utah.gov/rules](http://wildlife.utah.gov/rules).

You can use the references in this guidebook—such as Utah Administrative Rule R657-13-6 and Utah Code § 23-20-3—to search the Division's website for the detailed statute or rule that underpins the guidebook summary.

If you have questions about a particular rule, call or visit the nearest Division office.

## Who makes the rules?

The Utah Wildlife Board passes the rules and laws summarized in this guidebook.

There are seven board members, and each serves a six-year term. Appointed by the governor, board members are not Division employees.

The Division's director serves as the board's executive secretary but does not have a vote on wildlife policies.

Before board members make changes to wildlife rules, they listen to recommendations from Division biologists. They also receive input from the public and various interest groups via the regional advisory council (RAC) process.

If you have feedback or suggestions for board members, you can find their contact information online at [wildlife.utah.gov](http://wildlife.utah.gov).

## Wildlife Board members

Jake Albrecht, *Chair*  
Bill Fenimore, *Vice Chair*  
Gregory Sheehan,  
*Division Director &*  
*Executive Secretary*

John Bair  
Calvin Crandall  
Steve Dalton  
Michael King  
Kirk Woodward

## Utah State Parks Annual Pass

Consider purchasing a Utah State Parks Annual Pass to access some of Utah's best fisheries. Annual passes are available for \$75. Utah seniors who are 62 and over can purchase discounted passes for \$35. Passes allow the permit holder, and up to seven guests traveling in the same vehicle, day-use entrance to most Utah state parks.

Passes are available at all Utah state parks, the Utah State Parks administrative office in Salt Lake City and online at [stateparks.utah.gov](http://stateparks.utah.gov).

You can see a list of all the Utah state parks that offer fishing at [stateparks.utah.gov/activities/fishing](http://stateparks.utah.gov/activities/fishing).

Camping reservations are accepted by telephone or online:

Salt Lake area: 801-322-3770

Outside Salt Lake: 800-322-3770

Online: [stateparks.utah.gov](http://stateparks.utah.gov)

**Use a crossbow to take carp:** You may now use a crossbow—along with more traditional methods—to fish for carp statewide. For details, see page 13.

## And remember

**Buy your license over the phone:** You can easily purchase a Utah fishing license over the telephone. Just call 1-800-221-0659. The line is staffed 24 hours a day, seven days a week. In addition to the fee for the license, you'll also be charged a \$2 transaction fee for each item you buy.

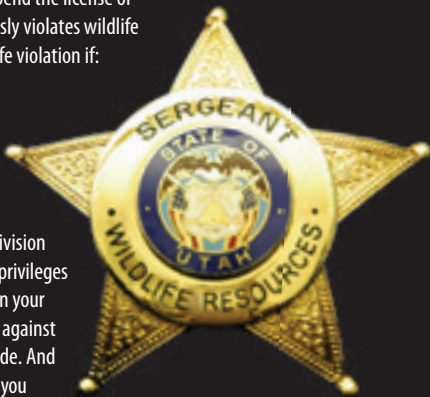
**Fish throughout the year:** Utah has a year-round fishing season for most waterbodies. It runs from Jan. 1–Dec. 31, 2015.

## Don't lose your hunting and fishing privileges

If you commit a wildlife violation, you could lose the privilege of hunting and fishing in Utah. The Utah Division of Wildlife Resources can suspend the license of anyone who knowingly, intentionally or recklessly violates wildlife laws. Your license can be suspended for a wildlife violation if:

- You are convicted.
- You plead guilty or no contest.
- You enter a plea in abeyance or diversion agreement.

Suspension proceedings are separate and independent from criminal prosecution. The Utah Division of Wildlife Resources may suspend your license privileges whether or not the court considers suspension in your criminal case. You will be notified of any action against your privilege after criminal proceedings conclude. And remember, if your license is suspended in Utah, you may not be permitted to hunt or fish in most other states. (Visit [ianrc.org](http://ianrc.org) to see a map of participating states.)



**Community fisheries:** You can learn more about Utah's 53 community fisheries by picking up a copy of the Division's Utah Community Fishing brochure or visiting [wildlife.utah.gov/cf](http://wildlife.utah.gov/cf).

**Share your feedback:** In 2014, the Division obtained substantial feedback on proposed fishing changes via open houses and an online questionnaire. Because these tools were so effective, Division biologists plan to use a similar format to obtain feedback in 2015. To review all of your feedback options, please see page 44.

**Corrections:** If errors are found in the printed guidebook, the Division will correct them in the online version. Visit [wildlife.utah.gov/guidebooks](http://wildlife.utah.gov/guidebooks) to view all of the Division's guidebooks and proclamations.

**Protection from discrimination:** The Division receives federal financial assistance from the U.S. Fish and Wildlife Service. Under Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act of 1990,

the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972, the U.S. Department of the Interior and its bureaus prohibit discrimination on the basis of race, color, national origin, age, disability or sex. If you believe that you have been discriminated against in any program, activity or facility, or if you desire further information, please write to:

Director, Office of Civil Rights  
Department of the Interior  
1849 C Street  
NW Washington, DC, 20240

**Private lands:** The Division cannot guarantee access to any private land. You may only access cultivated or properly posted private land if you obtain WRITTEN permission from the landowner or the landowner's authorized representative. For more information, see *Trespassing* on page 14.

**Division funding:** The Division is mostly funded by the sale of fishing and hunting licenses and through federal aid made possible by an excise tax on the sale of fishing rods and other fishing-related equipment.

## LICENSE AND PERMIT FEES

### Resident licenses

365-day fishing license (ages 12–13)	\$5
365-day fishing license (ages 14–17)	\$16
365-day fishing license (ages 18–64)	\$34
365-day fishing license (age 65 and older)	\$25
365-day disabled veteran (see the box on page 7 for details)	\$12
Multi-year fishing license (age 18 and older)	\$33 per year, up to five years
365-day combination license (ages 14–17)	\$20
365-day combination license (ages 18–64)	\$38
365-day combination license (age 65 and older)	\$29
Multi-year combination license (age 18 and older)	\$37 per year, up to five years
3-day fishing license (all ages)	\$16
7-day fishing license (all ages)	\$20

### Nonresident licenses

365-day fishing license (ages 12–13)	\$5
365-day fishing license (ages 14–17)	\$25
365-day fishing license (age 18 and older)	\$75
Multi-year fishing license (age 18 and older)	\$74 per year, up to five years
365-day combination license (age 17 and younger)	\$29
365-day combination license (age 18 and older)	\$85
Multi-year combination license (age 18 and older)	\$84 per year, up to five years
3-day fishing license (all ages)	\$24
7-day fishing license (all ages)	\$40

### Reciprocal fishing permits

Wyoming residents: Flaming Gorge, Utah reciprocal permit*	\$10
Arizona residents: Lake Powell, Utah reciprocal permit*	\$8

\* See page 8 for details.

### Other fishing permits

Setline permit** (residents and nonresidents)	\$20
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\*\* To learn more about setline permits, please see page 12 of this guide.

# GENERAL RULES: LICENSES AND PERMITS

*Utah Code §§ 23-19 and 23-20-3*

Obtaining a fishing license is the first step to fishing in Utah. The type of license you should purchase depends on many variables: how old you are, how often you want to fish, where you want to fish and whether you're a Utah resident. (To determine if you are a resident, see the definition on page 67.) This section provides information about the different licenses and permits that are available.

## Free Fishing Day

*Utah Code § 23-19-1 and Utah Admin. Rule R657-13-3*

The one day you don't need a license to fish in Utah is Saturday, June 6, 2015, which is Free Fishing Day. Everyone in Utah can fish for free that day, but please remember that all of the state's other fishing laws and rules still apply.

## Under 12 years of age

*Utah Code § 23-19-21 and Utah Admin. Rule R657-13-3*

If you're under 12 years of age, you do not need a fishing license to fish in Utah. You can fish without a license, use two poles and take a full daily limit.

The only exception is if you'd like to fish with a setline. If you're under the age of 12 and would like to fish with a setline, you must purchase a Utah fishing or combination license and a setline permit. Please see page 12 for more information.

## 12 years of age and older

*Utah Code § 23-19-21 and Utah Admin. Rule R657-13-3*

If you're 12 years of age or older, you must purchase a fishing license or a combination license to fish in Utah. You can choose from a variety of licenses:

- Three-day fishing licenses allow you to fish for three consecutive days.
- Seven-day fishing licenses allow you to fish for seven consecutive days.
- 365-day fishing licenses allow you to fish for 365 consecutive days, including the day you buy the license.
- Multi-year fishing licenses allow you to fish for up to five years.

- 365-day combination licenses allow you to fish, hunt small game and apply for hunting permits.

- Multi-year combination licenses allow you to fish, hunt small game and apply for hunting permits for up to five years.

When you buy a combination license or a multi-year license, you also get a price break compared to buying your hunting and fishing licenses separately.

## Discounted licenses for disabled veterans

To thank our servicemen and service-women, the Division offers discounted fishing licenses to Utah veterans who were disabled in the line of duty.

The discounted license is \$12—instead of the \$34 full price—and the license is good for 365 days from the day you buy it. Discounted licenses are available from all Division offices listed on page 2.

To purchase a discounted license, you must have a qualifying service-connected disability of at least 20 percent. When you visit a Division office to purchase your license, simply bring the verification of service-connected disability documentation that the Department of Veterans Affairs issued to you.

For more information, please visit [wildlife.utah.gov/disabled](http://wildlife.utah.gov/disabled) or call the nearest Division office.

# Helping wildlife makes you look good.

(Now your car wants a turn.)



[wildlife.utah.gov](http://wildlife.utah.gov)

Fishing and combination licenses are available at [wildlife.utah.gov](http://wildlife.utah.gov) and from license agents and Division offices. You can also call 1-800-221-0659 to purchase your license by phone.

You must have your license with you while you're fishing, and you cannot alter your license or transfer it to another person.

## Fishing across state lines and reciprocal fishing permits

*Utah Admin. Rule R657-13-5*

Utah shares three waters—Bear Lake, Flaming Gorge and Lake Powell—with other states. Utah, Idaho, Wyoming and Arizona have entered into the following agreements to allow anglers to fish across state lines:

### Bear Lake

If you have a valid Utah fishing or combination license, or a valid Idaho fishing or combination license, you can:

- Use one fishing pole to fish anywhere on Bear Lake that's open to fishing

- Use two fishing poles to fish anywhere on the Utah side of the lake that's open to fishing

If you want to fish with two fishing poles on the Idaho side of the lake, you must have either a valid Utah fishing or combination license, or a valid Idaho fishing or combination license, as well as an Idaho two-pole permit. An Idaho two-pole permit must be purchased from the state of Idaho.

If you plan to launch or fish on the Idaho side of the lake, you must also have a current Idaho Invasive Species Fund sticker on your watercraft. You can purchase the sticker online, by mail, at any Idaho State Park and through some retail vendors.

### Flaming Gorge Reservoir

To fish across state lines at Flaming Gorge, you must have a valid fishing license from one state and a reciprocal fishing permit from the other state. For example, if you buy a Utah resident or nonresident fishing license, you can fish the Utah portion of Flaming Gorge. After buying your Utah license, if you decide you



also want to fish the Wyoming portion of the reservoir, you must buy a Wyoming reciprocal fishing permit. You can also choose to purchase a Wyoming fishing license.

If you're fishing the Utah portion of Flaming Gorge, you may use two fishing poles throughout the year and up to six lines through the ice.

For more information on obtaining a Wyoming reciprocal fishing permit or a Wyoming fishing license, call the Wyoming Game and Fish Department at 307-777-4600.

Utah reciprocal fishing permits are available at [wildlife.utah.gov](http://wildlife.utah.gov) and from Utah Division of Wildlife Resources offices and license agents that sell Utah fishing licenses.

If you plan to launch or fish on the Wyoming side of Flaming Gorge, you must have a Wyoming Aquatic Invasive Species decal on your watercraft. You can purchase the decal online or from a Wyoming license agent.

## Lake Powell

To fish across the state line at Lake Powell, any person with a valid Utah fishing license — either resident or nonresident — may fish any portion of Lake Powell, including the Arizona portion, without any additional permits or licenses.

A person with an Arizona license will still need to purchase and possess a valid Utah reciprocal permit to fish in the Utah waters of Lake Powell. Arizona residents may obtain a Utah reciprocal fishing permit at [wildlife.utah.gov](http://wildlife.utah.gov) and from Division offices and license agents that sell Utah fishing licenses. As long as you are legally fishing the Utah portion of Lake Powell, you may use two fishing poles without any additional permits.

## More information about reciprocal permits

- Utah reciprocal fishing permits are valid for 365 days from the day you buy them.

- You must sign your name on your reciprocal permit the same way you signed your name on your fishing license.
- You are subject to the laws and rules of the state in which you're fishing.

## Fishing contests

*Utah Admin. Rule R657-58*

You can hold a fishing contest in Utah, but you must follow the rules, some of which have changed in recent years. For the current fishing contest rules, please see Utah Admin. Rule R657-58 at [wildlife.utah.gov/rules](http://wildlife.utah.gov/rules), visit [wildlife.utah.gov/fishingcontests](http://wildlife.utah.gov/fishingcontests) or contact the nearest Division office.

If you plan to hold a fishing contest at a Utah State Park, you should also check with the park to see if there are any additional rules that apply to the area.

## Licenses for residents with special needs

*Utah Code § 23-19-36*

If you're a Utah resident and have certain physical or mental disabilities—or a terminal illness—you may qualify for a free fishing license. A child who has been placed in the custody of the state by a court order may also qualify. To learn if you qualify, please see Utah Code § 23-19-36 at [wildlife.utah.gov/rules](http://wildlife.utah.gov/rules) or contact your nearest Division office.

## License exemptions for youth organizations

Are you a scout leader or a mentor for a youth organization? Many youth groups can hold fishing events that don't require a fishing license for participants under the age of 14. To determine if you are eligible and to complete the license-exemption form, visit [wildlife.utah.gov/youth-org](http://wildlife.utah.gov/youth-org).

# GENERAL RULES: FISHING METHODS

*Utah Code § 23-20-3*

There are laws and rules that govern fishing in Utah. By obeying these regulations and being an ethical angler, you will help keep fishing great for everyone. Please be familiar with the following general rules for taking fish and crayfish. You'll find some exceptions to these rules in the *Rules for specific waters* on page 23.

## Taking game fish

You may take game fish using only the following methods:

### Angling

*Utah Admin. Rule R657-13-6 and R657-13-11*

Angling is permitted from boats and float tubes—and other motorized and nonmotorized aquatic vehicles—on any water where such vehicle use is authorized. There are some waters, however, where you cannot fish from a float tube or a boat (see page 14 for more information). Please keep in mind that other agencies may have placed additional restrictions on the use of float tubes and boats at certain Utah waters.

You may fish with up to two fishing lines or poles as long as you have a valid Utah fishing or combination license. You may use additional lines or hooks when you are:

- Fishing for crayfish. Please see page 15 of this guide for more information about fishing for crayfish.
- Using a setline. See page 12 to learn more about fishing with a setline.
- Ice fishing at Flaming Gorge. Please see page 28 for the rules specific to Flaming Gorge.

While fishing, you must be within sight of the equipment you're fishing with (this distance cannot exceed 100 feet). The only exception to this rule is if you have a setline permit. Please see page 12 for more information about fishing with a setline.

There are a few additional angling rules to keep in mind:

- No artificial lure may have more than three hooks.

- No line may have attached to it more than three baited hooks, three artificial flies or three artificial lures. Please see page 12 of this guide for more information about fishing with a setline.
- When you're fishing through the ice, you may not fish through a hole that's more than 12 inches wide. The only exceptions are at Bear Lake, Flaming Gorge Reservoir and Fish Lake. For more information about ice fishing at these waters, please see page 23.

### Bait

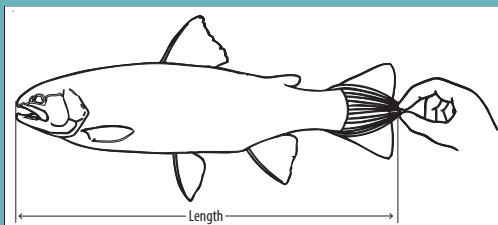
*Utah Admin. Rule R657-13-12*

While you are fishing, it is unlawful to:

- Use or possess corn, hominy or live baitfish
- Use or possess tiger salamanders (live or dead)
- Use or possess any bait if you are on waters designated artificial fly and lure only
- Use or possess artificial baits that are commercially imbedded or covered with fish or fish parts
- Use or possess bait in the form of fresh or frozen fish or fish parts, except as provided below:
  - Dead Bonneville cisco may be used as bait only in Bear Lake.
  - Dead yellow perch may be used as bait only in Deer Creek, Echo, Fish Lake, Gunnison, Hyrum, Johnson, Jordanelle, Mantua, Mill Meadow, Newton, Pineview, Rockport, Starvation, Utah Lake, Willard Bay and Yuba reservoirs.

## How to measure a fish

1. Place the fish on its side with the jaw closed.
2. Squeeze the tail fin together or turn it so you obtain the maximum overall length.
3. Measure a straight line from the tip of the snout to the extreme tip of the tail fin.



- Dead white bass may be used as bait only in Utah Lake and the Jordan River.
- Dead shad from Lake Powell may be used as bait only in Lake Powell. It is illegal to remove dead shad from the Glen Canyon National Recreation Area.
- Dead striped bass from Lake Powell may be used as bait or chum only in Lake Powell.
- Dead, fresh or frozen saltwater species, including sardines and anchovies, may be used as bait in any water where bait is permitted.
- Dead mountain sucker, white sucker, Utah sucker, reidside shiner, speckled dace, mottled sculpin, fathead minnow, Utah chub and common carp may be used as bait in any water where bait is permitted.
- The eggs of any species of fish caught in Utah, except prohibited fish, may be used in any water where bait is permitted. You may not, however, take or use eggs from fish that are being released.

You may only use live crayfish for bait if you are on the water where the crayfish were captured. It is unlawful to transport live crayfish away from the water where they were captured.

You may use commercially prepared and chemically treated baitfish or their parts as bait in any water where bait is permitted.

Manufactured, human-made items that may not be digestible—including items that have been chemically treated with food stuffs, chemical fish attractants or feeding stimulants—may not be used on waters where bait is prohibited.

If the Utah Wildlife Board has declared that a water is infested with an aquatic invasive species—or the water is subject to a closure order or control plan—you may not transport any species of baitfish (live or dead) from that water to use in any other water. To determine whether a water is infested, visit [wildlife.utah.gov/affected-waters.html](http://wildlife.utah.gov/affected-waters.html).

## Restrictions on taking fish and crayfish

*Utah Admin. Rule R657-13-11*

You can use artificial light while fishing, but not when you are underwater spearfishing. There are two exceptions:

- If you're underwater spearfishing for burbot at Flaming Gorge.
- If you're underwater spearfishing for carp anywhere in the state.

You may not obstruct a waterway or use any chemical, explosive, electricity, poison, firearm, pellet gun or archery equipment to take fish or crayfish. The only exceptions are found in *Taking Nongame Fish* (page 16), *Fishing with archery tackle and crossbows* (page

13) and *Rules for specific waters, Lake Powell* on page 31.

You may not take or land a fish by snagging or gaffing, and you may not have a gaff in your possession while fishing. A fish hooked anywhere other than the mouth must be released immediately. The only exceptions are at Lake Powell (where you may use a gaff to land striped bass), Bear Lake (where you may snag Bonneville cisco) and any waterbody where there is a catch-and-kill regulation for the fish you snag.

Chumming is prohibited on all waters except Lake Powell. Please see the *Rules for specific waters, Lake Powell* on page 31 for more information about chumming at Lake Powell.

## Fishing with more than one pole

*Utah Admin. Rule R657-13-7*

If you are under age 12 or have a valid Utah fishing or combination license, you can fish with two poles at any water in the state during its open fishing season. You may keep only one daily limit of fish. Using a second pole does NOT allow you to keep two daily limits of fish.

While fishing, you must be within sight of the equipment you're using (this distance cannot exceed 100 feet). See also *Fishing across state lines and reciprocal fishing permits* on page 8.

A person may use up to six lines, poles or tip-ups when fishing at Flaming Gorge Reservoir through the ice. Please see page 28 for more information.

You may also use additional lines when fishing for crayfish. See page 15 for more information.

## Setline fishing

*Utah Admin. Rule R657-13-8*

Setlines are lines that are anchored to a non-moving object and that are not attached to a fishing pole.

Setline permits are available for \$20 at [wildlife.utah.gov](http://wildlife.utah.gov) and from license agents and Division offices.

A setline permit is a 365-day permit, but you must also have an unexpired three-day, seven-day, 365-day or multi-year Utah fishing or combination license in order to use it (a setline permit is not valid unless it's accompanied by a valid fishing or combination license).

If you're under 12 years of age and would like to use a setline, you must have a valid three-day, seven-day, 365-day or multi-year Utah fishing or combination license, and a setline permit.

If you obtain a setline permit, and a Utah fishing or combination license, you can use a setline to take fish from the following waters: Bear River proper (downstream from the Idaho state line, including Cutler Reservoir and outlet canals); Little Bear River below Valley View Highway (SR-30); Malad River; and Utah Lake.

The following rules apply to setline fishing:

- You may not fish with more than one setline.
- A setline may not contain more than 15 hooks.
- When fishing with a setline, you must be within 100 yards of the surface or the bank of water you're fishing from.
- One end of your setline must be attached to a non-moving object that is not attached to a fishing pole. Your setline must also have a legible tag attached to it that includes your name, address and setline permit number.
- While fishing with a setline, you can also fish with up to two fishing poles.

## Dipnetting

*Utah Admin. Rule R657-13-10*

You can use a handheld dipnet to land game fish that you've legally taken by angling. However, you may not use a handheld dipnet as a primary method of taking game fish un-

less you are at Bear Lake, where you may use a dipnet to take Bonneville cisco.

When fishing for Bonneville cisco at Bear Lake, the opening of your dipnet may not exceed 18 inches. If you're dipnetting through the ice at Bear Lake, there is no restriction on the size of the hole you can drill in the ice.

Please see *Rules for specific waters, Bear Lake* on page 23 for more information.

You may also use a handheld dipnet to take crayfish and nongame fish, except prohibited fish. For a list of fish you are prohibited to possess, please see page 16 of this guide.

## Fishing with archery tackle and crossbows

*Utah Admin. Rule R657-13-14 and R657-12-8*

Fishing with archery tackle—also called bowfishing—is allowed in most Utah waterbodies but only for nonprotected, nongame fish such as carp. And within that limitation, there are waters where you may bowfish for carp only (see page 16 for details).

In most areas, bowfishing is allowed at night with the use of spotlights. There are a few notable exceptions: The tributaries of Utah Lake are closed at night (sunset to sunrise) from May 2 to July 11. A few other lakes, including Lake Powell, have closed areas. If you're wondering about a specific waterbody, see the section that begins on page 23 or call the Division office that manages that particular fishery.

### Using a crossbow

You may use a crossbow to take carp at any open water statewide. You may not use a crossbow to take any other species of fish.

### Follow local ordinances

Please remember that archery tackle and crossbows are considered weapons and cannot be discharged within 600 feet of a structure. Also, local communities may have ordinances against the discharge of weapons within city limits. If possible, please check with your local

city office to make sure you are following all the rules.

If you have additional questions about bowfishing or the places you can bowfish, please contact your local Division office.

## Underwater spearfishing

*Utah Admin. Rule R657-13-9*

The waters listed below are open to underwater spearfishing for game fish from Jan. 1 through Dec. 31. Unless otherwise noted, you may use spearfishing to take any legal species within the limits that apply to each waterbody:

- Big Sandwash Reservoir (Duchesne County)
- Blue Lake, for pacu and tilapia only (Tooele County)
- Brown's Draw Reservoir (Duchesne County)
- Causey Reservoir (Weber County)
- Electric Lake (Emery County)
- Grantsville Reservoir (Tooele County)
- Kens Lake (San Juan County)
- Newcastle Reservoir, for wipers and rainbow trout only (Iron County)
- Porcupine Reservoir (Cache County)
- Recapture Reservoir (San Juan County)
- Red Fleet Reservoir (Uintah County)
- Sand Lake (Summit County)
- Smith and Morehouse Reservoir (Summit County)
- Willard Bay Reservoir (Box Elder County)
- Yuba Reservoir (Juab and Sanpete counties)

### Restrictions on spearfishing for bass

The waters listed below are open to underwater spearfishing for game fish from Jan. 1 through Dec. 31, but you may not use spearfishing to take largemouth and smallmouth bass from April 1 through June 27:

- Deer Creek Reservoir (Wasatch County)
- East Canyon Reservoir (Morgan County)
- Echo Reservoir (Summit County)

## Watercraft restrictions

Before you launch a boat at any waterbody, be sure to check with local, state or federal agencies about any watercraft restrictions that may exist.

In southern Utah, there are a handful of Division-managed waters with restrictions in place to protect the fisheries. Fishing from boats and float tubes is prohibited at the following waterbodies:

- Aspen-Mirror Lake (Kane County)
- Duck Creek Springs Lake (Kane County)
- Pine Valley Reservoir (Washington County)

Fishing from a boat with a motor of any kind is prohibited at the waterbodies listed below:

- Flaming Gorge Reservoir (Daggett County)
- Lake Powell (Garfield, Kane and San Juan counties)
- Pineview Reservoir, except closed year round to the take of tiger muskie (Weber County)
- Rockport Reservoir (Summit County)
- Starvation Reservoir (Duchesne County)
- Steinaker Reservoir (Uintah County)

## Additional spearfishing rules

Underwater spearfishing hours are from official sunrise to official sunset. It is illegal to use artificial light while underwater spearfishing, and free shafting is prohibited.

There are a few exceptions to these regulations:

- At Fish Lake (Sevier County), you may underwater spearfish for all fish species from 6 a.m. on June 6 until official sunset on Sept. 15.
- At Flaming Gorge, you can underwater spearfish for burbot from Jan. 1 to Dec. 31, 24 hours per day. You can also use ar-

- Anderson Meadow Reservoir (Beaver County)
- Barney Lake (Piute County)
- Boulder Mountain Lakes (Garfield and Wayne counties, except for Wide Hollow Reservoir, Pine Lake and Lower Bowns Reservoir)
- Little Reservoir (Beaver County)

Regulations differ from one water to another, depending on which municipality or agency is in charge. It's your responsibility to learn and follow the rules for a particular water.

You can view a partial list of additional watercraft restrictions at [wildlife.utah.gov/watercraft](http://wildlife.utah.gov/watercraft) (click the *Watercraft Restrictions* tab).

tificial light while spearfishing for burbot at this reservoir. Please see page 28 for rules specific to Flaming Gorge.

All possession limits apply, regardless of the angling technique you use.

At all waters open to angling—during their open seasons—you can underwater spearfish for carp.

## Closed areas

*Utah Admin. Rule R657-13-19*

All of the state's fish hatcheries are closed to fishing, including the warmwater fish hatchery at the Lee Kay Public Shooting Center. All of the state's waterfowl management areas are also closed to fishing unless they're posted open to fishing or they're listed as open to fishing in *Rules for specific waters* on page 23.

## Trespassing

*Utah Code §§ 23-20-14 and 23-20-3.5*

While fishing or engaging in wildlife-related activities, you may not—without permission—enter or remain on privately owned land that is:

## Stream access in Utah

*Utah Code § 73-3-29*

In 2010, the Utah Legislature passed the Public Waters Access Act. The act changed the recreational easement recognized by the Utah Supreme Court in 2008, which allowed the public to walk on the private bed of a river, stream or lake.

The act does not allow recreational water users (including anglers, kayakers, tubers, hunters and others) to walk on the private bed of a river, stream or lake. This

means that if you are fishing or recreating in public water that flows over private property closed to trespass, you may not walk on the land beneath the water without obtaining landowner permission.

The act does allow you to float on the surface of the water, even if you're floating over private property that is closed to trespass. It also allows you to fish while floating.

For more information, please visit [wildlife.utah.gov/streamaccess](http://wildlife.utah.gov/streamaccess).

- Cultivated
- Properly posted
- Fenced or enclosed in a manner designed to exclude intruders

In addition, you may not:

- Enter or remain on private land when directed not to do so by the owner or a person acting for the owner.
- Obstruct any entrance or exit to private property.

"Cultivated land" is land that is readily identifiable as land whose soil is loosened or broken up for the raising of crops, land used for the raising of crops, or a pasture that is artificially irrigated.

"Permission" means written authorization from the owner or person in charge to enter upon private land that is cultivated or properly posted. Permission must include all of the following details:

- The signature of the owner or person in charge
- The name of the person being given permission
- The appropriate dates
- A general description of the land

"Properly posted" means that signs prohibiting trespass—or bright yellow, bright orange or fluorescent paint—are clearly displayed at all corners, on fishing streams crossing property lines, and on roads, gates

and rights-of-way entering the land. Or, they are displayed in a manner that is visible to a person in the area.

You may not post private property you do not own or legally control or land that is open to the public as provided by Utah Code § 23-21-4. In addition, it is unlawful to take protected wildlife or its parts while trespassing in violation of Utah Code § 23-20-14.

You are guilty of a class B misdemeanor if you violate any provision described in this section. Your license, tag or permit privileges may also be suspended.

### Native American Trust Lands

If you're fishing on land that belongs to any of the Native American tribes in Utah, you must observe tribal regulations. These regulations are available from the Native American tribe that owns the land.

## Taking crayfish

*Utah Admin. Rule R657-13-15*

Fishing for crayfish (also called crawdads) is a fun activity for the whole family.

If you're under the age of 12, you do not need a license to fish for crayfish. If you're 12 years of age or older, you must have a valid Utah fishing or combination license to fish for crayfish. You may take crayfish for personal, noncommercial purposes at any body of water

where there's an open fishing season. You may not take crayfish if the fishing season at that water is closed.

You may take crayfish by hand or with a trap, dipnet, liftnet, handline, pole or seine.

You must also obey all of the following rules:

- You may not use game fish or their parts for bait, or use any substance that is illegal for fishing.
- Seines (nets) may not exceed 10 feet in length or width.
- You may not use more than five lines, and only two of those lines can have hooks attached. (On the lines without hooks, simply tie your bait to the line so the crayfish can grasp the bait with its claw.)
- You may not transport live crayfish away from the body of water where you captured them.

## Prohibited fish

*Utah Admin. Rule R657-13-13*

Possession of the following nongame fish is prohibited. If you catch any of these fish, you must release them immediately:

- Bonytail
- Bluehead sucker
- Colorado pikeminnow (formerly, Colorado squawfish)
- Flannelmouth sucker
- Gizzard shad (except at Lake Powell, where you may possess dead shad and use them as bait)
- Grass carp
- Humpback chub
- June sucker
- Least chub
- Northern leatherside chub
- Razorback sucker
- Roundtail chub
- Southern leatherside chub

- Virgin chub
- Virgin spinedace
- Woundfin

## Taking nongame fish

*Utah Admin. Rule R657-13-14 and R657-12-8*

If you have a valid Utah fishing or combination license, you may take nongame fish—except those listed in the *Prohibited Fish* section above—for personal, noncommercial purposes, as long as you're fishing at a body of water during its open fishing season.

There are, however, more than a dozen waters where carp are the only nongame fish you may take. Those waters are listed in the *Taking carp* section.

To take nonprohibited nongame fish, you may use angling, traps, archery, dipnets, cast nets, liftnets, seines or a handheld spear from above the surface of the water. You may use a crossbow only if you're taking carp. When using these methods, please remember the following rules:

- Seines (nets) may not exceed 10 feet in length or width.
- Cast nets may not exceed 10 feet in diameter (a five-foot radius).
- Nongame fish that are legal to take must either be released or killed immediately after you remove them from the water. You may not leave them on the shoreline.

Underwater spearfishing for nongame fish (other than carp) is only allowed at the waters listed on page 13.

## Taking carp

You may use a variety of techniques—including angling, archery, crossbow, a spear from above the surface of the water, or underwater spearfishing—to take carp in any water during its open fishing season.

For more information on bowfishing rules, see page 13.



You may also use artificial lights while bowfishing for carp.

Carp are the *only* nongame fish you may take in the following waters:

- Ash Creek
- Beaver Dam Wash
- Colorado River
- Diamond Fork
- Duchesne River (from the Myton SR-40 bridge to the confluence with the Green River)
- Fort Pierce Wash
- Green River (from the Colorado state line in Browns Park upstream to Flaming Gorge Dam, including Gorge Creek, a tributary that enters the Green River at Little Hole)
- Green River (from the confluence with the Colorado River upstream to the Colorado state line in Dinosaur National Monument)
- Hobbie Creek
- La Verkin Creek
- Main Canyon Creek (tributary to Wallsburg Creek)
- Provo River (below Deer Creek Dam)
- Raft River (from the Idaho state line, including all tributaries)
- San Juan River
- Santa Clara River (from Pine Valley Reservoir downstream to the confluence with the Virgin River)
- Snake Valley waters (west and north of US-6 and the part of US-6 and US-50 in Millard and Juab counties)
- Spanish Fork River
- Thistle Creek
- Virgin River (main stem and the north and east forks)

- Weber River
- White River (Uintah County)
- Yellow Creek

## Taking brine shrimp

*Utah Admin. Rule R657-52*

Many people who visit the Great Salt Lake want to take some of the lake's brine shrimp home with them. You may take brine shrimp from the lake without a fishing license, but you may not take more than one gallon in a seven-day period.

## Checkpoints and officer contacts

*Utah Code §§ 23-20-25 and 77-23-104*

The Division is the trustee and guardian of Utah's fish and wildlife. Division conservation officers monitor the taking and possession of fish, and the required licenses and equipment used for fishing. You should expect to encounter conservation officers and biologists checking anglers at waters and at checkpoints across Utah.

If you meet a conservation officer, you must provide the items he or she asks for, including any licenses required for fishing, any devices used to participate in fishing and any fish that you've taken. These contacts allow the Division to collect valuable information about fish populations in Utah.

# GENERAL RULES: POSSESSION AND TRANSPORTATION

*Utah Code § 23-20-3*

Once you've taken a fish or crayfish, several rules apply to how you can use it. Please be familiar with the following general rules for possessing and transporting fish and crayfish.

## Season dates

*Utah Admin. Rule R657-13-19*

Utah's general fish and crayfish season is Jan. 1 through Dec. 31. Fish may be caught by angling or setline 24 hours a day. Underwater spearfishing is allowed from official sunrise to official sunset. See page 13 for details.

## Daily limits and possession

*Utah Admin. Rule R657-13-19*

This section provides general rules for fishing in Utah. Many waters have localized and specific rules, which are listed in *Rules for specific waters* on page 23.

On waters that have a specific rule, that rule takes precedence over the general rules.

For more information about limits and possession, see the article on page 42.

## Daily limit

You may possess a legal daily limit of dead game fish or crayfish as you travel within Utah—or if you leave the state—as long as you have a valid fishing or combination license. Those who are under 12 years of age may fish without a license and take a full daily limit.

You may possess only one legal daily limit of fish in number, species and size, from a particular waterbody.

If you fish multiple waters in one day, you cannot have any fish in your possession that violate the rules of the waterbody where you're fishing.

When calculating your daily limit, please remember the following rules:

- Any trout, salmon or grayling not immediately released is part of your daily limit.

- A trout, salmon or grayling may not be released if it's been held in or on a stringer, fish basket, livewell or by any other device.

- Any fish that doesn't meet the size or species rules for the water you're fishing must be returned to the water immediately.

See page 22 for a list of daily limits that apply statewide, except as provided in *Rules for specific waters* on page 23.

## Additional limit in the field

You may possess up to two daily limits of fish as you travel within Utah—or if you leave the state—as long as you meet the following conditions:

- You are on an overnight or multi-day fishing trip at any Utah waterbody, excluding Strawberry Reservoir or Flaming Gorge Reservoir. (At those two reservoirs, you may have only one daily limit in your possession.)
- At least one of the limits in your possession was caught at a Utah water on a previous day, and the fish were a legal species and limit for the waterbody where you caught them.
- The fish from the previous day have been cleaned and gutted (entrails removed).

If you fish at a different waterbody on the second day of your trip, you may not have any fish in your possession—from either day—that violate the rules of the waterbody where you're currently fishing. This means you must always comply with the size and species regulations for the waterbody where you're

fishing and not have more than two daily limits in your possession. For examples of this regulation, see the article on page 42.

You may continue to fish while in possession of a full daily limit, but you must immediately release any additional fish you catch.

## Keeping fish at home

Starting January 1, 2015, any fish species at your permanent residence will not count as part of your possession limit. Please keep in mind that this does NOT allow you to take home multiple daily limits of fish in one day. You may take home only one daily limit per day.

## Dead fish and crayfish

*Utah Code § 4-37-305 and Utah Admin. Rule R657-13-16*

The following sections provide important information about when you can possess filleted fish and fish donated by other anglers.

### Possession of filleted fish

While you are in the act of fishing, it is unlawful to possess filleted fish from the current day's catch or fish that have had their heads or tails removed. This does not apply to fish processed for immediate consumption or from a previous day's catch.

At most waters, you may fillet harvested game fish, or remove their heads or tails, after you have:

- Completed the act of fishing
- Arrived at camp
- Reached a fish-cleaning station
- Arrived at a principle means of land transportation

At Strawberry Reservoir, Scofield Reservoir, Lost Creek Reservoir and Panguitch Lake, you may not fillet trout and salmon, and you may not remove their heads or tails while in the field or in transit.

Likewise, at Jordanelle, you may not fillet smallmouth bass, and you may not remove

their heads or tails while in the field or in transit.

**Note:** Do not dispose of entrails and carcasses on the bank. Leave them in the water where you caught the fish.

### Possession of fish obtained from other sources

You may possess or transport a legal limit of game fish or crayfish caught by another person if you have a donation letter from that person. Please see *Donating* on page 20 for more information.

If you have purchased or obtained fish from a registered commercial fishing installation, a private pond owner or a short-term fishing event, you may only possess or transport dead fish if you have a receipt. The receipt must include all of the following information:

- The species and number of fish
- The date the fish were caught
- The certificate of registration number of the installation, pond or short-term fishing event
- The name, address and telephone number of the seller

To help prevent the spread of disease, dead fish and crayfish may not be moved between waters.

### Live fish and crayfish

*Utah Code § 23-13-14 and Utah Admin. Rule R657-13-17*

You may not release fish or crayfish into the wild except as provided in the Wildlife Code, rule, proclamation or order of the Wildlife Board. For example, you can release fish caught at Scofield Reservoir back into Scofield, but you cannot take live fish from Scofield and place those fish in another water. Any person who moves live fish from one body of water to another is guilty of a class A misdemeanor and may be fined up to \$2,500.

You may use live fish stringers, livewells or holding cages to store fish or crayfish while fishing on the water where you caught them.

A trout, salmon or grayling may not be released if it's been held on a stringer or in a fish basket, livewell or any other type of device.

You may not transport live fish or crayfish away from the water where they were caught.

## Release of tagged or marked fish

*Utah Admin. Rule R657-13-18*

You may not, without prior authorization from the Division, perform any of the following activities:

- Tag, mark or fin-clip fish for the purpose of offering a prize or reward as part of a contest
- Introduce a tagged, marked or fin-clipped fish into any water in the state
- Tag, mark or fin-clip a fish and return it to the water

## Disposal of aquatic wildlife

### Donating

*Utah Code § 23-20-9*

The following are the only places where you may donate or give protected aquatic wildlife or its parts to another person:

- The permanent residence of the donor
- The permanent residence of the recipient
- A meat locker
- A storage plant
- A meat-processing facility

You may not donate fish in the field.

A written statement of donation must be kept with the protected aquatic wildlife or parts that includes all of the following information:

- The number and species of protected aquatic wildlife or parts donated
- The date of donation

- The license or permit number of the donor
- The signature of the donor

## Purchasing or selling

*Utah Code § 23-20-3*

You may not purchase or sell protected aquatic wildlife or its parts except as provided in the Wildlife Code, rule, proclamation or order of the Wildlife Board.

## Disposal of fish

*Utah Code § 23-20-8*

In most instances, you may not waste any fish or crayfish or allow them to be wasted or spoiled. Waste means to abandon a fish or crayfish or allow it to spoil or be used in a manner not normally associated with its beneficial use. For example, using the meat of game fish as fertilizer or for trapping bait is not considered a beneficial use of the meat.

In 2013, the Utah Legislature passed a new law that allows anglers to dispose of carp and a few other species—particularly species under catch-and-kill orders at certain waterbodies—without violating the state's wasting statute. If you visit any of the following waters and catch any of the species listed for those waters, you may dispose of them:

- All waters statewide: common carp
- Blue Lake: pacu and tilapia
- Colorado River: burbot, northern pike, smallmouth bass and walleye
- Colorado River tributaries: burbot, northern pike, smallmouth bass and walleye (see page 25 for a list of applicable tributaries)
- Deer Creek Reservoir: white bass and black bullhead
- Fish Lake: yellow perch
- Flaming Gorge: burbot
- Grantsville Reservoir: smallmouth bass
- Green River: burbot, northern pike, smallmouth bass and walleye
- Green River tributaries: burbot, northern pike, smallmouth bass and walleye

(see page 29 for a list of applicable tributaries)

- Gunlock Reservoir: smallmouth bass
- Lake Powell: striped bass
- Quail Creek Reservoir: smallmouth bass
- Red Fleet Reservoir: walleye
- Sand Hollow Reservoir: smallmouth bass
- San Juan River: burbot, northern pike, smallmouth bass and walleye
- San Juan River tributaries: burbot, northern pike, smallmouth bass and walleye

(see page 36 for a list of applicable tributaries)

- Utah Lake: northern pike

After catching any of the above fish, you may consume them or dispose of them at one of the following locations:

- In the water where the fish was caught
- A fish-cleaning station
- The angler's permanent residence
- Another location where disposal is authorized by law

## FISH CONSUMPTION ADVISORIES

Go online to learn about elevated mercury levels in some of Utah's fish.

Fish are an important part of a healthy diet, and most are safe to eat on a regular basis. You should, however, limit your intake of some fish found in certain Utah waters.

Why? Recent testing identified elevated levels of mercury in some populations of fish. Over time, eating these fish may be unhealthy if consumed in large amounts.

Be sure to visit [fishadvisories.utah.gov](http://fishadvisories.utah.gov) before eating the fish you catch. The Utah Fish Advisories website is updated frequently and has the latest information about mercury levels in Utah's fish and waters.

If you decide to share your fish with family or friends, be sure to communicate any relevant advisories.

### Advisories issued in 2014

In 2014, there were a few new and modified fish-consumption advisories. They were for the following species and waterbodies:

- Smallmouth bass at Flaming Gorge Reservoir
- Tiger muskie at Joes Valley Reservoir
- Smallmouth bass at Upper Enterprise Reservoir

For details on these new advisories—and to see advisories from previous years—visit [fishadvisories.utah.gov](http://fishadvisories.utah.gov).

### Your best resource for information

Three government agencies work together closely to keep the Utah Fish Advisories website current.

First, the Utah Division of Wildlife Resources and the Utah Department of Environmental Quality (DEQ) obtain fish samples from lakes and rivers across the state. Then, the DEQ analyzes the samples and forwards the results to the Utah Department of Health (DOH). After reviewing the data, the DOH decides whether to issue a consumption advisory.

This partnership makes [fishadvisories.utah.gov](http://fishadvisories.utah.gov) your best resource for accurate, up-to-date fish consumption advisories.

### Learn more

To learn more about Utah's ongoing battle with mercury, visit [wildlife.utah.gov/mercurygroup](http://wildlife.utah.gov/mercurygroup). For more information about the health effects of mercury, visit [wildlife.utah.gov/mercury](http://wildlife.utah.gov/mercury).

## DAILY LIMITS

Bluegill and green sunfish (a combined total)*	50
Bonneville cisco	30
Bullhead	24
Burbot (Anglers must not release any burbot they catch. All burbot caught must be immediately killed.)	No limit
Channel catfish*	8
Community fisheries (The limit includes fish of any species, but anglers are encouraged to release all largemouth bass. See the complete list of community waters on page 26.)	2
Crappie*	50
Crayfish	No limit
Largemouth and smallmouth bass (a combined total)*	6
Nongame species (except prohibited fish; see page 16 for a list of prohibited fish)	No limit

Northern pike*	6
Tiger muskellunge*	1 over 40 inches
Sacramento perch	10
Striped bass	No limit
Trout, including salmon, grayling and hybrids (a combined total), except no more than two can be lake trout/mackinaw. Also, you can take extra brook trout at some waters in the state.*	4
Walleye*	10, only 1 over 24 inches
Whitefish*	10
White bass	No limit
Wiper*	6
Yellow perch*	50

\* On some waters, specific bag or size restrictions apply. Please see Rules for specific waters on page 23 for variations.

## Utah's boating laws and rules

Boaters have the responsibility to practice and advocate safe and ethical use of our waterways. If you're planning to take your boat out on Utah waters, you should take the following safety measures:

Wear your life jacket. Utah law requires those under 13 to wear their life jacket when on a boat, and it is recommended everyone wear one.

Let someone know where you are going and what time you expect to return.

Carry the required boating safety equipment. For a detailed list of safety equipment, visit [wildlife.utah.gov/boating](http://wildlife.utah.gov/boating).

Keep your boat 150 feet away from a displayed diver-down flag (illustrated to the right). The flag means that someone is diving in the area.



By completing a Utah Boating Course, you may reduce your boat insurance premiums. For additional boating information, visit [stateparks.utah.gov/boating](http://stateparks.utah.gov/boating).

## RULES FOR SPECIFIC WATERS

*Utah Code § 23-20-3 and Utah Admin. Rule R657-13-20*

The rules below take precedence over the general rules listed earlier in this guidebook. The seasons, limits and other restrictions in this section apply only to the waters listed below. General rules apply to all of the waters **NOT** listed in this section. (See *Daily limits* on page 22 to learn more about catching and harvesting fish at waters that are **NOT** listed in this section.)

### **American Fork Creek**, Utah County

From Utah Lake upstream to I-15.

- CLOSED March 1 through 6 a.m. on the first Saturday of May.

### **Anderson Meadow Reservoir**, Beaver County

- Fishing from a boat with a motor is unlawful.

### **Ashley Creek**, Uintah County

From Steinaker (Thornburg) diversion upstream to the water treatment plant near the mouth of Ashley Gorge.

- Limit 2 trout.
- Artificial flies and lures only.

### **Aspen-Mirror Lake**, Kane County

- Fishing from a boat or float tube is unlawful.

### **Badger Hollow**, Wasatch County See *Strawberry Reservoir tributaries*.

### **Barney Lake**, Piute County

- Limit 2 trout.
- Artificial flies and lures only.
- Fishing from a boat with a motor is unlawful.

### **Bear Lake**, Rich County

See *Fishing across state lines and reciprocal fishing permits* on page 8 for license requirements.

- Limit 2 trout.
- Cutthroat trout or trout with cutthroat markings with all fins intact must be immediately released. Only cutthroat

trout that have had one or more healed fins clipped may be kept.

- Cisco may be taken with a handheld dipnet. Net opening may not exceed 18 inches in any dimension. When dipnetting through the ice, the size of the hole is unrestricted.
- When ice fishing for fish other than cisco, the size of the hole may not exceed 18 inches.
- Any angler who possesses a valid Utah or Idaho fishing or combination license may fish within both the Utah and Idaho boundaries of Bear Lake. An angler may fish with up to two poles on all areas of the Utah portion of Bear Lake that are open to fishing. Anglers must comply with Idaho regulations if they want to use more than one pole when fishing on the Idaho portion of Bear Lake.
- Anglers may keep foul-hooked Bonneville cisco that are taken through normal, legal fishing activities.
- A person may not possess a multipoint hook with a weight permanently or rigidly attached directly to the shank — or a weight suspended below a multipoint hook — unless the hook is on an unweighted dropper line that is at least three inches long.

### **Bear Lake tributaries**, Rich County

(a) Big Spring Creek from Lamborn Diversion (approximately 500 yards below SR-30) downstream to Bear Lake and that area extending from the mouth out into the lake 1,000 feet, or as buoyed.

- CLOSED April 15 through 6 a.m. on the second Saturday of July.
- Catch and release only and artificial flies and lures only (Jan. 1 through April 14 and from 6 a.m. on the second Saturday of July through Dec. 31).

(b) Swan Creek from the headwater spring downstream to Bear Lake and that area extending from the mouth out into the lake 1,000 feet, or as buoyed.

- CLOSED April 15 through 6 a.m. on the second Saturday of July.
- Catch and release only and artificial flies and lures only (Jan. 1 through April 14 and from 6 a.m. on the second Saturday of July through Dec. 31).

**Beaver Creek**, Cache County  
See *Logan River*.

**Beaver Creek**, San Juan County  
Tributary to La Sal Creek.

- CLOSED to the possession of cutthroat trout or trout with cutthroat markings.
- All cutthroat trout must be immediately released.
- Artificial flies and lures only.

**Beaver Dam Reservoir**, Wayne County  
• CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

**Beaver River**, Beaver County  
From Minersville Reservoir upstream to the bridge at Greenville.

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Beer Creek**, Utah County  
From Utah Lake upstream to I-15 (includes Benjamin Slough).

- CLOSED March 1 through 6 a.m. on the first Saturday of May.

**Benches Pond tributaries**, Sanpete County  
• CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Bicknell Bottoms**, Wayne County  
This area is along the Fremont River.

- Open to fishing, except where posted CLOSED.

**Big Spring Creek**, Rich County  
See *Bear Lake tributaries*.

**Blacksmith Fork River**, Cache County  
From the first highway bridge (at the mouth of the canyon) of State Road 101 (Blacksmith Fork Canyon Road) to the headwaters.

- Only one fish may be over 15 inches.
- Bonus limit of 4 brown trout (total limit of no more than 8 trout if at least 4 are brown trout).

**Blue Lake**, Tooele County

- No limit for pacu or tilapia. Anglers must not release any pacu or tilapia they catch. All pacu and tilapia must be immediately killed.
- Underwater spearfishing is allowed for pacu, tilapia and carp only.

**Boulder Mountain lakes and reservoirs**, Garfield and Wayne counties.

- See specific water restrictions for individual waters. Statewide regulations apply to those waters not specifically identified.
- Fishing from a boat with a motor is unlawful, except at Wide Hollow Reservoir, Pine Lake and Lower Bowns Reservoir.

**Broad Hollow**, Wasatch County  
See *Strawberry Reservoir tributaries*.

**Brough Reservoir**, Uintah County

- Limit 1 trout over 22 inches.
- All trout 22 inches or smaller must be immediately released.
- Artificial flies and lures only.



**Brown Duck Basin**, Duchesne County  
 Uinta Mountains—all streams in the Brown Duck Basin and the outlet of Clemments Reservoir downstream to the Lake Fork Creek confluence.

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Bryants Fork**, Wasatch County  
 See *Strawberry Reservoir tributaries*.

**Bulberry Lakes**, Wayne County

- CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

**Calder Reservoir**, Uintah County

- Limit 1 trout over 22 inches.
- All trout 22 inches or smaller must be immediately released.
- Artificial flies and lures only.

**Causey Reservoir**, Weber County

- CLOSED to the possession of kokanee salmon with any red color within the high-water mark of the reservoir from Aug. 15 through 6 a.m. on the last Saturday of September.

**Causey Reservoir tributaries**, Weber County

Right and left forks of the South Fork Ogden River, from Causey Reservoir upstream to the headwaters.

- CLOSED Aug. 15 through 6 a.m. on the last Saturday of September.

**Chicken Creek**, Wasatch County  
 See *Strawberry Reservoir tributaries*.

**Chipman Creek**, Wasatch County  
 See *Strawberry Reservoir tributaries*.

**Clyde Creek**, Wasatch County  
 See *Strawberry Reservoir tributaries*.

**Cold Springs Lakes**, Box Elder County  
 Also called Honeyville Ponds.

- CLOSED Jan. 1 through 6 a.m. on the Saturday before Memorial Day.

**Co-op Creek**, Wasatch County  
 See *Strawberry Reservoir tributaries*.

**Coal Canyon**, Wasatch County  
 See *Strawberry Reservoir tributaries*.

**Colorado River**, Garfield, Grand, San Juan and Wayne counties  
 From the Colorado state line downriver to the Hite bridge on SR-95

- No limit for channel catfish.
- No limit for burbot, northern pike, small-mouth bass or walleye. Anglers may not release any of these fish, which must be immediately killed.
- Species of threatened and endangered fish occur in the Colorado. If you catch one of these fish, you must release it immediately. See page 16 for a list of prohibited fish.

**Colorado River tributaries**, Garfield, Grand and Wayne counties

*Dolores River* (Grand County) from the confluence with the Colorado River upstream to the Colorado state line; *Mill Creek* (Grand County) from the confluence with the Colorado River upstream to headwaters; *Dirty Devil River* (Garfield and Wayne counties) from the SR-95 bridge upstream to the Hanksville Diversion.

- No limit for channel catfish.
- No limit for burbot, northern pike, small-mouth bass or walleye. Anglers may not release any of these fish, which must be immediately killed.

**Cow Hollow**, Wasatch County  
 See *Strawberry Reservoir tributaries*.

## Community fishing waters

The following rules apply to all the fisheries listed below:

- The daily limit is 2 fish.
- Anglers are encouraged to voluntarily release all largemouth bass.
- Waters are open to fishing only when the community parks are open to the public.

**Box Elder County:** Mayors Pond and Pioneer Park Pond

**Cache County:** Skylars Pond (West Willow Pond) and Wellsville Reservoir

**Carbon County:** Carbon County Community Fishery, Gigliotti Pond and Knight-Ideal Community Fishing Pond

**Davis County:** Adams Reservoir, Bountiful Lake, Clinton Pond, Farmington Pond, Jensen Park Pond (Syracuse Pond), Kaysville Ponds, Mabey Pond and Steed Pond

**Emery County:** Green River State Park Golf Course Ponds and Huntington Game Farm Ponds

**Iron County:** Brian Head Pond, Leigh Hill Reservoir, Parowan Pond and Woods Pond

**Juab County:** Burraston Ponds

**Rich County:** Garden City Community Fishery

**Salt Lake County:** Cove Pond, Kidney Pond, Midas Pond, Millrace Park Pond, Riverton Pond, Sandy Urban Fishery, Sunset Pond and Willow Park Pond

**Sevier County:** Monroe Community Fishery and Salina City Pond

**Utah County:** Canyon View Park Pond, Highland Glen Park Pond, Manila Creek Pond, Salem Pond, Spanish Oaks Reservoir, Spring Lake and Vivian Park Pond (Note: Spanish Oaks Reservoir and Manila Creek Pond are closed Dec. 1 through 6 a.m. on the last Saturday of February.)

**Wasatch County:** Wasatch Mountain State Park Pond

**Washington County:** Hurricane Pond (Grandpa's Pond), Razor Ridge Pond, Skyline Drive Pond, Sullivan Virgin River Park Pond and Tawa Ponds (Upper and Lower)

**Weber County:** Fort Buenaventura, Glassmans Pond, Goode Ski Lake (21st Street Pond) and Meadow Creek Pond

Check the Community Fishing booklet or visit [wildlife.utah.gov/cf](http://wildlife.utah.gov/cf) for specific site recreation rules.

### **Currant Creek**, Wasatch County

From the confluence with Water Hollow Creek upstream to the headwaters, including all tributaries to Currant Creek Reservoir, but not the reservoir itself.

- Limit 4 trout.
- Artificial flies and lures only.

### **Deer Creek Reservoir**, Wasatch County

- No limit on white bass or black bullhead catfish. Anglers must not release any white bass or black bullhead catfish they catch. All white bass or black bullhead catfish must be immediately killed.

- Closed to the use of underwater spearfishing to take largemouth and smallmouth bass from April 1 through the fourth Saturday of June.

### **Deer Valley Lakes**, Wasatch County

- Limit 2 trout.

### **Deseret Reservoir**, Tooele County

The reservoir is located at Deseret Chemical Depot, a U.S. Army facility.

- Open to fishing on the first Saturday of May through Oct. 31 during daylight hours. (A gate will be closed and locked from dusk to dawn.)

- Facility CLOSED Nov. 1 through Dec. 31 and Jan. 1 through April 30.
- Fishing at Deseret Reservoir requires an onpost fishing permit. You can obtain one at any of the following locations: the Outdoor Recreation Shop (Building 1011, 435-833-3100) or the TEAD Physical Fitness Center (Building 1002, 435-833-2159).
- Shore fishing only.

**Dougherty Basin Lake**, Garfield County  
Boulder Mountain—the lake and outflow from the dam downstream one-quarter mile.

- CLOSED to the possession of cutthroat trout or trout with cutthroat markings.
- Artificial flies and lures only.
- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Dry Creek**, Utah County  
From Utah Lake upstream to I-15.

- CLOSED March 1 through 6 a.m. on the first Saturday of May.

**Duck Creek Springs Lake**, Kane County  
• Fishing from a boat or a float tube is unlawful.

**Duck Fork Creek and other tributaries to Duck Fork Reservoir**, Sanpete County

- Limit 2 tiger trout.
- CLOSED to the possession of cutthroat trout or trout with cutthroat markings.
- Artificial flies and lures only.
- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Duck Fork Reservoir**, Sanpete County  
• Limit 2 tiger trout.  
• CLOSED to the possession of cutthroat trout or trout with cutthroat markings.  
• Artificial flies and lures only.

**East Canyon Reservoir**, Morgan County  
• Closed to the use of underwater spearfishing to take largemouth and smallmouth bass from April 1 through the fourth Saturday of June.

**East Fork Boulder Creek**, Garfield County  
From the confluence with West Fork Boulder Creek upstream to the headwaters.

- Limit 4 trout.
- Bonus limit of 4 brook trout (total limit of no more than 8 trout if at least 4 are brook trout).

**East Fork Little Bear River and its tributaries**, Cache County

From Porcupine Reservoir upstream to the headwaters.

- CLOSED Aug. 15 through 6 a.m. on the last Saturday of September.

**East Fork Little Bear River**, Cache County  
From Porcupine Dam downstream to the Avon-Paradise road (SR-165), second stream crossing below reservoir.

- Limit 2 trout and salmon (a combined total).
- Artificial flies and lures only.

**East Fork Sevier River**, Garfield and Piute counties

(a) Feeder canal from the diversion near Antimony down the channel to Otter Creek Reservoir:

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

(b) From the BLM boundary (about four miles south of the town of Antimony) upstream to the confluence of Deer Creek:

- Limit 2 trout.
- Artificial flies and lures only.

**East Fork Smiths Fork River**, Summit County

- CLOSED to the possession of kokanee with any red color from Aug. 15 through 6 a.m. on the second Saturday of September.

**Echo Reservoir**, Summit County

- Closed to the use of underwater spearfishing to take largemouth and smallmouth bass from April 1 through the fourth Saturday of June.

**Electric Lake**, Emery County

- CLOSED to the possession of kokanee salmon with any red color from Aug. 15 through 6 a.m. on the last Saturday of September.

**Electric Lake tributaries**, Emery County

From Electric Lake upstream to the headwaters

- CLOSED to the possession of kokanee salmon with any red color from Aug. 15 through 6 a.m. on the last Saturday of September.

**Fish Creek Reservoir**, Wayne County

- CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

**Fish Lake**, Sevier County

- No limit on yellow perch
- Limit 4 trout, only 1 may exceed 24 inches, regardless of species
- Underwater spearfishing is permitted from 6 a.m. on the first Saturday of June through Sept. 15.
- When ice fishing, the size of the hole may not exceed 18 inches.

**Flaming Gorge Reservoir**, Daggett County

See *Fishing across state lines and reciprocal fishing permits* on page 8 for license and permit requirements.

- Limit 4 trout or kokanee salmon (a combined total), excluding lake trout, and no more than 3 may be kokanee salmon.
- Limit 8 lake trout/mackinaw, only 1 may exceed 28 inches.
- All kokanee salmon caught from Sept. 10 through Nov. 30 must be immediately released.
- Linwood Bay, west of a line from the easternmost point of the south shore of Linwood Bay (mouth of canyon) to easternmost point of the north shore of Linwood Bay (Lucerne Point), CLOSED to nighttime angling (sunset to sunrise) from Oct. 15 through 6 a.m. on the second Saturday of December.
- Limit 6 catfish.
- Limit 10 smallmouth and largemouth bass (a combined total).
- An angler may have only one daily limit in possession at any time.
- No limit for burbot. Anglers must not release any burbot they catch. All burbot must be immediately killed.
- When ice fishing, the hole size may not exceed 18 inches.
- A person may use up to six lines when fishing through the ice. If the angler is using more than one line, the angler's name shall be attached to each line, pole or tip-up, and the angler shall check only their lines.
- Open to taking burbot by means of underwater spearfishing from Jan. 1 through Dec. 31, 24 hours each day. Artificial light is permitted while engaged in underwater spearfishing for burbot. Artificial light may not be used to take other fish species with spearfishing techniques. No other species of fish may be taken with underwater spearfishing techniques between official sunset and official sunrise.
- Closed to the use of underwater spearfishing to take largemouth and

## Disposal of certain fish species

Last year, the Utah Legislature has passed a law that allows you to dispose of certain species of fish.

Now you can easily dispose of fish that fall under catch-and-kill regulations — and some additional species — instead of consuming them.

If you decide to dispose of the dead fish, you can put them in the water where you caught them. You can also dispose of them at a fish-cleaning station or your home.

To see if you can dispose of fish at a particular waterbody, see the section that begins on page 23 or call the Division office that manages that particular fishery.

smallmouth bass from April 1 through the fourth Saturday of June.

### Gooseberry Creek, Sanpete County

From the confluence with Upper Fish Creek upstream to Gooseberry Dam.

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

### Gooseberry Reservoir tributaries,

Sanpete County

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

### Granddaddy Lake tributaries, Duchesne County

Located in the Uinta Mountains.

- All tributaries to Granddaddy Lake CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

### Grantsville Reservoir, Tooele County

- No limit for smallmouth bass. Anglers must not release any bass they catch. All bass must be immediately killed.

### Grassy Trail Reservoir, Carbon County

- CLOSED TO FISHING.

### Green River, Carbon, Daggett, Emery, Grand, San Juan, Uintah and Wayne counties

(a) From the Flaming Gorge Dam downriver to the confluence of the Colorado River:

- No limit for channel catfish.
- No limit for burbot, northern pike, smallmouth bass or walleye. Anglers may not release any of these fish, which must be immediately killed.
- Species of threatened and endangered fish occur in the Green River. If you catch one of these fish, you must release it immediately. See page 16 for a list of prohibited fish.

(b) From the Colorado state line in Browns Park upstream to Flaming Gorge Dam, including Gorge Creek, a tributary entering the Green River at Little Hole:

- Limit 3 trout (2 under 15 inches and 1 over 22 inches).
- All trout from 15 to 22 inches must be immediately released.
- No limit for burbot, northern pike, smallmouth bass or walleye. Anglers may not release any of these fish, which must be immediately killed.
- Artificial flies and lures only.
- CLOSED to fishing from a boat with a motor between the Utah-Colorado state line and Flaming Gorge Dam.

### Green River tributaries, Carbon, Duchesne, Emery and Uintah counties

*Ashley Creek* (Uintah County) from the confluence with the Green River upstream to the town of Vernal; *Brush Creek* (Uintah County) from the confluence with the Green River upstream to Red Fleet Dam; *Duchesne River* (Duchesne and Uintah counties) from the confluence with the Green River upstream to the Knight Diversion; *White River* (Uintah County) from the confluence with the Green

River to the Utah–Colorado border; *Willow Creek* (Uintah County) from the confluence with the Green River upstream to the confluence with Hill Creek; *Price River* (Carbon and Emery counties) from the confluence with the Green River upstream to the Farnham Dam/Diversion near Wellington; *San Rafael River* (Emery County) from the confluence with the Green River upstream to the Hatt’s Ranch Diversion near SR-24; *Range Creek* (Carbon and Emery counties) from the confluence with the Green River upstream to headwaters; *Nine Mile Creek* (Carbon and Duchesne counties) from the confluence with the Green River upstream to headwaters.

- No limit for channel catfish.
- No limit for burbot, northern pike, smallmouth bass or walleye. Anglers may not release any of these fish, which must be immediately killed.

**Gunlock Reservoir**, Washington County

- Limit 6 largemouth bass, only 1 may be over 12 inches.
- No limit on smallmouth bass. Anglers must not release any smallmouth bass they catch. All smallmouth bass must be immediately killed.

**Hobble Creek**, Utah County

From Utah Lake upstream to I-15.

- CLOSED March 1 through 6 a.m. on the first Saturday of May.

**Hobbs Reservoir**, Davis County

- Limit 2 trout under 15 inches.
- All trout over 15 inches must be immediately released.
- Artificial flies and lures only.

**Holmes Creek Reservoir**, Davis County

- Limit 6 largemouth bass, only 1 may be over 12 inches.

**Honeymoon Lake**, Wayne County

- CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

**Honeyville Ponds**, Box Elder County

Also called Cold Springs Lakes.

- CLOSED Jan. 1 through 6 a.m. on the Saturday before Memorial Day.

**Horse Creek**, Wasatch County

See *Strawberry Reservoir tributaries*.

**Huntington Creek**, Emery County

Below Electric Lake.

(a) Right Fork (from Flood and Engineers canyons upstream to Electric Lake Dam):

- Limit 2 trout.
- Artificial flies only

(b) Left Fork (from the top of the USFS campground, near the confluence with Right Fork, to the headwaters, including all tributaries:

Scad Valley Creek, Rolfson Creek, Lake Creek, Staker Creek, Millers Flat Creek and Paradise Creek):

- Anglers are encouraged to harvest brown trout.
- Artificial flies and lures only.

**Huntington Reservoir**, Sanpete County

Near the top of Huntington Canyon.

- CLOSED to the possession of cutthroat trout or trout with cutthroat markings.

**Huntington Reservoir tributaries**,

Sanpete County

Near the top of Huntington Canyon.

- CLOSED to the possession of cutthroat trout or trout with cutthroat markings.
- Anglers are encouraged to harvest tiger trout.
- Artificial flies and lures only.
- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Huntington North Reservoir**, Emery

County

Near the city of Huntington.

- Limit 6 bass, only 1 may be over 12 inches.

**Indian Creek**, Wasatch CountySee *Strawberry Reservoir tributaries*.**Joels Valley Reservoir**, Emery County

- Limit 4 trout, only 1 trout may be over 18 inches.

**Jones Hole Creek**, Uintah County

- Limit 2 trout, only 1 may be a brown trout over 15 inches.
- Artificial flies and lures only.

**Jordanelle Reservoir**, Wasatch County

- Limit 6 bass, only 1 may be over 12 inches.
- Bass may not be filleted, and the heads or tails may not be removed in the field or in transit.
- CLOSED to spearfishing.

**Kolob Reservoir**, Washington County

- Limit 2 trout under 15 inches or over 22 inches.
- All trout from 15 to 22 inches must be immediately released.
- Artificial flies and lures only from Jan. 1 through 6 a.m. on the third Saturday in May, and from the second Saturday in September through Dec. 31.

**Kolob Reservoir tributaries**, Washington

County

From Kolob Reservoir upstream to the headwaters.

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Lake Canyon Lake**, Duchesne County

- Limit 2 trout, only 1 may be a cutthroat trout over 22 inches.

- All cutthroat trout 22 inches or smaller must be immediately released.
- Artificial flies and lures only.
- CLOSED near the inlet stream, as posted for spring spawning operations.

**Lake Powell**, Garfield, Kane and San Juan countiesSee *Bait* on page 10 for the use of dead shad as bait in Lake Powell.

- Limit 20 smallmouth bass.
- Limit 5 largemouth bass.
- Limit 10 crappie.
- Limit 25 channel catfish.
- No limit on striped bass.
- No limit on walleye.
- Fish may be filleted at any time.
- Anglers may possess filleted fish.
- Anglers may use dead striped bass as bait.
- Chumming is allowed, but you may chum only with legal baits or dead striped bass, as specified in Utah Admin. Rule R657-13-12.
- Gaffs may be used to land striped bass only.
- Closed to the use of underwater spearfishing to take largemouth and smallmouth bass from April 1 through the fourth Saturday of June.
- Archery and underwater spearfishing are prohibited within all of the following areas:
  - One-quarter mile of all existing developed areas, including shore-line campgrounds, docks, launch ramps, breakwaters and trailheads
  - One-quarter mile of any structure, including any building, shed, pump-out, boat dock, breakwater, permanent harbor fixture, camper, motor home, trailer, tent or vehicle
  - Rainbow Bridge National Monument

- One-quarter mile of Dangling Rope Marina, including any land- or harbor-based structures
- One hundred yards (300 feet) of any boats (unless the person owns, rents, leases or lawfully occupies the boat), or another boat moves into the 100-yard perimeter after the bow or spearfishing activity has commenced

**Little Co-op Creek**, Wasatch County

See *Strawberry Reservoir tributaries*.

**Little Creek Reservoir**, Rich County

- Limit 8 trout from Aug. 1 through Oct. 31.
- Limit 4 trout from Jan. 1 through July 31 and from Nov. 1 through Dec. 31.

**Little Dell Reservoir**, Salt Lake County

- CLOSED to the possession of cutthroat trout or trout with cutthroat markings.
- All cutthroat trout must be immediately released.
- Artificial flies and lures only.

**Little Reservoir**, Beaver County

- Fishing from a boat with a motor is unlawful.

**Logan River**, Cache County

(a) From Card Canyon Bridge upstream to the highway bridge at Red Banks Campground, including all tributary streams in between, but not including Tony Grove Lake:

- Limit 2 trout and whitefish (a combined total).
- Artificial flies and lures only.

(b) From the highway bridge at Red Banks Campground upstream to the Idaho state line, including all tributaries, but not including White Pine Lake:

- Limit 2 trout and whitefish (a combined total).

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Long Willow Bottom**, Garfield County

- CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

**Lost Creek**, Morgan County

From the bridge (culvert) approximately one-quarter mile above Lost Creek Reservoir upstream to the headwaters, EXCEPT Squaw Creek.

- Catch and release only.
- Artificial flies and lures only.

**Lost Creek Reservoir**, Morgan County

- Limit 4 trout (a combined total).
- No more than 3 trout may be under 15 inches.
- No more than 1 trout may be over 22 inches.
- All trout between 15 and 22 inches must be immediately released.
- Trout and salmon may not be filleted, and their heads or tails may not be removed in the field or in transit.
- CLOSED to fishing 10 p.m. to 6 a.m. daily.
- CLOSED to spearfishing.

**Lower Fish Creek (Price River)**, Carbon and Utah counties

From the railroad bridge (approximately one mile below the Scofield Reservoir dam) downstream to the confluence with the White River.

- Artificial flies and lures only.

**Mammoth Creek**, Garfield County

From the canal diversion (about three miles upstream from the Mammoth Creek Fish Hatchery), upstream 7.5 miles to the end of Hatch Meadow and the beginning of summer home sites.

- Limit 2 trout between 10 and 15 inches.
- All trout less than 10 inches or over 15 inches must be immediately released.
- Artificial flies and lures only.



**Manila Creek Pond**, Utah County

- CLOSED to fishing Dec. 1 through Dec. 31 and Jan. 1 through 6 a.m. on the last Saturday of February.

**Manning Meadow Reservoir, tributaries and spillway**, Piute County

- Limit 1 trout over 22 inches.
- All trout 22 inches or smaller must be immediately released.
- Artificial flies and lures only
- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**McGath Lake**, Garfield County

- CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

**Mill Meadow Reservoir**, Sevier County

- Limit 8 tiger muskie of any size (no size restrictions on tiger muskie on this water).

**Minersville Reservoir**, Beaver County

- Limit 1 trout over 22 inches.
- All trout 22 inches or smaller must be immediately released.
- Artificial flies and lures only.
- Cement outlet channel between the dam and spillway pond, approximately 55 feet long, is CLOSED.

**Moon Lake**, Duchesne County

- Limit 4 trout, only 2 may be splake.

**Mountain Dell Creek**, Salt Lake County

(a) From Mountain Dell Reservoir upstream to Little Dell Dam.

- CLOSED TO FISHING.

(b) From Little Dell Reservoir upstream to the headwaters.

- CLOSED to the possession of cutthroat trout or trout with cutthroat markings.
- Artificial flies and lures only.

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Mountain Dell Reservoir**, Salt Lake County

- CLOSED TO FISHING.

**Mud Creek**, Wasatch County

See *Strawberry Reservoir tributaries*.

**Newcastle Reservoir**, Iron County

- Limit 2 wiper.
- Underwater spearfishing is allowed for wipers and rainbow trout only.

**Newton Reservoir**, Cache County

- CLOSED to the possession of tiger muskie. All tiger muskie must be immediately released.
- Unlawful to use whole fish for bait. Cut baitfish must not be larger than one inch in any dimension and no more than one piece per hook.

**Oak Creek Reservoir (Upper Bowns Reservoir)**, Garfield County

- Limit 16 brook trout.

**Ogden River**, Weber County

From Pineview Dam downstream to the first bridge, approximately one-half mile.

- CLOSED TO FISHING.

**Otter Creek Stream**, Piute County

From Otter Creek Reservoir upstream to the Angle Diversion.

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Pacer Lake**, Garfield County

- CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

**Panguitch Lake**, Garfield County

- Limit 4 trout (a combined total).
- No more than 2 may be cutthroat or tiger trout under 15 inches, and no more than

1 may be a cutthroat or tiger trout over 22 inches.

- All cutthroat and tiger trout from 15 to 22 inches must be immediately released.
- Trout may not be filleted and the heads or tails may not be removed in the field or in transit.
- Any trout with cutthroat markings is considered to be a cutthroat trout. To learn how to identify the fish in this water, see the detailed descriptions that begin on page 47.

#### **Panguitch Lake tributaries**, Garfield County

Excluding *Blue Springs Creek* upstream from Bunker Creek Road Bridge. (The bridge is approximately one mile upstream from Panguitch Lake.) Also excluding *Clear Creek* upstream from the Panguitch Lake North Shore Highway, located approximately one-quarter mile upstream from Panguitch Lake.

- Limit 4 trout (a combined total).
- No more than 2 may be cutthroat or tiger trout under 15 inches, and no more than 1 may be a cutthroat or tiger trout over 22 inches.
- All cutthroat and tiger trout from 15 to 22 inches must be immediately released.
- Any trout with cutthroat markings is considered to be a cutthroat trout. To learn how to identify the fish in these waters, see page 47.
- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

#### **Paragonah (Red Creek) Reservoir**, Iron County

- Limit 8 trout.

#### **Paragonah (Red Creek) Reservoir tributaries**, Iron County

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

#### **Parleys Creek**, Salt Lake County

(a) From Mountain Dell Reservoir upstream to SR-65.

- CLOSED TO FISHING.

(b) From SR-65 upstream to the headwaters.

- CLOSED to the possession of cutthroat trout or trout with cutthroat markings.
- Artificial flies and lures only.
- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

#### **Pelican Lake**, Uintah County

- Limit 20 bluegill and green sunfish (a combined total).

#### **Petes Hole Reservoir tributaries**, Sanpete County

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

#### **Pine Creek Reservoir**, Wayne County

- CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

#### **Pine Hollow**, Wasatch County

See *Strawberry Reservoir tributaries*.

#### **Pine Lake inflow**, Garfield County

Inflow, including the spawning channel.

- CLOSED TO FISHING.

#### **Pine Valley Reservoir**, Washington County

- Fishing from a boat or float tube is unlawful.

#### **Pineview Reservoir**, Weber County

- Limit 20 crappie.
- CLOSED to the possession of tiger muskie. All tiger muskie must be immediately released.
- Tiger muskie may not be taken by means of underwater spearfishing.
- Closed to the use of underwater spearfishing to take largemouth and smallmouth bass from April 1 through the fourth Saturday of June.

- Unlawful to use whole fish for bait. Cut baitfish must not be larger than one inch in any dimension and no more than one piece per hook.

#### **Porcupine Reservoir**, Cache County

- Limit 12 trout and salmon, only 4 may be rainbow, cutthroat or brown trout (a combined total). To take 12 fish, you must possess at least 8 salmon.
- CLOSED to the possession of kokanee salmon with any red color from Aug. 15 through 6 a.m. on the last Saturday of September.
- See EAST FORK LITTLE BEAR RIVER.

#### **Price River (Lower Fish Creek)**, Carbon and Utah counties

From the railroad bridge (approximately one mile below the Scofield Reservoir dam) downstream to the confluence with the White River.

- Artificial flies and lures only.

#### **Provo River**, Summit, Utah and Wasatch counties

(a) From Center Street Bridge (entrance to Utah Lake State Park) upstream to I-15 (Utah County):

- CLOSED to taking of nongame fish by methods other than angling.
- CLOSED March 1 through 6 a.m. on the first Saturday of May.

(b) From Olmstead Diversion Dam upstream to Deer Creek Dam (Utah and Wasatch counties):

- Limit 2 trout under 15 inches.
- Artificial flies and lures only.

(c) From Legacy Bridge on Midway Lane (SR-113) in Midway upstream to Jordanelle Dam (Wasatch County):

- Limit 2 trout under 15 inches.
- Artificial flies and lures only.

(d) From Jordanelle Reservoir upstream to the confluence of the north and south forks of the Provo River (Wasatch County):

- Limit 2 brown trout under 15 inches.
- CLOSED to the possession of cutthroat and rainbow trout and their hybrids. All cutthroat and rainbow trout and their hybrids must be immediately released.
- Artificial flies and lures only.

#### **Quail Creek Reservoir (Quail Lake)**,

Washington County

- Limit 6 largemouth bass, only 1 may be over 12 inches.
- No limit on smallmouth bass. Anglers must not release any smallmouth bass they catch. All smallmouth bass must be immediately killed.

#### **Red Butte Creek and Red Butte Reservoir**, Salt Lake County

- CLOSED TO FISHING.

#### **Red Fleet Reservoir**, Uintah County

- No limit on walleye. Anglers may not release any of these fish, which must be immediately killed.

#### **Right Fork of Logan River**, Cache County

See *Logan River*.

#### **Road Hollow**, Wasatch County

See *Strawberry Reservoir tributaries*.

#### **Rockport Reservoir**, Summit County

- Closed to the use of underwater spearfishing to take largemouth and smallmouth bass from April 1 through the fourth Saturday of June.

#### **Round Willow Bottom**, Garfield County

- CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

#### **Sage Creek**, Wasatch County

See *Strawberry Reservoir tributaries*.

**Sand Hollow Reservoir**, Washington County

- Limit 6 largemouth bass, only 1 may be over 12 inches.
- No limit on smallmouth bass. Anglers must not release any smallmouth bass they catch. All smallmouth bass must be immediately killed.

**San Juan River**, San Juan County

From Lake Powell to the Utah-Colorado state line.

- No limit for channel catfish.
- No limit for burbot, northern pike, smallmouth bass or walleye. Anglers may not release any of these fish, which must be immediately killed.

**San Juan River tributaries**, San Juan County

*Comb Wash* (San Juan County) from the confluence with the San Juan River upstream to headwaters; *Montezuma Creek* (San Juan County) from the confluence with the San Juan River upstream to headwaters; *Recapture Creek* (San Juan County) from the confluence with the San Juan River upstream to the Recapture Reservoir dam.

- No limit for channel catfish.
- No limit for burbot, northern pike, smallmouth bass or walleye. Anglers may not release any of these fish, which must be immediately killed.

**Santa Clara River**, Washington County

- No limit on smallmouth bass.

**Scofield Reservoir**, Carbon and Utah counties

- Limit 4 trout (a combined total).
- No more than 2 may be cutthroat or tiger trout under 15 inches, and no more than 1 may be a cutthroat or tiger trout over 22 inches.
- All cutthroat and tiger trout from 15 to 22 inches must be immediately released.
- Trout may not be filleted, and the heads or tails may not be removed in the field or in transit.
- Any trout with cutthroat markings is considered to be a cutthroat trout. To learn how to identify the fish in this water, please see page 47.

**Scofield Reservoir tributaries**, Carbon, Sanpete and Utah counties  
Including *Gooseberry Creek*.

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Scout Lake**, Garfield County

- CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

**Sheep Creek**, Daggett County

From Flaming Gorge Reservoir upstream to the Ashley National Forest boundary.

- CLOSED Aug. 15 through 6 a.m. on the last Saturday of November.

**Sheep Creek Lake**, Daggett County

- Limit 2 trout, only 1 may be a cutthroat trout over 22 inches.
- All cutthroat trout 22 inches or smaller must be immediately released.
- Artificial flies and lures only.
- CLOSED near the spawning trap and portions of the lake and canal, as posted during spring spawning operations.

**Soldier Creek**, Wasatch County

See *Strawberry Reservoir tributaries*.

**Solitaire Lake**, Garfield County

- CLOSED Jan. 1 through 6 a.m. on the third Saturday of April and Nov. 1 through Dec. 31.

**Spanish Fork River**, Utah County

From Utah Lake upstream to I-15.

- CLOSED to fishing March 1 through 6 a.m. on the first Saturday of May.

**Spanish Oaks Reservoir**, Utah County

- CLOSED to fishing Dec. 1 through Dec. 31 and Jan. 1 through 6 a.m. on the last Saturday of February.

**Spring Creek**, Utah County

From Utah Lake upstream to I-15.

- CLOSED to fishing March 1 through 6 a.m. on the first Saturday of May.

**Spring Run Creek** Utah County

From Utah Lake upstream to I-15.

- CLOSED March 1 through 6 a.m. on the first Saturday of May.

**Squaw Creek**, Wasatch County

See *Strawberry Reservoir tributaries*.

**Starvation Reservoir**, Duchesne County

- Closed to the use of underwater spearfishing to take largemouth and smallmouth bass from April 1 through the fourth Saturday of June.

**Stateline Reservoir**, Summit County

- CLOSED to the possession of kokanee salmon with any red color from Aug. 15 through 6 a.m. on the last Saturday of September.

**Steinaker Reservoir**, Uintah County

- Closed to the use of underwater spearfishing to take largemouth and smallmouth bass from April 1 through the fourth Saturday of June.

**Strawberry Reservoir**, Wasatch County

- Limit 4 trout or kokanee salmon (a combined total).
- No more than 2 may be cutthroat trout under 15 inches, and no more than 1 may be a cutthroat trout over 22 inches.
- All cutthroat trout from 15 to 22 inches must be immediately released.
- Trout and salmon may not be filleted, and the heads or tails may not be removed in the field or in transit.
- An angler may have only one daily limit in possession at any time.
- Anglers are encouraged to voluntarily release all cutthroat trout.
- Any trout with cutthroat characteristics (not necessarily jaw slashing) is considered to be a cutthroat trout. Slash marks under the jaw should not be used to distinguish Bear Lake cutthroat trout from rainbow trout at Strawberry. Slashing is sometimes absent on Bear Lake cutthroats and sometimes visible on rainbows. Better characteristics are deep orange pelvic and anal fins on the cutthroats, and white-tipped pink to gray-green pelvic and anal fins on the rainbows. Rainbows also have the pinkish lateral stripe on the sides (see fish descriptions beginning on page 47 of this guide for more information).

**Strawberry Reservoir tributaries**,

Wasatch County

(a) *Indian Creek* and *all tributaries to Indian Creek*, *Squaw Creek*, the *Strawberry River* from Strawberry Reservoir upstream to USFS Road 124 (Bull Springs Road), *Co-op Creek* from the confluence with the Strawberry River upstream to US-40, and the *Central Utah Project Canal* (commonly known as the "steps" or "ladders") from Strawberry Reservoir up the channel to

US-40, including that portion of the reservoir confined to the narrow “steps” or “ladders” channel.

- CLOSED TO FISHING.

(b) The *Strawberry River* and its tributaries upstream from USFS Road 124 (Bull Springs Road) to the headwaters, *Co-op Creek* and its tributaries upstream from US-40 to the headwaters, *Soldier Creek*, *Coal Canyon*, *Cow Hollow*, *Trout Creek*, *Sage Creek*, *Chicken Creek*, *Little Co-op Creek*, *Clyde Creek*, *Mud Creek*, *Bryants Fork*, *Horse Creek*, *Chipman Creek*, *Trail Hollow*, *Broad Hollow*, *Pine Hollow*, *Badger Hollow* and *Road Hollow*.

- Catch and release only. (All fish must be immediately released. It is illegal to fish if you have any fish in possession.)
- Artificial flies and lures only. (The use or possession of bait while fishing is illegal.)
- CLOSED May 15 through 6 a.m. on the second Saturday of July, and from Sept. 1 through 6 a.m. on the second Saturday of October.

**Strawberry River**, Duchesne and Wasatch counties

From the confluence with Red Creek, near Pinnacles, upstream to Soldier Creek Dam.

- Artificial flies and lures only.
- No overnight camping on Division land.

**Swan Creek**, Rich County

See *Bear Lake* tributaries.

**Temple Fork**, Cache County

See *Logan River*.

**Trail Hollow**, Wasatch County

See *Strawberry Reservoir* tributaries.

**Trout Creek**, Wasatch County

See *Strawberry Reservoir* tributaries.

**Twin Creek**, Sevier County

Tributary to Fish Lake.

- CLOSED TO FISHING.

**Uinta Mountains lakes and streams**,

Daggett, Duchesne, Summit, Uintah and Wasatch counties

Includes streams and lakes in Utah within the boundary beginning on I-80 at the Utah-Wyoming state line southwest of Evanston, Wyoming and continuing southwest along I-80 to US-40 (near Park City); then east along US-40 to Vernal, Utah; then north along SR-44 to Manila, Utah; then west on SR-43 to the Wyoming state line; and then west and north along the Wyoming state line back to the beginning point at I-80.

- Limit 4 trout.
- Bonus limit of 4 brook trout (total limit of no more than 8 trout if at least 4 are brook trout).

**UM Creek**, Sevier and Wayne counties

From Forsyth Reservoir upstream to the headwaters, including the right and left forks.

- CLOSED to the possession of cutthroat trout or trout with cutthroat markings.
- Artificial flies and lures only.

**Upper Bowns Reservoir (Oak Creek Reservoir)**, Garfield County

- Limit 16 brook trout.

**Upper Kents Lake inflow**, Beaver County

Inflow, approximately 900 feet, from the mouth up to the waterfall.

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

**Utah Lake**, Utah County

- Limit 6 largemouth or smallmouth bass (a combined total), only 1 may be over 12 inches.
- No limit on northern pike. Anglers must not release any northern pike they catch.

All northern pike must be immediately killed.

- All suckers must be immediately released.

#### **Utah Lake tributaries west of I-15**, Utah County

Including but not limited to: *American Fork Creek, Beer Creek, Dry Creek, Hobble Creek, Provo River, Spanish Fork River, Spring Creek* and *Spring Run Creek*.

- All suckers must be immediately released.
- CLOSED March 1 through 6 a.m. on the first Saturday of May.
- CLOSED to nighttime bowfishing (sunset to sunrise) from the first Saturday of May through 6 a.m. on the second Saturday of July.

#### **Virgin River**, Washington County

- No limit on smallmouth bass.

#### **Weber River**, Summit County

(a) From the first I-80 bridge upstream from Echo Reservoir (near Exit 164) upstream to the I-80 bridge near Wanship (near Exit 156).

- Limit 2 trout.
- Artificial flies and lures only.

(b) From the Great Salt Lake to Echo Reservoir dam.

- All cutthroat trout—or trout with cutthroat markings—must be immediately released.

#### **West Fork Duchesne River**, Duchesne and Wasatch counties

From the confluence with North Fork upstream to the headwaters, including Wolf Creek.

- Limit 4 trout, only 2 may be cutthroat trout or trout with cutthroat markings.
- Artificial flies and lures only.
- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

#### **Wheeler Creek**, Weber County

From the confluence with the Ogden River upstream to SR-39 (approximately one-quarter mile).

- CLOSED TO FISHING.

#### **White River**, Uintah County

See *Green River tributaries*.

#### **Whitney Reservoir tributaries**, Summit County

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

#### **Willard Bay Reservoir and inlet channel**, Box Elder County

- Limit 10 crappie.
- Limit 6 walleye, only 1 walleye may be over 24 inches.
- Limit 3 wiper.
- Possession and use of commercially sold and preserved gizzard shad is allowed. Otherwise, possession of gizzard shad, dead or alive, is unlawful.

#### **Wolf Creek**, Duchesne and Wasatch counties

- Limit 4 trout, only 2 trout may be cutthroat trout or trout with cutthroat markings.
- Artificial flies and lures only.
- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

#### **Yankee Meadow Reservoir inlet**, Iron County

- CLOSED Jan. 1 through 6 a.m. on the second Saturday of July.

#### **Yuba Reservoir**, Juab County

- Limit 20 northern pike, only 1 northern pike may be over 36 inches.

## CHANGES COMING TO LAKE POWELL

What anglers and boaters must do to help prevent the spread of quagga mussels.

Over the past eight years, the state of Utah has spent millions of dollars trying to keep quagga mussels out of our waterways. Much of that funding went toward on-the-ground efforts at boat ramps, where Division personnel and volunteers worked hundreds of thousands of hours to educate boaters and decontaminate watercraft.

Despite those efforts, there are now quagga mussels in Lake Powell. (See [www.nps.gov/glca/naturescience/mussel-update.htm](http://www.nps.gov/glca/naturescience/mussel-update.htm) for details.)

### Mussels at Powell

Large colonies of mussels are growing on Glen Canyon Dam and in the lower regions of the lake. Smaller colonies and individual mussels are also appearing across much of the lake. Eventually, quagga mussels will be a common sight on canyon walls and beaches throughout Lake Powell.

If you use Lake Powell, this will undoubtedly affect you in the months and years to come.

### A new plan for Lake Powell

We already know that quagga mussels will affect the fishery at Lake Powell. To prepare for this, the Division will be working with other agencies and anglers to develop a new sportfish management plan for the lake.

This plan will focus on adapting to the changes that result from the introduction of mussels. Working together, we can maintain a healthy fishery in Lake Powell. You can help by sharing your ideas or suggestions at [dwrcomments@gmail.com](mailto:dwrcomments@gmail.com).

### Changes for boaters

We cannot allow quagga mussels to leave Lake Powell and infest any other lakes in Utah—and to stop them, we need your help. Some of the changes you will see in 2015 will affect you on the boat ramp or as you are driving away from Lake Powell:

- Expect to be contacted as you arrive and as you leave, and your watercraft will be inspected for attached mussels and standing water. All water must be drained. It is illegal to possess or transport a mussel in Utah.
- Inspection technicians will place a wire tag on your watercraft and give you a receipt to indicate that your boat has been inspected and is now subject to dry time. For a complete list of dry times, visit [STDOfthesea.com](http://STDOfthesea.com) or [wildlife.utah.gov/decontaminate.html](http://wildlife.utah.gov/decontaminate.html).

If you cannot complete the dry time before you boat again, you'll need to visit one of the state's hot-water decontamination stations. Operated by the Division and Utah State Parks, these stations are available at several locations throughout the state. Visit [STDOftheSea.com](http://STDOftheSea.com) to find a decontamination station near you.

### Don't move mussels

Invasive mussels in our lakes will affect our fisheries; make beaches unusable; create unpleasant odors; damage boats, docks and water infrastructure; and ultimately raise the cost of water and recreation in Utah.

You can help combat this threat by making sure your boat is inspected, cleaned and drained before you leave Lake Powell, and then by completely drying it for the required amount of time before you launch again. Don't be the person responsible for moving invasive mussels around Utah.



## BIG FISH AND BREATHING ROOM

Anglers share their top priorities in a 2014 angler survey.

Utah anglers are our customers, and we make every effort to manage the state's fisheries to their satisfaction. To determine what anglers want, we conduct surveys. Some are informal online questionnaires to quickly assess angler feedback, while others are formal, scientifically valid surveys.

### The 2014 survey

Past survey results have shown us that a growing percentage of anglers only practice catch-and-release fishing. Approximately 75 percent of Utah anglers do not keep fish on most of their trips. We have also noted an increasing trend in the number of anglers who request stricter regulations.

To examine these changes in more detail, we contracted with an outside organization in 2014 to professionally survey anglers about what they want to see in their fisheries. This was a valuable, statistically valid survey that will help us set a course of action for the future.

### Survey participants and results

The survey targeted two groups of respondents. The first group included those who had purchased a fishing license recently (active anglers). Individuals in the second group were those who had not bought a license in either 2012 or 2013, but had bought one since 2010 (lapsed anglers).

The majority of active angler respondents were motivated by big fish. They most often chose waters that offered the opportunity to

catch larger fish, even if they did not catch as many. Their other factors in choosing a fishery included:

- Desired species are present
- There are many fish to catch
- The area is not crowded
- The fish are safe to eat

Lapsed anglers had a different top priority; their number-one preference was that the fishery not be crowded. Then, their other factors in choosing a fishery included:

- The opportunity to catch larger fish
- Desired species are present
- There are many fish to catch
- The fish are safe to eat

### Next steps

After looking closely at the 2014 survey results—and the results of other recent surveys and questionnaires—the Division is shifting its management focus.

We are moving toward increased species diversity in Utah's fisheries, and we want to provide opportunities that emphasize quality over quantity within 100 miles of major population centers.

Many of these changes have already occurred (for example, the stocking of wipers in Minersville Reservoir). The next decade should provide many exciting opportunities and memorable trips for Utah anglers, regardless of their fishing preferences.

## IT'S TIME TO KEEP MORE FISH

Starting in 2015, fish at your home will no longer count as part of your possession limit.

Utah anglers want to catch big fish. In both 2011 and 2014, active Utah anglers indicated that their top priority for a fishing trip was the chance to catch a larger fish.

However, over the past 10 to 15 years, there has been a dramatic decline in the number of fish that anglers keep, and that is resulting in smaller fish in Utah waterbodies. In order to grow bigger fish, Utahns need to keep more fish.

Starting on Jan. 1, 2015, you will be able to do exactly that. In late 2014, the Utah Wildlife Board changed the possession rules for all fish species in Utah. This doesn't mean you can catch and keep more than a single limit in one day, but it means that the fish cease to be part of your possession limit once they enter your permanent residence.

### A catch-and-release problem

Many of Utah's waters simply have too many fish. Here are just a few examples of Utah's catch-and-release problem:

- More than 90 percent of the brown trout caught in Utah are released.
- More than 80 percent of the largemouth and smallmouth bass caught in Utah are released.
- At Willard Bay, harvest of walleye has decreased from 20,000 in 2001 to less than 2,000 in 2010.

When too few fish are harvested, there are more fish competing for a limited number of resources. When overcrowding happens, most of the fish will remain relatively small, a condition known as stunting.

To prevent stunting, anglers need to take home more fish of all sizes. Here's what you need to know about Utah's possession limits and keeping additional fish.

### Daily limit

You may possess up to one daily limit of fish in number, species and size, from the waterbody you are fishing.

If you fish multiple waters in one day, you cannot have any fish in your possession that violate the rules of the waterbody where you're fishing.

For example, if you have been fishing at Currant Creek Reservoir (which has a general 4 trout limit), you may not stop at Strawberry Reservoir (which has a more restrictive regulation) if you have fish from Currant Creek that violate the rules at Strawberry.

Here's another example. If you go to a community fishery and catch your limit in the morning, you cannot take those fish home to your freezer and visit another pond in the afternoon to harvest additional fish.

In short, you may catch and keep a maximum of one limit of fish per day, regardless of what happens to the fish. See page 22 for a list of daily limits that apply statewide, except as provided in the *Rules for specific waters* on page 23.

### Additional limit in the field

You may possess up to two daily limits of fish as you travel within Utah—or if you leave the state—as long as you meet the following conditions:

- You are on an overnight or multi-day fishing trip at any Utah waterbody, excluding Strawberry Reservoir or Flaming Gorge Reservoir. (At those two reservoirs, you may have only one daily limit in your possession.)
- At least one of the limits in your possession was caught at a Utah water on a previous day, and the fish were a legal

## Which fisheries to target

You can help by keeping more of the species listed next to the following waterbodies:

- Blacksmith Fork River: brown trout
- East Canyon Reservoir: smallmouth bass smaller than 12 inches
- Fish Lake: yellow perch
- Flaming Gorge Reservoir: lake trout smaller than 22 inches
- Gooseberry Creek: cutthroat and rainbow trout
- Lake Powell: striped bass, walleye and smallmouth bass
- Lower Fish Creek: brown trout
- Lower Provo River: brown trout
- Middle Provo River: brown trout
- Ogden River: brown trout (in the canyon reach)
- Pelican Lake: bass smaller than 12 inches and bluegill smaller than 8 inches
- Red Creek Reservoir (Paragonah): rainbow trout
- Starvation: bass smaller than 12 inches and walleye smaller than 18 inches
- Straight Canyon Creek: brown trout
- Utah Lake: northern pike

species and limit for the waterbody where you caught them.

- The fish from the previous day have been cleaned and gutted (entrails removed).

If you fish at a different waterbody on the second day of your trip, you may not have any fish in your possession—from either day—that violate the rules of the waterbody where you're currently fishing. This means you must always comply with the size and species regulations for the waterbody where you're fishing and not have more than two daily limits in your possession.

For example, if you camp at Starvation Reservoir and fish for walleye, you may possess 10 walleye, including one walleye over 24 inches (as long as the fish are cleaned or filleted). Then, you may return to the water the next day and again catch and keep 10 walleye, including one walleye over 24 inches.

You may not possess two limits caught in the same day. For example, you cannot catch four trout at Deer Creek Reservoir, put them in a cooler and then go back out onto the water that day to catch and keep another four trout.

## Keeping fish at home

Starting January 1, 2015, any fish species at your permanent residence will not count as part of your possession limit. Again, this does NOT allow you to take home multiple daily limits of fish in one day. You may take home only one daily limit per day.

Your permanent residence is your most recent physical location/address that is your primary domicile or place of residence.

## The path to bigger fish

Division biologists are hoping that this possession limit change will reduce anglers' concerns about keeping track of how many fish are in the freezer at home. The biologists can then use a combination of angler harvest, regulations and other tools to better manage the state's fisheries.

Selective harvest within the legal limits should be the goal of all Utah anglers. More harvest now will mean bigger fish in the future.

## ANGLER FEEDBACK DRIVES CHANGES

Many of the 2015 regulation changes came directly from anglers.

Wherever you fish—whether it's a big reservoir, a slow river or a bustling community pond—you probably have an opinion about fishing in Utah.

This is your chance to let us know what's on your mind.

### How do biologists gather public feedback?

In the spring of 2014, fisheries biologists held open houses to discuss possible changes and collect angler feedback. They also placed their recommendations online and allowed the public to submit comments via an informal survey.

At the end of the survey, anglers could write in their suggestions and recommendations for other changes. Biologists also gathered public input through phone calls, emails and Internet forums, as well as more formal creel surveys and targeted email questionnaires.

Many of the anglers' suggestions shaped this year's final recommen-

dations and helped biologists identify issues that needed more scrutiny and discussion.

### What changes were angler-driven?

Anglers made the case for a number of regulation changes that the Wildlife Board approved in October 2014:

- Changes to the possession limit
- Changes to limits at Fish Lake
- Changes to management of fisheries on Boulder Mountain

The Division is grateful to those of you who completed the survey and sent in suggestions.

### Why didn't the Division use my suggestion?

Please realize that the Division may not be able to implement every suggestion it receives. Some suggestions are in direct conflict with each other and may require a compromise recommendation. In general, though, your feedback lets the biologists know which topics are your highest priorities.



## How can I share my feedback?

If you want to see a fishing regulation change in Utah in 2016, you should contact the Division before June 15, 2015. There are four easy ways to share your suggestions:

1. Email your idea to:  
*DWRComment@utah.gov*
2. Mail your idea to:  
Sport Fisheries Coordinator, Utah Division of Wildlife Resources, P.O. Box 146301, Salt Lake City, UT 84114-6301
3. Attend an open house and talk to fisheries biologists in the spring of 2015. The Division will likely hold these open houses in May and early June. As soon as they are scheduled, you can find dates and times online at *wildlife.utah.gov/calendar*.
4. Share your idea while completing the Fishing Proposals survey. There will be a blank field at the end of the survey where you can submit ideas. The survey will be available at *wildlife.utah.gov/fisheries-surveys.html* by the middle of May 2015.

Division biologists will finalize their recommendations for the 2016 fishing season in early summer.

After the biologists put their proposals together, they'll share them with the public at a series of Regional Advisory Council (RAC) meetings held across Utah in September.

The Utah Wildlife Board will consider public input when it meets in early October to approve Utah's 2016 Fishing Guidebook.

## Prevent the spread of whirling disease

Whirling disease is caused by a microscopic parasite that primarily affects trout fisheries. If a young fish is heavily infected, it may swim in circles or later develop head and spinal deformities. These fish often die before they fully mature.

Although whirling disease does not affect humans, and fish from affected waters are safe for human consumption, we need your help to prevent whirling disease from spreading to uncontaminated Utah waters:

- Clean fish where you catch them. Do not transport fish—alive or dead—before cleaning them.
- Decontaminate your gear. Before you leave a lake or river and step into another water, rinse all the mud and other debris off of your waders, boots and wetted fishing gear or equipment. Then, generously spray all of it with a 10-percent bleach solution, which will kill any whirling disease spores.
- Avoid felt-soled wading gear. There is increasing evidence that waders and boots with felt soles help spread whirling disease spores and invasive species.

If you see diseased fish while fishing, please call a Division office to report the sighting.

## NEW FISHING RECORDS IN 2014

Last year, five anglers set new fishing records at Utah waterbodies:

The Division maintains records of the biggest fish caught throughout the state. The criteria for these records varies, depending on the angling method and whether the fish was kept or released.

### Catch-and-keep records

The Division determines this record by the weight of the fish. The fish's length and girth are also necessary in order to verify the weight.

#### Wiper

Russell Nielson at Newcastle Reservoir

Weight: 11 lbs 2 oz; Length: 26-7/8 in; Girth: 20-4/8 in

### Catch-and-release records

The Division determines this record by length. You need a witness to verify your catch and measurement in order to qualify for the record.

#### Black bullhead

John Harris at Pineview Reservoir

Length: 14-1/2 in

#### Green sunfish

Jeremy Martinez at Quail Creek Reservoir

Length: 11-1/4 in

### Spearfishing records

The Division determines this record by the weight of the fish. The fish's length and girth are also necessary in order to verify the weight.

#### Black crappie

Ryan Peterson at Deer Creek Reservoir

Weight: 13 oz; Length: 12 in; Girth: 9-3/8 in

#### Smallmouth bass

Justin D Hall at Flaming Gorge Reservoir

Weight: 4 lbs, 5 oz; Length: 19 in; Girth: 12-1/2 in

#### Wiper

Carl Wayne Cooper at Newcastle Reservoir

Weight: 11 lbs, 6 oz; Length: 27-3/4 in; Girth: 20-3/8 in

These records were set between November 2013 and October 2014. Anglers set new fishing records throughout the year.

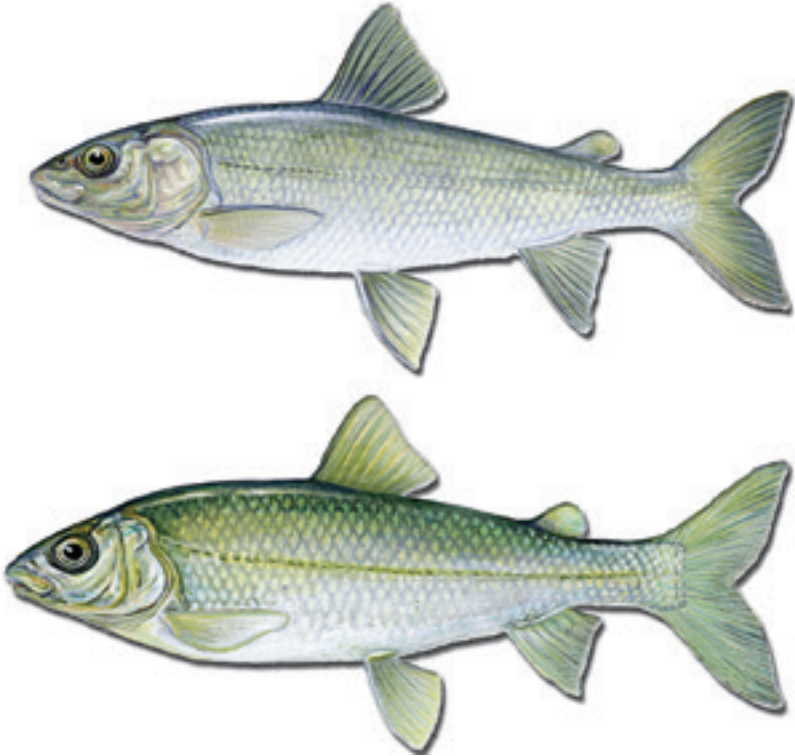
You can see a complete, up-to-date list of Utah's fishing records—and download the forms you need to submit a new record—at [wildlife.utah.gov/record-fish.html](http://wildlife.utah.gov/record-fish.html).

## IDENTIFYING UTAH'S NATIVE AND NONNATIVE FISH

When you catch a fish, you need to be able to identify it quickly and accurately, especially if you're at a fishery with size or species restrictions. The illustrations and descriptions in this section should help you identify fish across Utah.

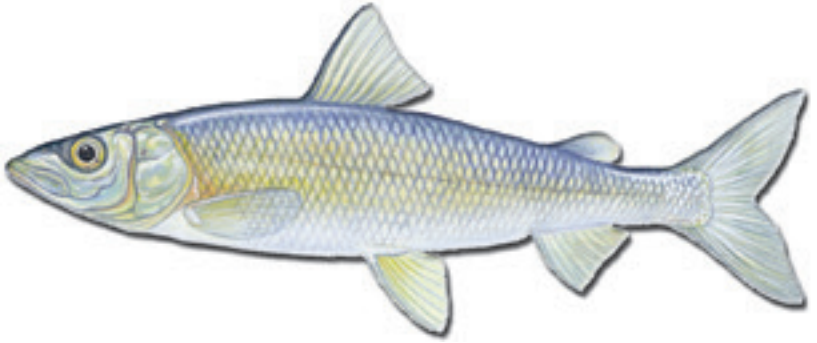
### Native coldwater sportfish

#### Bonneville whitefish and Bear Lake whitefish



These two fish are indistinguishable below 10 inches in length. Bonneville whitefish have gray-blue spots along their sides. These whitefish are elongated, relatively cylindrical fish. They are silvery-white along their sides, grading into a charcoal gray to black on their backs. They have small delicate mouths that make them difficult to catch. Bonneville whitefish may reach four pounds and grow to 20 inches. Both species occur only in Bear Lake.

## **Bonneville cisco**



The Bonneville cisco is a long, slender, pearly-silver fish found only in Bear Lake. It rarely grows beyond seven inches. It has a dusky blue back and a brassy band along its flanks at spawning time. The snout is sharply pointed. It is noted for its mid-January spawning concentrations along a rocky beach on the east side of Bear Lake, where it is dipnetted in large numbers.

## **Mountain whitefish**



This fish is light brown on its back and fins and silver to white on its belly and sides. The lower jaw and snout are short and blunt, with a flap on each nostril.



## Cutthroat trout

Three primary subspecies (strains) of native cutthroat trout are found in Utah, including Bonneville cutthroat trout, Colorado River cutthroat trout and Yellowstone cutthroat trout. The Bear Lake cutthroat trout is a lake-dwelling form of the Bonneville cutthroat trout. Except for Bear Lake cutthroat trout, cutthroats are best distinguished by their crimson slash along the lower jaw. Cutthroat trout lack the iridescent pink stripe or the white-tipped pelvic and anal fins of the rainbow trout.

### Bonneville cutthroat



Bonneville cutthroat trout originally inhabited the Bonneville Basin. They have sparsely scattered, large and very distinctive round spots over the upper body, with few spots on or near the head. Bonneville cutthroat trout are a subdued silver-gray to charcoal color on the upper body, with shades of bronze and pink on their flanks during spawning.

### Bear Lake cutthroat



Bear Lake cutthroat trout often lack the bright crimson jaw slash, which may at times be yellow, gray or non-existent. Deep orange pelvic and anal fins and the presence of few, if any, spots on the head readily distinguish Bear Lake cutthroat from rainbow trout (see rainbow trout description). Bear Lake cutthroat can exhibit a variety of spotting patterns, but spots are generally sparsely scattered, large and rounded in outline. Spotting is typically more concentrated near the tail. During the spawning season, Bear Lake cutthroat (particularly the males) take on a bronze color along the sides and lower body, and often develop rosy-colored gill plates.

**Colorado River cutthroat**

Colorado River cutthroat trout are native to the Green and Colorado River watersheds and are noted for their brilliant coloration. The males, in spawning condition, have bright crimson stripes along the sides and the stomach. Spotting is usually concentrated toward the tail area.

**Yellowstone cutthroat (not illustrated)**

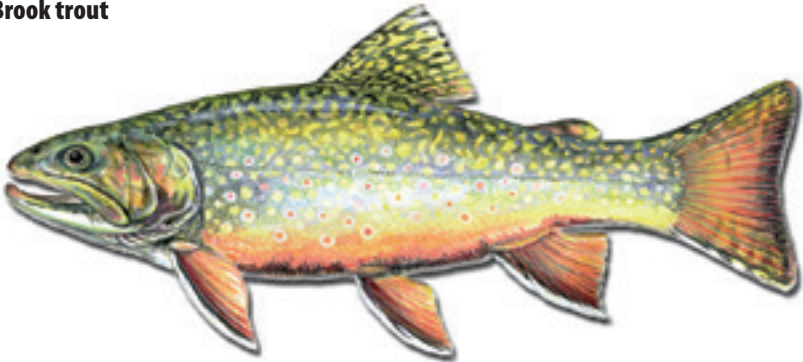
Yellowstone cutthroat trout are native to the Snake River watershed in northwestern Utah, including the Raft River Mountains. Yellowstone cutthroat trout are lightly spotted, with distinctly round spots concentrated toward the tail area.

**Nonnative coldwater sportfish****Trout, char & salmon****Rainbow trout**

A rainbow trout is dark green to bluish on the back with silvery sides. The pinkish to reddish horizontal band typifies the species. The belly may be white to silvery. Irregular and profuse black spots are usually present on the head, back and sides. The pelvic and anal fins are translucent pink to gray-green and tipped in white. The coloration of a river-dwelling rainbow trout is often more vibrant than that of a lake dweller. Rainbow trout also tend to have a fairly blunt snout.

**Lake trout**

This species of char has a background color of gray-brown, overlaid with light spots that vary in intensity with age and environment. The background color covers the back, sides and fins, highlighting the lighter gray spots. Lake trout in large lakes are sometimes so silvery that the spots are difficult to see. Spotting is usually more intense on small fish. The caudal fin is deeply forked. The mouth is large and features strong teeth on both jaws.

**Brook trout**

This species of char may be olive to blue-gray on its back and white on its belly. Red spots, usually with bluish halos around them, are present on the sides. Colors can vary greatly, depending on whether the fish lives in a stream or a lake. Characteristic light wavy marks on the back are a distinguishing feature. The obvious white-and-black striping pattern along the front edge of each of the lower fins makes it easier to distinguish brook trout from other trout species. The caudal fin is squared or lightly forked.

**Golden trout (not illustrated)**

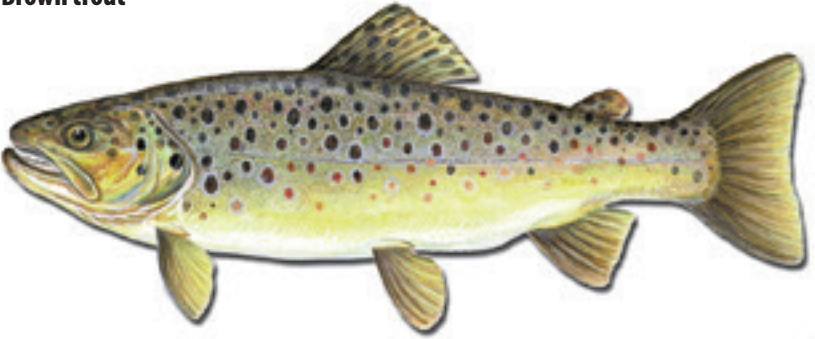
The golden trout has a golden belly with red, horizontal bands along the lateral lines on its sides. Golden trout also have about 10 dark, vertical, oval-shaped marks (called parr marks) on each side.

**Arctic grayling**

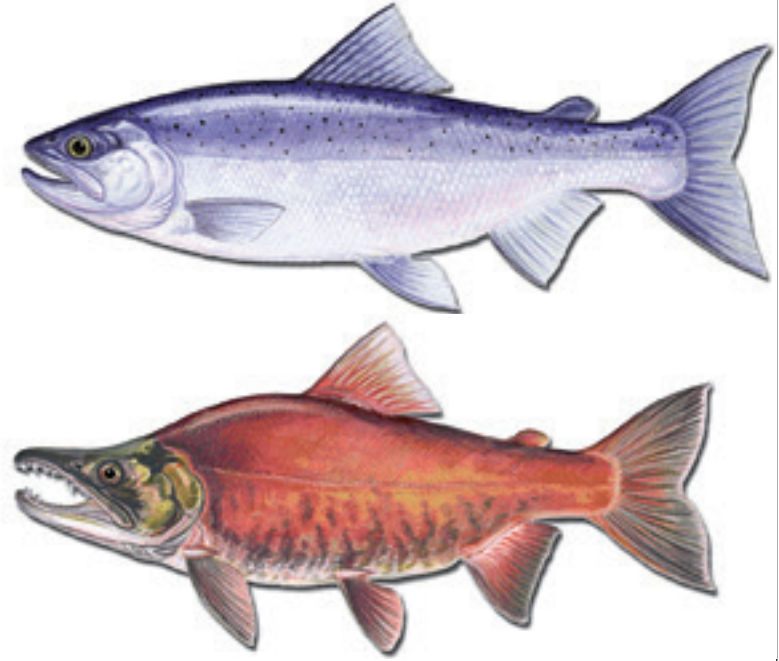


Arctic grayling are silvery to light purple on the sides and bluish-white on the belly. They are relatively slender and are most easily distinguished by their long, high, sail-like dorsal fin. The dorsal fin is brilliantly colored with shades of pink, green and purple.

**Brown trout**



Brown trout generally have golden brown hues with yellow underparts. During spawning, the males often have brilliant crimson spots circled with blue halos. The upper body is usually dappled with large, irregular, dark-chocolate spots. Brown trout are carnivorous and have stronger, sharper teeth than most trout.

**Kokanee salmon**

Kokanee are bright silvery fish with no definitive spotting pattern. Kokanee have a dark blue back with silvery sides. As the spawning season approaches, kokanee turn from silver to orange to deep red, and the male develops the characteristic hump on the back, elongated head and hooked jaw common to the Pacific salmon. A deeply forked tail also distinguishes them from rainbow, cutthroat and brown trout.

## Cool and warmwater sportfish

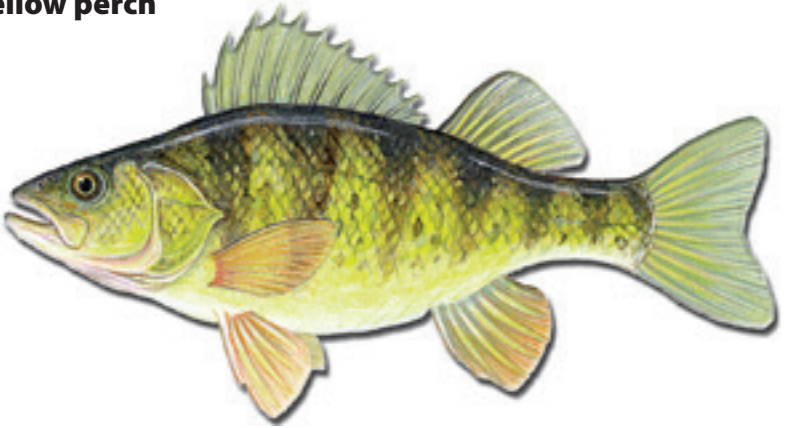
### Walleye



Prominent sharp teeth distinguish this big perch from its smaller cousin, the yellow perch. Walleye are a brassy olive buff color that sometimes shades to yellowish sides and a white underbelly. There is a large, dark blotch at the rear base of the first dorsal fin, and the lower lobe of the tail is white-tipped. The tail is moderately forked.

Reservoir.

### Yellow perch



Yellow perch are yellowish with dark vertical bars. The caudal fin is forked, and the dorsal fin is divided.

## Striped bass



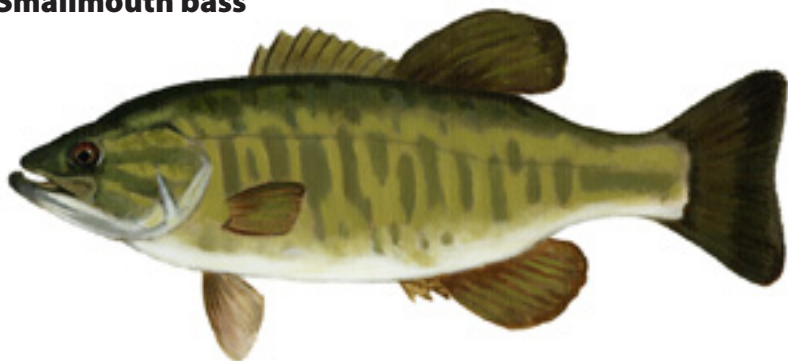
Striped bass coloration ranges from bluish-black to either dark grey or olive-green above. Their sides are silvery and their bellies white. Striped bass have seven to nine unbroken stripes along each side. The body is somewhat streamlined. The mouth is oblique, and the lower jaw longer than the upper. The dorsal fins are clearly separated. The caudal fin is forked.

## White bass



The back of a white bass is usually grey, charcoal or green. It typically has silvery sides and a white belly. It also has five to seven longitudinal stripes on each side. The body of a white bass is deeper and less streamlined than that of the striped bass.

## Smallmouth bass



The snout is long and bluntly pointed, with the lower jaw slightly longer than the upper jaw. Smallmouth bass vary in color, depending on their habitat, but are normally dark olive/brown on the back. Their sides and belly are lighter and yellowish. There are 8 to 15 (average 9) dark vertical bars on the sides, which distinguish them from the largemouth bass. The anterior dorsal fin has 10 spines and is strongly joined to the soft dorsal. The anal fin has three spines.

## Largemouth bass



The head of a largemouth bass is large and long. Its mouth is also large, with an upper jaw that reaches past the center of the eye in adults. The upper parts of the body and head are greenish, with a silvery or brassy shine. The belly is white to yellow, and there is an irregular dark stripe along the sides. The eyes of a largemouth bass are brown.



## Bullhead



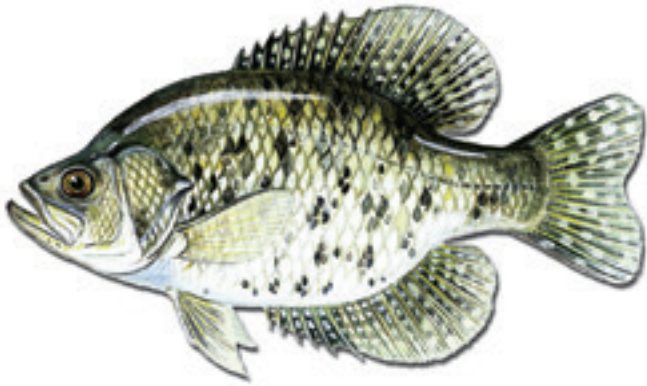
Adults are blackish, dark olive or dark brown on the back. The belly is greenish-white or bright yellow. The tail is not forked.

## Channel catfish



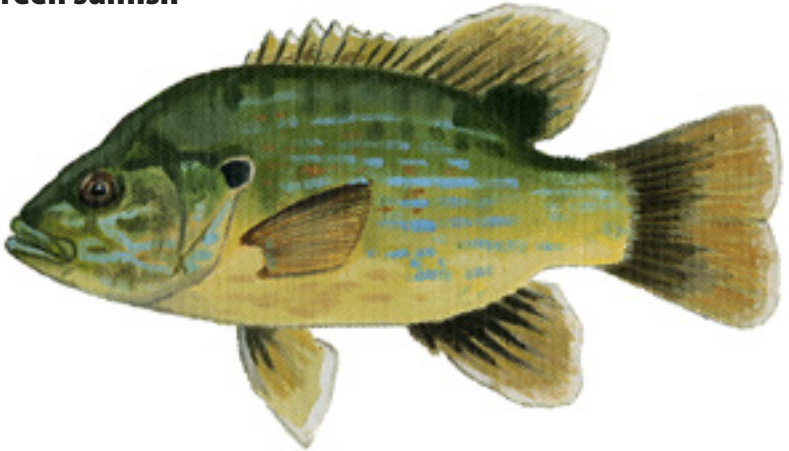
Channel catfish have a long anal fin and deeply forked tail that distinguish them from other catfish. The body is pale bluish-olive above and bluish-white below. They usually have spots but lose them with age. Both the dorsal and pectoral fins have strong, sharp spines. The mouth is short, wide and horizontal with chin and snout barbels.

## Crappie



The crappie has two closely-joined dorsal fins. Crappie are silver-olive with numerous black or green splotches on the sides. Vertical bars, prominent in the young, are absent in adults. Their sides are light, iridescent green to silvery. The belly is silvery to white. Pelvic fins are opaque with some black on the tips of the membranes, and pectoral fins are dusky and transparent.

## Green sunfish



Green sunfish are brassy-green or blue-green on the back, sometimes with metallic-green flecks and dusky bars on the sides. The flap over the gills is a dark color.

## Bluegill



Bluegill are shorter, deep-bodied fish, whose name comes from the dark flap over the gills. The body is olive-green with vertical bars, and some blue and orange may be present.

## Northern pike



Northern pike are characterized by a long, slender, torpedo-shaped body. They have a pattern of light-colored markings on each side of the body that form seven to nine horizontal rows on a dark background. The tail fins are rounded at the ends. The northern pike differs from other similar species in having fully scaled cheeks.

## Hybrid sportfish

### Wiper



The wiper is a hybrid cross between a female striped bass and a male white bass. Its appearance reflects both parents. It has six to eight dark, horizontal broken stripes over a silver-white background, with a dark charcoal to black back. It has two dorsal fins, the anterior with eight to ten sharp spines. It is slightly heavier bodied than the striped bass and grows up to 12 pounds in weight and 24 inches in length.

### Tiger muskellunge



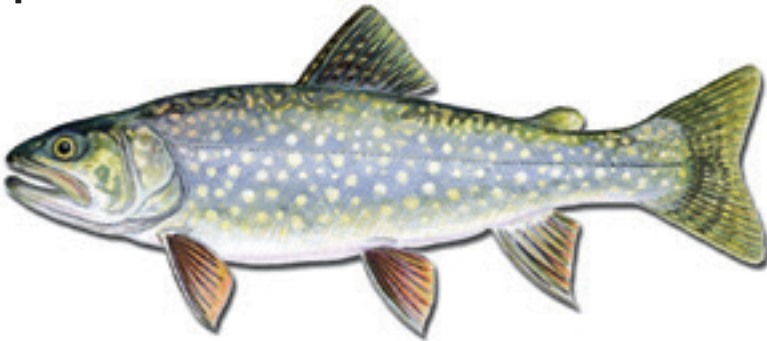
The tiger muskie is a hybrid cross between a muskellunge and northern pike. It features characteristics from both parents. It has a very elongated torpedo-like body. Its most notable features are the grey-green vertical bars along its sides. It can reach lengths of more than 50 inches and weigh more than 30 pounds.

## Tiger trout



The tiger trout, a cross between a brown trout and a brook trout, has a unique, dark maze-like pattern all over its brownish, gray body. The belly is yellowish-orange as are the pectoral, pelvic and anal fins. The tail fin is square.

## Splake



A splake trout is the hybrid cross between lake trout and brook trout. It has a dark background with white spots. Its tail fin is not as deeply forked as that of a lake trout.

## Nongame fish

### Native nongame fish

#### Utah sucker



The Utah sucker is dark olive to copper, with dusky fins and a downward-facing mouth.

#### Utah chub



Utah chub have robust bodies and large scales. Their coloration ranges from dark olive green or black on the upper back to silvery, brassy or golden sides. They can be distinguished by the way their fins align. The front edge of the dorsal fin (on the fish's back) aligns with the front edge of the middle fin on the fish's belly.

## Nonnative nongame fish

### Carp



Carp have deep, thick bodies that are gray to brassy green or yellowish green. The body is normally covered with large scales, and carp have fleshy barbels on each side of the mouth. A large spine is present at the front of the dorsal (top) fin.

### Burbot



Burbot, or ling cod, were illegally introduced into Flaming Gorge Reservoir, where the population is rapidly expanding. Burbot are a slender, smooth-skinned fish with a large barbel in the middle of the chin and two dorsal fins, the second of which is half the length of the body and matched by an anal fin of about the same length. The coloring ranges from yellow to light brown with a wavy pattern of dark brown or black. Despite the odd, eel-like appearance, burbot have flaky white flesh that tastes excellent. All burbot caught in Flaming Gorge must be immediately killed (see page 28).

## Utah's endangered fish

### June sucker



The June sucker occurs in Utah Lake and the Provo River. Although once abundant in Utah Lake, it is now rare. The June sucker is listed as endangered, and efforts to help recover the June sucker population are ongoing. Although June suckers are members of the sucker family, they are not bottom feeders. The jaw structure of the June sucker allows the species to feed on zooplankton in the middle of the water column.

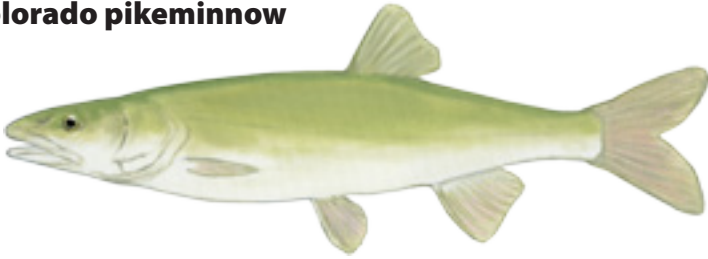
### Bonytail



The bonytail is currently found in limited stretches of the Green and Colorado mainstem rivers, where the species is stocked by the Upper Colorado River Recovery Program. The species is endangered and, if caught, should be returned immediately to the water unharmed. The body is highly streamlined, with a bluish, dusky color above to pale below. The head is short and noticeably concave. The area just in front of the fish's tail fin is extremely narrow. Bonytail can reach lengths of 22 inches and weigh more than two pounds in the wild.



## Colorado pikeminnow



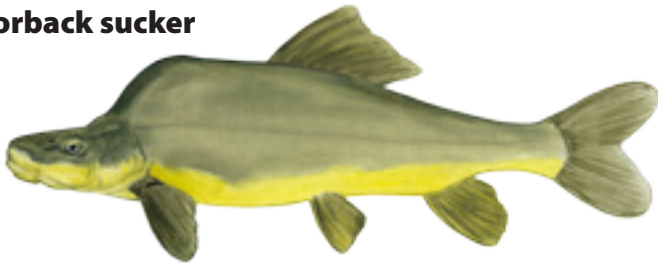
The highly predacious Colorado pikeminnow is found in the Green, Colorado and San Juan rivers and their tributaries. The pikeminnow is an endangered species, and efforts are underway to protect the fish throughout its native range. The pikeminnow's body is long and slender, with a gray-green back and silver sides. The head is long and conical, with a large, horizontal mouth. The tail fin is large and deeply forked. The pikeminnow can reach lengths up to six feet and can weigh 80 pounds. It should be returned to the water immediately if caught.

## Humpback chub



The humpback chub is found in canyon-bound habitats of the Green and Colorado rivers. The humpback chub has a streamlined body, with a dark, olive-gray back and silver sides. The head is small. The area in front of its tail is slender, although thicker than that of the bonytail. The fatty hump that is thought to keep the fish on the stream bottom and stabilize it in fast, flowing waters. The humpback chub can reach lengths up to 18 inches and can weigh up to two pounds.

## Razorback sucker



The razorback sucker is found in the mainstem Green, Colorado and San Juan rivers. Razorback suckers prefer shallow, off-channel habitats for spawning in the springtime. The razorback sucker is endangered and is stocked in many portions of its native range, including Utah, by the Upper Colorado River Recovery Program. The species normally has an olive-colored to brown or black back, brown to pinkish sides, and a white to yellow belly. Adults have a sharp-edged keel or "humpback." The mouth faces downward, and the lower lip is widely separated into two lobes by a deep groove. The razorback sucker can reach lengths up to 36 inches and can weigh up to 13 pounds.

## DEFINITIONS

*Utah Code § 23-13-2 and Utah Admin. Rule R657-13-2*

**Aggregate** means the combined total of two or more species of fish or two or more size classes of fish which are covered by a limit distinction (i.e., trout and salmon in the aggregate).

**Angling** means fishing with a rod, pole, tip-up, handline or troll board that has a single line with legal hooks, baits or lures attached to it, and is held in the hands of, or within sight (not to exceed 100 feet) of the person fishing.

**Artificial fly** means a fly made by the method known as fly tying. Artificial fly does not mean a weighted jig, lure, spinner, attractor blade or bait.

**Artificial lure** means a device made of rubber, wood, metal, glass, fiber, feathers, hair or plastic with a hook or hooks attached. Artificial lures (including artificial flies) do not include fish eggs or other chemically treated or processed natural baits or any natural or human-made food, or any lures that have been treated with a natural or artificial fish attractant or feeding stimulant.

**Bait** means a digestible substance, including worms, cheese, salmon eggs, marshmallows or manufactured baits including human-made items that are chemically treated with food stuffs, chemical fish attractants or feeding stimulants.

**Camp** means, for the purposes of this rule, any place providing temporary overnight accommodation for anglers including a camper, campground, tent, trailer, cabin, houseboat, boat or hotel.

**Chumming** means dislodging or depositing in the water any substance not attached to a hook, line or trap, which may attract fish.

**Commercially prepared and chemically treated baitfish** means any fish species or fish parts which have been processed using a chemical or physical preservation technique other than freezing (including irradiation, salting, cooking, or oiling) and are marketed, sold or traded for financial gain as bait.

**Daily limit** means the maximum limit, in number or amount, of protected aquatic wildlife that one person may legally take during one day.

**Dipnet** means a small bag net with a handle that is used to scoop fish or crayfish from the water.

**Filleting** means the processing of fish for human consumption typically done by cutting away flesh from bones, skin and body.

**Fishing** means to take fish or crayfish by any means.

**Fishing contest** means any organized event or gathering where anglers are awarded prizes, points or money for their catch.

**Float tube** means an inflatable floating device less than 48 inches in any dimension, capable of supporting one person.

**Free shafting** means to release a pointed shaft that is not tethered or attached by physical means to the diver in an attempt to take fish while engaged in underwater spearfishing.

**Gaff** means a spear or hook, with or without a handle, used for holding or lifting fish.

**Game fish** means Bonneville cisco; bluegill; bullhead; channel catfish; crappie; green sunfish; largemouth bass; northern pike;

Sacramento perch; smallmouth bass; striped bass, trout (rainbow, albino, cutthroat, brown, golden, brook, lake/mackinaw, kokanee salmon, and grayling or any hybrid of the foregoing); tiger muskellunge; walleye; white bass; whitefish; wiper; and yellow perch.

**Handline** means a piece of line held in the hand and not attached to a pole used for taking fish or crayfish.

**Harvest** means to catch and retain in possession for personal use.

**Immediately released** means that the fish should be quickly unhooked and released back into the water where caught. Fish that must be immediately released cannot be held on a stringer, or in a live well or any other container or restraining device.

**Lake** means the standing water level existing at any time within a lake basin. Unless posted otherwise, a stream flowing inside or within the high water mark is not considered part of the lake.

**Length measurement** means the greatest length between the tip of the head or snout and the tip of the caudal (tail) fin when the fin rays are squeezed together. Measurement is taken in a straight line and not over the curve of the body.

**Liftnet** means a small net that is drawn vertically through the water column to take fish or crayfish.

**Motor** means an electric or internal combustion engine.

**Nongame fish** means species of fish not listed as game fish. (Also see *Prohibited fish* for more information.)

**Nonresident** means a person who does not qualify as a resident.

**Permanent residence** means, for purposes of this guidebook only, the domicile an individual claims pursuant to Utah Code 23-13-2(13).

**Possession** means actual or constructive possession.

**Possession limit** means, for purposes of this rule only, two daily limits, including fish in a cooler, camper, tent, freezer, livewell or any other place of storage, excluding fish stored in an individual's permanent residence.

**Protected aquatic wildlife** means, for purposes of this guide only, all species of fish, crustaceans or amphibians.

**Reservoir** means the standing water level existing at any time within a reservoir basin. Unless posted otherwise, a stream flowing inside or within the high water mark is not considered part of the reservoir.

**Resident** means a person who has a fixed permanent home and principal establishment in Utah for six consecutive months immediately preceding the purchase of a license or permit, AND DOES NOT claim residency for hunting, fishing or trapping in any other state or country.

An individual retains Utah residency if he or she leaves Utah to serve in the armed forces of the United States, or for religious or educational purposes, and does NOT claim residency for hunting, fishing or trapping in any other state or country.

Members of the armed forces of the United States and dependents are residents as of the date the member reports for duty under assigned orders in Utah, if:

- the member is NOT on temporary duty in Utah and does NOT claim residency for hunting, fishing or trapping in any other state or country.

- the member presents a copy of his or her assignment orders to a Division office to verify the member's qualification as a resident.

A nonresident attending an institution of higher learning in Utah as a full-time student may qualify as a resident if the student has been present in Utah for 60 consecutive days immediately preceding the purchase of the license or permit and does NOT claim residency for hunting, fishing or trapping in any other state or country.

A Utah resident license or permit is invalid if a resident license for hunting, fishing or trapping is purchased in any other state or country.

An individual DOES NOT qualify as a resident if he or she is an absentee landowner paying property tax on land in Utah.

**Second pole** means fishing with one additional rod, pole, tip-up, handline or troll board that has a single line with legal hooks, bait or lures attached to it, and is held in the hands of, or within sight (not to exceed 100 feet) of the person fishing. (A valid fishing or combination license is required to use a second pole.)

**Seine** means a small mesh net, with a weighted line on the bottom and float line on the top, that is drawn through the water. This type of net is used to enclose fish when its ends are brought together.

**Setline** means a line anchored to a non-moving object and not attached to a fishing pole.

**Single hook** means a hook or multiple hooks having a common shank.

**Snag** means to hook a fish anywhere other than its mouth.

**Spear** means a long-shafted, sharply pointed hand held instrument with or without barbs used to pierce fish from above the surface of the water.

**Spearfishing (underwater)** means fishing by a person swimming, snorkeling, or diving and using a mechanical device held in the hand, which uses a rubber band, spring, pneumatic power, or other device to propel a pointed shaft to take fish from under the surface of the water.

**Take** means to hunt, pursue, harass, catch, capture, possess, angle, seine, trap or kill any protected wildlife; or attempt any of the aforementioned actions.

**Tributary** means a stream flowing into a larger stream, lake or reservoir.

**Trout** means species of the family Salmonidae, including rainbow, albino, cutthroat, brown, golden, brook, lake/mackinaw, kokanee salmon, and grayling or any hybrid of the foregoing. Trout does not include whitefish or Bonneville cisco.

**Underwater spearfishing** (see Spearfishing underwater.)

**Waste** means to abandon protected wildlife or to allow protected wildlife to spoil or to be used in a manner not normally associated with its beneficial use.

**Appendix P**

**Law Enforcement MOAs and Joint Information Center MOA**

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MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN  
TOOELE ARMY DEPOT  
AND  
TOOELE CITY POLICE DEPARTMENT

SUBJECT: Mutual Assistance in providing Law Enforcement and Civil Emergency Assistance

1. PURPOSE. To secure the benefits of mutual assistance in Law Enforcement for the preservation of life and property on Tooele Army Depot and it's surrounding communities.
  2. FACTS.
    - a. The primary responsibility of Tooele City Police Department (TPD) is to protect and serve the Tooele City community, to include portions of the Tooele Army Depot located within the Tooele City corporate boundary.
    - b. One of the functions of the Tooele Army Depot, Law Enforcement and Security Branch (LES) is to provide emergency and routine law enforcement and security services to Tooele Army Depot.
    - c. Jurisdiction at Tooele Army Depot includes areas of exclusive federal jurisdiction and areas of concurrent state and federal jurisdiction. LES has primary law enforcement responsibility at Tooele Army Depot regardless of the type of jurisdiction present at a given site on the Depot.
  3. SCOPE. This MOU establishes responsibilities and guidelines for support associated with Tooele Army Depot and the Tooele City Police Department.
  4. AGREEMENT.
    - a. On request of TPD, the LES will dispatch, when available, LES personnel to render assistance during a civil emergency (i.e., natural or man-made disasters) to property adjacent to Tooele Army Depot not immediately accessible by TPD until arrival of TPD officers or other Local or State Law Enforcement Agencies. However LES personnel may not perform civilian law enforcement duties as such actions would violate the Posse Comitatus Act (18 U.S. Code § 1385). Military Commanders and responsible officials of DOD components and agencies are authorized, when time does not permit prior approval from higher headquarters and subject to supplemental direction, to take immediate actions in response to requests from domestic civil authorities in order to save lives, prevent human suffering, or mitigate great property damage.
    - b. On request to the TPD by the LES, TPD will dispatch, when available, TPD personnel to any point within the jurisdiction of the Tooele Army Depot.
    - c. The rendering of assistance through the terms of this understanding shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting department if, for any reason, assistance cannot be rendered.
-

d. Any dispatch of equipment and personnel pursuant to this understanding is subject to the following conditions:

- (1) The City of Tooele and the U.S. Army Tooele Army Depot agree that each party releases the other party from liability for any and all damage or loss to equipment or injury or death resulting from reciprocal assistance provided pursuant to this MOU.
  - (2) Any request for assistance, through this understanding, will specify the location to which the personnel are to be dispatched; however, a representative of the responding organization will determine the amount and type of personnel to be furnished.
  - (3) The responding organization will report to the officer in charge of the requesting organization at the location to which the personnel are dispatched, and will be subject to the orders of said officer in charge.
  - (4) A responding organization will be free to retire when the services of the responding organization are no longer required, or when the responding organization is needed within the area for which it normally provides law enforcement services.
  - (5) Each party to this agreement is authorized and directed to meet and draft any detailed plans and procedures of operation necessary to effectively implement this understanding. Such plans and procedures shall become effective upon ratification by the signatory parties.
  - (6) All equipment used by the TPD in carrying out this MOU will be owned by the TPD, and all personnel acting for the TPD under this MOU will be employees or volunteer members of the TPD.
  - (7) LES and TPD will seek guidance from their respective legal offices concerning jurisdiction for the conduct of investigations of possible criminal law violations on Tooele Army Depot to insure that the appropriate criminal investigation agency conducts the investigation with a view toward prosecution in the appropriate state or federal court system. LES will contact the Tooele Army Depot Legal Office, (435) 833-2536. TPD will contact the Tooele City Attorney's Office, at (435) 843-2120.
  - (8) Domestic violence and other State of Utah protection orders have the same force and effect on Tooele Army Depot as such orders have within the jurisdiction of the court that issued the order (10 U.S. Code § 1561a). Military Protective Orders (MPO) for military personnel on and off Tooele Army Depot will be honored by the TPD and transmitted through routine administrative procedures. LES and TPD will cooperate in the service and enforcement of protective orders at Tooele Army Depot and in Tooele City.
  - (9) TPD officers seeking to serve legal process at Tooele Army Depot should contact the Tooele Army Depot Legal Office, (435) 833-2536 for assistance.
  - (10) TPD and LES will share incident/investigation reports and other law enforcement information upon request to the extent that such sharing is allowed under Utah state law and the Federal Privacy Act (5 U.S. Code § 552a(b)(7)). TPD requests for LES information or reports should be directed to: Desk Sergeant, telephone (435) 833-2314. LES requests for information or reports should be directed to: Chief of Police, telephone (435) 882-8900.
-



- (11) The Chief, LES, or his representative will meet frequently with the Tooele City Chief to share information and concerns.
- (12) This MOU shall become effective upon the date of the last signature below and remain in full force and effect until cancelled by mutual agreement of the parties hereto or by written notice by one party to the other party, giving thirty (30) days notice of said cancellation. This MOU will be reviewed biannually and updated as required.

Signature Ron Kirby Signature Anne L. Davis  
Ron Kirby Anne L. Davis  
Chief of Police Colonel, Ordnance Corps  
Tooele City, Utah Commanding, Tooele Army Depot

Date: 17 Nov 2005 Date: 15 NOVEMBER 2005

Signature Roger Baker Signature Frank G. Brunson  
Roger Baker Frank G. Brunson  
Tooele City Attorney Attorney, Tooele Army Depot  
Tooele City, Utah

Date: 11/28/05 Date: 11/14/05



**DEPARTMENT OF THE ARMY**

Tooele Army Depot  
Tooele, Utah 84074-5000

**MEMORANDUM OF UNDERSTANDING  
BETWEEN  
U.S. ARMY TOOEELE ARMY DEPOT (TEAD)  
AND  
FEDERAL BUREAU OF INVESTIGATION (FBI), SALT LAKE CITY**

**SUBJECT: Support Required for Capture and Recovery of Conventional Ammunition**

**1. References.**

- a. Army Regulation 190-16, Physical Security, 31 May 1991.
- b. Tooele Army Depot Physical Security Plan dated.
- c. Army Regulation 190-14, Carrying of Firearms and Use of Force for Law Enforcement and Security Duties, 12 March 1993.

**2. Purpose.** To assist in the capture and recovery of conventional ammunition stolen from TEAD and the capture of unauthorized person(s). Apprehension of the personnel involved, though important, is a secondary concern.

**3. Problem.** Terrorist/dissident personnel may target conventional ammunition at TEAD. Unauthorized removal by such personnel poses the threat of severe consequences due to possible unauthorized use of conventional ammunition.

**4. Scope.** This agreement is limited to TEAD and FBI for the recovery of conventional ammunition and the apprehension of personnel.

**5. Understandings, agreement, support and resources.**

- a. Tooele Army Depot will:
  - (1) Notify the support agencies as specified in paragraph 5d of this agreement.
  - (2) Keep the support agencies appraised of the situation as changes occur.
  - (3) Utilize all available resources in pursuing any and all persons responsible for the unauthorized removal of conventional ammunition while on TEAD. Pursuit outside TEAD boundaries will be only hot pursuit.

SUBJECT: Support Required for Capture and Recovery of Conventional Ammunition

(4) Ensure the transfer of custody of persons apprehended and conventional ammunition recovered at the earliest opportunity.

b. Federal Bureau of Investigation will:

(1) Upon notification of unauthorized removal of conventional ammunition from TEAD, utilize all available support (personnel and equipment) to assist in the capture of responsible personnel and recovery of the conventional ammunition.

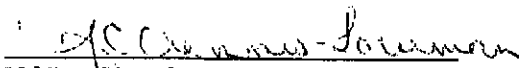
(2) The FBI will coordinate all law enforcement investigative activity resulting from the unauthorized removal of conventional ammunition from TEAD.

(3) Continue pursuit/investigation until the conventional ammunition is recovered. The primary concern is the recovery of the conventional ammunition.


c. Security forces are authorized use of deadly force only as a last resort in self defense or the protection of another individual. Due consideration will be given to the welfare and safety of hostages. When hostages are used as a means to prevent the recovery of the conventional ammunition, the welfare and safety of the hostages will be the deciding factor in actions taken to recover the conventional ammunition. The FBI will be governed by the Department of Justice Deadly Force Policy on record with the FBI.

d. In the event of unauthorized removal/theft of conventional ammunition on TEAD, initial contact will be to the Tooele County Sheriff's Department. The Salt Lake City FBI will be contacted immediately thereafter at (801) 579- 1400.

6. Effective date. This agreement is effective upon the last signature and shall continue in effect for an indefinite period. TEAD Support Agreement Manager will initiate a triennial review of this agreement on the anniversary date to evaluate the effectiveness and need for modification. The agreement may be changed with the concurrence of both agencies or terminated by either agency with a 30 day notice.

  
YOLANDA C. DENNIS-LOWMAN  
COL, LC  
Commanding

28 Jul 09  
(Date)

  
TIMOTHY J. FUHRMAN  
Special Agent in Charge

7-23-09  
(Date)

MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN  
TOOELE ARMY DEPOT  
AND  
GRANTSVILLE CITY POLICE DEPARTMENT

SUBJECT: Mutual Assistance in Providing Law Enforcement and Civil Emergency Assistance

1. PURPOSE. To secure the benefits of mutual assistance in law enforcement for the preservation of life and property on Tooele Army Depot and its surrounding communities.

2. FACTS.

- a. The primary responsibility for Grantsville City Police Department (GPD) is to protect and serve the community.
- b. One of the functions of the Tooele Army Depot, Law Enforcement and Security Branch (LES) is to provide emergency and routine law enforcement and security services to Tooele Army Depot.
- c. Jurisdiction at Tooele Army Depot includes areas of exclusive federal jurisdiction and areas of concurrent state and federal Jurisdiction. LES has primary Law Enforcement responsibility at Tooele Army Depot regardless of the type of jurisdiction present at a given site on the Depot.

3. SCOPE. This MOU establishes responsibilities and guidelines for support associated with Tooele Army Depot and the GPD.

4. AGREEMENT.

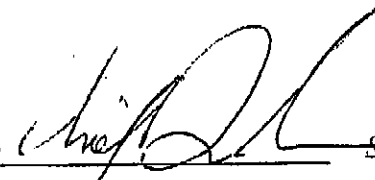
- a. On request of GPD, the LES will dispatch, when available, LES personnel to render assistance during a civil emergency (i.e., natural or man-made disasters). However LES personnel may not perform civilian law enforcement duties as such actions would violate the Posse Comitatus Act (18 U.S. Code § 1385). Military commanders and responsible officials of DOD components and agencies are authorized, when time does not permit prior approval from higher headquarters and subject to supplemental direction, to take immediate actions in response to requests from domestic civil authorities in order to save lives, prevent human suffering, or mitigate great property damage.
- b. On request to the GPD by the LES, GPD will dispatch, when available, GPD personnel to any point within the jurisdiction of the Tooele Army Depot.
- c. The rendering of assistance through the terms of this understanding shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting department if, for any reason, assistance cannot be rendered.
- d. Any dispatch of equipment and/or personnel pursuant to this understanding is subject to the following conditions:

- (1). The City of Grantsville and the U.S. Army Tooele Army Depot agree that each party releases the other party from liability for any and all damage or loss

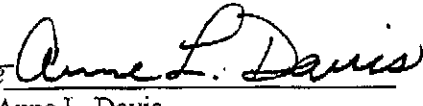
to equipment, injury or death resulting from reciprocal assistance provided pursuant to this MOU.

- (2). Any request for assistance through this understanding will specify the location to which the personnel are to be dispatched; however, a representative of the responding organization will determine the amount and type of personnel to be furnished.
- (3). The responding organization will report to the officer in charge of the requesting organization at the location to which the personnel are dispatched, and will be subject to the orders of that official.
- (4). A responding organization will be free to retire when the services of the responding organization are no longer required or when the responding organization is needed within the area for which it normally provides law enforcement services.
- (5). Each party to this agreement is authorized and directed to meet and draft any detailed plans and procedures of operation necessary to effectively implement this understanding. Such plans and procedures shall become effective upon ratification by the signatory parties.
- (6). All equipment used by the GPD in carrying out this MOU will be owned by the GPD, and all personnel acting for the GPD under this MOU will be employees or volunteer members of the GPD.
- (7). LES and GPD will seek guidance from their respective legal offices concerning jurisdiction for the conduct of investigations of possible criminal law violations on Tooele Army Depot to insure that the appropriate criminal investigation agency conducts the investigation with a view toward prosecution in the appropriate state or federal court system. LES will contact the Tooele Army Depot Legal Office, (435) 833-2536. GPD will contact the Grantsville City Attorney's Office, at (435) 882-5284.
- (8). Domestic violence and other State of Utah protection orders have the same force and effect on Tooele Army Depot as such orders have within the jurisdiction of the court that issued the order (10 U.S. Code § 1561a). Military protective orders (MPO) for military personnel on and off Tooele Army Depot will be honored by the GPD and transmitted through routine administrative procedures. LES and GPD will cooperate in the service and enforcement of protective orders at Tooele Army Depot and in Tooele County.
- (9). GPD officers seeking to serve legal process at Tooele Army Depot should contact the Tooele Army Depot Legal Office at (435) 833-2536 for assistance.
- (10). GPD and LES will share incident/investigation reports and other law enforcement information upon request to the extent that such sharing is allowed under Utah state law and the Federal Privacy Act (5 U.S. Code § 552a(b)(7)). GPD requests for LES information or reports should be directed to: Desk Sergeant telephone (435) 833-2314. LES requests for information or reports should be directed to: Chief, telephone (435) 884-6881.
- (11). The Chief, LES, or his representative will meet frequently with the Chief, GPD to share information and concerns.


(12) This MOU shall become effective upon the date of the last signature below and remain in full force and effect until cancelled by mutual agreement of the parties hereto or by written notice by one party to the other party, giving thirty (30) days notice of said cancellation. This MOU will be reviewed biannually and updated as required.

Signature   
Dan Johnson  
Chief  
Grantsville City Police Department

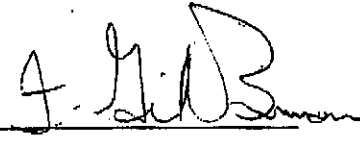
Date: 12/30/05

Signature   
Anne L. Davis,  
Colonel, U.S. Army  
Commanding, Tooele Army Depot

Date: 20 Dec 2005

Signature   
Ron Elton  
Grantsville City Attorney

Date: 12/22/05

Signature   
F. Gil Brunson  
Attorney, Tooele Army Depot

Date: 12/15/2005

TOOELE COUNTY CORPORATION  
CONTRACT # 05-04-07MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN  
TOOELE ARMY DEPOT  
AND  
TOOELE COUNTY SHERIFFS OFFICE

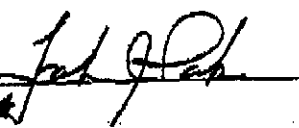
SUBJECT: Mutual Assistance in providing Law Enforcement and Civil Emergency Assistance

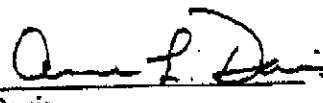
1. PURPOSE. To secure the benefits of mutual assistance in Law Enforcement for the preservation of life and property on Tooele Army Depot and it's sutrounding communities.
2. FACTS.
  - a. The primary responsibility for Tooele County Sheriffs Office (TSO) is to protect and serve the community, to include Tooele Army Depot.
  - b. One of the functions of the Tooele Army Depot, Law Enforcement and Security Branch (LES) is to provide emergency and routine Law Enforcement and Security services to Tooele Army Depot.
  - c. Jurisdiction at Tooele Army Depot includes areas of exclusive Federal jurisdiction and areas of concurrent State and Federal jurisdiction. LES has primary Law Enforcement responsibility at Tooele Army Depot regardless of the type of jurisdiction present at a given site on the Depot.
3. SCOPE. This MOU establishes responsibilities and guidelines for support associated with Tooele Army Depot and the Tooele County Sheriffs Office.
4. AGREEMENT.
  - a. On request of TSO, the LES will dispatch, when available, LES personel to render assistance during a civil emergency (i.e., natural or man-made disasters) to property adjacent to Tooele Army Depot not immediately accessible by TSO until arrival of TSO officers or other Local or State Law Enforcement Agencies. However LES personnel may not perform civilian law enforcement duties as such actions would violate the Posse Comitatus Act (18 U.S. Code § 1385). Military Commanders and responsible officials of DOD components and agencies are authorized, when time does not permit prior approval from higher headquarters and subject to supplemental direction, to take immediate actions in response to requests from domestic civil authorities in order to save lives, prevent human suffering, or mitigate great property damage.
  - b. On request to the TSO by the LES, TSO will dispatch, when available, TSO personnel to any point within the jurisdiction of the Tooele Army Depot.
  - c. The rendering of assistance through the terms of this understanding shall not be mandatory, but the party receiving the request for assistance should immediately inform the requesting department if, for any reason, assistance cannot be rendered.
  - d. Any dispatch of equipment and personel pursuant to this understanding is subject to the following conditions:

- (1). Any request for assistance, through this understanding, will specify the location to which the personnel are to be dispatched; however, a representative of the responding organization will determine the amount and type of personnel to be furnished.
- (2). The responding organization will report to the officer in charge of the requesting organization at the location to which the personnel are dispatched, and will be subject to the orders of the official.
- (3). A responding organization will be free to retire when the services of the responding organization are no longer required, or when the responding organization is needed within the area for which it normally provides law enforcement services.
- (4). Each party to this agreement is authorized and directed to meet and draft any detailed plans and procedures of operation necessary to effectively implement this understanding. Such plans and procedures shall become effective upon ratification by the signatory parties.
- (5). All equipment used by the TSO in carrying out this MOU will be owned by the TSO, and all personnel acting for the TSO under this MOU will be employees or volunteer members of the TSO.
- (6). LES and TSO will seek guidance from their respective legal offices concerning jurisdiction for the conduct of investigations of possible criminal law violations on Tooele Army Depot to insure that the appropriate criminal investigation agency conducts the investigation with a view toward prosecution in the appropriate State or Federal court system. LES will contact the Tooele Army Depot Legal Office, (435) 833-2536. TSO will contact the Tooele County Attorney Office, Criminal Division, (435) 843-3120.
- (7). Domestic violence and other State of Utah protection orders have the same force and effect on Tooele Army Depot as such orders have within the jurisdiction of the court that issued the order (10 U.S. Code § 1561a). Military Protective Orders (MPO) for military personnel on and off Tooele Army Depot will be honored by the TSO and transmitted through routine administrative procedures. LES and TSO will cooperate in the service and enforcement of protective orders at Tooele Army Depot and in Tooele County.
- (8). TSO officers seeking to serve legal process at Tooele Army Depot should contact the Tooele Army Depot Legal Office, (435) 833-2536 for assistance.
- (9). TSO and LES will share incident/investigation reports and other law enforcement information upon request to the extent that such sharing is allowed under Utah state law and the Federal Privacy Act (5 U.S. Code § 552a(b)(7)). TSO requests for LES information or reports should be directed to: Chief of Police telephone (435) 833-2559. LES requests for information or reports should be directed to: Sheriff, telephone (435) 882-5600.
- (10). The Chief, LES, or his representative will meet frequently with the Tooele County Sheriff or his representative to share information and concerns.
- (11). This MOU shall become effective upon the date of the last signature below and remain in full force and effect until cancelled by mutual agreement of



the parties hereto or by written notice by one party to the other party, giving thirty (30) days notice of said cancellation. This MOU will be reviewed biannually and updated as required.

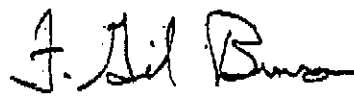
Signature   
Frank Parrot  
Sheriff  
Tooele County, Utah

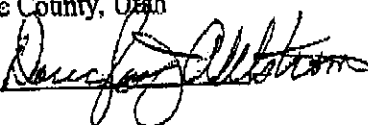
Signature   
Anne L. Davis  
Colonel, U.S. Army  
Commanding Officer  
Tooele Army Depot

Date: 8-22-05

Date: 20 July 2005

Douglas J. Ahlstrom  
County Attorney  
Tooele County, Utah

  
F. Gil Brunson  
Chief Counsel  
Tooele Army Depot

Date: 

Date: 19 July 2005

MEMORANDUM OF UNDERSTANDING (MOU) BETWEEN  
TOOELE ARMY DEPOT  
AND  
UTAH HIGHWAY PATROL

SUBJECT: Mutual Assistance in providing Law Enforcement and Civil Emergency Assistance.

1. PURPOSE. To secure the benefits of mutual assistance in Law Enforcement for the preservation of life and property on Tooele Army Depot and it's surrounding communities:

2. FACTS.

The primary responsibility for Utah Highway Patrol (UHP) is to protect and serve the community, to include Tooele Army Depot.

- a. One of the functions of the Tooele Army Depot, Law Enforcement and Security Branch (LES) is to provide emergency and routine Law Enforcement and Security services to Tooele Army Depot.
  - b. Jurisdiction at Tooele Army Depot includes areas of Exclusive Federal Jurisdiction and areas of concurrent State and Federal Jurisdiction. LES has primary Law Enforcement responsibility at Tooele Army Depot regardless of the type of jurisdiction present at a given site on the Depot.
3. SCOPE. This MOU establishes responsibilities and guidelines for support associated with TOOELE Army Depot and the Utah Highway Patrol.

4. AGREEMENT.

- a. On request of UHP, the LES will dispatch, when available, LES personnel to render assistance during a civil emergency (i.e., natural or man-made disasters) to property adjacent to Tooele Army Depot not immediately accessible by UHP until arrival of UHP officers or other Local or State Law Enforcement Agencies. However LES personnel may not perform civilian law enforcement duties as such actions would violate the Posse Comitatus Act (18 U.S. Code § 1385). Military Commanders and responsible officials of DOD components and agencies are authorized, when time does not permit prior approval from higher headquarters and subject to supplemental direction, to take immediate actions in response to requests from domestic civil authorities in order to save lives, prevent human suffering, or mitigate great property damage.
- b. On request to the UHP by the LES, UHP will dispatch, when available, UHP personnel to any point within the jurisdiction of the Tooele Army Depot.
- c. The rendering of assistance through the terms of this understanding shall not be Mandatory, but the party receiving the request for assistance should immediately Inform the requesting department if, for any reason, assistance cannot be rendered.
- d. Any dispatch of equipment and personnel pursuant to this understanding is subject to the following conditions:

- (1). Any request for assistance, through this understanding, will specify the location to which the personnel are to be dispatched; however, a representative of the responding organization will determine the amount and type of personnel to be furnished.
- (2). The responding organization will report to the officer in charge of the requesting organization at the location to which the personnel are dispatched, and will be subject to the orders of the official.
- (3). A responding organization will be free to retire when the services of the responding organization are no longer required, or when the responding organization is needed within the area for which it normally provides law enforcement services.
- (4). Each party to this agreement is authorized and directed to meet and draft any detailed plans and procedures of operation necessary to effectively implement this understanding. Such plans and procedures shall become effective upon ratification by the signatory parties.
- (5). All equipment used by the UHP in carrying out this MOU will be owned by the UHP, and all personnel acting for the UHP under this MOU will be employees or volunteer members of the UHP.
- (6). LES and UHP will seek guidance from their respective legal offices concerning jurisdiction for the conduct of investigations of possible criminal law violations on Tooele Army Depot to insure that the appropriate criminal investigation agency conducts the investigation with a view toward prosecution in the appropriate State or Federal court system. LES will contact the Tooele Army Depot Legal Office, (435) 833-2536. UHP will contact the Tooele County Attorney Office, Criminal Division, and (435) 843-3120.
- (7). Domestic violence and other State of Utah protection orders have the same force and effect on Tooele Army Depot as such orders have within the jurisdiction of the court that issued the order (10 U.S. Code § 1561a). Military Protective Orders (MPO) for military personnel on and off Tooele Army Depot will be honored by the UHP and transmitted through routine administrative procedures. LES and UHP will cooperate in the service and enforcement of protective orders at Tooele Army Depot and in Utah.
- (8). UHP officers seeking to serve legal process at Tooele Army Depot should contact the Tooele Army Depot Legal Office, (435) 833-2536 for assistance.
- (9). UHP and LES will share incident/investigation reports and other law enforcement information upon request to the extent that such sharing is allowed under Utah state law and the Federal Privacy Act (5 U.S. Code § 552a(b)(7)). UHP requests for LES information or reports should be directed to: Chief of Police telephone (435) 833-2156. LES requests for information or reports should be directed to: UHP, telephone (435) 882-5600.
- (10). The Chief, LES, or his representative will meet frequently with the Utah Highway Patrol to share information and concerns.
- (11). This MOU shall become effective upon the date of the last signature below and remain in full force and effect until cancelled by mutual agreement of the parties hereto or by written notice by one party to the other party, giving

thirty (30) days notice of said cancellation. This MOU will be reviewed biannually and updated as required.

Signature

Mike Rapich

Lieutenant, Sector Leader

Tooele County, Ut.

Date:

25 SEPT 2006

Signature

Anne L. Davis

Anne L. Davis,

Colonel, Ordnance Corps

Commanding, Tooele Army Depot

Date:

12 SEPT 2006



## DEPARTMENT OF THE ARMY

Tooele Army Depot  
Tooele, Utah 84074-5000

May 22, 2013

REPLY TO  
ATTENTION OF

Office of the Commander

J. Bruce Clegg, Commission Chairman  
Tooele County Commission  
47 South Main Street, Room 210  
Tooele, Utah 84074

Dear Commissioner Clegg,


This memorandum is in reference to a Memorandum of Agreement (MOA) between Tooele County, Tooele Army Depot, Dugway Proving Ground, Deseret Chemical Depot and State of Utah Division of Emergency Management. The agreement subject, dated June 1, 2011, is the Establishment of the Tooele Community Joint Information Center/System (copy enclosed).

It has come to my attention that Tooele County has made an agreement with Tooele County Youth Services, operated by Valley Mental Health, to locate that program in the established Tooele Community Joint Information Center (JIC) facility located at 27 South Main Street, Tooele, Utah. This arrangement has been made without notification or coordination with all parties involved.

The document clearly agrees to the establishment of the Tooele Community Joint Information Center/System for times of emergencies or disasters (all-hazards) occurring in Tooele County through mutual cooperation. Tooele County had agreed to provide and maintain a physical facility at 27 South Main Street for use as the JIC on a 24 hour basis, for the joint or separate use of the parties in times of a disaster, emergency, for training, or for other meetings.

Request you provide Tooele County's intent or options of supporting a Joint Information Center/System. This system is an integral part of our emergency management planning. Tooele Army Depot's point of contact for the action is Sheila Lopez, Tooele Army Depot Master Planner, telephone number 435-833-2124; email [sheila.l.lopez2.civ@mail.mil](mailto:sheila.l.lopez2.civ@mail.mil).

Sincerely,

  
Christopher O. Mohan  
Colonel, US Army  
Commanding

Copies Furnished:  
Commander, Dugway Proving Ground  
Commander, Deseret Chemical Depot  
Director, Utah Division of Emergency Management



TOOELE COUNTY CORPORATION  
CONTRACT # 11-09-007

MEMORANDUM OF AGREEMENT  
BETWEEN  
TOOELE COUNTY  
TOOELE ARMY DEPOT  
DUGWAY PROVING GROUND  
DESERET CHEMICAL DEPOT  
AND  
STATE OF UTAH DIVISION OF EMERGENCY MANAGEMENT

SUBJECT: Establishment of the Tooele Community Joint Information Center/System

1. **THIS AGREEMENT** entered into this 1st day of June 2011 by and among Tooele County (County), Tooele Army Depot (TEAD), Dugway Proving Ground (DPG), Deseret Chemical Depot (DCD), and State of Utah Division of Emergency Management (UDEM), witnesseth that:

a. **WHEREAS**, there is a need for cooperation between and among County, TEAD, DPG, DCD, and UDEM concerning the acquisition and dissemination of information to governmental officials, media and general public during all-hazard emergencies and disasters; and

b. **WHEREAS**, County, TEAD, DPG, DCD, and UDEM desire to cooperate by establishing the Tooele Community Joint Information Center/System for use whenever emergencies or disasters of any type (all-hazards) occur anywhere in Tooele County:

c. **NOW, THEREFORE**, the parties agree to establish the Tooele Community Joint Information Center/System for acquisition and dissemination of emergency public information in times of emergencies or disasters (all-hazards) occurring in Tooele County through mutual cooperation as follows:

2. **PURPOSE**: The need exists among all jurisdictions to provide coordinated and consistent public information in the event of any emergency or disaster occurring in Tooele County. This need can be met by (a) designating spokespersons to serve as points of contact for the media, public and other emergency response organizations, (b) following policies and procedures for sharing of information and cooperation in developing information releases, and (c) activating and operating a JIC to facilitate the coordination and dissemination of emergency public information. This memorandum is intended to set policies and general understandings under which these activities will be carried out. Detailed procedures are documented in the Tooele Community Joint Information Center/System Plan.

SUBJECT: *Establishment of the Tooele Community Joint Information Center/System*

**3. DESIGNATION OF SPOKESPERSONS:** The County, TEAD, DPG, DCD, and UDEM will each designate a primary spokesperson to provide emergency public information to the media in the event of emergencies or disasters in Tooele County. These spokespersons, and/or their designated alternates, will be the primary points of contact for providing information to the media during the emergency, and for coordination and sharing of such information among the response organizations.

**4. COORDINATION OF INFORMATION:** The County, TEAD, DPG, DCD, and UDEM will use best efforts to implement these information coordination policies in the event of an emergency or disaster:

- Share unclassified information with other spokespersons prior to disseminating to the media. If that is not possible, share the information as soon as possible.
- Cooperate to develop joint press releases and news conference briefing charts and to conduct joint news conferences.
- Provide information on the operations and policies of their respective jurisdictions and refer questions about other jurisdictions' activities to the appropriate spokesperson.

a. These policies will apply to all public information activities associated with any emergency or disaster in Tooele County, whether performed at the Joint Information Center (JIC) or from other locations.

b. Each organization retains the right to issue emergency public information concerning its organization to the media at any time, without restriction on content or format, in accordance with its own policies and procedures.

**5. OPERATION OF THE JIC:** The JIC is established at 27 South Main Street, Tooele. The JIC may be used for any emergency or disaster that occurs in Tooele County. Management and use of the JIC will be the joint responsibility of Tooele County, TEAD, DPG, DCD, and UDEM, who will each designate an individual to support the Information Management Group. JIC activation and operational procedures will be in accordance with the Tooele Community Joint Information Center/System Plan. Use of the facility for exercises, training, and other emergency preparedness activities will be coordinated among all parties to this agreement.

**6. TOOELE COUNTY RESPONSIBILITIES:** The County agrees to:

a. Designate a spokesperson to provide information on its emergency response activities. This spokesperson initially will be the County's Emergency Management Public Information Officer.

b. Send a spokesperson or alternate representative to the JIC.

c. Operate in accordance with the Tooele Community Joint Information Center/System plan.

SUBJECT: *Establishment of the Tooele Community Joint Information Center/System*

d. Provide and maintain a physical facility at 27 South Main Street, Tooele, for use as the JIC on a 24-hour basis, for the joint or separate use of the parties in time of a disaster, emergency, for training, or for other meetings.

e. Provide telephone and facsimile services, audio/visual support equipment, janitorial services, utilities, an Uninterruptible Power Supply, and an alternate power source for the JIC.

f. Provide and maintain throughout the term of this agreement the equipment located at the JIC for use by the parties.

g. Provide the JIC with the necessary supplies and volunteer augmentation support staff for the Tooele Community for actual emergencies and training sessions.

h. Provide and maintain a sign on the outside of the JIC that identifies the facility as the Tooele Community Joint Information Center reflective of the local/state/federal government JIC.

i. Provide appropriate security measures for the JIC when activated and operational.

j. Provide TEAD, DPG, DCD, and UDEM with immediate access and use of the JIC in the event of any emergency or disaster. The designated point of contact shall be the TCEM PIO at (435) 833-8123, Monday through Thursday, 7:00 a.m. to 6:00 p.m. During other than business hours (including holidays), contact Tooele County Dispatch at (435) 882-5600.

**7. TEAD RESPONSIBILITIES:** The TEAD agrees to:

a. Designate a spokesperson to provide unclassified information on its emergency response activities. This spokesperson initially will be the depot's Public Affairs Officer.

b. Send a spokesperson or alternate representative to the JIC.

c. Operate in accordance with the Tooele Community Joint Information Center/System plan.

d. Provide the JIC with the necessary supplies and support staff for the TEAD Public Affairs cell for actual emergencies and training sessions.

e. Provide to TCEM PIO a list of designated persons who are authorized to request access to the JIC pursuant to the terms of this agreement.

f. Provide the TCEM PIO with as much advance warning as possible (no less than two weeks) when the TEAD wishes to use the JIC facility for training or exercises.



SUBJECT: *Establishment of the Tooele Community Joint Information Center/System*

**8. DPG RESPONSIBILITIES:** The DPG agrees to:

- a. Designate a spokesperson to provide unclassified information on its emergency response activities. This spokesperson initially will be the DPG's Public Affairs Officer.
- b. Send a spokesperson or alternate representative to the JIC when possible.
- c. Operate in accordance with the Tooele Community Joint Information Center/System plan.
- d. Provide the JIC with necessary supplies and support staff for the DPG Public Affairs cell for actual emergencies and training sessions.
- e. Provide to TCEM PIO a list of designated persons who are authorized to request access to the JIC pursuant to the terms of this agreement.
- f. Provide the TCEM PIO with as much advance warning as possible (no less than two weeks) when the DPG wishes to use the JIC facility for training or exercises.

**9. DCD RESPONSIBILITIES:** The DCD agrees to:

- a. Designate a spokesperson to provide unclassified information on its emergency response activities. This spokesperson initially will be the depot's CSEPP Public Affairs Specialist. In the event of Service Response Force (SRF) activation, the Army spokesperson may be the SRF Commander or SRF PAO.
- b. Send a spokesperson or alternate representative to the JIC.
- c. Operate in accordance with the Tooele Community Joint Information Center/System plan.
- d. Provide the JIC with the necessary supplies and augmentation support staff for the DCD Public Affairs cell for actual emergencies and training sessions.
- e. Provide to TCEM PIO a list of designated persons who are authorized to request access to the JIC pursuant to the terms of this agreement.
- f. Provide the TCEM PIO with as much advance warning as possible (no less than two weeks) when the Deseret Chemical Depot wishes to use the JIC facility for training or exercises.

SUBJECT: *Establishment of the Tooele Community Joint Information Center/System*

**10. UDEM RESPONSIBILITIES:** UDEM agrees to:

- a. Designate a spokesperson to provide information on State emergency response activities. This spokesperson initially will be the State's CSEPP Public Information Officer.
- b. Send a spokesperson or alternate representative to the JIC.
- c. Operate in accordance with the Tooele Community Joint Information Center/System plan.
- d. Provide the JIC necessary supplies and clerical support staff needed by UDEM for actual emergencies and training sessions.
- e. Provide to TCEM PIO a list of designated persons who are authorized to request access to the JIC pursuant to the terms of this agreement.
- f. Provide the TCEM PIO with as much advance warning as possible (no less than two weeks) when the ~~UDEM~~ wishes to use the JIC facility for training or exercises.

**11. MUTUAL RESPONSIBILITIES:** The parties mutually agree to:

- a. Coordinate acquisition and dissemination of information in cooperation with any other local/state/federal agencies as applicable, to facilitate the release of timely, accurate, appropriate and coordinated information to the news media, public and elected officials.
- b. During times of emergency or disaster, share resources at the JIC for the benefit of all participating JIC operations.
- c. Meet annually, if providing equipment, to inventory said equipment in the JIC.

**12. TERM AND TERMINATION:**

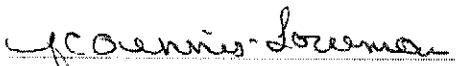
- a. This agreement will be reviewed for adequacy annually on the anniversary of its effective date. If determined to be adequate, this agreement shall remain in effect for another year.
- b. If this agreement is determined to need revision upon annual review, such revision shall be made and agreed to by all parties. If such revision is minor, it may be accomplished through attachment to this original agreement. If such revision is determined to be major, a new agreement may be prepared to supersede this agreement.
- c. Any signatory to this MOA may withdraw from the MOA 90 days after sending written notice to all parties as to why they wish to withdraw from the MOA.

SUBJECT: *Establishment of the Tooele Community Joint Information Center/System*

**13. TERMINATION OF PRIOR AGREEMENTS:** The parties mutually agree that the Memorandum of Agreement (Joint Information Center) between County, DCD, TEAD, DPG, and DHS dated 1 September 2006 is and shall be terminated upon the execution of this agreement.

In witness whereof, the parties have subscribed their signatures below with the agreement effective on the date above written.

**TOOELE ARMY DEPOT**

  
YOLANDA C. DENNIS-LOWMAN  
COL. ~~CD~~ LG  
Commanding

**TOOELE COUNTY**

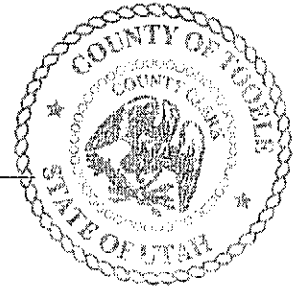
  
COLLEEN JOHNSON, Chairman  
Tooele County Commission

**DUGWAY PROVING GROUND**


  
WILLIAM E. KING IV  
COL. CM  
Commanding

**ATTEST**

  
MARILYN GILLETTE, Clerk  
Tooele County



**DESERET CHEMICAL DEPOT**

  
MARK B. POMEROY  
COL. CM  
Commanding

**APPROVED AS TO FORM**

  
DOUGLAS HOGAN  
Tooele County Attorney

**STATE OF UTAH**

  
KRIS HAMLET, Deputy Director  
Utah Division of Emergency Management

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**Appendix Q**

**Executive Order 13186  
Responsibilities of Federal Agencies to Protect Migratory Birds**

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# Presidential Documents

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Title 3—

Executive Order 13186 of January 10, 2001

The President

## Responsibilities of Federal Agencies To Protect Migratory Birds

By the authority vested in me as President by the Constitution and the laws of the United States of America, and in furtherance of the purposes of the migratory bird conventions, the Migratory Bird Treaty Act (16 U.S.C. 703–711), the Bald and Golden Eagle Protection Acts (16 U.S.C. 668–668d), the Fish and Wildlife Coordination Act (16 U.S.C. 661–666c), the Endangered Species Act of 1973 (16 U.S.C. 1531–1544), the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4347), and other pertinent statutes, it is hereby ordered as follows:

**Section 1. Policy.** Migratory birds are of great ecological and economic value to this country and to other countries. They contribute to biological diversity and bring tremendous enjoyment to millions of Americans who study, watch, feed, or hunt these birds throughout the United States and other countries. The United States has recognized the critical importance of this shared resource by ratifying international, bilateral conventions for the conservation of migratory birds. Such conventions include the Convention for the Protection of Migratory Birds with Great Britain on behalf of Canada 1916, the Convention for the Protection of Migratory Birds and Game Mammals-Mexico 1936, the Convention for the Protection of Birds and Their Environment- Japan 1972, and the Convention for the Conservation of Migratory Birds and Their Environment-Union of Soviet Socialist Republics 1978.

These migratory bird conventions impose substantive obligations on the United States for the conservation of migratory birds and their habitats, and through the Migratory Bird Treaty Act (Act), the United States has implemented these migratory bird conventions with respect to the United States. This Executive Order directs executive departments and agencies to take certain actions to further implement the Act.

**Sec. 2. Definitions.** For purposes of this order:

(a) “Take” means take as defined in 50 C.F.R. 10.12, and includes both “intentional” and “unintentional” take.

(b) “Intentional take” means take that is the purpose of the activity in question.

(c) “Unintentional take” means take that results from, but is not the purpose of, the activity in question.

(d) “Migratory bird” means any bird listed in 50 C.F.R. 10.13.

(e) “Migratory bird resources” means migratory birds and the habitats upon which they depend.

(f) “Migratory bird convention” means, collectively, the bilateral conventions (with Great Britain/Canada, Mexico, Japan, and Russia) for the conservation of migratory bird resources.

(g) “Federal agency” means an executive department or agency, but does not include independent establishments as defined by 5 U.S.C. 104.

(h) “Action” means a program, activity, project, official policy (such as a rule or regulation), or formal plan directly carried out by a Federal agency. Each Federal agency will further define what the term “action” means with respect to its own authorities and what programs should be included

in the agency-specific Memoranda of Understanding required by this order. Actions delegated to or assumed by nonfederal entities, or carried out by nonfederal entities with Federal assistance, are not subject to this order. Such actions, however, continue to be subject to the Migratory Bird Treaty Act.

(i) "Species of concern" refers to those species listed in the periodic report "Migratory Nongame Birds of Management Concern in the United States," priority migratory bird species as documented by established plans (such as Bird Conservation Regions in the North American Bird Conservation Initiative or Partners in Flight physiographic areas), and those species listed in 50 C.F.R. 17.11.

**Sec. 3. Federal Agency Responsibilities.** (a) Each Federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement, within 2 years, a Memorandum of Understanding (MOU) with the Fish and Wildlife Service (Service) that shall promote the conservation of migratory bird populations.

(b) In coordination with affected Federal agencies, the Service shall develop a schedule for completion of the MOUs within 180 days of the date of this order. The schedule shall give priority to completing the MOUs with agencies having the most substantive impacts on migratory birds.

(c) Each MOU shall establish protocols for implementation of the MOU and for reporting accomplishments. These protocols may be incorporated into existing actions; however, the MOU shall recognize that the agency may not be able to implement some elements of the MOU until such time as the agency has successfully included them in each agency's formal planning processes (such as revision of agency land management plans, land use compatibility guidelines, integrated resource management plans, and fishery management plans), including public participation and NEPA analysis, as appropriate. This order and the MOUs to be developed by the agencies are intended to be implemented when new actions or renewal of contracts, permits, delegations, or other third party agreements are initiated as well as during the initiation of new, or revisions to, land management plans.

(d) Each MOU shall include an elevation process to resolve any dispute between the signatory agencies regarding a particular practice or activity.

(e) Pursuant to its MOU, each agency shall, to the extent permitted by law and subject to the availability of appropriations and within Administration budgetary limits, and in harmony with agency missions:

(1) support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;

(2) restore and enhance the habitat of migratory birds, as practicable;

(3) prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable;

(4) design migratory bird habitat and population conservation principles, measures, and practices, into agency plans and planning processes (natural resource, land management, and environmental quality planning, including, but not limited to, forest and rangeland planning, coastal management planning, watershed planning, etc.) as practicable, and coordinate with other agencies and nonfederal partners in planning efforts;

(5) within established authorities and in conjunction with the adoption, amendment, or revision of agency management plans and guidance, ensure that agency plans and actions promote programs and recommendations of comprehensive migratory bird planning efforts such as Partners-in-Flight, U.S. National Shorebird Plan, North American Waterfowl Management Plan, North American Colonial Waterbird Plan, and other planning efforts, as well as guidance from other sources, including the Food and Agricultural



Organization's International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries;

(6) ensure that environmental analyses of Federal actions required by the NEPA or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern;

(7) provide notice to the Service in advance of conducting an action that is intended to take migratory birds, or annually report to the Service on the number of individuals of each species of migratory birds intentionally taken during the conduct of any agency action, including but not limited to banding or marking, scientific collecting, taxidermy, and depredation control;

(8) minimize the intentional take of species of concern by: (i) delineating standards and procedures for such take; and (ii) developing procedures for the review and evaluation of take actions. With respect to intentional take, the MOU shall be consistent with the appropriate sections of 50 C.F.R. parts 10, 21, and 22;

(9) identify where unintentional take reasonably attributable to agency actions is having, or is likely to have, a measurable negative effect on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. With respect to those actions so identified, the agency shall develop and use principles, standards, and practices that will lessen the amount of unintentional take, developing any such conservation efforts in cooperation with the Service. These principles, standards, and practices shall be regularly evaluated and revised to ensure that they are effective in lessening the detrimental effect of agency actions on migratory bird populations. The agency also shall inventory and monitor bird habitat and populations within the agency's capabilities and authorities to the extent feasible to facilitate decisions about the need for, and effectiveness of, conservation efforts;

(10) within the scope of its statutorily-designated authorities, control the import, export, and establishment in the wild of live exotic animals and plants that may be harmful to migratory bird resources;

(11) promote research and information exchange related to the conservation of migratory bird resources, including coordinated inventorying and monitoring and the collection and assessment of information on environmental contaminants and other physical or biological stressors having potential relevance to migratory bird conservation. Where such information is collected in the course of agency actions or supported through Federal financial assistance, reasonable efforts shall be made to share such information with the Service, the Biological Resources Division of the U.S. Geological Survey, and other appropriate repositories of such data (e.g. the Cornell Laboratory of Ornithology);

(12) provide training and information to appropriate employees on methods and means of avoiding or minimizing the take of migratory birds and conserving and restoring migratory bird habitat;

(13) promote migratory bird conservation in international activities and with other countries and international partners, in consultation with the Department of State, as appropriate or relevant to the agency's authorities;

(14) recognize and promote economic and recreational values of birds, as appropriate; and

(15) develop partnerships with non-Federal entities to further bird conservation.

(f) Notwithstanding the requirement to finalize an MOU within 2 years, each agency is encouraged to immediately begin implementing the conservation measures set forth above in subparagraphs (1) through (15) of this section, as appropriate and practicable.

(g) Each agency shall advise the public of the availability of its MOU through a notice published in the **Federal Register**.

**Sec. 4. Council for the Conservation of Migratory Birds.** (a) The Secretary of Interior shall establish an interagency Council for the Conservation of Migratory Birds (Council) to oversee the implementation of this order. The Council's duties shall include the following: (1) sharing the latest resource information to assist in the conservation and management of migratory birds; (2) developing an annual report of accomplishments and recommendations related to this order; (3) fostering partnerships to further the goals of this order; and (4) selecting an annual recipient of a Presidential Migratory Bird Federal Stewardship Award for contributions to the protection of migratory birds.

(b) The Council shall include representation, at the bureau director/administrator level, from the Departments of the Interior, State, Commerce, Agriculture, Transportation, Energy, Defense, and the Environmental Protection Agency and from such other agencies as appropriate.

**Sec. 5. Application and Judicial Review.** (a) This order and the MOU to be developed by the agencies do not require changes to current contracts, permits, or other third party agreements.

(b) This order is intended only to improve the internal management of the executive branch and does not create any right or benefit, substantive or procedural, separately enforceable at law or equity by a party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.



THE WHITE HOUSE,  
January 10, 2001.

## **Appendix R**

### **MOU between the DoD and USFWS to Promote the Conservation of Migratory Birds**

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**MEMORANDUM OF UNDERSTANDING  
BETWEEN THE  
U.S. DEPARTMENT OF DEFENSE  
AND THE  
U.S. FISH AND WILDLIFE SERVICE  
TO PROMOTE THE CONSERVATION OF MIGRATORY BIRDS**

This Memorandum of Understanding (MOU) is entered into between the U.S. Department of Defense (DoD) and the U.S. Fish and Wildlife Service (FWS) (hereinafter "the Parties").

**A. Purpose and Scope**

Pursuant to Executive Order 13186 (January 17, 2001), Responsibilities of Federal Agencies to Protect Migratory Birds, this MOU outlines a collaborative approach to promote the conservation of migratory bird populations.

This MOU does not address incidental take during military readiness activities, which is being addressed in a rulemaking in accordance with section 315 of the National Defense Authorization Act for Fiscal Year 2003 (Pub. L. 107-314, 116 Stat. 2458).

This MOU specifically pertains to the following categories of DoD activities:

- (1) Natural resource management activities, including, but not limited to, habitat management, erosion control, forestry activities, agricultural outleasing, conservation law enforcement, invasive weed management, and prescribed burning;
- (2) Installation support functions, including but not limited to, the maintenance, construction or operation of administrative offices, military exchanges, road construction, commissaries, water treatment facilities, storage facilities, schools, housing, motor pools, non-tactical equipment, laundries, morale, welfare, and recreation activities, shops, landscaping, and mess halls;
- (3) Operation of industrial activities;
- (4) Construction or demolition of facilities relating to these routine operations; and
- (5) Hazardous waste cleanup.

This MOU identifies specific activities where cooperation between the Parties will contribute substantially to the conservation of migratory birds and their habitats. This MOU does not authorize the take of migratory birds.

## **B. Authorities**

The Parties' responsibilities under the MOU are authorized by provisions of the following laws:

Alaska National Interest Lands Conservation Act of 1980 (16 USC 410hh-3233)  
Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668-668d)  
Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.)  
Fish and Wildlife Act of 1956 (16 U.S.C. 742 et seq.)  
Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901-2911)  
Fish and Wildlife Coordination Act (16 U.S.C. 661-667)  
Migratory Bird Conservation Act (16 U.S.C. 715-715d, 715e, 715f-715r)  
Migratory Bird Treaty Act (16 U.S.C. 703-711)  
National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347)  
Sikes Act Improvement Act of 1997 (16 USC 670a-670o)  
Agreements to limit encroachments and other constraints on military training, testing, and operations (10 U.S.C. § 2684a)

## **C. Background**

The Parties have a common interest in the conservation and management of America's natural resources. The Parties agree that migratory birds are important components of biological diversity and that the conservation of migratory birds will both help sustain ecological systems and help meet the public demand for conservation education and outdoor recreation, such as wildlife viewing and hunting opportunities. The Parties also agree that it is important to: 1) focus on bird populations; 2) focus on habitat restoration and enhancement where actions can benefit specific ecosystems and migratory birds dependent upon them; and 3) recognize that actions taken to benefit some migratory bird populations may adversely affect other migratory bird populations.

The DoD mission is to provide for the Nation's defense. DoD's conservation program works to ensure continued access to land, air, and water resources for realistic military training and testing while ensuring that the natural and cultural resources entrusted to DoD's care are sustained in a healthy condition.

The DoD is an active participant in international bird conservation partnerships including Partners in Flight (PIF) and the North American Bird Conservation Initiative (NABCI). Military lands frequently provide some of the best remaining habitat for migratory bird species of concern, and DoD plans to continue its leadership role in bird conservation partnerships.

Through the PIF initiative, DoD works in partnership with numerous Federal and State agencies and nongovernmental organizations for the conservation of migratory and resident birds and to enhance migratory bird survival. Through DoD PIF, a list of species of concern (see Definitions) has been developed for each Bird Conservation Region where DoD facilities occur, thus improving DoD's ability to evaluate any migratory bird conservation concerns on respective DoD lands.

Integrated Natural Resources Management Plans (INRMPs) offer a coordinated approach for incorporating habitat conservation efforts into installation management.

INRMPs are a significant source of baseline conservation information and conservation initiatives used when preparing National Environmental Policy Act (NEPA) documents for all DoD management activities. This linkage helps to ensure that appropriate conservation and mitigation measures are identified in NEPA documents and committed to, when appropriate, in final decision documents.

The DoD PIF program provides a framework for incorporating landbird, shorebird and waterbird habitat management efforts into INRMPs. DoD's strategy focuses on inventorying and long-term monitoring to determine changes in migratory bird populations on DoD installations. Effective on-the-ground management may then be applied to those areas identified as having the highest conservation value. DoD's PIF goal is to support the military's training and testing mission while being a vital and supportive partner in regional, national, and international bird conservation initiatives. DoD strives to implement cooperative projects and programs on military lands to benefit the health and well-being of birds and their habitats, whenever possible. The Department of Defense implements bird inventories and monitoring programs in numerous ways including Monitoring Avian Productivity and Survivorship (MAPS) and Next Generation Radar (NEXRAD) for studying bird movements in the atmosphere. DoD also maintains an integrated pest management (IPM) program designed to reduce the use of pesticides to the minimum necessary.

The mission of the FWS is to work with others to conserve, protect, manage, and enhance fish, wildlife, plants, and their habitats for the continuing benefit of the American people. The FWS is legally mandated to implement the provisions of the Migratory Bird Treaty Act (MBTA), which include responsibilities for population management (e.g., monitoring), habitat protection (e.g., acquisition, enhancement, and modification), international coordination, and regulation development and enforcement. The FWS also promotes migratory bird conservation through its coordination and consultation efforts with other entities.

Many FWS programs are involved in bird conservation activities, including:

1. The Division of Migratory Bird Management and Regional Migratory Birds and Habitat Programs serve as focal points in the United States for policy development and strategic planning, developing and implementing monitoring and management initiatives that help maintain healthy populations of migratory birds and their habitat, and providing continued opportunities for citizens to enjoy bird-related recreation.
2. The Division of Bird Habitat Conservation is instrumental in supporting habitat conservation partnerships through the administration of bird conservation grant programs and development of Joint Ventures that serve as major vehicles for implementing the various bird conservation plans across the country.
3. Ecological Services Field Offices across the country serve as the primary contacts for environmental reviews that include, when requested, projects developed by local military installations and DoD regional offices involving migratory bird issues. The Field Offices coordinate with the Regional Migratory Bird Offices, as necessary, during these reviews regarding permits

and overall migratory bird conservation coordination for DoD activities.

4. The Office of Law Enforcement is the principal FWS program that enforces the legal provisions of the MBTA .

The Parties agree this MOU shall be implemented to the extent permitted by law and in harmony with agency missions, subject to the availability of appropriations and budgetary limits.

**D. Responsibilities**

**1. Each Party shall:**

a. Emphasize an interdisciplinary, collaborative approach to migratory bird conservation in cooperation with other governments, State and Federal agencies, and non-federal partners within the geographic framework of the NABCI Bird Conservation Regions

b. Strive to protect, restore, enhance, and manage habitat of migratory birds, and prevent or minimize the loss or degradation of habitats on DoD-managed lands, by:

(1) Identifying and avoiding management actions that have the potential to adversely affect migratory bird populations, including breeding, migration, or wintering habitats; and by developing and implementing, as appropriate, conservation measures that would avoid or minimize the take of migratory birds or enhance the quality of the habitat used by migratory birds.;

(2) Working with partners to identify, conserve, and manage Important Bird Areas, Western Hemisphere Shorebird Reserve Network sites, and other significant bird conservation sites that occur on DoD-managed lands;

(3) Preventing or abating the pollution or detrimental alteration of the habitats used by migratory birds;

(4) Developing and integrating information on migratory birds and their habitats into outreach and education materials and activities; and

(5) Controlling the introduction, establishment, and spread of non-native plants or animals that may be harmful to migratory bird populations, as required by Executive Order 13112 on Invasive Species.

c. Work with willing landowners to prevent or minimize the loss or degradation of migratory bird habitats on lands adjacent or near military installation boundaries. This cooperative conservation may include:

(1) Participating in efforts to identify, protect, and conserve



important migratory bird habitats or other significant bird conservation sites and ecological conditions that occur in landscapes or watersheds that may be affected by activities on DoD lands;

(2) Developing and integrating information on migratory bird resources found on DoD lands into other partners' outreach and education materials and activities; and

(3) Using available authorities to enter into agreements with other Federal agencies, States, other governmental entities, and private conservation organizations to conserve and enhance habitat in a compatible manner so military operations are not restricted.

d. Promote collaborative projects such as:

(1) Developing or using existing inventory and monitoring programs, at appropriate scales, with national or regional standardized protocols, to assess the status and trends of bird populations and habitats, including migrating, breeding, and wintering birds;

(2) Designing management studies and research projects using national or regional standardized protocols and programs, such as MAPS to identify the habitat conditions needed by applicable species of concern, to understand interrelationships of co-existing species, and to evaluate the effects of management activities on habitats and populations of migratory birds;

(3) Sharing inventory, monitoring, research, and study data for breeding, migrating, and wintering bird populations and habitats in a timely fashion with national data repositories such as Breeding Bird Research and Monitoring Database (BBIRD), National Point Count Database, National Biological Information Infrastructure, and MAPS;

(4) Working in conjunction with each other and other Federal and State agencies to develop reasonable and effective conservation measures for actions that affect migratory birds and their natural habitats;

(5) Participating in or promoting the implementation of existing regional or national inventory and monitoring programs such as Breeding Bird Survey (BBS), BBIRD, Christmas Bird Counts, bird atlas projects, or game bird surveys (e.g., mid-winter waterfowl surveys) on DoD lands where practicable and feasible.

(6) Using existing partnerships and exploring opportunities for expanding and creating new partnerships to facilitate combined funding for inventory, monitoring, management studies, and research.

e. Provide training opportunities to DoD natural resources personnel on migratory bird issues, to include bird population and habitat inventorying,

monitoring methods, and management practices that avert detrimental effects and promote beneficial approaches to migratory bird conservation.

f. Participate in the Interagency Council for the Conservation of Migratory Birds to evaluate implementation of this MOU.

g. Promote migratory bird conservation internationally, as it relates to wintering, breeding and migration habitats of birds that breed on DoD lands.

h. Promote and undertake ecologically sound actions to curb the introduction in the wild of exotic or invasive species harmful to migratory birds.

2. **The Department of Defense Shall:**

a. Follow all migratory bird permitting requirements for non-military readiness activities that are subject to 50 CFR Parts 21.22 (banding or marking), 21.23 (scientific collecting), 21.26 (special Canada goose permit), 21.27 (special purposes), or 21.41 (depredation). No permit is required to take birds in accordance with Parts 21.43 - 21.47 (depredation orders).

b. Encourage incorporation of comprehensive migratory bird management objectives in the preparation of DoD planning documents, including Integrated Natural Resource Management Plans, Pest Management Plans, Installation Master Plans, NEPA analyses, and non-military readiness elements of Bird Aircraft Strike Hazard documents. Comprehensive planning efforts for migratory birds include PIF Bird Conservation Plans, the North American Waterfowl Management Plan, U.S. Shorebird Conservation Plan, and North American Waterbird Conservation Plan and associated regional plans where available.

c. Incorporate conservation measures addressed in Regional or State Bird Conservation Plans in INRMPs.

d. Consistent with imperatives of safety and security, allow the FWS and other partners reasonable access to military lands for conducting sampling or survey programs such as MAPS, BBS, BBIRD, International Shorebird Survey, and breeding bird atlases.

e. Prior to starting any activity that is likely to affect populations of migratory birds:

(1) Identify the migratory bird species likely to occur in the area of the proposed action and determine if any species of concern could be affected by the activity;

(2) Assess and document, through the project planning process, using NEPA when applicable, the effect of the proposed action on species of concern. Use best available demographic, population, or habitat

association data in the assessment of effects upon species of concern;

(3) Engage in early planning and scoping with the FWS relative to potential impacts of a proposed action, to proactively address migratory bird conservation, and to initiate appropriate actions to avoid or minimize the take of migratory birds.

f. Manage military lands and non-military readiness activities in a manner that supports migratory bird conservation, giving consideration to the following factors:

(1) Habitat protection, restoration, and enhancement. Military lands contain many important habitats for migratory birds. Some unique, sensitive, endangered and/or declining habitat types that may require special management attention include:

(a) Grasslands. Many native grassland communities require intensive management to maintain and restore vigor and species diversity and to provide habitat for migratory birds and other wildlife dependent on native grasslands. Grassland management and restoration tools include controlled burning, mowing, grazing, native species planting, and exotic plant removal. Many grasslands have evolved with a natural fire regime, and the management activities often emulate this fire regime.

(b) Riparian and wetland habitats. Military lands contain riparian and wetland habitats that may be critical for migratory birds. DoD will strive to prevent the destruction or degradation of wetlands and riparian vegetation, and also restore those habitats, when feasible, where they have been degraded.

(c) Coastal beach, salt marsh, and dune habitats. Military lands support some of the best remaining undisturbed coastal habitats. DoD will strive to protect, restore and prevent the destruction of coastal and island habitats that are important to breeding, migrating and wintering shorebirds, salt marsh land birds and colonial water birds.

(d) Longleaf pine ecosystem. Some of the best remaining examples of the longleaf pine ecosystem occur on military lands. Such habitats benefit from prescribed fire and other management measures which DoD regularly implements on thousands of acres in the Southeast. The DoD manages and will continue to manage this ecosystem to benefit and promote migratory bird conservation.

(2) Fire and fuels management practices. Fire plays an important role in shaping plant and animal communities and is a valuable tool in restoring habitats altered by decades of fire suppression. Fire management may include fire suppression, but also involves fire

prevention and fuels treatment, including prescribed burning and monitoring, to protect communities and provide for healthy ecosystems. Fire management planning efforts will consider the effects of fire management strategies on the conservation of migratory bird populations.

- (3) Invasive Species and Aquatic Nuisance Species management practices. Invasive Species and Aquatic Nuisance Species are a threat to native habitats and wildlife species throughout the United States, including military lands. Efforts to control/contain these species must take into account both the impacts from invasive species and the effects of the control efforts on migratory bird populations. Invasive Species and Aquatic Nuisance Species that can threaten migratory birds and their habitats include, but are not limited to, exotic grasses, trees and weeds, terrestrial and aquatic insects and organisms, non-native birds, and stray and feral cats.
- (4) Communications towers, utilities and energy development. Increased communications demands, changes in technology and the development of alternative energy sources result in impacts on migratory birds. DoD will review wind turbine and powerline guidelines published by FWS and the Avian Power Line Interaction Committee, respectively, and consult with FWS as needed, in considering potential effects on migratory birds of proposals for locating communications towers, powerlines or wind turbines on military lands. Construction of new utility and energy systems and associated infrastructure should be designed to avoid and minimize impacts on migratory bird populations. Existing utilities may also be considered for retrofitting to reduce impacts.
- (5) Recreation and public use. The demand for outdoor recreational opportunities on public lands is increasing. Impacts on migratory birds may occur both through direct and indirect disturbances by visitors and through agency activities associated with providing recreational opportunities to visitors and installation personnel and morale facilities (e.g., facilities construction). DoD provides access to military lands for recreation and other public use, such as Watchable Wildlife and bird watching, where such access does not compromise security and safety concerns or impact migratory birds, other species, or their habitats.

Many conservation measures have been developed to benefit a variety of migratory bird species and their associated habitats. Some of these conservation measures may be directly applicable to DoD non-military readiness related activities; however, the appropriateness and practicality of implementing any specific conservation measure may have to be determined on a case-by-case basis. The FWS will work cooperatively with DoD in providing existing conservation measures and developing new ones as needed. Examples of some conservation measures may be found at <http://www.partnersinflight.org/pubs/BMPs.htm> for landbird

species.

g. Develop and implement new and/or existing inventory and monitoring programs, at appropriate scales, using national standardized protocols, to evaluate the effectiveness of conservation measures to minimize or mitigate take of migratory birds, with emphasis on those actions that have the potential to significantly impact species of concern.

h. Advise the public of the availability of this MOU through a notice published in the Federal Register.

i. In accordance with DoD INRMP guidance, promote timely and effective review of INRMPs with respect to migratory bird issues with the FWS and respective state agencies. During the INRMP review process, evaluate and coordinate with FWS on any potential revisions to migratory bird conservation measures taken to avoid or minimize take of migratory birds.

3. **The Fish and Wildlife Service Shall:**

a. Work with DoD by providing recommendations to minimize adverse effects upon migratory birds from DoD actions.

b. Through the Division of Migratory Bird Management, maintain a Web page on permits that provides links to all offices responsible for issuing permits and permit application forms for take of migratory birds.

c. Provide essential background information to the DoD when requested to ensure sound management decisions. This may include migratory bird distributions, status, key habitats, conservation guidelines, and risk factors within each BCR. This includes updating the FWS publication of *Birds of Conservation Concern* at regular intervals so it can be reliably referenced.

d. Work to identify special migratory bird habitats (i.e., migration corridors, stop-over habitats, ecological conditions important in nesting habitats) to aid in collaborative planning.

e. Through the Ecological Service Field Office, provide to DoD, upon request, technical assistance on migratory bird species and their habitats.

f. In accordance with FWS Guidelines for Coordination with DoD and Implementation of the 1997 Sikes Act (2005), work cooperatively with DoD in the development, review and revision of INRMPs.

g. Review and comment on NEPA documents and other planning documents forwarded by military installations.

**E. It is Mutually Agreed and Understood That:**

1. This MOU will not change or alter requirements associated with the MBTA, Endangered Species Act, NEPA, Sikes Act or other statutes or

legal authority.

2. The responsibilities established by this MOU may be incorporated into existing DoD actions; however, DoD may not be able to implement some responsibilities identified in the MOU until DoD has successfully included them in formal planning processes. This MOU is intended to be implemented when new actions are initiated as well as during the initiation of new, or revisions to, INRMPs, Pest Management Plans, and non-military readiness elements of Bird Aircraft Strike Hazard plans. It does not apply to ongoing DoD actions for which a NEPA decision document was finalized prior to, or within 180 days of the date this MOU is signed.
3. This MOU in no way restricts either Party from participating in similar activities with other public or private agencies, governments, organizations, or individuals.
4. An elevation process to resolve any dispute between the Parties regarding a particular practice or activity is in place and consists of first attempting to resolve the dispute with the DoD military installation and the responsible Ecological Services Field Office. If there is no resolution at this level, either Party may elevate the issue to the appropriate officials at the applicable Military Service's Chain of Command and FWS Regional Offices. In the event that there is no resolution by these offices, the dispute may be elevated by either Party to the headquarters office of each agency.
5. This MOU is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement, contribution of funds, or transfer of anything of value between the Parties will be handled in accordance with applicable laws, regulations, and procedures, including those for government procurement and printing. Such endeavors will be outlined in separate agreements that shall be made in writing by representatives of the Parties and shall be independently authorized by appropriate statutory authority.
6. The Parties shall schedule periodic meetings to review progress and identify opportunities for advancing the principles of this MOU.
7. This MOU is intended to improve the internal management of the executive branch and does not create any right or benefit, substantive or procedural, separately enforceable at law or equity by a party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.
8. Modifications to the scope of this MOU shall be made by mutual consent of the Parties, through issuance of a written modification, signed and dated by both Parties, prior to any changes.
9. Either Party may terminate this instrument, in whole or in part, at any time before the date of expiration by providing the other Party with a written statement to that effect.

The principal contacts for this instrument are as follows:

Brian Millsap, Chief  
Division of Migratory Bird Management  
US Fish and Wildlife Service  
4401 N. Fairfax Drive  
MS4107  
Arlington, VA 22203

L. Peter Boice, Conservation Team  
Leader  
Office of the Secretary of Defense  
1225 S. Clark St.  
Suite 1500  
Arlington, VA 22202-4336

This MOU is executed as of the last date signed below and expires no later than five (5) years thereafter, at which time it is subject to review and renewal, or expiration.

**F. Definitions**

Action – a program, activity, project, official policy, rule, regulation or formal plan directly carried out by DoD, but not a military readiness activity.

Breeding Biology Research and Monitoring Database (BBIRD) - national, cooperative program that uses standardized field methodologies for studies of nesting success and habitat requirements of breeding birds (<http://pica.wru.umt.edu/BBIRD/>).

Breeding Bird Survey (BBS) – a standardized international survey that provides information on population trends of breeding birds, through volunteer observations located along randomly selected roadside routes in the United States, Canada and Mexico (<http://www.mbr-pwrc.usgs.gov/bbs/bbs.html>).

Bird Conservation Region – a geographic unit used to facilitate bird conservation actions under the North American Bird Conservation Initiative (<http://www.manomet.org/USSCP/bcrmaps.html>).

Birds of Conservation Concern – published by the FWS Division of Migratory Bird Management, refers to the list of migratory and non-migratory birds of the United States and its territories that are of conservation concern. The current version of the list Birds of Conservation Concern 2002 is available at (<http://migratorybirds.fws.gov/reports/bcc2002.pdf>).

Comprehensive Planning Efforts for Migratory Birds – includes Partners in Flight, North American Waterfowl Management Plan, U.S. Shorebird Conservation Plan, Western Hemisphere Shorebird Reserve Network, North American Waterbird Conservation Plan, and other planning efforts integrated through the North American Bird Conservation Initiative.

Conservation Measure – an action undertaken to improve the conservation status of one or more species of migratory birds. Examples include surveys and inventories, monitoring, status assessments, land acquisition or protection, habitat restoration, population manipulation, research, and outreach.

Conservation Planning – strategic and tactical planning of agency activities for the long-

term conservation of migratory birds and their habitats.

Council for the Conservation of Migratory Birds – an interagency council established by the Secretary of the Interior to oversee the implementation of Executive Order 13186.

Ecological Condition – the composition, structure, and processes of ecosystems over time and space. This includes the diversity of plant and animal communities, the productive capacity of ecological systems and species diversity, ecosystem diversity, disturbance processes, soil productivity, water quality and quantity, and air quality. Often referred to in terms of ecosystem health, which is the degree to which ecological factors and their interactions are reasonably complete and functioning for continued resilience, productivity, and renewal of the ecosystem.

Effect (adverse or beneficial) – “effects” and “impacts,” as used in this MOU are synonymous. Effects may be direct, indirect, or cumulative, and refer to effects from management actions or categories of management actions on migratory bird populations, habitats, ecological conditions and/or significant bird conservation sites.

Important Bird Areas (IBAs) – a network of sites that provide essential habitat for the long-term conservation of birds. In the United States, the IBA network is administered by the American Bird Conservancy and the National Audubon Society.  
(<http://www.audubon.org/nird/iba/>)

Integrated Natural Resources Management Plan (INRMP) – an integrated plan based, to the maximum extent practicable, on ecosystem management that shows the interrelationships of individual components of natural resources management (e.g., fish and wildlife, forestry, land management, outdoor recreation) to military mission requirements and other land use activities affecting an installation’s natural resources. INRMPs are required for all DoD installations with significant natural resources, pursuant to the Sikes Act Improvement Act.

International Shorebird Survey – a monitoring program started in 1974 to survey shorebirds (sandpipers, plovers, etc.) across the Western Hemisphere.  
(<http://www.manomet.org/programs/shorebirds>).

Management Action – an activity by a government agency that could cause a positive or negative impact on migratory bird populations or habitats. Conservation measures to mitigate potential negative effects of actions may be required.

Migratory Bird – any bird listed in 50 CFR §10.13, Code of Federal Regulations.

Military Readiness Activity – all training and operations of the Armed Forces that relate to combat, including but not limited to the adequate and realistic testing of military equipment, vehicles, weapons and sensors for proper operation and suitability for combat use.

Monitoring Avian Productivity and Survivorship (MAPS) – a program that uses the banding of birds during the breeding season to track the changes and patterns in the number of young produced and the survivorship of adults and young



(<http://www.birdpop.org/maps.htm>).

National Environmental Policy Act (NEPA) – a Federal statute that requires Federal agencies to prepare a detailed analysis of the environmental impacts of a proposed action and alternatives, and to include public involvement in the decision making process for major Federal actions significantly affecting the quality of the human environment 42 U.S.C. §4321, et. seq.

North American Bird Conservation Initiative (NABCI) – an initiative to align the avian conservation community to implement bird conservation through regionally-based, biologically driven, landscape-oriented partnerships across the North American continent. NABCI includes Federal agencies of Canada, Mexico and the United States, as well as most landbird, shorebird, waterbird, and waterfowl conservation initiatives (<http://www.nabci-us.org>).

North American Waterbird Conservation Plan – a partnership of Federal and State government agencies, non-governmental organizations, and private interests focusing on the conservation of waterbirds, primarily including marshbirds and inland, coastal, and pelagic colonial waterbirds ([www.nacwcp.org/pubs/](http://www.nacwcp.org/pubs/)). The vision of the partnership is that the distribution, diversity and abundance of populations and breeding, migratory, and nonbreeding waterbirds are sustained throughout the lands and waters of North America, Central America, and the Caribbean.

North American Waterfowl Management Plan – a partnership of Federal and State agencies, non-governmental organizations, and private interests focusing on the restoration of waterfowl populations through habitat restoration, protection, and enhancement (<http://birdhabitat.fws.gov/NAWMP/nawmphp.htm>).

Partners in Flight (PIF) – a cooperative partnership program of more than 300 partners including Federal and State government agencies, non-governmental organizations, conservation groups, foundations, universities and industry focusing on the conservation of landbirds. DoD was an original signatory to the PIF Federal Agencies' MOA. (<http://www.partnersinflight.org> and <http://www.dodpif.org>).

Species of Concern – refers to those species listed in the periodic report *Birds of Conservation Concern*; priority migratory bird species documented in the comprehensive bird conservation plans (North American Waterbird Conservation Plan, U.S. Shorebird Conservation Plan, Partners in Flight Bird Conservation Plans); species or populations of waterfowl identified as high, or moderately high, continental priority in the North American Waterfowl Management Plan; listed threatened and endangered bird species in 50 CFR. 17.11; and MBTA listed game birds below desired population sizes.

Take – as defined in 50 C.F.R. 10.12, to include pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect.

U.S. Shorebird Conservation Plan – an effort undertaken by a partnership of Federal and State government agencies, as well as non-governmental and private organizations to ensure that stable and self-sustaining populations of all shorebird species are restored

and protected (<http://www.fws.gov/shorebird>).

The Parties hereto have executed this agreement as of the date shown below.

Director  
US Fish and Wildlife Service

Assistant Deputy Under Secretary of  
Defense (Environment, Safety and  
Occupational Health)  
US Department of Defense

A Dale Hall      7/7/06  
Signature                      Date

Alex Albert Beckler      7/31/06  
Signature                      Date

—

**MEMORANDUM OF UNDERSTANDING  
BETWEEN THE  
U.S. DEPARTMENT OF DEFENSE  
AND THE  
U.S. FISH AND WILDLIFE SERVICE  
TO PROMOTE THE CONSERVATION OF MIGRATORY BIRDS**

The Memorandum of Understanding (MOU) between the U.S. Fish and Wildlife Service and the Department of Defense (hereinafter referred to "the Parties"), signed in 2006, expired on July 31, 2011. Both Parties have agreed to extend the MOU as currently written for two more years while the Parties work together to evaluate the MOU to ensure that the MOU is meeting its stated purpose and scope and responsibilities identified in Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* (66 FR 3853, 2001). If deemed necessary, the Parties will revise any portions of the MOU based on this evaluation and upon signature of a revised MOU, the current MOU will no longer be valid.

The principal contacts for this instrument are as follows:

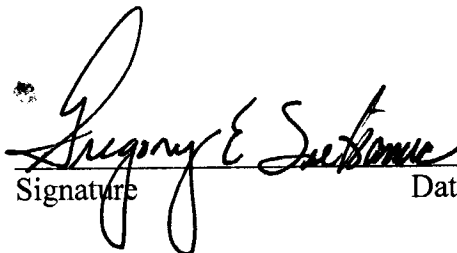
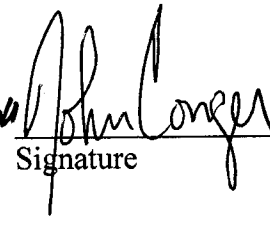
Chief  
Division of Migratory Bird Management  
US Fish and Wildlife Service  
4401 North Fairfax Drive  
MS4107  
Arlington, VA 22203

Conservation Team Leader  
Office of the Secretary of Defense  
1225 South Clark Street  
Suite 1500  
Arlington, VA 22202-4336

The Parties hereto have extended this agreement as of the date shown below to remain effective through July 31, 2013.

Director  
US Fish and Wildlife Service

Assistant Deputy Under Secretary of  
Defense (Installations and Environment)  
US Department of Defense

	
Signature	Signature
17 Oct 2011	9/1/2011
Date	Date

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## **Appendix S**

### **MOA with UDWR for Stocking Fish in Rainbow Reservoir (Deseret Reservoir)**

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REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
US ARMY CHEMICAL MATERIALS AGENCY  
DESERET CHEMICAL DEPOT  
11500 Stark Road  
STOCKTON, UT 84071



RECEIVED  
MAY 2 - 2007  
WILDLIFE DIRECTOR'S  
OFFICE

25 April 2007

Director of Risk Management

SUBJECT: Revised Memorandum of Agreement (MOA) between Deseret Chemical Depot and Utah State Division of Wildlife Resources for Stocking Rainbow Reservoir

Mr. James F. Karpowitz  
Director of Wildlife Resources  
Utah State Division of Wildlife Resources  
1594 West North Temple  
Salt Lake City, Utah 84114

Dear Mr. Karpowitz:

Enclosed with this letter is the subject MOA for your review and approval. This revision incorporates language for periodic review of the MOA. Please sign and return the original document to the Director of Risk Management.

If you have any questions regarding this request, please contact Mr. Martin Barth at (435)-833-4003.

Sincerely,

Frederick D. Pellissier  
Colonel, Chemical Corps  
Commanding

\*CERTIFICATION STATEMENT

Enclosure

\*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

**MEMORANDUM OF AGREEMENT (MOA)**  
**BETWEEN**  
**DESERET CHEMICAL DEPOT**  
**AND**  
**UTAH STATE DIVISION OF WILDLIFE RESOURCES**  
**FOR**  
**STOCKING FISH IN RAINBOW RESERVOIR**

**1. PURPOSE:** The purpose of this document is to define the support interaction required for the stocking of fish in Rainbow Reservoir. The Deseret Chemical Depot (DCD) has authorized the Utah Division of Wildlife Resources (UDWR) to perform duties of Supplier for all matters pertaining to this agreement as delineated in section 5.a. of this agreement.

**2. AUTHORITY:**

DODI 4000.19 Department of Defense Instructions dated 9 August 1995  
AR 5-9 Area Support Responsibilities dated 16 October 1998  
AR 5-22 The Army Proponent System dated 3 October 1986  
AR 37-49 Budgeting, Funding, and Reimbursements for Base Operations Support of Army Activities dated 15 October 1978

**3. PERIOD OF PERFORMANCE:** This MOA is granted for an indefinite term, but revocable at will by the Commander of DCD. Any modification or changes to this MOA will only be made by the agencies designated representative and coordinated by all participants.

**4. COORDINATION REPRESENTATIVES:**

- a. Supplier: Utah State Division of Wildlife Resources  
1115 North Main Street  
Springville, Utah 84663  
Representative: Don Wiley
  
- b. Receiver: Commander  
Deseret Chemical Depot  
Bldg. 5108  
11500 Stark Road  
Stockton, UT 84071-0250  
Representatives: Martin Barth, and/or Russell D. Wallis

**5. RESPONSIBILITIES:**

a. Supplier: The supplier agrees to follow all Receiver rules, regulations, policies and procedures that apply to the services provided. The supplier is the Utah State Division of Wildlife Resources. The UDWR will stock Rainbow Reservoir with Trout.



b. Receiver: The receiver agrees to provide all services, facilities, and assistance outlined in this agreement. As previously stated, the Receiver is Deseret Chemical Depot.

**6. FUNDING:**

- a. Supplier: No funding is required.
- b. Receiver: No funding is required.

**7. CATEGORIES OF SUPPORT:**

- a. Supplier (POC – Don Wiley (801) 491-5678)

UDWR will stock reservoir with Rainbow Trout – initial stocking event will consist of 1000 fish. The number of proceeding stocking events and the amount of fish will depend on the amount of fish caught and will be adjusted accordingly. Prior to the first annual stocking of Rainbow Trout into Rainbow Reservoir, UDWR will provide DCD with a certificate verifying that the fish are healthy and free of disease.

Fishing will then be open to the public. Anglers must obtain a state fishing license and a DCD fishing permit. Utah State Conservation Officer will occasionally check personnel for state fishing license.

- b. Receivers (POCs – Martin Barth (435-833-4003, or Russell Wallis (435) 833-4165)

DCD will determine length & time frame of fishing season (1 May to 31 October). Rainbow Reservoir will open and close on a daily basis from dawn to dusk. DCD will maintain the facility to include restrooms, picnic areas, and roadway to reservoir. DCD will ensure that enough water is maintained in the reservoir to sustain the fish. Along with a state-fishing license, patrons must pay a user fee in the amount of \$5.00 per person per season, or \$15.00 for a family season pass. Patrons will be required to pay the fee before fishing at the reservoir. Fees are to be paid at the Outdoor Rental Shop (435) 833-3301 located at Tooele Army Depot, Building 1003. Upon payment of fees, patrons will be issued a permit that is to be worn while fishing. Amount of fish taken will be limited to four fish per day per individual (no catch & release).


The following will not be allowed and violators will either be required to leave this installation or detained and custody relinquished to the Tooele County Sheriff's Office, and possibly subjected to legal prosecution:

- No Camping
- No Swimming
- No Boating
- No Alcohol
- No Firearms
- No Fireworks
- No Littering
- No Campfires
- No Fishing without a state license & depot permit
- No more than 4 fish per day per Angler

Patrons are also subject to all applicable Federal and Utah State codes, laws, and regulations while on Depot property. DCD reserves the right to close the , restrooms and fish cleaning station if there is any damage or misuse of the facilities (a list of Do's and Don'ts will be provided to patrons when they purchase the depot fishing permit). DCD Security and Law Enforcement Division will open and close the reservoir; conduct spot checks for state license and depot permit, and oversee emergency evacuation of reservoir if needed. Because of heightened security concerns related to 11 September 01 and the United States subsequent war on terror, DCD as with the rest of nation has raised its security posture accordingly. In the future, DCD may be required to further raise its security posture, this may entail that the installation be closed for a period of time to include Rainbow Reservoir. If DCD is closed under such circumstances, the installation's security force will evacuate Rainbow Reservoir, and the Utah Division of Wildlife Resources will immediately be notified. When the level of protection has been lowered, DCD will notify the Division of Wildlife Resources and re-open the reservoir to the public.

#### 8. TERMS AND TERMINATION:

This agreement shall take effect upon the date of the last signature and shall continue until amended or terminated, in writing, with thirty days advance notice to the non-terminating party. This agreement will be reviewed every three years (triennially) for continuation and/or modification. This agreement supersedes all previous agreements.

  
**FREDERICK D. PELLISSIER** (date)  
 COL, CM  
 Commanding  
 Deseret Chemical Depot

  
**JAMES F. KARPOWITZ** (date)  
 Director of Wildlife Resources **DEPUTY DIRECTOR**

  
**LINDA BRAITHWAITE** (date)  
 Financial Manager,  
 Division of Wildlife Resources

## **Appendix T**

### **Mutual Aid Agreements for Fire and Emergency Services**

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## Fire and Emergency Services Mutual Aid Program Summary

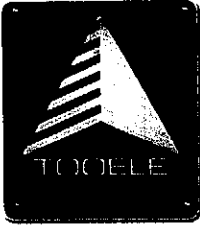
Though it is the individual communities' responsibility to provide for the preservation of life and property in their respective community, Mutual Aid is designed to provide rapid appropriate aid to its members and/or any other organizations that may be in need of assistance.

TEAD and the surrounding communities determined that a need exists for a program to provide the best collective response to fires and emergency medical assistance in times of emergencies whether they are natural or man-made.

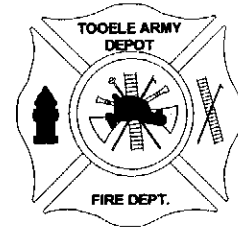
Table 1 summarizes the titles and capabilities that TEAD has Mutual Aid agreements with the surrounding communities.

**Table 1.**  
**TEAD Fire and Emergency Services**

	Firefighting	Emergency Medical Services	Search and Rescue	Hazardous Materials	Emergency Management
Grantsville Fire Department Grantsville City Resolution No. 2010-11	X	X			
NTCFD Reciprocal Fire Protection Agreement	X	X			
Stockton VFD Reciprocal Fire Protection Agreement	X	X			
Tooele City FD Reciprocal Fire Protection Agreement	X	X			
Interservice Support Agreement Dugway Proving Ground	X	X	X	X	



**TOOELE ARMY DEPOT  
FIRE & EMERGENCY SERVICES BRANCH  
STATION 1, BUILDING T-8**



SJMTE-RMD-ES

25 January 2012

**MEMORANDUM FOR RECORD**

1. Army Regulation 420-90-1 Chapter 25-9e requires a biennially review of all mutual aid (reciprocal) agreements with local jurisdictions, communities and fire districts.
2. Reviews' of the Mutual Aid Agreements were conducted and found to be in order with no required changes. The following agreements were reviewed:
  - a. Tooele City
  - b. Grantsville City
  - c. Stockton City
  - d. North Tooele County
  - e. Dugway Proving Ground

Point of contact is the undersigned, 435-833-2015

Dan W. Dow  
Fire Chief,  
Tooele Army Depot

## RECIPROCAL FIRE PROTECTION AGREEMENT

This Reciprocal Fire Protection Agreement, entered into this 21st day of September, 2010, by and between the Secretary of the Army, acting pursuant to the authority of 42 U.S.C. (1856(A), and the city of Stockton, and the United States of America, hereinafter referred to as the Government, represented by the Commanding Officer of the Tooele Army Depot, and Stockton City, State of Utah:

### WITNESS THAT:

WHEREAS, the government owns the Tooele Army Depot, hereinafter referred to as the Depot, a facility of the Department of the Army: and WHEREAS, Stockton City maintains a Fire Department, which includes volunteer personnel, fire trucks, and fire fighting/Emergency Medical equipment; and WHEREAS, the Government also maintains a Fire Department at the Depot, WHEREAS, it is to the best interest of the parties here to cooperate in fire fighting/Emergency Medical Services (EMS) emergencies which may occur within Stockton City and / or the Depot.

NOW THEREFORE, the parties hereto do hereby agree to render mutual assistance, and to the other, on the terms, conditions, and provisions hereinafter set forth;

- (1) Stockton City will, at the request of the Commanding officer of the Depot, or his/her properly authorized designee, in the time of emergency or necessity; furnish aid to the Depot in the nature of apparatus, equipment, and personnel to combat fires for assist in time of disaster at the Depot.
- (2) The Depot will, at the request of the Mayor or Fire Chief or his/her properly authorized designee, in the time of emergency or necessity; furnish aid to Stockton City in the nature of apparatus, necessity, and personnel to combat fires, EMS or assist in time of disaster within the City.
- (3) When the combined fire departments or parts thereof are engaged in fire fighting at the Depot, they shall be subject to the authority and direction of the Fire Chief of the Depot and /or the Commanding Officer thereof. When the combined forces or parts thereof are engaged in fire fighting/ EMS in Stockton City, they shall be under the authority and direction of the Fire Chief of Stockton.

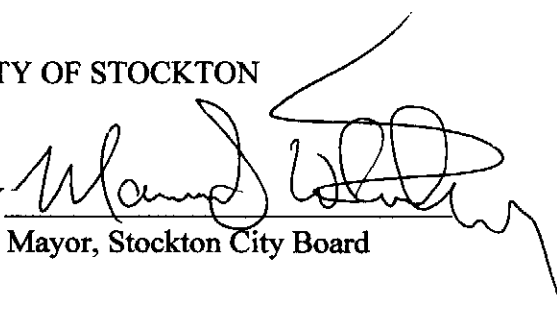
- (4) Government firemen, acting pursuant to this agreement, shall be considered to be acting pursuant to lawful orders of the Commanding Officer and Fire Chief of the installation, and therefore, acting within the scope of their employment and not as employees of Stockton City.
- (5) It is understood and agreed that Stockton City will be under no obligation to furnish aid the Depot if, under the circumstances, furnishing of such aid will endanger or jeopardize the fire protection of the City. It is likewise understood and agreed that the Depot shall be under no obligation to furnish aid to the City, if the furnishing of such aid, under the circumstances, will endanger or jeopardize the fire protection for the Depot. The Mayor or Fire Chief of the City or his/her properly authorized designee will be the sole judge as to when conditions permit assistance and the extent of such assistance to the Depot; and the Commanding Officer or Fire Chief of the Depot shall be the sole judge as to when conditions permit assistance and the extent of such assistance to the city by the Government.
- (6) It is hereby agreed that cooperating fire departments will become familiar with the special fire fighting problems common to their territory.
- (7) Under no circumstances will mutual aid fire fighters be expected to or permitted to enter the area or attack fires involving high explosives or chemical munitions
- (8) In the event of combined department or parts thereof are engaged in fighting fire, the department lending assistance may, in order to attend any alarm at its regular station, withdraw on notice to the Fire Chief in charge.
- (9) It is expressly hereby mutually agreed between the parties hereto that any claim against either party by the other party for compensation for any loss, damage, personal injury or death occurring in consequence of the performance of this agreement is hereby waived.
- (10) Reimbursement to fire services for costs and losses of fire fighting on Federal property is authorized under PL 93-498 (15 U.S.C. 2210).
- (11) This Agreement may be terminated at any time by either party, provided, however, that such termination shall not be effective until 30 days after the



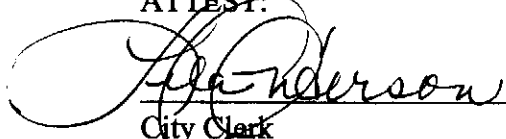
Terminating party gives notice of its intention to terminate and such notice is received by the other party. Until such termination is effected, the terms, provisions, and conditions of this agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed the Reciprocal Fire Protection Agreement as of the day and year first above written.

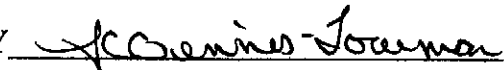
CITY OF STOCKTON

BY   
Mayor, Stockton City Board

ATTEST:

  
City Clerk

TOOLE ARMY DEPOT

BY   
YOLANDA C.DENNIS-LOWMAN  
COL, USG  
Commanding

The execution of this Agreement by the Government is authorized by Act of Congress (Public Law 46, 84 Cong.) Approved 27 May 1955.

(Affix corporate certificate of City Clerk and seal.)

## RECIPROCAL FIRE PROTECTION AGREEMENT

This Reciprocal Fire Protection Agreement, entered into this 21<sup>st</sup>  
day of October, 2010, by and between the Secretary of the  
Army, acting pursuant to the authority of 42 U.S.C. (1856(A), and North Tooele County Fire  
District (NTCFD), and the  
United States of America, hereinafter referred to as the Government, represented by the  
Commanding Officer of the Tooele Army Depot, and NTCFD, State of Utah:

### WITNESS THAT:

WHEREAS, the government owns the Tooele Army Depot, hereinafter referred to as the Depot, a facility of the Department of the Army; and WHEREAS, NTCFD maintains a Fire Department, which includes volunteer personnel, fire trucks, and fire fighting/Emergency Medical equipment; and WHEREAS, the Government also maintains a Fire Department at the Depot, WHEREAS, it is to the best interest of the parties here to cooperate in fire fighting/Emergency Medical Services (EMS) emergencies which may occur within NTCFD and / or the Depot.

NOW THEREFORE, the parties hereto do hereby agree to render mutual assistance, and to the other, on the terms, conditions, and provisions hereinafter set forth;

- (1) NTCFD will, at the request of the Commanding officer of the Depot, or his/her properly authorized designee, in the time of emergency or necessity; furnish aid to the Depot in the nature of apparatus, equipment, and personnel to combat fires for assist in time of disaster at the Depot.
- (2) The Depot will, at the request of the Mayor or Fire Chief or his/her properly authorized designee, in the time of emergency or necessity; furnish aid to NTCFD in the nature of apparatus, necessity, and personnel to combat fires, EMS or assist in time of disaster within the County.
- (3) When the combined fire departments or parts thereof are engaged in fire fighting at the Depot, they shall be subject to the authority and direction of the Fire Chief of the Depot and /or the Commanding Officer thereof. When the combined forces or parts thereof are engaged in fire fighting/ EMS in NTCFD, they shall be under the authority and direction of the Fire Chief of NTCFD.

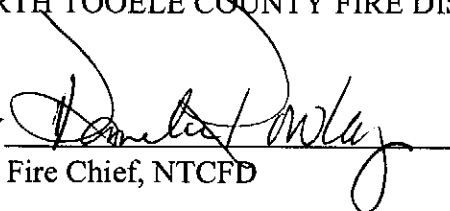
- (4) Government firemen, acting pursuant to this agreement, shall be considered to be acting pursuant to lawful orders of the Commanding Officer and Fire Chief of the installation, and therefore, acting within the scope of their employment and not as employees of NTCFD.
- (5) It is understood and agreed that NTCFD will be under no obligation to furnish aid the Depot if, under the circumstances, furnishing of such aid will endanger or jeopardize the fire protection of the County. It is likewise understood and agreed that the Depot shall be under no obligation to furnish aid to the County, if the furnishing of such aid, under the circumstances, will endanger or jeopardize the fire protection for the Depot. The Mayor or Fire Chief of the County or his/her properly authorized designee will be the sole judge as to when conditions permit assistance and the extent of such assistance to the Depot; and the Commanding Officer or Fire Chief of the Depot shall be the sole judge as to when conditions permit assistance and the extent of such assistance to the city by the Government.
- (6) It is hereby agreed that cooperating fire departments will become familiar with the special fire fighting problems common to their territory.
- (7) Under no circumstances will mutual aid fire fighters be expected to or permitted to enter the area or attack fires involving high explosives or chemical munitions.
- (8) In the event of combined department or parts thereof are engaged in fighting fire, the department lending assistance may, in order to attend any alarm at its regular station, withdraw on notice to the Fire Chief in charge.
- (9) It is expressly hereby mutually agreed between the parties hereto that any claim against either party by the other party for compensation for any loss, damage, personal injury or death occurring in consequence of the performance of this agreement is hereby waived.
- (10) Reimbursement to fire services for costs and losses of fire fighting on Federal property is authorized under PL 93-498 (15 U.S.C. 2210).
- (11) This Agreement may be terminated at any time by either party, provided, however, that such termination shall not be effective until 30 days after the

Terminating party gives notice of its intention to terminate and such notice is received by the other party. Until such termination is effected, the terms, provisions, and conditions of this agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed the Reciprocal Fire Protection Agreement as of the day and year first above written.

NORTH TOOELE COUNTY FIRE DISTRICT

BY

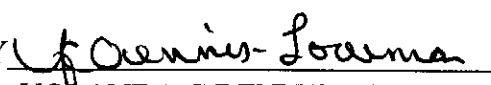
  
Fire Chief, NTCFD

ATTEST:

  
North Tooele County Fire District clerk

TOOLE ARMY DEPOT

BY

  
YOLANDA C.DENNIS-LOWMAN  
COL, LG  
Commanding

The execution of this Agreement by the Government is authorized by Act of Congress (Public Law 46, 84 Cong.) Approved 27 May 1955.

(Affix corporate certificate of City Clerk and seal.)

GRANTSVILLE CITY  
RESOLUTION NO. 2010- 11

**A RESOLUTION APPROVING AN AGREEMENT WITH THE SECRETARY OF THE ARMY TO PROVIDE MUTUAL AID TO COMBAT FIRES AND ASSIST IN TIMES OF DISASTER.**

Be it Resolved and Ordained by the City Council of Grantsville City Utah as follows:

**SECTION ONE: PURPOSE.** This Resolution is for the purpose of approving an Agreement with the Secretary of the Army, to provide for mutual aid to combat fires, for emergency medical services and in times of disaster.

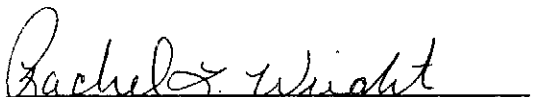
**SECTION TWO: APPROVAL OF AGREEMENT.** Grantsville City, a body politic and corporate of the State of Utah, by and through its City Council, hereby approves that certain "Reciprocal Fire Protection Agreement" between the Grantsville City and the Secretary of the Army in order to provide mutual aid, pursuant to the terms of said agreement, a copy of which is attached hereto and by reference made a part hereof. The City Council also authorizes Mayor Brent Marshall to execute said agreement on behalf of Grantsville City and to carry out its intent and purposes by implementing the terms of said Agreement.

**SECTION THREE: EFFECTIVE DATE.** This resolution shall take effect immediately upon passage by the City Council.

ADOPTED AND PASSED BY THE CITY COUNCIL OF GRANTSVILLE CITY THIS  
1<sup>ST</sup> DAY OF SEPTEMBER, 2010.

  
MAYOR BRENT MARSHALL

ATTEST:

  
RACHEL WRIGHT, CITY RECORDER

( S E A L )



## RECIPROCAL FIRE PROTECTION AGREEMENT

This Reciprocal Fire Protection Agreement, entered into this 15<sup>th</sup>  
day of September, 2010, by and between the Secretary of the  
Army, acting pursuant to the authority of 42 U.S.C. (1856(A), and the city of Grantsville, and the  
United States of America, hereinafter referred to as the Government, represented by the  
Commanding Officer of the Tooele Army Depot, and Grantsville City, State of Utah:

### WITNESS THAT:

WHEREAS, the government owns the Tooele Army Depot, hereinafter referred to as the Depot, a facility of the Department of the Army; and WHEREAS, Grantsville City maintains a Fire Department, which includes volunteer personnel, fire trucks, and fire fighting/Emergency Medical equipment; and WHEREAS, the Government also maintains a Fire Department at the Depot, WHEREAS, it is to the best interest of the parties here to cooperate in fire fighting/Emergency Medical Services (EMS) emergencies which may occur within Grantsville City and / or the Depot.

NOW THEREFORE, the parties hereto do hereby agree to render mutual assistance, and to the other, on the terms, conditions, and provisions hereinafter set forth;

- (1) Grantsville City will, at the request of the Commanding officer of the Depot, or his/her properly authorized designee, in the time of emergency or necessity; furnish aid to the Depot in the nature of apparatus, equipment, and personnel to combat fires or assist in time of disaster at the Depot.
- (2) The Depot will, at the request of the Mayor or Fire Chief or his/her properly authorized designee, in the time of emergency or necessity; furnish aid to Grantsville City in the nature of apparatus, necessity, and personnel to combat fires, EMS or assist in time of disaster within the City.
- (3) When the combined fire departments or parts thereof are engaged in fire fighting at the Depot, they shall be subject to the authority and direction of the Fire Chief of the Depot and /or the Commanding Officer thereof. When the combined forces or parts thereof are engaged in fire fighting/ EMS in Grantsville City, they shall be under the authority and direction of the Fire Chief of Grantsville.

- (4) Government firemen, acting pursuant to this agreement, shall be considered to be acting pursuant to lawful orders of the Commanding Officer and Fire Chief of the installation, and therefore, acting within the scope of their employment and not as employees of Grantsville City.
- (5) It is understood and agreed that Grantsville City will be under no obligation to furnish aid the Depot if, under the circumstances, furnishing of such aid will endanger or jeopardize the fire protection of the City. It is likewise understood and agreed that the Depot shall be under no obligation to furnish aid to the City, if the furnishing of such aid, under the circumstances, will endanger or jeopardize the fire protection for the Depot. The Mayor or Fire Chief of the City or his/her properly authorized designee will be the sole judge as to when conditions permit assistance and the extent of such assistance to the Depot; and the Commanding Officer or Fire Chief of the Depot shall be the sole judge as to when conditions permit assistance and the extent of such assistance to the city by the Government.
- (6) It is hereby agreed that cooperating fire departments will become familiar with the special fire fighting problems common to their territory.
- (7) Under no circumstances will mutual aid fire fighters be expected to or permitted to enter the area or attack fires involving high explosives or chemical munitions.
- (8) In the event of combined department or parts thereof are engaged in fighting fire, the department lending assistance may, in order to attend any alarm at its regular station, withdraw on notice to the Fire Chief in charge.
- (9) It is expressly hereby mutually agreed between the parties hereto that any claim against either party by the other party for compensation for any loss, damage, personal injury or death occurring in consequence of the performance of this agreement is hereby waived.
- (10) Reimbursement to fire services for costs and losses of fire fighting on Federal property is authorized under PL 93-498 (15 U.S.C. 2210).

(11) This Agreement may be terminated at any time by either party, provided, however, that such termination shall not be effective until 30 days after the

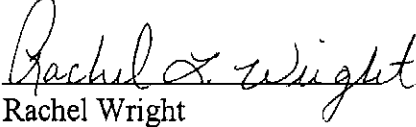
Terminating party gives notice of its intention to terminate and such notice is received by the other party. Until such termination is effected, the terms, provisions, and conditions of this agreement shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed the Reciprocal Fire Protection Agreement as of the day and year first above written.

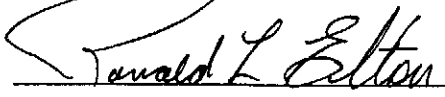
GRANTSVILLE CITY CORPORATION

BY   
Mayor Brent Marshall  
for the Grantsville City Council

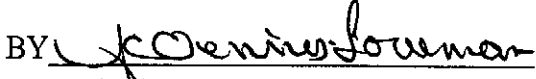
ATTEST:

  
Rachel Wright  
City Recorder

APPROVED AS TO FORM:

  
Ronald L. Elton  
Grantsville City Attorney

TOOLE ARMY DEPOT

BY   
YOLANDA C. DENNIS-LOWMAN  
COL, LG  
Commanding

The execution of this Agreement by the Government is authorized by Act of Congress (Public Law 46, 84 Cong.) Approved 27 May 1955.



## RECIPROCAL FIRE PROTECTION AGREEMENT

This Reciprocal Fire Protection Agreement, entered into this 7<sup>th</sup> day of July, 2010, by and between the Secretary of the Army, acting pursuant to the authority of 42 U.S.C. (1856(A), and the city of Tooele, and the United States of America, hereinafter referred to as the Government, represented by the Commanding Officer of the Tooele Army Depot, and Tooele City, State of Utah:

### WITNESS THAT:

WHEREAS, the government owns the Tooele Army Depot, hereinafter referred to as the Depot, a facility of the Department of the Army; and,

WHEREAS, Tooele City maintains a Fire Department, which includes volunteer personnel, fire trucks, and fire fighting/Emergency Medical equipment; and,

WHEREAS, the Government also maintains a Fire Department at the Depot; and,

WHEREAS, it is to the best interest of the parties here to cooperate in fire fighting/Emergency Medical Services (EMS) emergencies which may occur within Tooele City and / or the Depot:

NOW THEREFORE, the parties hereto do hereby agree to render mutual assistance, and to the other, on the terms, conditions, and provisions hereinafter set forth:

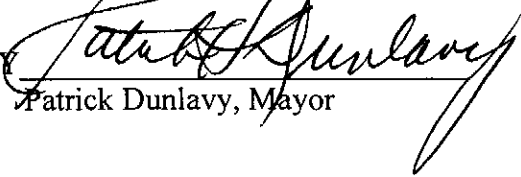
- (1) Tooele City will, at the request of the Commanding officer of the Depot, or his/her properly authorized designee, in the time of emergency or necessity; furnish aid to the Depot in the nature of apparatus, equipment, and personnel to combat fires for assist in time of disaster at the Depot.
- (2) The Depot will, at the request of the Mayor or Fire Chief or his/her properly authorized designee, in the time of emergency or necessity; furnish aid to Tooele City in the nature of apparatus, necessity, and personnel to combat fires, EMS or assist in time of disaster within the City.
- (3) When the combined fire departments or parts thereof are engaged in fire fighting at the Depot, they shall be subject to the authority and direction of the Fire Chief of the Depot and /or the Commanding Officer thereof. When the combined forces or parts thereof are engaged in fire fighting/ EMS in Tooele City, they shall be under the authority and direction of the Fire Chief of Tooele.

- (4) Government firemen, acting pursuant to this agreement, shall be considered to be acting pursuant to lawful orders of the Commanding Officer and Fire Chief of the installation, and therefore, acting within the scope of their employment and not as employees of Tooele City.
- (5) It is understood and agreed that Tooele City will be under no obligation to furnish aid the Depot if, under the circumstances, furnishing of such aid will endanger or jeopardize the fire protection of the City. It is likewise understood and agreed that the Depot shall be under no obligation to furnish aid to the City, if the furnishing of such aid, under the circumstances, will endanger or jeopardize the fire protection for the Depot. The Mayor or Fire Chief of the City or his/her properly authorized designee will be the sole judge as to when conditions permit assistance and the extent of such assistance to the Depot; and the Commanding Officer or Fire Chief of the Depot shall be the sole judge as to when conditions permit assistance and the extent of such assistance to the city by the Government.
- (6) It is hereby agreed that cooperating fire departments will become familiar with the special fire fighting problems common to their territory.
- (7) Under no circumstances will mutual aid fire fighters be expected to or permitted to enter the area or attack fires involving high explosives or chemical munitions.
- (8) In the event of combined department or parts thereof are engaged in fighting fire, the department lending assistance may, in order to attend any alarm at its regular station, withdraw on notice to the Fire Chief in charge.
- (9) It is expressly hereby mutually agreed between the parties hereto that any claim against either party by the other party for compensation for any loss, damage, personal injury or death occurring in consequence of the performance of this agreement is hereby waived.
- (10) Reimbursement to fire services for costs and losses of fire fighting on Federal property is authorized under PL 93-498 (15 U.S.C. 2210).
- (11) This Agreement may be terminated at any time by either party, provided, however, that such termination shall not be effective until 30 days after the terminating party gives notice of its intention to terminate and such notice is received by the other party. Until such termination is effected, the terms, provisions, and conditions of this agreement shall remain in full force and effect.
- (12) This Agreement shall supersede all prior agreements between the parties addressing the same subject matter.

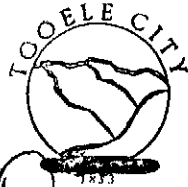
IN WITNESS WHEREOF, the parties hereto have executed the Reciprocal Fire Protection Agreement as of the day and year first above written.

TOOELE CITY CORPORATION

BY

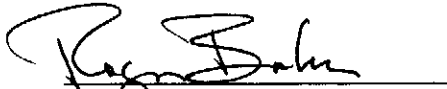
  
Patrick Dunlavy, Mayor

ATTEST:



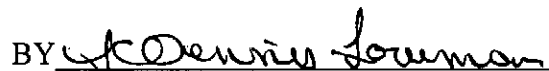
  
Sharon Dawson, City Recorder

APPROVED AS TO FORM:

  
Roger Baker, City Attorney

TOOLE ARMY DEPOT

BY

  
YOLANDA C. DENNIS-LOWMAN  
COL, LG  
Commanding

The execution of this Agreement by the Government is authorized by Act of Congress (Public Law 46, 84 Cong.) Approved 27 May 1955.



DEPARTMENT OF THE ARMY  
INSTALLATION MANAGEMENT COMMAND  
HEADQUARTERS, UNITED STATES ARMY GARRISON, DUGWAY PROVING GROUND  
DUGWAY UTAH 84022-5000

REPLY TO  
ATTENTION OF:

MEMORANDUM OF AGREEMENT  
BETWEEN  
TOOELE ARMY DEPOT  
AND  
DUGWAY PROVING GROUND  
FOR  
RECIPROCAL FIRE PROTECTION AGREEMENT

This Reciprocal Fire Protection Agreement, entered into this 5 Day of January, 2011 by and between the Commander of Tooele Army Depot and the Commander of Dugway Proving Ground, acting pursuant to the authority of DOD Instruction 6055.6.

WITNESS THAT:

WHEREAS, the Government owns the Tooele Army Depot, a facility of the Department of the Army, hereinafter referred to as Tooele Army Depot; and WHEREAS, Dugway Proving Ground, a facility of the Department of the Army, hereinafter referred to as Dugway Proving Ground, each maintaining a Fire Department which includes career personnel, fire trucks, and fire fighting equipment; it is to the best interest of the parties here to cooperate in fire fighting emergencies which may occur within Dugway Proving Ground or Tooele Army Depot.

NOW THEREFORE, the parties hereto do hereby agree to render mutual assistance one to the other, on the terms, conditions, and provision hereinafter set forth:

1. Dugway Proving Ground Commander will, at the request of the Commander of Tooele Army Depot; or properly authorized designee, in the time of emergency or necessity, furnish aid to Tooele Army Depot in the nature of apparatus equipment, and personnel to combat fires or assist in time of disaster as well as assist in dealing with Weapons of Mass Destruction, (chemical, biological, radiological, nuclear (CBRN), or explosive) emergencies at Tooele Army Depot.
2. The Tooele Army Depot will, at the request of the Dugway Proving Ground Commander or properly authorized designee, in the time of emergency or necessity, furnish aid to Dugway Proving Ground in the nature of apparatus, equipment and personnel to combat fires or assist in time of disaster as well as Weapons of Mass Destruction, (chemical, biological, radiological, nuclear (CBRN) as well as Explosives) at Dugway Proving Ground.
3. When the combined fire departments or parts thereof are engaged in firefighting at Tooele Army Depot, they shall be subject to the authority and direction of the Fire Chief or Fire Department's Incident Commander on scene and/or the Commanding Officer

or Fire Department's Incident Commander on scene and/or the Officer in Charge (OIC/TAD) thereof. When the combined forces or parts thereof are engaged in fire fighting at Dugway Proving Ground, they shall be under the authority and direction of the Fire Chief or Fire Department's Incident Commander on scene and/or the Garrison Manager thereof.

4. Government fire fighters, acting pursuant to this agreement, shall be considered to be acting pursuant to lawful orders of the Commanding Officer/Garrison Manager and Fire Chief of their respective installation, and therefore, acting within the scope of their employment and not as independent firemen.

5. It is understood and agreed that Dugway Proving Ground will be under no obligation to furnish aid to Tooele Army Depot, if under the circumstances; furnishing of such aid will endanger or jeopardize the fire protection or weapons of mass destruction readiness of Dugway Proving Ground. It is likewise understood and agreed that Tooele Army Depot shall be under no obligation to furnish aid to Dugway Proving Ground, if the furnishing of such aid, under the circumstances, will endanger or jeopardize the fire protection or weapons of mass destruction readiness of Tooele Army Depot. The Garrison Manager, USAG Dugway Proving Ground or Fire Chief or properly authorized designee will be the sole judge as to when conditions permit assistance and the extent of such assistance to Tooele Army Depot; and the Commanding Officer of Tooele Army Depot or Fire Chief or properly authorized designee of shall be the sole judge as to when conditions permit assistance and the extent of such assistance to Dugway Proving Ground.

6. It is hereby agreed that cooperating fire departments will become familiar with the special fire fighting problems common to their emergency response territory.

7. Under no circumstances will mutual aid fire fighters be expected to or permitted to enter the area or attack fires involving high explosives or chemical munitions without receiving orders from the on scene Incident Commander.

8. In the event the combined department or parts thereof are engaged in fighting a fire, the department lending assistance may, in order to attend any alarm at its regular station withdraw on notice to the Incident Commander in charge of the emergency.

9. It is hereby expressly mutually agreed between the parties hereto that any claim against either party by the other party for compensation for any loss, damage, personal injury or death occurring in consequence of the performance of this agreement is waived.

10. Each party hereby waives all claims against every other party for compensation for any loss, damage, injury or death occurring as a consequence of the performance of this agreement.

11. Either party may terminate this Agreement at any time, provided that such termination shall not be effective until 30 calendar days after the terminating party gives

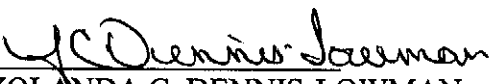
notice of its intention to terminate and the other party receives such notice. Until such termination is effected the terms, provisions, and conditions of this agreement shall remain in full force and effect. This agreement shall be reviewed biennially on the anniversary date.


12. This supersedes MOA dated 5 Nov 08.

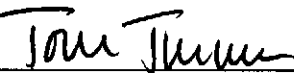
IN WITNESS WHEREOF, the parties hereto have executed the Reciprocal Fire Protection Agreement as of the day and year first above written.

TOOELE ARMY DEPOT

U.S. ARMY GARRISON  
DUGWAY PROVING GROUND

BY   
YOLANDA C. DENNIS-LOWMAN  
COL, LG  
Commanding

BY   
CAROL COLEMAN  
Acting, Garrison Manager

BY   
TOM TURNER  
Garrison Manager

## **Appendix U**

### **USFWS Utah Field Office INRMP Review, Comments, and Responses**

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United States Department of the Interior  
FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE  
2369 WEST ORTON CIRCLE, SUITE 50  
WEST VALLEY CITY, UTAH 84119

July 23, 2015

FWS/R6  
ES/UT  
15-CPA-0020

Roland Howard  
Engineering Services Division  
1 Tooele Army Depot Building 501  
Tooele, Utah 84074-5003

RE: Tooele Army Depot Integrated Natural Resources Management Plan 2015-2020

Dear Mr. Howard:

We have reviewed the Integrated Natural Resource Management Plan (INRMP) 2015 -2020 for the U.S. Army Tooele Army Depot (TEAD) North and South Areas. As required by the Sikes Act, the INRMP will provide guidance to the natural resource management program at TEAD. Specifically, the INRMP establishes goals and objectives for successful management and monitoring of wildlife and habitat resources at TEAD. We are providing the following comments for your consideration in evaluating this document.

**General Comments**

Overall the document is clear and informative, and provides a guiding management direction for TEAD's natural resources management program for the next five years. The INRMP provides an excellent list of Management Measures (Table 7-1, and described in Section 7-4) which will help meet the INRMP's goal of ensuring that the natural resources are managed in such a way as to maintain ecosystem viability and ensure the sustainability of military lands. These measures are specific and attainable, will improve the TEAD's baseline natural resource information, and provide specific guidance for avoiding and minimizing impacts to fish and wildlife resources. These steps will help to inform future management decisions and enable TEAD to efficiently meet its military mission while conserving natural resources.

**Specific Comments**

Page 5-6, Section 5.2.2, Vegetation, TEAD South Area - Although it is not a "dominant"

vegetation community, the wetland/riparian community is an important one from a habitat perspective. We recommend you identify wetland/riparian communities in this section.

Page 5-8, Section 5.4.1, Protected Species – We recommend you discuss golden eagles in this section.

Page 5-8, Section 5.4.1, Protected Species – If surveys have not been conducted for Bonneville cutthroat trout and Columbia spotted frog, we recommend you coordinate with Utah Division of Wildlife Resources to do so. If surveys were conducted, please provide that information.

Page 5-8, Section 5.4.1.2, Protected Species, Yellow-billed cuckoo – Please provide a citation for the statement, “There are thought to be less than 20 breeding pairs of the yellow-billed cuckoo in Utah.”

Page 5-8, Section 5.4.1.4, Protected Species, Bald Eagle – Bald eagles are more widespread within Utah now. For example, bald eagles also nest in Duchesne and Summit counties.

Page 7-5 and 7.6, Section 7.4.1.1; Section 7.4.1.2, Non-game Fish and Wildlife Management; and Page 7-24, Table 7-1, TEAD North and South – Guzzlers are known to attract and support predators that prey upon and out-compete native wildlife which are adapted to the more xeric conditions without guzzlers. We recommend TEAD give strong consideration to native wildlife when evaluating the need for guzzlers, and generally recommend against installing guzzlers. We recommend you remove the sentence, “Install water guzzlers” or add a caveat such as, “Install water guzzlers only in instances where the historic water resource has been reduced or diverted for other purposes and where at-risk native wildlife will not be negatively impacted.”

Appendix C, Table C-3, Animal Species List for TEAD South Area – It would be helpful information to include a field like the Comments field in Table C-1, which identifies whether each species is probable, confirmed, etc. It isn't clear from the citations provided in this table (e.g., “TEAD 1995”) if the species are identified from confirmed accounts or are simply likely to occur.

We appreciate the opportunity to provide these comments and are available to provide support and technical assistance at your request. If further assistance is needed or you have any questions, please contact Betsy Herrmann, Supervisory Fish and Wildlife Biologist, at (801) 975-3330, extension 139.

Sincerely,



Larry Crist  
Utah Field Supervisor

cc: UDWR – Springville

The comments made in the preceding letter from the USFWS Utah Field Office dated July 23, 2015 were put into the following comment matrix. TEAD responded to the comments and made the necessary corresponding changes to the INRMP. The following page is the comment matrix that summarizes the comments from USFWS, the responses from TEAD, and documents the changes made to this INRMP.

**Tooele Army Depot INRMP Comment Matrix  
USFWS Comments on Final INRMP, July 2015**

Comment Number	Page Number	Section/Figure/ Table/Appendix	Line Number	Commentor	Comment	Response
1	5-6	5.2.2. Vegetation-TEAD South Area		Larry Crist, Utah Field Supervisor, USFWS	Although it is not a "dominant" vegetation community, the wetland/riparian community is an important one from a habitat perspective. We recommend you identify wetland/riparian communities in this section.	Text revised per comment. Added a section (Section 5.2.2.5) about wetland/riparian habitat on TEAD South Area.
2	5-8	5.4.1. Protected Species		Larry Crist, Utah Field Supervisor, USFWS	We recommend you discuss golden eagles in this section.	Text revised per comment. Added a section (Section 5.4.1.5) about the golden eagle.
3	5-8	5.4.1. Protected Species		Larry Crist, Utah Field Supervisor, USFWS	If surveys have not been conducted for Bonneville cutthroat trout and Columbia spotted frog, we recommend you coordinate with Utah Division of Wildlife Resources to do so. If surveys were conducted, please provide that information.	Surveys have not been conducted. The need for a survey for the spotted frog is already noted in Section 7.15 (T&E Species Management Measures). Added the Bonneville cutthroat trout to this section (7.15) and to the management measures summary Table 7-1 in Section 7.16. Also specifically noted in Section 8 (Management Goals) and in Section 9 in Table 9-1, under the T&E goals of updating the PLS, that surveying for the Bonneville cutthroat trout and Columbia spotted frog would be part of that survey.
4	5-8	5.4.1.2. Protected Species, Yellow-billed cuckoo		Larry Crist, Utah Field Supervisor, USFWS	Please provide a citation for the statement, "There are thought to be less than 20 breeding pairs of the yellow-billed cuckoo in Utah."	Text revised per source and source citation added.
5	5-8	5.4.1.4. Protected Species, Bald Eagle		Larry Crist, Utah Field Supervisor, USFWS	Bald eagles are more widespread within Utah now. For example, bald eagles also nest in Duchesne and Summit counties.	Updated information on bald eagle in Section 5.4.1.4 per comment from Mr. Crist and from additional UDWR sources.
6	7-5 and 7-6; and 7-24	Section 7.4.1.1 and 7.4.1.2; and Table 7-1		Larry Crist, Utah Field Supervisor, USFWS	Guzzlers are known to attract and support predators that prey upon and out-compete native wildlife which are adapted to the more xeric conditions without guzzlers. We recommend TEAD give strong consideration to native wildlife when evaluating the need for guzzlers, and generally recommend against installing guzzlers. We recommend you remove the sentence, "Install water guzzlers" or add a caveat such as, "Install water guzzlers only in instances where the historic water resource has been reduced or diverted for other purposes and where at-risk native wildlife will not be negatively impacted."	Text revised per comment. Added the caveat language to Section 7.4.1.1 and 7.4.1.2 and Table 7-1, and Section 8 and Table 9-1 in Section 9.
7		Appendix C, Table C-3, Animal Species List for TEAD South Area		Larry Crist, Utah Field Supervisor, USFWS	It would be helpful information to include a field like the Comments field in Table C-1, which identifies whether each species is probable, confirmed, etc. It isn't clear from the citations provided in this table (e.g., "TEAD 1995") if the species are identified from confirmed accounts or are simply likely to occur.	Text revised per comment. Added a "Comments" column to Table C-3 (TEAD South Animal List), identifying if animal is possible, probable, or confirmed.