

Camp Adair Training Site
Benton County, Oregon

**Revised
Integrated Natural Resources
Management Plan and
Environmental Assessment**



February 2011


Oregon Military Department
Oregon Army National Guard

REVISED INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN
CAMP ADAIR, BENTON COUNTY, OREGON

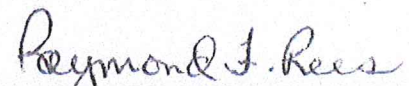
This Integrated Natural Resources Management Plan (INRMP) meets the requirements for such plans listed in the Sikes Act (16 U.S.C. 670a et seq.) and Sikes Act Improvement Amendments, Army Regulation 200-1, applicable Department of Defense directives, National Guard Bureau (NGB) guidance (March 2005) with NGB INRMP template dated 10 January 2005. The INRMP also complies with all applicable state and federal regulatory requirements. The INRMP sets appropriate and adequate guidelines for conserving and protecting the natural resources to the maximum extent practicable, without unduly limiting or restricting training activities and opportunities of the Camp Adair Training Site.

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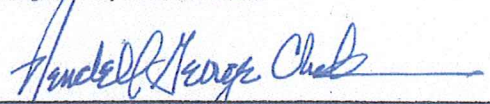
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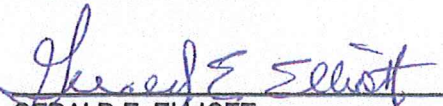
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Finding of No Significant Impact

Implementation of a Revised Integrated Natural Resources Management Plan For Camp Adair, Benton County, Oregon Oregon Army National Guard

1. Description of the Proposed Action and Alternatives

Proposed Action. The proposed action is the implementation of a revised Integrated Natural Resources Management Plan (INRMP) at Camp Adair, a 537 acre federally owned training area located in Benton County, Oregon. The preparation and implementation of an INRMP is required by the Sikes Act (16 USC 670a *et seq*, as amended), and Department of the Army regulations. The Oregon Army National Guard (ORARNG) proposes to adopt and implement a revised INRMP to provide an integrated and comprehensive guide for managing the natural resources on Camp Adair, including the conservation of threatened and endangered species known to exist on the Camp. The revised INRMP defines roles and responsibilities for natural resources management at all levels within the ORARNG. The revised INRMP also provides a basis for achieving the goals and objectives of the ORARNG's military and environmental missions while also meeting all applicable legal requirements.

No Action Alternative. In addition to the proposed action, the ORARNG analyzed a No Action alternative. Under the No Action alternative, existing natural resources management goals, objectives, and strategies would continue to be implemented in accordance with the existing 2001 INRMP. This alternative also would not result in significant adverse effects to the physical, biological or socioeconomic environment; however, it does not update goals, objectives, and projects needed to effectively manage the natural resources on Camp Adair. An environmental analysis of the No Action alternative is required by the federal Council on Environmental Quality (CEQ) regulations to serve as a benchmark against which the proposed action can be evaluated.

2. Environmental Analysis

The Environmental Analysis (EA) analyzed the potential effects from implementation of the revised INRMP and the No Action Alternative on soils, water, vegetation, wetlands, wildlife, threatened and endangered species, cultural resources, air quality, noise, public safety and health, socioeconomics, and environmental justice. Some natural resources would not be affected by implementation of either the revised INRMP or continued implementation of the existing INRMP. Consequently, the ORARNG did not evaluate them as part of this analysis. Those natural resource topics are: land use, ecological setting, climate, geology (except soils), and installation infrastructure (utilities, roads, buildings, training facilities).

The ORARNG's environmental analysis indicates that implementation of the revised INRMP or continued implementation of the existing INRMP will result in beneficial effects or no significant adverse effects to the resources included in the analysis. Implementation of the revised INRMP is expected to produce the greatest benefits, because it better identifies goals, objectives, and projects that are supported by the ORARNG and are capable of being implemented. Neither alternative would result in a net loss in the capability of lands to support the military mission of ORARNG.

Mitigation. No mitigation measures will be necessary to reduce potential adverse effects from this proposed plan revision to below significant levels. Implementation of the revised INRMP will improve the management of Camp Adair's natural resources and will not cause any adverse environmental effects. The ORARNG will identify and implement appropriate BMPs at the time of the projects, as warranted.

3. Regulations

The Proposed Action will not violate NEPA, the CEQ Regulations, 32 CFR 651, or any other Federal, state, or local environmental regulations.

4. Commitment to Implementation

The National Guard Bureau (NGB) and ORARNG affirm their commitment to implement this EA in accordance with NEPA. Implementation is dependent on funding. The ORARNG and ARNG's Environmental Programs Division will ensure that adequate funds are requested in future years' budgets to achieve the goals and objectives set forth in this EA.

5. Public review and Comment


Scoping letters were sent to federal, state, and local agencies and potentially interested Native American tribes, requesting input on the proposed action. Responses received were considered and were addressed in the revised INRMP or EA or both, as appropriate. In August 2006, a notice of availability and a legal advertisement for the draft revised INRMP and draft EA were published in a local newspaper. Letters and copies of the draft revised INRMP and EA also were mailed to Federal, state, and local agencies and potentially interested Native American tribes. Copies of the draft revised INRMP and draft EA were available for public review and comment from 28 August 2006 to 29 September 2009 in local libraries, from the ORARNG, and online. No issues significant to natural resources management were identified or left unresolved. Comments were received from two state and federal wildlife management agencies, a state agriculture agency, and a tribe. These comments were addressed in the final revised INRMP and EA as appropriate.

The final EA and draft FNSI were available for public review and comment in local libraries, from the ORARNG, and online from November 22 through December 23, 2010. Two comments were received; one from the USFWS and one from a local resident. Neither comment raised substantive issues concerning the INRMP, EA, or draft FNSI.

6. Finding of No Significant Impact

After careful review of the EA, I have concluded that implementation of the Proposed Action would not generate significant controversy or have a significant impact on the quality of the human or natural environment. This analysis fulfills the requirements of NEPA and the CEQ Regulations. An Environmental Impact Statement will not be prepared, and the ARNG is issuing this Finding of No Significant Impact.

7 Feb 11
Date



MICHAEL J. BENNETT
COL, LG
Chief, Environmental
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2007 REVISED INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN CAMP ADAIR, OREGON

Lead Agency: National Guard Bureau, Oregon Military Department
Participating Agencies: U.S. Fish and Wildlife Service; Oregon Department of Fish and Wildlife
Title of Proposed Action: Update the Existing Integrated Natural Resources Management Plan for Camp Adair, Oregon
Affected Jurisdictions: Benton County
Designation: 2007 Revised Integrated Natural Resources Management Plan

ABSTRACT

Camp Adair consists of approximately 527 acres of federal public lands. The Oregon Army National Guard (ORARNG) is proposing to implement a revised Integrated Natural Resources Management Plan (INRMP) that would enable the ORARNG to effectively manage the natural resources at the camp and to support the military mission. Activities that may affect natural resources on Camp Adair are regulated primarily by the *Sikes Act*, 16 U.S.C. 670a, and the supplemental *Sikes Act Improvement Amendments (SAIA) of 1997*. Other pertinent regulations include the *National Environmental Protection Act (NEPA)* and various Federal laws and Executive Orders that address specific environmental resources. The *Sikes Act* provides for conservation programs on government lands, including military installations and requires a cooperative plan for wildlife conservation and rehabilitation. The *SAIA of 1997* provides language clarifying and strengthening the requirements for preparing INRMPs in cooperation with the U.S. Fish and Wildlife Service (USFWS) and Oregon Department of Fish and Wildlife (ODFW).

This revised INRMP has also been prepared in accordance with Army Regulation 200-3, applicable Department of Defense (DoD) directives, and NGB guidance of March 2005. The document addresses the interrelationships among the natural resources (including soils, wildlife, vegetative communities, and outdoor recreation) and the military mission. Without effective and proactive natural resources management, components of the military mission could be jeopardized, especially those related to military training using all-terrain vehicles. This updated plan provides a flexible program to balance natural resources stewardship and military needs. The INRMP update identifies a number of goals and objectives for specific natural resources at Camp Adair that the ORARNG would implement, including: to identify and maintain the carrying capacity of training areas for military training; ensure no net loss of mission training lands and training opportunities; ensure compliance with all federal, state, and local environmental laws and regulations; minimize adverse impacts to natural ecosystems, communities, and resources; identify sustainable long-term uses of the natural resources at the camp; control the spread of non-native species, especially nuisance species that restrict training and adversely impact wildlife habitat; limit the amount of soil erosion and restore actively eroding areas; and increase natural biodiversity (native ecosystems, communities, and species).

Specific management strategies are proposed to meet the specific goals and objectives. The revised INRMP contains baseline information that supports compliance with regulatory and planning processes. To fulfill the requirements of the NEPA of 1969, an environmental assessment (EA) has been prepared to assess possible impacts from implementing the INRMP and from taking no action. An environmental analysis of the No Action alternative is required by CEQ regulations to serve as a benchmark against which the Proposed Action can be evaluated. The EA has been integrated into this document as an appendix. No significant adverse environmental impacts have been identified from implementing this updated INRMP.

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ACRONYMS AND ABBREVIATIONS

AERTA	US Army Environmental Requirements and Technology Assessments
AGI	OMD Installation Division
AGI-ENV	OMD Environmental Branch
AR	Army Regulation
ARNG	Army National Guard
ASL	above sea level
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFMO	Construction and Facilities Management Office
DA	Department of the Army
dB	decibel
dBA	“A-weighted” decibel scale
DCSOPS	Deputy Chief of Staff for Operations and Training
DNL	day-night average noise level
DoD	Department of Defense
DoDD	Department of Defense Directive
DoDI	Department of Defense Instruction
DPSST	Oregon Department of Public Safety Standards and Training
DSL	Department of State Lands
EA	Environmental Assessment
EMS	Environmental Management System
EO	Executive Order
EPA	Environmental Protection Agency
EPAS	Environmental Performance Assessment System
EQT	Environmental Quality Technology
ESA	Endangered Species Act
ESRI	Environmental Systems Research Institute
GIS	Geographic Information System
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management
ISO	International Organization for Standardization
ITAM	Integrated Training Area Management
KD	known distance
LCTA	Land Condition-Trend Analysis
LRAM	Land Restoration and Maintenance
MCOOC	Munitions Constituents of Concern
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NGB-ARE	National Guard Bureau - Environmental Programs Division

NGB-ART	National Guard Bureau – Training Division
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRS	Natural Resources Specialist
ODA	Oregon Department of Agriculture
ODEQ	Oregon Department of Environmental Quality
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
OMD	Oregon Military Department
ONHIC	Oregon Natural Heritage Information Center
ORAP	U.S. Army Operational Range Assessment Program
ORARNG	Oregon Army National Guard
ORS	Oregon Revised Statutes
OSU	Oregon State University
PAO	Public Affairs Office
PL	Public Law
PM	particulate matter
RCRA	Resource Conservation and Recovery Act
RFMSS	Range Facility Management Support System
ROTC	Reserve Office Training Corps
RPOM	Real Property Operations, Maintenance
RTLA	Range and Training Land Assessments
RTI	Regional Training Institute
SAIA	Sikes Act Improvement Amendments
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SOP	Standard Operating Procedure
SRP	U.S. Army Sustainable Range Program
SWANCC	Solid Waste Agency of Northern Cook County
TAG	The Adjutant General
TRI	Training Requirements Integration
TY	training year
USACE	U.S. Army Corps of Engineers
USAEC	U.S. Army Environmental Center
USACHPPM	US Army Center for Health Promotion and Preventive Medicine
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USNVCS	U.S. National Vegetation Classification System
WFMP	Wildland Fire Management Plan

EXECUTIVE SUMMARY

INTRODUCTION

Camp Adair, located in Benton County, consists of approximately 527 acres of land managed by the Oregon Military Department (OMD). Camp Adair is owned by the federal government and is administered by the U.S. Army Corps of Engineers (USACE). The USACE has licensed use of Camp Adair to the OMD and the Oregon Department of Public Safety Standards and Training (DPSST). The Oregon Army National Guard (ORARNG) trains military personnel on these public lands and allows scheduled uses of the Camp by other military branches, college Reserve Officer Training Corps (ROTC) programs, and public groups. The primary military mission at the camp is to provide training facilities and terrain for the soldiers of the military.

As required by the Sikes Act, as amended, (16 USC 670a *et. seq.*), the OMD prepared and implemented an Integrated Natural Resources Management Plan (INRMP) for Camp Adair in 2001. The ORARNG now is proposing to implement a revised INRMP for natural resources management at the camp and support the military mission. To meet the requirements of the Sikes Act, as amended, this INRMP will be updated on a regular basis and no less frequently than every five years. The INRMP provides an adaptive management program to balance natural resources stewardship and military needs.

The primary mission of Camp Adair is to provide high-quality training opportunities, appropriate to the installation, for ORARNG soldiers and other military organizations. The INRMP directly supports the mission of Camp Adair by aiming to develop, achieve, and maintain sustainable, high-quality environmental conditions that provide the training opportunities required by ORARNG units and other military users.

To fulfill the requirements of the National Environmental Policy Act (NEPA) of 1969 (42 USC 4321 *et. seq.*), and NGB policy an environmental assessment (EA) has been prepared using the Guidance on Preparing Environmental Documentation for Army National Guard Actions in Compliance with the National Environmental Policy Act of 1969, (March 2002), to assess possible impacts from implementing the updated INRMP. The EA is provided as Appendix H.

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of revising the INRMP is to guide the ORARNG in managing the natural resources at Camp Adair. The revised INRMP is designed to be a programmatic document that helps Camp Adair ensure the sustainability of the military mission while maintaining the integrity of the ecological process and its ecosystems. This revision of the INRMP also is required to meet the requirements of the November 1, 2004, Assistant Under Secretary of Defense

memorandum, entitled "Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning INRMP Reviews."

PUBLIC INVOLVEMENT, AGENCY COORDINATION, AND TRIBAL CONSULTATION

Coordination with appropriate federal, state, and tribal governments was conducted in preparing this revised INRMP. A comprehensive listing of individuals and agencies contacted is provided in Appendix A. Copies of all letters/responses received are also contained in Appendix A.

A 30-day public comment period was provided for public review of the draft revised INRMP. The ORARNG solicited public comments on the draft revised INRMP through notices in local newspapers and by direct distribution to interested parties. Representatives from federal and state resource management agencies, and tribal governments were invited to review the draft INRMP.

MANAGEMENT GOALS AND OBJECTIVES

Natural resources management goals and objectives are described in Section 5. Section 5 also lists specific projects that will be implemented to achieve those goals and objectives.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

To reduce duplication of effort and to streamline the decision-making process, Army guidelines recommend that an INRMP and its associated NEPA analysis and documentation be prepared concurrently, which they were. In accordance with NEPA, the ORARNG has identified a proposed action and alternatives for evaluation. The proposed action is Alternative 1, to implement the revised INRMP for Camp Adair. This proposal would meet the ORARNG's underlying need to train soldiers in a realistic setting that is in compliance with environmental regulations and policies. Alternative 2 is the no action alternative, which would mean a continuation with current management measures.

IMPLEMENTATION OF THE INRMP AND MILITARY MISSION

Implementation of the revised INRMP would not result in adverse effects to the military mission.

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SECTION 1 INTRODUCTION

This INRMP was developed in an interdisciplinary manner, prepared by specialists in natural resources management, environmental science, environmental planning, geographic information systems (GIS), and NEPA. Contributors to this Updated INRMP are listed in Section 7, List of INRMP Preparers and Reviewers.

1.1 LOCATION AND LAND USE

Camp Adair is a 527-acre parcel of Federally owned land located in the Willamette Valley, approximately 10 miles north of Corvallis (Figure 1.1-1). It has been used as a military installation since World War II. The land uses around Camp Adair are primarily rural residential to the south, state forest land to the west, and farm land to the north and east.

Camp Adair is located on land that was occupied and controlled by the Luckiamute River bands of the Kalapuya tribe (Mackey, 1974). Upon Euro-American settlement, it became private farmland for almost one hundred years. In 1941 the federal government exercised the right of eminent domain to include the land in a 52,000-acre major training area for U.S. Army troops during World War II, also known as Camp Adair (Sloan and Roth, 1998). After the war, most of the U.S. Army property was sold or transferred. This 527-acre parcel was kept, most likely because of the existence of the small arms firing ranges. Since the 1960s, the Oregon Military Department (OMD) has licensed the property from the U.S. Army Corps of Engineers (USACE) for the use of Oregon Army National Guard (ORARNG) units conducting small arms training and platoon-sized tactical training. In addition, the Oregon Department of Public Safety Standards and Training (DPSST) operates a firing range within the camp for training law enforcement officers under a separate license from the USACE. However, the OMD is responsible for all management activities at the camp. Further history of the area can be obtained from the cultural resource survey report prepared for the OMD (Sloan and Roth, 1998).

Camp Adair provides a local training area for ORARNG units located in the Willamette Valley, especially for weapons qualification training and tactical training, for platoon- (approximately 16 to 44 soldiers) and company-sized (approximately 62 to 190 soldiers) units. The camp offers many of the training opportunities these units require to reduce traveling long distances to other training areas. Camp Adair also offers training opportunities to other military units and state and local law enforcement agencies, as appropriate and available.

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1.2 CURRENT AND PROPOSED TRAINING ACTIVITIES

1.2.1 Current Military Training Activities

Generally, ORARNG training takes place on weekend days (monthly drills). Annual training events (two weeks) normally do not occur on Camp Adair. The most frequent training activity at the camp is weapons qualification or small arms training. This occurs on the known distance (KD) range and/or the pistol range (Figure 1.2.1-1). Small arms training occurs year round and has averaged 21 days per year for the past three years. The second-most frequent training activity is infantry field exercises. These exercises could take place anywhere on the camp but tend to be concentrated around Oak Hill or in the evergreen forest around Smith Hill. Infantry training involves such things as land navigation, bivouacking, construction of fortifications and defensive positions, and can include the use of blank ammunition, pyrotechnics, and smoke. This type of training also occurs year-round, averaging 12 days per year for the past 3 years. Other types of military training conducted at Camp Adair include land navigation, equipment concealment, and use of the ropes course.

Units using Camp Adair are mostly at platoon or company levels. A platoon is the basic tactical unit in the Army and typically is composed of two or more squads, with nine to ten soldiers per squad. An infantry platoon generally consists of three to five squads and generally numbers from 16 to 44 soldiers. A Company typically is composed of three to five platoons and numbers from 62 to 190 soldiers. Thus, the number of soldiers training at Adair could vary from about 16 to 190 per weekend day.

Military units that train at Camp Adair are scheduled and tracked using the Range Facility Management Support System (RFMSS). Information on training activities, dates, number of soldiers that participated, ranges/training areas used, equipment used, and bivouac/command center locations is recorded.

A summary of use of Camp Adair from 1999 through 2006 is presented in Table 1.2.1-1. ORARNG use of Camp Adair during 2001 – 2006 has not come close to approaching the level of use estimated in the 1997 EA. ORARNG use of Camp Adair during 2002 and 2003 was less than in earlier years because many of the units that otherwise use the facilities were deployed.

In addition to military use, civilian law enforcement marksmanship occurs regularly on weekdays on the DPSST range, which is not controlled by the OMD. Civilian groups, including high school students receiving ropes course training and historic re-enactors, occasionally also use Camp Adair.

1.2.2 Facilities

Existing Facilities

At present, all facilities are located in a 55-acre area in the southeastern portion of the camp. This developed area includes three firing ranges (police range, known distance rifle range, and pistol range), a work shop, storage buildings, vehicle compound, two vault toilets, and the camp caretaker's residence. Roads (paved and gravel), drainage ditches, and utility lines are present as well. Water for operations and drinking is provided by the Luckiamute River Water System. The remainder of the camp is undeveloped training area.

Future Facility Plans

At this time, the only planned improvement to Camp Adair is the construction of three maneuver trails. These maneuver trails will be used for off-road convoy training. Added benefits will be improved access into the undeveloped portion of the Camp for infantry training. Also, safety will be improved as the trails will act as fire breaks. Firing ranges would be maintained and improved as necessary to keep them functioning properly and meeting Army Standards. Modification of the KD and Pistol ranges, construction of a new target storage shed, and renovation of the existing targeting storage shed (new walls and concrete floor) have all been proposed. Figure 1.2.1-1 shows the proposed locations for most of these training aids.

Potential environmental effects from future construction projects and facility projects are not evaluated as part of this INRMP and EA. The construction of new roads and maneuver trails on Camp Adair was evaluated as part of a 1997 EA, and will receive additional environmental analysis, as needed, prior to work being done. Environmental analyses of other proposed projects will be conducted prior to action being taken as those projects are identified and planned.

1.2.3 Proposed Training Activities

No significant changes to the types or levels of training conducted by the ORARNG at Camp Adair are being proposed. Any changes to training activities that have the potential to affect human health or the environment will be evaluated in accordance with the Army's NEPA regulations, found in Title 32, Part 651 of the Code of Federal Regulations (32 CFR 651). ORARNG infantry platoons and companies are expected to account for the vast majority of users, but ORARNG engineer units also may use the camp for field training and helicopters occasionally land on the camp.

The 1997 EA estimated that ORARNG training could increase to about 120 days per year on average, with the implementation of the changes described in the EA. ORARNG use during the term of this INRMP is expected to increase above the levels seen during the past three years, when several of the ORARNG units that use Camp Adair were deployed.



FIGURE 1.2.1-1 Camp Adair Existing Training Area Facilities, Roads, and Property Facilities

N

Legend

- Roads
- Proposed Roads
- Obstacle Course
- - - Installation Boundary
- ▨ Training Area
- ▨ Small Arms Range
- Buildings/Structures

Note: 2005 Aerial Photograph

0 50 100 200 Meters

Note: Projected Coordinate System WGS1984 UTM Zone 10N

Revised Integrated Natural Resources Management Plan/
Environmental Assessment

No warranty is made by the Oregon Military Department as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document", in that it is intended to change as new data become available and is incorporated into the Enterprise GIS database.
DATE: MARCH 2007

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**Table 1.2.1-1
Camp Adair Training Data, 1999 – 2006**

	YEAR	1999	2000	2001	2002	2003	2004	2005	2006
ORARNG: small-arms range use	Days	27	29	14	21	20	21	18	29
	Person-days	1648	1570	845	1490	896	1185	1151	1246
ORARNG: field exercises	Days	11	8	27	36	12	16	29	26
	Person-days	455	163	615	1067	495	459	1250	1490
Subtotal ORARNG use	Days	38	37	41	57	32	37	47	55
	Person-days	2103	1733	1460	2557	1391	1644	2401	2736
Other military: small-arms range use	Days	2	3	1	9	4	2	4	3
	Person-days	53	235	75	795	260	165	220	250
Other military: field exercises	Days	5	11	9	3	7	3	9	11
	Person-days	136	670	415	175	435	200	548	510
Subtotal other military use	Days	7	14	10	12	11	5	13	14
	Person-days	189	905	490	970	695	365	768	760
Police: small-arms range use	Days	48	68	59	77	62	78	84	34
	Person-days	2190	2985	2790	3405	2685	3685	4135	1620
Police: field exercises	Days	2	0	1	0	0	0	0	0
	Person-days	78	0	30	0	0	0	0	0
Subtotal Police use	Days	50	68	60	77	62	78	84	34
	Person-days	2268	2985	2820	3405	2685	3685	4135	1620
Civilian: small-arms range use	Days	0	0	0	0	0	1	0	0
	Person-days	0	0	0	0	0	20	0	0
Civilian: field exercises	Days	0	0	4	6	5	12	12	8
	Person-days	0	0	257	645	270	337	432	136
Total Civilian use	Days	0	0	4	6	5	13	12	8
	Person-days	0	0	257	645	270	357	432	136
Total use	Days	95	119	115	152	110	133	156	111
	Person-days	4560	5623	5027	7397	5041	6051	7736	5252

1.3 PURPOSE AND NEED OF THE INRMP

1.3.1 Purpose of the INRMP

The INRMP is intended to guide natural resource management at Camp Adair and ensure compatibility with military training and other activities. The OMD fully expects the level of training over this period will remain within projections included in the 1997 EA that addressed military training at Camp Adair. However, the OMD expects the use of Camp Adair to increase over the levels shown in Table 1.2.1-1 as ORARNG return from long-term active duty deployments, such as those in Iraq and Afghanistan.

This INRMP is an integral part of Camp Adair's overall land management process. Continued implementation of the INRMP will help ensure that Camp Adair lands continue to support present and future mission requirements while preserving, improving, and enhancing ecosystem integrity. Over the long term, implementation of this and future INRMP updates will help guide the OMD in maintaining and improving the sustainability and biological diversity of terrestrial ecosystems at Camp Adair while supporting sustainable economies, human use, and the environment required for realistic military training operations.

1.3.2 Need for the INRMP

The INRMP for Camp Adair is required by the Sikes Act, as amended. An EA is required to identify and evaluate all potential environmental impacts resulting from the implementation of this updated INRMP. The need for this INRMP is fourfold:

- It must be prepared in accordance with the provisions of the Natural Resources Management on Military Lands Act of 1960 (commonly known as the Sikes Act) and the Sikes Act Improvement Act of 1997. Department of Defense (DoD) Policy (DoD Instruction 4715.3, Environmental Conservation Program), National Guard Bureau (NGB) guidance contained in NGB All States Memorandum P00-0039, and the November 1, 2004 memorandum from the Assistant Under Secretary of Defense entitled "Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning INRMP Reviews," commonly referred to as the DoD Supplemental Guidance.
- It supports the military mission and sustains the integrity of natural resources. An essential element of the military mission is to train military personnel as they would be expected to perform under actual combat or emergency conditions. The military mission requires healthy and viable natural resources to provide realistic environmental conditions and to minimize the potential for hazardous situations.

These healthy and viable resources provide “cover” or concealment (camouflage) needed for soldiers’ survival in combat.

- It is needed to document previously completed and current natural resources surveys, inventories, and monitoring programs for Camp Adair.
- It is needed to implement an adaptive ecosystem management framework as part of the NGB's guidance on natural resources management. This approach takes a long-term view of human activities, including military training needs, human uses, and biological resources as part of the same environment.

The following authorities for the requirements for an INRMP are cited and are available on the internet:

- Army Regulation 200-3, Environmental Quality, Natural Resources-Land, Forest and Wildlife Management, Last Modified 20 March 2000.
- Sikes Act Reauthorization Act of 2003.
- DoD Directive (DoDD) 4700.4, Natural Resources Management Program, January 1989.
- DoD Instruction (DoDI) 4715.3, Environmental Conservation Program, 3 May 1996.
- Conserving Biodiversity on Military Lands - A Handbook for Natural Resources Managers, 1996.
- Guide to Integrated Natural Resources Management, April 1997.
- Deputy Under Secretary of Defense, Sikes Act Policy Memorandum, 10 October 2002.
- Deputy Under Secretary of Defense, Implementation of Sikes Act Improvement Act Amendments: Supplemental Guidance concerning INRMP Reviews, 1 November 2004.
- Guidance on Preparing Environmental Documentation for Army National Guard Actions in compliance with the National Environmental Policy Act of 1969, March 2002.

1.4 Environmental Management System (EMS)

The ORARNG is developing and implementing an environmental management system that is intended to comply with EO13423. The ORARNG is currently developing a single, statewide eMS that will cover all ORARNG facilities. In accordance with Army and NGB requirements, it is expected that the ORARNG system will be ISO 14001-compliant by December 2009.

Annual reviews of the INRMP and revisions made to the INRMP at no less than every five years are important parts of the environmental management system process. Annually, natural resources conditions are reviewed along with INRMP

projects slated to be conducted (see table 6.6-1) to determine whether specific projects are needed, have been funded, and confirm implementation schedules. Projects listed for the past year, and earlier in some cases, are reviewed to determine whether those projects were implemented, were effective, or need to be rescheduled or repeated. Five-year revisions of the INRMP permit the ORARNG to refocus its longer-term natural resource management efforts based on the results of implementing earlier projects and current natural resources conditions.

1.5 SUSTAINABLE RANGE PROGRAM

As part of the Army's commitment to environmental stewardship, the Sustainable Range Program (SRP) promotes environmental stewardship through the development & transfer of management tools and solutions for sustainable, ready, compliant, and realistic training ranges.

Many diverse projects make up the SRP. All are aimed at understanding how the Army can best manage its testing and training ranges to preserve air and water quality and prevent erosion while keeping the ranges open and ready for testing and training. All of the U.S. Army Environmental Center (USAEC) SRP projects map back to the Army's Environmental Quality Technology (EQT) Program, which ensures the requirements for work are validated.

The Army executes the EQT Program to find those critical solutions that meet Army unique requirements. The over-arching database that contains and describes the Army's environmental requirements is the **US Army Environmental Requirements and Technology Assessments (AERTA)** (*DENIX account and password required*). This database is considered a "Living Document" as the needs and environmental requirements of the U.S. Army constantly evolve.

Extensive information on the SRP can be found in the following web page: <http://aec.army.mil/usaec/technology/rangexxi00.html>.

1.6 RESPONSIBLE AND INTERESTED PARTIES

Successful natural resources management for Camp Adair and the implementation of this INRMP requires a cooperative effort among the parties directly responsible for using and maintaining the training site. A brief description of the parties directly responsible for implementing the INRMP and of other interested parties is provided below.

1.6.1 U.S. Department of Defense

As the property owner of Camp Adair, the Seattle District of the USACE was also provided a letter of coordination regarding the INRMP process. The USACE manages the full range of real estate services (appraisal, planning and control, acquisition, management, and disposal of land) for the military and civil works activities of the Army and Air Force, and for other federal agencies. The USACE manages the real property at Camp Adair.

1.6.2 National Guard Bureau

The Environmental Programs Division (NGB-ARE) is responsible for reviewing and approving the INRMP and advising the OMD before formal submission to the U.S. Fish and Wildlife Service (USFWS), the Oregon Department of Fish and Wildlife (ODFW), the State Historic Preservation Office (SHPO), and other federal and state agencies. NGB-ARE ensures operational readiness by promoting environmental quality and an environmental ethic throughout the ARNG, and is responsible for tracking projects, providing technical assistance, quality assurance of written materials, and funding to support the programs.

The Training Division (NGB-ART) also may participate by supporting certain projects.

1.6.3 ORARNG

The Adjutant General (TAG) for the State of Oregon is responsible for the operation and maintenance of Camp Adair, which includes implementation of this INRMP. TAG ensures that all installation land users are aware of, and comply with, procedures, requirements, or applicable laws and regulations that accomplish the goals and objectives of the INRMP. TAG also ensures coordination of projects and actions between environmental, training, and engineering staffs.

The Deputy Chief of Staff, Operations (DCSOPS) has the primary responsibility for scheduling military training and safety of all personnel while training exercises are being conducted. Secondary to scheduling is maintaining a high-quality training environment.

The Adjutant General – Installations Division, Environmental Branch (AGI-ENV) for Oregon is responsible for characterizing the natural and cultural resources of the training sites; identifying compliance, protection, and stewardship needs; and advising other OMD staff and ORARNG unit personnel on the best ways to comply with federal and state environmental laws and regulations. AGI-ENV provides technical assistance to training site personnel including: developing projects, securing permits, conducting field studies, providing environmental awareness materials, locating and mapping natural and cultural resources, preparing plans, and revising the INRMP every five years. AGI-ENV also oversees the NEPA process for the ORARNG.

Camp Adair staff, which consists of the camp caretaker and trainers at the Regional Training Institute (RTI), is the primary stakeholder. Camp Adair and RTI staff, in conjunction with AGI-ENV and the ORARNG Operations and Training staff, will ultimately implement this plan and assure its success. Camp Adair staff has intimate knowledge of all aspects of the training site, including training

scheduling (and conflicts), locations of training facilities, impairments or problems with human-made structures or natural functions, and needs for improvement or maintenance of the training land. Along with AGI-ENV and ORARNG Operations and Training, Camp Adair staff will ensure that:

- Land Rehabilitation and Maintenance (LRAM) projects are identified and executed;
- Vegetative cover is maintained on highly erodible soils;
- Wetlands, listed species, and other important cultural and natural resources are protected from construction and training activities;
- Integrated pest management actions are implemented as planned; and
- Environmental awareness materials are distributed to Camp users.

The Adjutant General – Installations Division (AGI) provides a full range of engineering disciplines for all facilities under the jurisdiction of the OMD, including Camp Adair. AGI is responsible for master planning and construction projects, and provides assistance with the design of construction projects, such as roads and some erosion control projects. AGI-ENV is an integral branch with AGI providing environmental oversight to project planning, construction, and operations.

The AGI-ENV is expected to maintain updated lists of resources at Camp Adair, act as the proponent of this INRMP, initiate annual reviews as required by DOD policy, and initiate revisions to ensure the plan remains current. It also is expected to provide expertise in the development and production of environmental awareness materials for distribution to training site managers and troop commanders, and functions as a liaison with the public in public meetings and community educational events. The Public Affairs Office (PAO) provides expertise in these matters at the request of AGI-ENV.

The Staff Judge Advocate is expected to advise the TAG, the CFMO, Operations, and AGI-ENV on laws and regulations that affect training land use and environmental compliance. Depending on the issue, this responsibility may be shared with the State Attorney General, as mandated by state law.

1.6.4 Federal Agencies

Federal agencies other than the DoD and the NGB also have interests in the integrity of the natural resources at Camp Adair. The involvement of these agencies is based on regulatory authority, their designation as participating agencies or providers of technical assistance, as required by federal legislation and regulation. These agencies and their roles and responsibilities are described below.

The USFWS has provided technical assistance on known and potentially occurring sensitive species and wildlife habitat management issues. They were

provided a letter of coordination for initiating this INRMP process. This agency is the primary federal agency for issues regarding fish and wildlife management and is the regulatory authority for the Endangered Species Act (ESA) of 1973 (16 USC 1531– 1534) and the Migratory Bird Treaty Act of 1918 (16 USC 703–711).

OMD sent the USFWS a coordination letter notifying them of the ORARNG's intent to revise the INRMP and sent the agency a copy of the draft revised INRMP and EA for review and comment.

1.6.5 Tribal Governments

The Confederated Tribes of Grande Ronde and the Confederated Tribes of Siletz were formally invited to participate in the planning process through written correspondence by TAG to their respective Tribal Chairs and resource management staff. OMD also sent the tribes a copy of the draft revised INRMP and EA for review and comment.

1.6.6 State Agencies

The ODFW is the primary state agency responsible for managing fish and wildlife. Cooperation between the ORARNG and ODFW generally involves compliance issues concerning State threatened and endangered species and the management of wildlife resources on Camp Adair. OMD sent the ODFW a coordination letter notifying them of the ORARNG's intent to revise the INRMP and sent the local field office of ODFW a copy of the draft revised INRMP and EA for review and comment.

The Oregon Department of Agriculture (ODA) is responsible for designating and conserving Oregon's threatened and endangered plant species. OMD sent the ODA a coordination letter notifying them of the ORARNG's intent to revise the INRMP and sent the agency a copy of the draft revised INRMP and EA for review and comment.

Other states agencies receiving letters notifying them of ORARNG's intent to update the INRMP are listed below:

- Oregon Water Resources Department
- State Historic Preservation Office, Oregon Parks and Recreation Department
- Planning Manager, Oregon Parks and Recreation Department
- Benton Soil and Water Conservation District
- Oregon State University, Department of Botany and Plant Pathology
- Oregon Department of Forestry
- Oregon Department of State Lands (Field Operations)
- Oregon Department of State Lands (Policy & Planning)

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SECTION 2

SIKES ACT AND NEPA COMPLIANCE

Army facilities, including ARNG installations, are subject to numerous regulations affecting use and management of natural resources, including federal laws, EOs, and Army regulations. Table 2-1 lists applicable laws, regulations, and policies, and Appendix B (Federal Requirements and Other Guidelines) discusses the most important of these.

2.1 SIKES ACT (16 USC 670a – 670o)

The Sikes Act, as amended, directs the Secretary of Defense to carry out a program for conserving and rehabilitating natural resources on military installations. The Sikes Act requires the following ten elements:

- Fish and wildlife management, land management, forest management, and fish and wildlife oriented recreation;
- Fish and wildlife habitat enhancement or modification;
- Wetland protection, enhancement, and restoration, where necessary for support of fish and wildlife;
- 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;
- Sustained use by the public of natural resources to the extent such use is not inconsistent with the needs of fish and wildlife resources management;
- Public access to the military installation that is necessary or appropriate, subject to requirements necessary to ensure safety and military security;
- Enforcement of applicable natural resource laws and regulations;
- No net loss in the capability of military installation lands to support the military mission of the installation; and
- Such other activities as the Secretary of the military department determines appropriate.

This updated INRMP is based on the requirements of the Sikes Act and related guidance issued by the DoD and NGB, including the November 1, 2004, Assistant Under Secretary of Defense memorandum, entitled “Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning INRMP Reviews.” The INRMP has been developed to meet the intent of the Sikes Act and the NEPA. To this end, the ORARNG intends to provide for:

**Table 2-1
Natural Resource Laws and Regulations and their Expected Influence on
Natural Resources Management at Camp Adair**

Law or Regulation	Influence		Not Applicable
	Direct	Indirect	
Abandoned Shipwreck Act of 1987 (43 USC 2101 - 2106)			√
American Indian Religious Freedom Act of 1978, as amended (42 USC 1996 - 1996a)	√		
Anadromous Fish Conservation Act of 1965, as amended (16 USC 757a - 757f)			√
Antiquities Act of 1906 (16 USC 431 - 433)		√	
Archaeological and Historic Resources Management (DoDD 4710-1)	√		
Archaeological and Historic Preservation Act (Moss-Bennett Act) of 1974 (16 USC 469 - 469c)	√		
Archaeological Resources Protection Act of 1979 (16 USC 470aa - 470mm)	√		
Bald Eagle Protection Act of 1940, as amended (16 USC 668 - 668d)		√	
Clean Air Act of 1955, as amended (42 USC 7401 - 7671q)	√		
Clean Water Act (Federal Water Pollution Control Act) of 1972, as amended (33 USC 1251 - 1387)	√		
Coastal Zone Management Act of 1972 (16 USC 1451 - 1465)			√
Curation of Federally Owned and Administered Archaeological Collections (36 CFR 79)		√	
Department of Defense Annotated American Indian and Alaska Native Policy (October 27, 1999)	√		
Determination of Eligibility for Inclusion in the National Register of Historic Places (36 CFR 63)		√	
Emergency Wetlands Resources Act of 1986, as amended (16 USC 3901 - 3932)			√
Endangered Species Act of 1973 (16 USC 1531 - 1534)	√		
Environmental Protection and Enhancement: Subpart H Historic Preservation (32 CFR 650)		√	
Erosion Protection Act, PL 86-645, as amended (33 USC §§ 426 - 426-3)	√		
Estuary Protection Act of 1968 (16 USC 1221 - 1226)			√
Executive Order 13007, Indian Sacred Sites, May 29, 1996 (61 Federal Register 26,771)	√		
Executive Order 11593, Protection and Enhancement of the Cultural Environment, May 13, 1971 (36 Federal Register 8921)		√	
Executive Order 11514, Protection and Enhancement of Environmental Quality, March 7, 1970 (35 Federal Register 4247), as amended by EO 11541 and EO 11991.		√	
Executive Order 11990, Protection of Wetlands, May 24, 1977 (42 Federal Register 26961)	√		
Executive Order 12962, Recreational Fisheries, June 7, 1995 (60 Federal Register 30769)			√
Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, January 4, 1979 (44 Federal Register 1957)			√
Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, November 6, 2000 (65 Federal Register 67249)	√		
Executive Order 11988, Floodplain Management, as amended by EO 12148, May 24, 1977 (42 Federal Register 26951)		√	

Table 2-1 (Continued)

Law or Regulation	Influence		Not Applicable
	Direct	Indirect	
Executive Order 11644, Use of Off-road Vehicles on Public Lands, February 8, 1972 (37 Federal Register 2877), as amended by EO 12608	√		
Executive Order 13112, Invasive Species, February 3, 1999 (64 Federal Register 6183)	√		
Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, January 10, 2001 (66 Federal Register 3853)	√		
Farmland Protection Policy Act of 1981, as amended (7 USC 4201 - 4209)			√
Federal Cave Resources Protection Act of 1988, as amended (16 USC 4301 - 4310)	√		
Federal Insecticide, Fungicide, and Rodenticide Act, as amended (7 USC 136 - 136y)	√		
Federal Land Policy and Management Act of 1976, as amended (43 USC 1701 - 1785)	√		
Federal Noxious Weed Act of 1974, as amended (7 USC 2801 - 2814)	√		
Fish and Wildlife Conservation Act of 1980 (16 USC 2901 - 2912)		√	
Fish and Wildlife Coordination Act of 1934, as amended (16 USC 661 - 666c)		√	
Food, Agricultural, Conservation, and Trade Act of 1990 (Pesticide Recordkeeping), as amended (7 USC 136i-136l)	√		
Forest Rangeland Renewable Resource Planning Act of 1974 (16 USC 1600 - 1614)		√	
Historic Preservation Certificates (36 CFR 67)		√	
Historic Sites Act of 1935, as amended (16 USC 461 - 467)		√	
Historic Preservation (Army Regulation 200-4)	√		
Hunting and Fishing Permits (32 CFR 552.19)			√
Lacey Act of 1900, as amended (16 USC 667e, 701)			√
Marine Mammal Protection Act of 1972 (16 USC 1361 - 1421h)			√
Migratory Bird Treaty Act of 1918, as amended (16 USC 703 - 712)		√	
Multiple-Use Sustained Yield Act of 1960, (16 USC 528 - 531)	√		
National Environmental Policy Act of 1969 (42 USC 4321 - 4370d)	√		
National Historic Landmarks Program (36 CFR 65)		√	
National Historic Preservation Act of 1966, as amended (16 USC 470 - 470x-6)	√		
National Register of Historic Places (36 CFR 60)		√	
Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001 - 3013)		√	
Native American Graves Protection and Repatriation Act Regulations (43 CFR 10)		√	
North American Wetlands Conservation Act (16 USC 4401 - 4414)			√
Executive Order 11988, Floodplain Management, as amended by EO 12148, May 24, 1977 (42 Federal Register 26951)		√	

Table 2-1 (Continued)

Law or Regulation	Influence		Not Applicable
	Direct	Indirect	
Outleasing for Grazing and Agriculture on Military Lands (10 USC 2667)			√
Preservation of American Antiquities (Antiquities Act regulations) (43 CFR 3)		√	
Protection of Archaeological Resources: Department of Defense Uniform Regulations (32 CFR 229)	√		
Protection of Historic and Cultural Properties (36 CFR 800)	√		
Rivers and Harbors Appropriations Act of 1899, as amended (33 USC 401 - 403)			√
Safe Drinking Water Act of 1974, as amended (42 USC 300f - 300j-26)		√	
Salmon and Steelhead Conservation and Enhancement Act of 1980, (16 USC 3301 - 3345)		√	
The Secretary of Interior's Standards for Historic Preservation Projects (36 CFR 68)		√	
Sikes Act and Sikes Act Improvement Amendments, as amended (16 USC 670a – 670o)	√		
Soil and Water Resources Conservation Act of 1977, as amended (16 USC 2001 - 2009)		√	
Taylor Grazing Act of 1934 (43 USC 315 - 315o-2)	√		
Timber Sales on Military Lands (10 USC 2665)			√
Waiver of Federal Agency Responsibility under Section 110 of the National Historic Preservation Act (36 CFR 78)			√
Water Resources Planning Act, as amended (42 USC 1962 - 1962d-20)		√	
Watershed Protection and Flood Prevention Act, (16 USC 1001 - 1011, 33 USC 701)		√	
Wild and Scenic Rivers Act of 1968, as amended (16 USC 1271 - 1287)			√
Source: Modified from US Army 1997.			

- Conservation and rehabilitation of natural resources affected by the military on Camp Adair;
- Sustainable multipurpose use of the natural resources, subject to public and military personnel safety requirements; and
- Public access to the military training site to use natural resources, subject to military use and security constraints.

The Sikes Act provides a mechanism whereby the DoD, the USFWS, and the states can cooperate to manage fish, wildlife, and other natural resources on military installations. The ORARNG has coordinated its actions with these agencies and entities in regard to natural resources and military training, and will continue to do so.

2.2 NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (42 USC 4321 - 4370D)

Under NEPA, federal agencies must consider the potential environmental consequences of proposed major actions. The spirit and intent of NEPA is to protect and enhance the environment through well-informed federal decisions based on sound science. NEPA is premised on the assumption that providing timely information to the decision-maker and the public concerning the potential environmental consequences of proposed actions will improve the quality of federal decisions. Thus, the NEPA process includes the systematic interdisciplinary evaluation of potential environmental consequences expected to result from implementing a proposed action. This document includes an EA to fulfill NEPA requirements.

2.2.1 NEPA/INRMP Integration

This INRMP integrates the requirements of the Sikes Act and NEPA. The EA for implementation of this INRMP is provided in Appendix H. The EA identifies and evaluates all potential impacts resulting from implementation of the proposed INRMP projects (see section 6).

2.2.2 Description of the Proposed Action

The proposed action is to implement a revised INRMP, consistent with the military use of Camp Adair and the goals and objectives established in the Sikes Act (as amended). This INRMP updates the existing INRMP adopted in 2001. As with the existing INRMP, the goal of this revised INRMP is to carry out an ecosystem-based conservation program that provides for conservation and enhancement of natural resources in a manner that is consistent with the military mission, that integrates and coordinates all natural resources management activities, and that provides for sustainable multipurpose uses of natural resources and for public access for use of natural resources, subject to military use and security constraints.

The goals of the INRMP are: to conserve Federally listed and candidate species, protect the historic orchard area, manage fires, prevent loss or degradation of wetlands, prevent soil erosion, prevent non-point source water pollution, eliminate exotic and invasive plant species, and to conserve native plant structural components and biodiversity. The management objectives are to integrate management plans as practicable and consistent with the military mission and established land uses.

Achieving the proposed action would comply with federal regulations and military requirements that mandate protection of natural resources managed by the Army. The proposed action focuses on a five-year planning period, which is consistent with the time frame mandated by the Sikes Act and DoDI.

2.2.3 Alternatives

In order to identify the full range of possible impacts that could result from implementing the updated INRMP, two alternative means of achieving a natural resource program at Camp Adair for the next five years have been identified. These alternatives consist of conducting the projects in the revised INRMP, as proposed in this document, or continuing to conduct natural resource management activities identified in the 2001 INRMP. The preferred alternative is to enable an ecosystem approach to meet multiple objectives, as outlined in Section 5. The EA provides an assessment of potential impacts resulting from their realization.

Alternative 1: Implementation of the 2007 INRMP. Under this preferred alternative, Camp Adair would carry out the revised INRMP approach outlined in Section 5, focusing on sustaining military readiness, promoting environmental stewardship, and conserving biodiversity. Under this alternative, all management issues important to the realization of the military mission, legal compliance, and ecological health are given a high priority; therefore, all management categories are emphasized. An adaptive management strategy would be instituted to conduct additional research, to monitor management actions, to reassess the function of management tools, and to revise the management plan accordingly.

Alternative 2: Continued Implementation of the 2001 INRMP (No Action Alternative). The No Action Alternative is the continued implementation of the existing 2001 INRMP. Inclusion of a No Action Alternative is prescribed by the Council on Environmental Quality (CEQ) regulations and serves as a benchmark against which proposed federal actions are evaluated.

Alternatives Considered but Eliminated. The 2001 INRMP identified goals, objectives, and projects to sustain military readiness, promote environmental stewardship, and conserve biodiversity. These were reevaluated and some of the goals, objectives and projects were changed or deleted for the revised INRMP. Some new goals, objectives and projects were introduced in the revised INRMP Update. Preparation and full implementation of the INRMP is an Army requirement. As such, other alternatives, including partial implementation of the initial 2001 INRMP, were considered but were dismissed as not feasible, impracticable, or precluded by legal insufficiency.

2.2.4 Scope of Analysis

The potential environmental impacts associated with the proposed action are required to be assessed in compliance with NEPA and CEQ regulations. The EA for the updated INRMP identifies, documents, and evaluates the effects of executing the INRMP at Camp Adair. The scope of the INRMP (goals, objectives, and the proposed projects) would guide the facility in achieving the following:

- Meeting the training requirements and objectives of the military mission at Camp Adair;
- Guiding the natural resources management program at Camp Adair in accordance with ARNG and ORARNG regulations; and
- Meeting legal and policy requirements, including those associated with NEPA, that are consistent with currently accepted natural resources management philosophies.

In order to meet compliance with NEPA and CEQ regulations, an interdisciplinary team of environmental scientists, biologists, geographers, engineers, archaeologists, historians, planners, and military technicians gathered to develop the INRMP and the EA. The team identified the affected environment, analyzed the proposed action against existing conditions, and determined the potential beneficial and adverse effects associated with the proposal.

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SECTION 3 EXISTING ENVIRONMENTAL CONDITIONS

3.1 LAND USE

The area around Camp Adair is agricultural to the north (Polk County) and east; forested to the west; and mixed to the south. Three pockets of rural residential development are to the east and south. Approximately 40–50 households are within one mile of the camp boundaries, mostly in Benton County. This includes a subdivision centered on Trillium Lane, south of the camp. Figure 3.1-1 shows the land use and locations of homes in Benton County around Camp Adair. The rural residential population is expected to grow, although this is expected to be limited by zoning and land use restrictions on the agricultural and forestry lands. Camp Adair is zoned as Open Space by Benton County. The OMD State Agency Coordination Program, reviewed and approved by the Land Conservation and Development Commission in 1989, indicates that this zoning does not apply to Camp Adair operations.

The 11,250-acre McDonald-Dunn Forest, owned and managed by Oregon State University (OSU), begins less than a mile southwest of Camp Adair. This OSU research forest is mostly a Douglas-fir forest of various age classes.

Approximately two miles to the east of the camp is the E.E. Wilson Wildlife Area, managed by the ODFW. This 1,683-acre refuge is a mosaic of wetlands, woods, prairie, and fields. Both of these areas are heavily used for outdoor recreation by Benton County residents.

3.2 ECOLOGICAL SETTING AND CLIMATE

Camp Adair is located within the Willamette Valley ecoregion. Ecoregions are areas of similarity in ecosystems and in the type, quality, and quantity of environmental resources (Pater, et al., 1998). Rolling prairies, deciduous/coniferous forests, and extensive wetlands comprised the pre-settlement landscape of this ecoregion. The camp appears to straddle the boundary between the area of prairie terraces and valley foothills, the latter being the transition zone into the Coast Range. Historically, oak woodlands and Douglas-fir coniferous forest were the dominant land cover, which was maintained by periodic burning by Native Americans. These ecosystems still occupy much of the camp, along with forested wetlands, albeit in modified form.

The Oregon Climate Service provided the following climatic condition information of the Willamette Valley (<http://www.ocs.oregonstate.edu/index.html>).

The climate of the Valley is relatively mild throughout the year, characterized by cool, wet winters and warm, dry summers. The climatic conditions closely resemble the Mediterranean climates, which occur in California, although Oregon's winters are somewhat wetter and cooler. Growing seasons in the

Willamette Valley are long, and moisture is abundant during most of the year (although summer irrigation is common).

Like the remainder of western Oregon, the Valley has a predominant winter rainfall climate. Typical distribution of precipitation includes about 50 percent of the annual total from December through February, lesser amounts in the spring and fall, and very little during summer. Rainfall tends to vary inversely with temperatures -- the cooler months are the wettest, the warm summer months the driest.

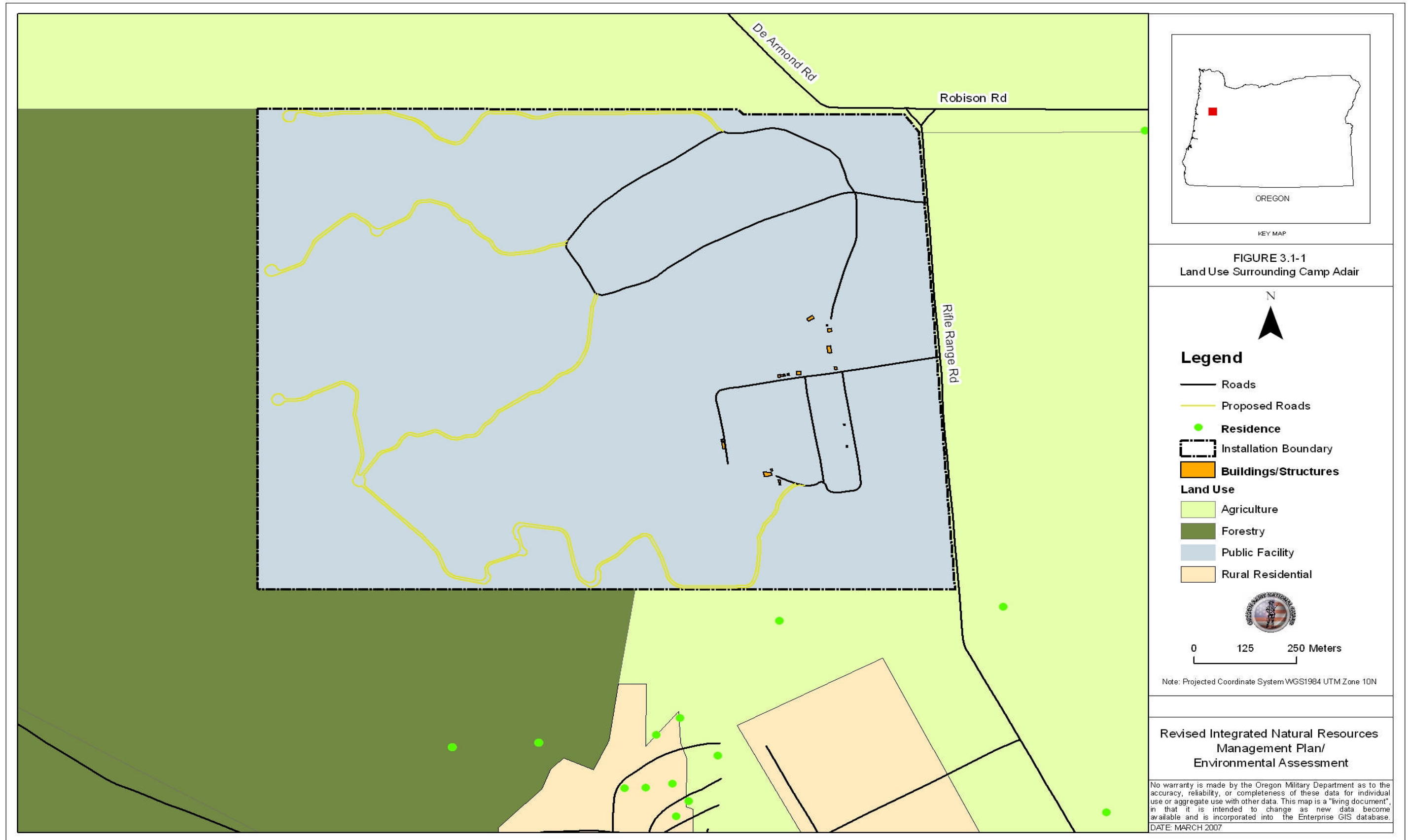
There is considerable variation in precipitation in the Valley, ranging from annual totals below 40 inches in the Portland area to upwards of 80 inches in the Cascade and Coast Range foothills. Elevation is the single most important determinant of precipitation totals.

Extreme temperatures in the Valley are rare. Days with maximum temperature above 90 deg F occur only 5-15 times per year on average, and below zero temperatures occur only about once every 25 years. Mean high temperatures range from the low 80's in the summer to about 40 deg F in the coldest months, while average lows are generally in the low 50's in summer and low 30's in winter. The mean growing season (days between 32 deg F temperatures) is 150-180 days in the lower portions of the Valley, and 110-130 days in the foothills (above about 800 feet).

Although snow falls nearly every year, amounts are generally quite low. Valley floor locations average 5-10 inches per year, mostly during December through February, although higher totals are observed at greater elevations in the foothills.

Relative humidity is highest during early morning hours, and is generally 80-100 percent throughout the year. Humidity is generally lowest during the afternoon, ranging from 70-80 percent during January to 30-50 percent during summer. Annual pan evaporation is about 35 inches, mostly occurring during the period April - October.

Winters are likely to be cloudy. Average cloud cover during the coldest months exceeds 80 percent, with an average of about 26 cloudy days in January (in addition to 3 partly cloudy and 2 clear days). During summer, however, sunshine is much more abundant, with average cloud cover less than 40 percent; more than half of the days in July are clear.



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3.3 GEOLOGICAL RESOURCES

3.3.1 Geology

Camp Adair is located in a prairie terrain ecological area composed of Pleistocene lacustrine and fluvial sedimentary deposits, while the valley foothills ecological area is Miocene and esitic basalt and marine sandstone (Pater, et al., 1998). Camp Adair itself is located along the base of an alluvial fan which follows the Luckiamute River drainage. Much of the alluvial material in the Willamette Valley and on Camp Adair is the result of a series of Pleistocene/early Holocene floods. These floods, which reached up to 400 feet elevation above sea level (ASL), are believed to have created the terraces on Camp Adair below that level. Terraces above 400 feet (125 meters) ASL likely resulted from the geological processes that created the Coast Range.

3.3.2 Topography

The topography of Camp Adair varies from nearly level on the east, to rolling foothills on the west. Three hills dominate the camp: Oak, Smith, and Hill 655T. Elevations range from approximately 70 meters (230 feet) to over 225 meters (740 feet) ASL. Most slopes are gentle (0–12%), but there are steep areas on Smith Hill and Hill 655T (over 20%). Figure 3.3.2-1 shows the topography of the camp.

3.4 SOILS

3.4.1 Soils Description and Classification

A special soil survey for Camp Adair was completed in 2000 by the Natural Resources Conservation Service (NRCS). Unlike the standard soil surveys, it mapped camp soils at a scale of 1:12000. A total of 14 soil components were identified, with four subdivided into slope classes to create 18 soil mapping units (NRCS, 2000). Figure 3.4.1-1 shows the soil mapping units, and Table 3.4.1-1 provides area and other data.

As can be seen, camp soils are highly variable and exhibit a complex pattern. Jory-Nekia and Dixonville silty clay loams occupy the highest elevations, and Woodburn, Dayton, and Waldo soils the lowest. Camp soils are either silt loams or silty clay loams. According to the soil survey, all of the soil mapping units have low permeability. Waldo, Amity, Concord, Dayton, and Witham soils are poorly drained, and the others have good drainage.

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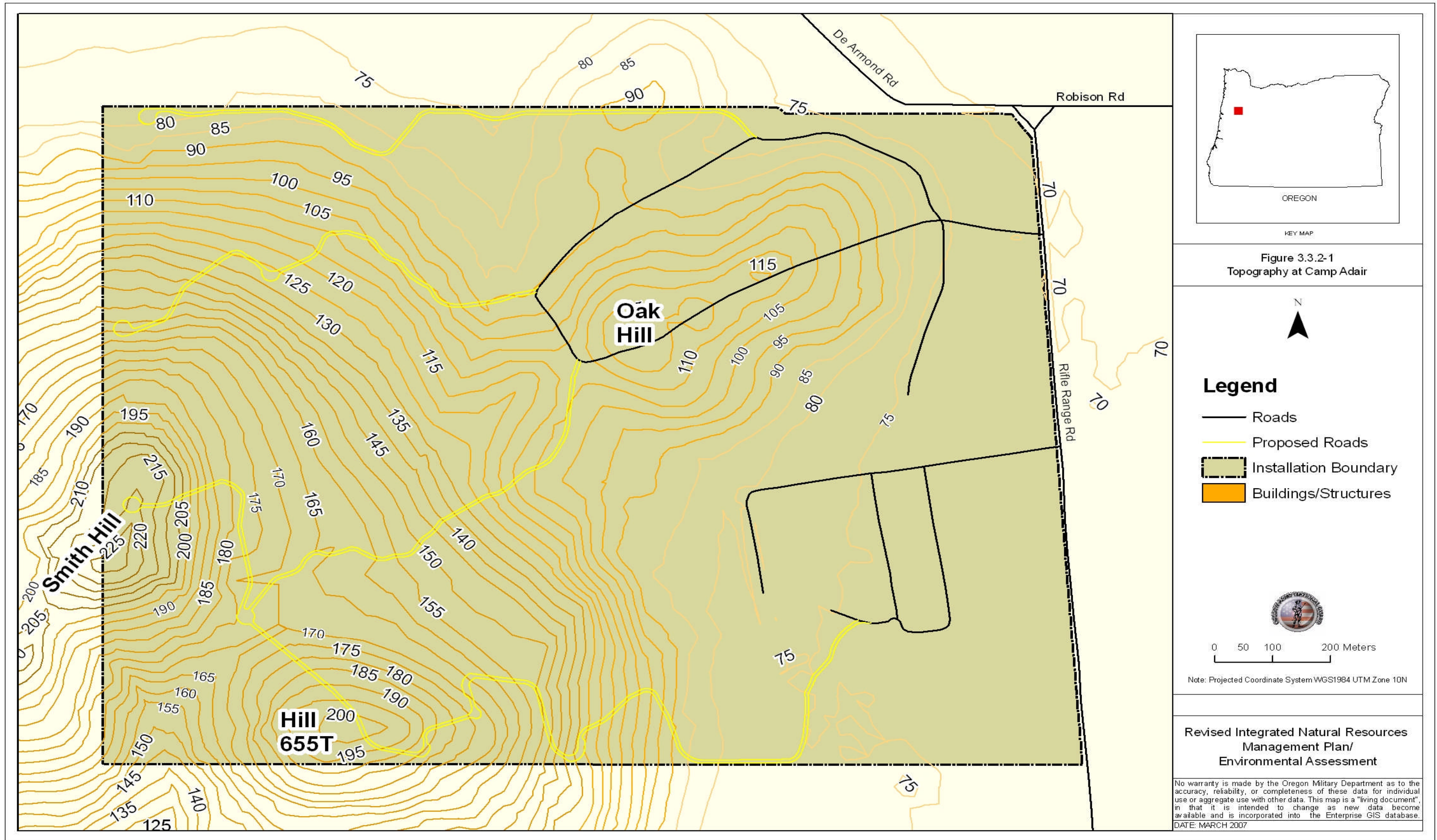
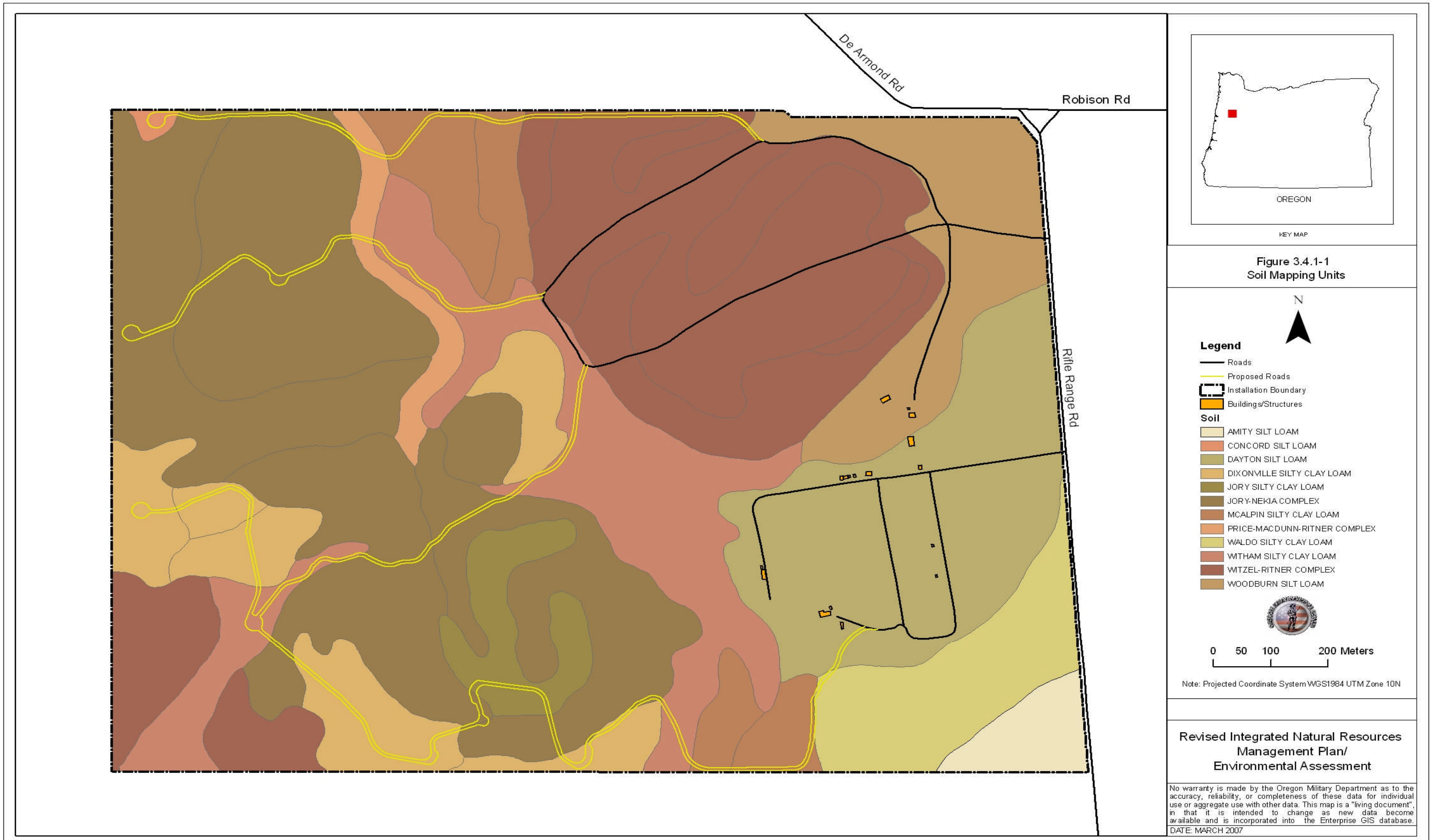


Figure 3.3.2-1
Topography at Camp Adair

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Table 3.4.1-1 Soils Data

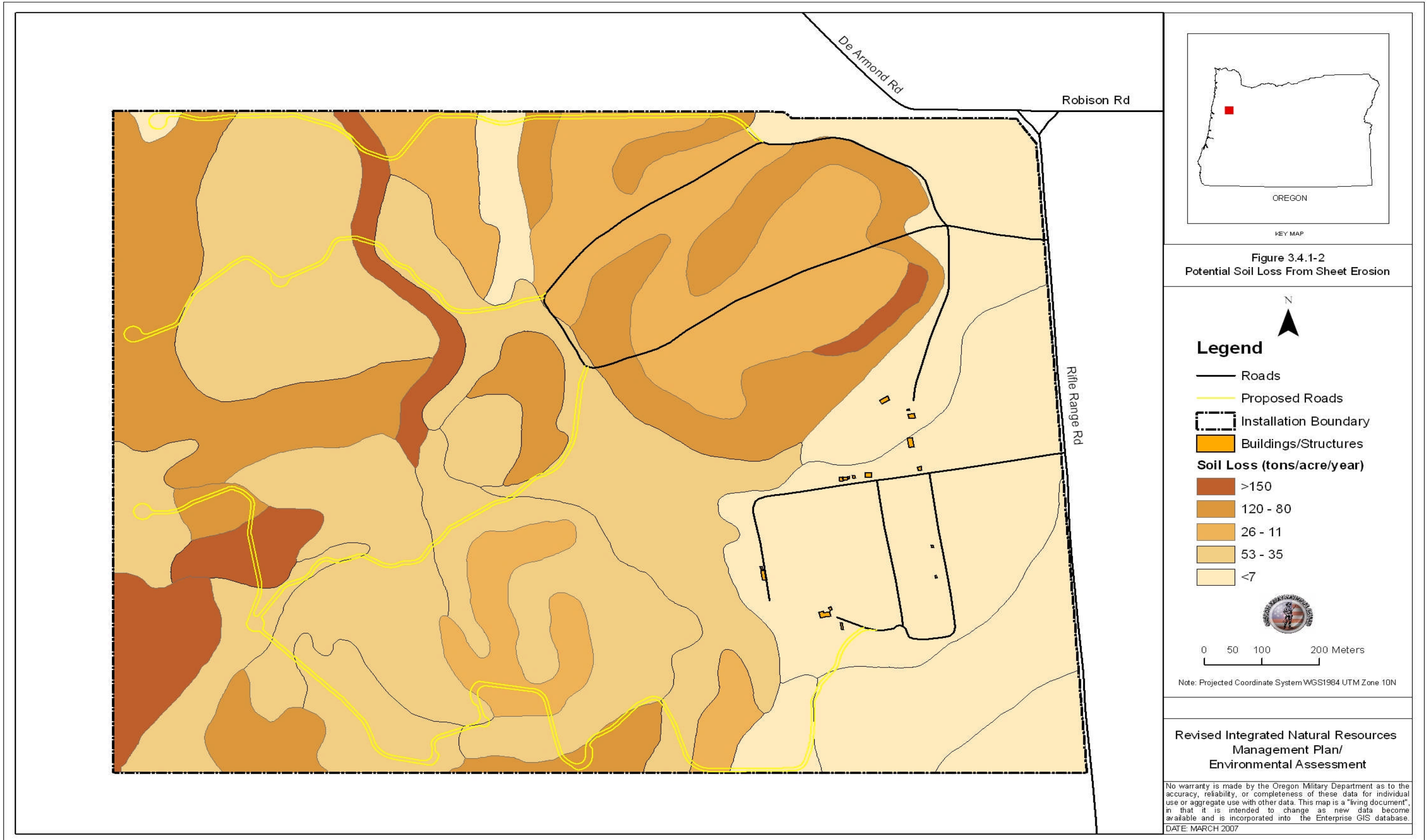
Map Unit Name	Symbol	No. of Areas	Acres	Erosion (Water)
Amity Silt Loam, 0–3 % Slopes	2301A	1	7.6	Not highly erodible
Concord Silt Loam, 0–2 % Slopes	2305A	1	0.9	Not highly erodible
Dayton Silt Loam, 0–2 % Slopes	2306A	1	62	Not highly erodible
Dixonville Silty Clay Loam, 3–12 % Slopes	2702C	2	18.6	Highly erodible
Dixonville Silty Clay Loam, 12–20 % Slopes	2702D	3	14.5	Highly erodible
Dixonville Silty Clay Loam, 20–30 % Slopes	2702E	1	6.4	Highly erodible
Jory Silty Clay Loam, 2–12 % Slopes	2711C	1	13.3	Not highly erodible
Jory-Nekia Complex, 12–20 % Slopes	2718D	3	78	Highly erodible
Jory-Nekia Complex, 20–30 % Slopes	2718E	2	67.2	Highly erodible
McAlpin Silty Clay Loam, 0–3 % Slopes	2020A	2	11.2	Not highly erodible
McAlpin Silty Clay Loam, 3–6 % Slopes	2208B	2	14.1	Not highly erodible
Price-MacDunn-Ritner Complex, 30–60 % Slopes	2719F	1	7.8	Highly erodible
Waldo Silty Clay Loam, 0–3 % Slopes	2012A	1	25	Not highly erodible
Witham Silty Clay Loam, 2–12 % Slopes	2734C	2	56.1	Not highly erodible
Witzel-Ritner Complex, 12–30 % Slopes	2746D	4	43.4	Highly erodible
Witzel-Ritner Complex, 3–12 % Slopes	2735C	1	52.6	Highly erodible
Witzel-Ritner Complex, 30–60 % Slopes	2746E	2	13.8	Highly erodible
Woodburn Silt Loam, 0–3 % Slopes	2310A	1	33.6	Not highly erodible

3.4.2 Erosion Potential

According to the soil survey, none of the soil components or mapping units has any significant erosion potential from wind. However, many of them are susceptible to water erosion (highly erodible on Table 3.4.1-1). This includes the Dixonville, Jory-Nekia Complex, Price-MacDunn-Ritner Complex, and Witzel-Ritner Complex soil components. Together, these components total 303 acres, over half of the area of the camp.

Using the revised universal soil loss equation, potential soil loss and erodibility indices were calculated for each soil mapping unit by the NRCS. This data is presented in Appendix C (Soil Erosion Hazard Data). Potential soil loss is an estimate of the tons per acre per year that would be eroded away by water if the soil is devoid of vegetative cover. Therefore, it is a worst-case scenario. The erodibility index is a measure of the maintenance of soil productivity over time, derived by factoring soil depth into the equation. Since the camp is not engaged in commercial agricultural or forestry, potential soil loss is more relevant and is depicted in Figure 3.4.1-2 by soil mapping unit. As can be seen, high-erosion potential areas are spread throughout the western two-thirds of the camp.

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3.5 WATER RESOURCES

3.5.1 Groundwater

About three-quarters of the camp is underlain with Siletz River volcanics, with the eastern quarter Holocene and Pleistocene alluviums. There is not much of a water-bearing aquifer in these formations; what little there is exists in the alluviums (Gonthier, 1983). Recharge is from precipitation and varies greatly. Estimates of annual recharge are 2-5 inches for the volcanic formations and older alluviums and 8–15 inches for younger alluviums (Gonthier, 1983). Younger alluviums are not present at the camp. Groundwater movement follows the topography from high-elevation areas to the lower areas; for Camp Adair the subsurface flow would be north and east to Berry and Soap Creeks. The water table ranges in elevation from 220 feet ASL (the seasonal marsh in the southeast corner of the camp) to over 600 feet in the hills. Of course the water table level fluctuates annually. Using data from observation wells, annual fluctuations were estimated at five to 15 feet (Gonthier, 1983).

3.5.2 Surface Water

The only stream on Camp Adair is an unnamed seasonal creek which flows from a spring on the northeastern slope of Smith Hill, through the ash wetlands in the southeast corner of the camp, and on to Berry Creek and Soap Creek, which empties into the Willamette River. This seasonal creek is shown in Figure 3.7-1, which also shows the jurisdictional wetlands. During the rainy season, several ephemeral drainage streams are also present at various locations in and around the camp, including one exiting the camp on the northeast perimeter into adjacent farmland. None of the ephemeral streams carry anything except storm runoff, and they are all relatively small with low discharge even at peak flow (Rosenfeld, et. al., 1997). Most of these streams are considered linear wetlands and are more thoroughly described below. There are no floodways or 100-year floodplains within the camp.

3.6 VEGETATION

3.6.1 Pre-Settlement Vegetation

Camp Adair is located on the western edge of the Willamette Valley. Reports by early explorers and Euro-American settlers indicate that the indigenous peoples of the area regularly burned the valley, primarily for the exploitation of food resources as well as manipulating plant materials that would be used for basketry, clothing, etc. (Johannessen, et al., 1971). This led to a landscape of extensive prairies (wet and dry according to topography and soils), oak openings (where scattered fire-resistant Oregon white oak managed to survive), and forests along riparian channels and in riparian bottomlands (Johannessen, et. al., 1971 and Sundberg and Kuykendall, 1999). Given the topography of the camp, the published research on the subject, and the open-grown oaks that are present, it is highly likely that Camp Adair once was mostly covered in dry prairie, wet prairie, and oak openings. This was confirmed by an examination of the original 1853 General Land Office survey notes. They described the area (the Green Berry

Smith Donation Land Claim, which covered over 90% of what is now Camp Adair) as “principally level prairie [with the] balance oak openings.” At that time, 40 acres was noted as being in cultivation, which was also shown on the sketch of the claim. With the cessation of burning that accompanied settlement, this landscape began evolving into oak woodland and coniferous forest.

3.6.2 Current Plant Communities

Like most of the Willamette Valley, over a century of intensive land use has transformed vegetation of the camp into a heavily modified state (Sundberg and Kuykendall, 1999). Much of the camp is open with dry hillsides and wet bottomlands. Many different plant communities exist, several dominated by introduced, non-native species that have replaced the native species. It is likely that few or none of the plant communities resemble what would have occurred in the area before settlement.

Using the U.S. National Vegetation Classification System (USNVCS), the OSU Department of Botany and Plant Pathology (OSU Botany) classified the existing plant communities into vegetation types during its floristic surveys of 1998-1999. The vegetation types were classified down to the Formation or Alliance level in the established hierarchy. The USNVCS is heavily based on existing vegetation and uses qualitative or quantitative data. A total of nine vegetation types were recognized and are shown on Figure 3.6.2-1. The nine types are described below (Sundberg and Kuykendall, 1999):

Douglas fir forest: The understory is mostly composed of non-native grasses. These areas were once open prairie habitat because of periodic burning by Native Americans, but now are being converted to Douglas fir (*Pseudotsuga menziesii*) forest. Unless the fir trees are actively suppressed, they will continue to gain dominance over more ground. Current environmental conditions for prairie habitat are unfavorable, and more open prairie will be lost unless it is actively managed.

Ash wetland: Water draining southeast from Smith Hill and from south of the KD and DPSST ranges feed a small riparian gallery forest at the southeastern corner of the camp. During the rainy season, this bottomland, a deciduous forest of ash and poplars, experiences flooding and extended periods of standing water. Commonly known as an ash swale, native understory species include slough sedge (*Carex obnupta*), red osier dogwood (*Cornus sericea*), snowberry (*Symphoricarpos albus*), and salmon berry (*Rubus spectabilis*). Sweet cheery trees (*Prunus avens*), which are exotic, have established along the southeastern edge of the ash swale. Regular mowing is limiting the spread of ash trees in this corner of the firing ranges. Seedlings and saplings grow in wet areas of the mowed grassy area to the north of the ash wetland. Young ash trees also are found north of the main entrance road and are scattered in other wet areas throughout the camp. If the flat, bottomlands that support these ash trees are not

mowed, more ash swales will develop. An incipient ash swale has developed in these wet soils at the north slope of Oak Hill.

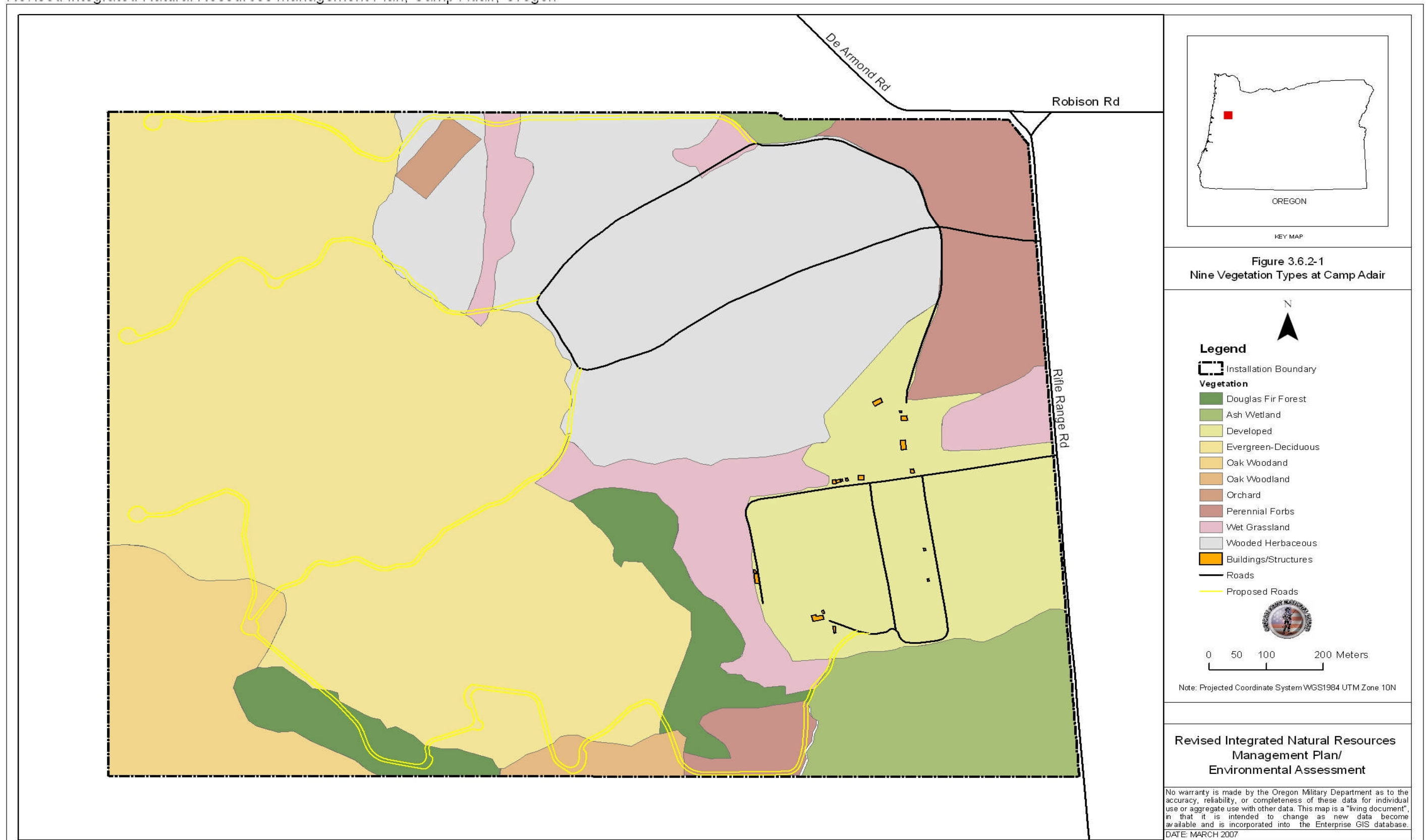
Orchard: An old apple orchard is located northwest of Oak Hill on a gentle, north-facing slope. It is considered cultivated vegetation by the USNVCS, and is therefore not defined. Non-native shrubs and grasses predominate in the understory of the orchard, including Himalayan blackberry, velvet grass (*Holcus lanatus*), and tall fescue.

Evergreen-deciduous forest: A mixed evergreen-deciduous forest, primarily composed of Douglas fir and white oak (*Pseudotsuga menziesii* and *Quercus garryana*), grows on the slopes of Smith Hill. The largest Douglas fir trees occur near the seasonal creeks that flow down the side of the hill. The important trees include the needle-leaved evergreens Douglas fir and grand fir (*Abies grandis*), and the broad-leaf deciduous trees white oak (*Quercus garryana*) and big-leaf maple (*Acer macrophyllum*), with a few scattered broad leaf evergreen madrone trees (*Arbutus menziesii*). Important understory components include vine maple (*Acer circinatum*) and sword fern (*Polystichum munitum*). This vegetation is classified as a mixed evergreen-deciduous forest because both evergreen and deciduous trees are present and because the ratios of the two cannot be determined solely by interpreting aerial photographs. Field sampling from the forest covering Smith Hill would increase the number of recognizable vegetation units within the forest. Places where white oak dominates would be separated from those where Douglas fir dominates. The USNVCS allows a broad perspective of mixed evergreen-deciduous forest.

Oak woodland: At the southwest corner of Smith Hill, oak trees are dense enough to form a woodland with meadow openings. White oak (*Quercus garryana*) dominates the upper canopy and poison oak (*Toxicodendron diversilobum*) dominates the understory. Roemer's fescue (*Festuca roemer*), a native species, is also present and is diagnostic of this community.

Wooded herbaceous: Scattered white oaks (*Quercus garryana*) dominate the tree stratum on Oak Hill and the open meadow to the west. Where these slopes once supported an herbaceous layer of native grasses and forbs, this habitat now is dominated by a mix of exotic and native species. In 2001, meadow knapweed (*Centaurea pratensis*) coverage approached 75% and overall may have averaged greater than 50%. However, annual eradication efforts since 2001 have significantly decreased the presence of knapweed. Other dominant exotic species in these areas are Himalayan blackberry shrubs and sweet cherry trees. Other weedy species that occur on these slopes include *Agrostis* sp., hedgehog dogtail (*Cynosurus echinatus*), wild carrot (*Daucus carota*), Scots broom (*Cytisus scoparius*), and tall fescue (*Festuca arundinacea*). Because the oak trees remain intact and dominant, this vegetation type is recognized as oak woodland, even without a native herbaceous layer, following the USNVCS.

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Wet Grassland: Ephemeral creeks originate from Smith Hill and drain into the bottomlands at its base. During the rainy season, these open meadows become inundated with standing water. Seasonal soil saturation supports a wide variety of mostly weedy, wetland vegetation. While these areas may not be classified as jurisdictional wetlands, they exhibit many of the characteristics of wetlands. These areas are classified as grassland on the basis of the predominance of grasses, rushes and sedges, but also contain a high percentage of forbs and some patches of meadow knapweed. Some of the soils in these areas exhibit the “pedestaling” that is characteristic of native Willamette Valley wet prairies. In some places, exotic bunchgrasses (*Festuca rubra* var. *commutata*) grow on top of soil pedestals that rise several inches above the wet surface of the ground where water runs during seasonal flooding. In other places, the vegetation contains wetland plants such as velvet grass, Harding grass (*Phalaris aquatica*), sedges, and rushes (*Juncus patens*, *J. effuses*).

At the east property border, just north of the main entrance road, is a triangular area that has not been managed by mowing. This triangular area is bordered on one side by a small ditch and on the other side by a very old fence line. This small refuge contains native wetland plant species that are not found anywhere else on the camp such as *Carex pellita* and *C. unilateralis*. Two noteworthy native plants occur in this refuge: leather grapefern and tufted hairgrass (*Deschampsia cespitosa*). The presence of the tufted hair grass provides supporting evidence that these seasonally wet areas, which are now dominated by invasive, exotic weeds, were once native wet prairies. Tufted hair grass once dominated extensive areas of native wet prairie in the Willamette Valley. The uncommon leather grapefern indicates the high level of native plant diversity that these wet prairie soils previously supported.

The polygon of wet grassland vegetation near the center of Camp Adair (Figure 3.6.2-1) was designated to recognize a change in soil hydrology that occurred through human intervention with earth moving equipment. It contains both remnants of an original water pathway and the current, diverted water path. A water drainage flows into this polygon from the forest to the west. This drainage probably ran due east and spread out into sheet flow, supplying water to the seasonally flooded grasslands in bottomlands extending through the camp at least as far as the triangular wet grassland north of the main entrance to the camp. Now, soil has been mounded into berms and dug into ditches and a pond to facilitate the diversion of the water. This water flows into the ash wetland forest. Vegetation in this polygon is now a mosaic of different types that are too small to map. Most of the vegetation type can be recognized as seasonally flooded temperate grassland, but the vegetation covering the berm, surrounding the pond, and in patches throughout the polygon consists of hardwoods that have invaded from the surrounding forests and exotic weeds from adjacent vegetation types.

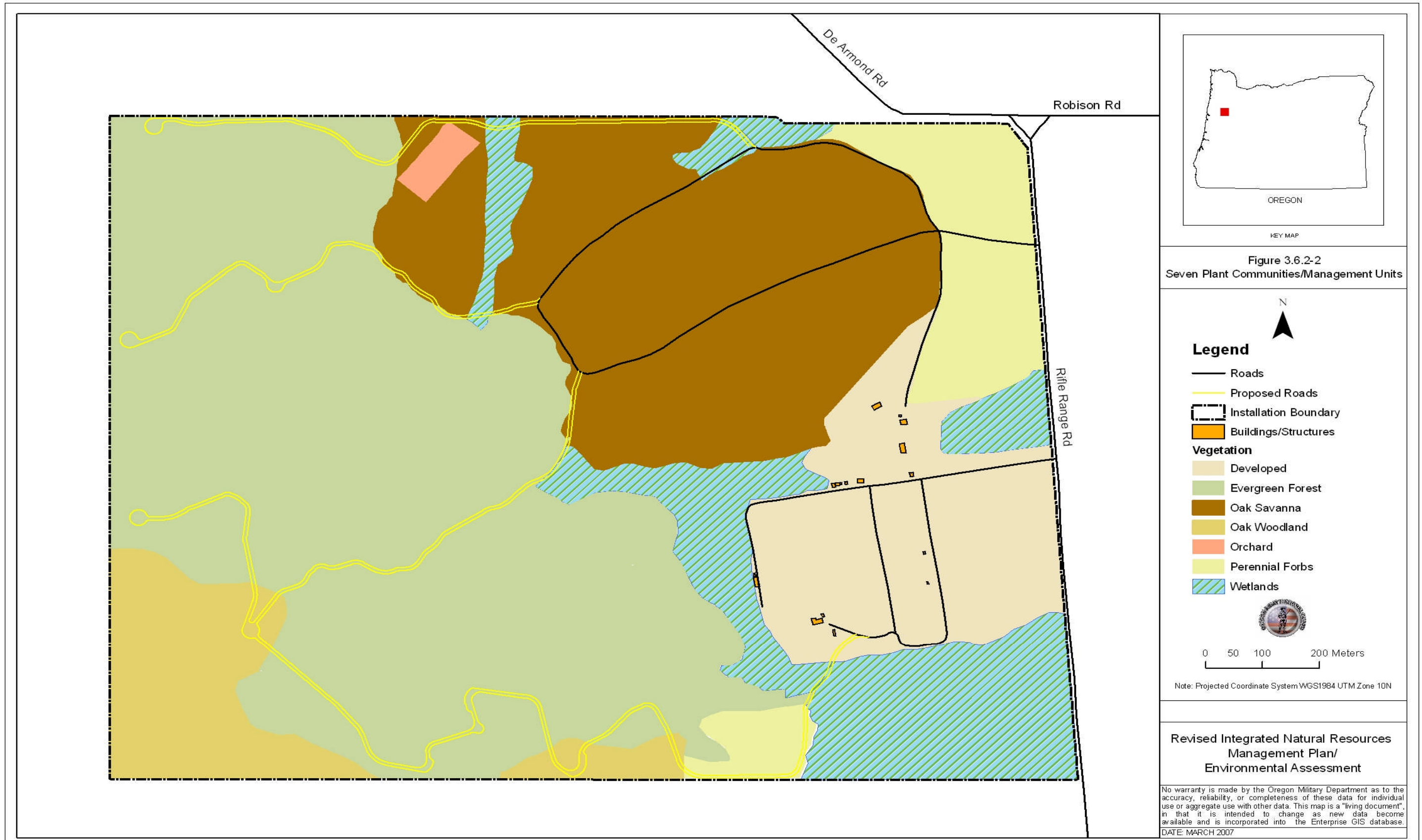
Developed: This area has been developed into the firing ranges, supporting structures, housing, and surrounding lawns. The vegetation, composed mostly of exotic grasses and forbs, is maintained as a lawn by mowing. Dominant species include velvet grass, tall fescue, bentgrass, and sweet vernalgrass. Portions of the area are wetlands, as indicated by ground that is saturated for a portion of the growing season.

Perennial forbs: The open, non-forested land at Camp Adair contains some exotic species (blackberries and some grasses) and has been sprayed annually for knapweed over the past five years. This open land probably supported grassland prairies in the recent past. It is likely that these fields were planted to pasture grass by early settlers, in which case it must be considered cultivated land. The USNVCS does not provide for a clear method to handle this situation. We have mapped this vegetation as perennial forbs to reflect the current condition of the vegetation, although it was probably once grassland. Sample plots in this vegetation may reveal that it is still grassland, composed of some exotic grasses and some pockets of knapweed.

Due to similarities in some of the above vegetative communities, some have been combined to facilitate management. In addition, some types were renamed to facilitate interpretation. These combined plant communities form the management units for this plan are:

- Wetlands (ash wetlands and wet grasslands)
- Evergreen forest (Douglas fir forest and evergreen-deciduous forest)
- Oak savanna (wooded herbaceous)
- Oak woodland (oak woodland)
- Perennial forbs
- Orchard
- Developed

Figure 3.6.2-2 presents the seven plant communities/management units used in this plan, and Table 3.6.2-2 lists the acreage of each. Representative photographs of each community are in Appendix G.



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**Table 3.6.2-2
Plant Community/Management Unit Data**

Modified Plant COM/MGMT Unit Name	USNVCS Name(s)	No. of Areas	Acres
Developed	Developed	1	56
Evergreen Forest	Evergreen-deciduous; Douglas Fir Forest	1	226.2
Oak Savanna	Wooded Herbaceous	2	111
Oak Woodland	Oak Woodland	2	35.2
Orchard	Orchard	1	2.6
Perennial Forbs	Perennial Forbs	2	33.4
Wetlands	Ash Wetland; Wet Grassland	4	62.7*

* Only 28.82 acres are jurisdictional (subject to state and federal regulations)

3.6.3 Floristic Survey Results

Floristic surveys have documented 265 plant species at Camp Adair. A list of the plant species is shown in Appendix D. This is approximately six percent of the 4,423 plant species known to grow outside of cultivation in Oregon (Sundberg and Kuykendall, 1999). Fifty-nine families and 179 genera are represented. Thirty-four percent of the species at Adair are non-native; by comparison approximately 18 percent of plant species are non-native statewide. It was estimated that 95 percent of the plant species, subspecies and varieties were documented at Camp Adair (Sundberg and Kuykendall, 1999).

Non-native vegetation is widespread on the camp and can be a problem. In 2001, meadow knapweed (*Centaurea pratensis*) was the most abundant, but has been significantly reduced through eradication efforts. Other non-native invasive plants include Scotch broom (*Cytisus scoparius*), medusahead wildrye (*Taeniatherum caput-medusae*), Robert geranium (*Geranium robertianum*), and Himalayan blackberry (*Rubus armeniacus*, formerly called *R. discolor*). Management of Scotch broom has been conducted on Oak Hill. In 1998 large patches of the plant were removed, but continued efforts are needed. Medusahead wildrye is not abundant, being found only on the southern end of Oak Hill. It is much more common in eastern Oregon, where it is an aggressive noxious weed (Sundberg and Kuykendall, 1999). Robert geranium is listed as a noxious weed in Washington, but not in Oregon. It is abundant in the mixed evergreen/deciduous forest in the western portion of the camp. In Washington it is known for crowding out native understory vegetation and appears to be doing so here as well (Sundberg and Kuykendall, 1999). Himalayan blackberry is well known in the Willamette Valley for forming large, monospecific patches. Numerous other non-native species, especially grasses, are abundant at Camp Adair.

Surveys were completed in the summer of 2002 to determine the presence, species, and locations of undesired plants. Some invasive grasses, English holly,

and English hawthorns were removed and/or sprayed with herbicide. Continued control efforts are required. Meadow knapweed remains a problem, but there has been some success in removal of this exotic species.

An area containing reed canary grass along the eastern boundary fence was sprayed with "Roundup" in the fall of both 2000 and 2001. More than 80% of the canary grass in this area has died. Some plants remain and seeds continue to migrate onto the property from adjacent areas. Therefore, periodic monitoring and spraying or other control will be required to maintain control of the species. Only a small area was involved, so only a small amount of pesticide was required.

3.7 WETLANDS

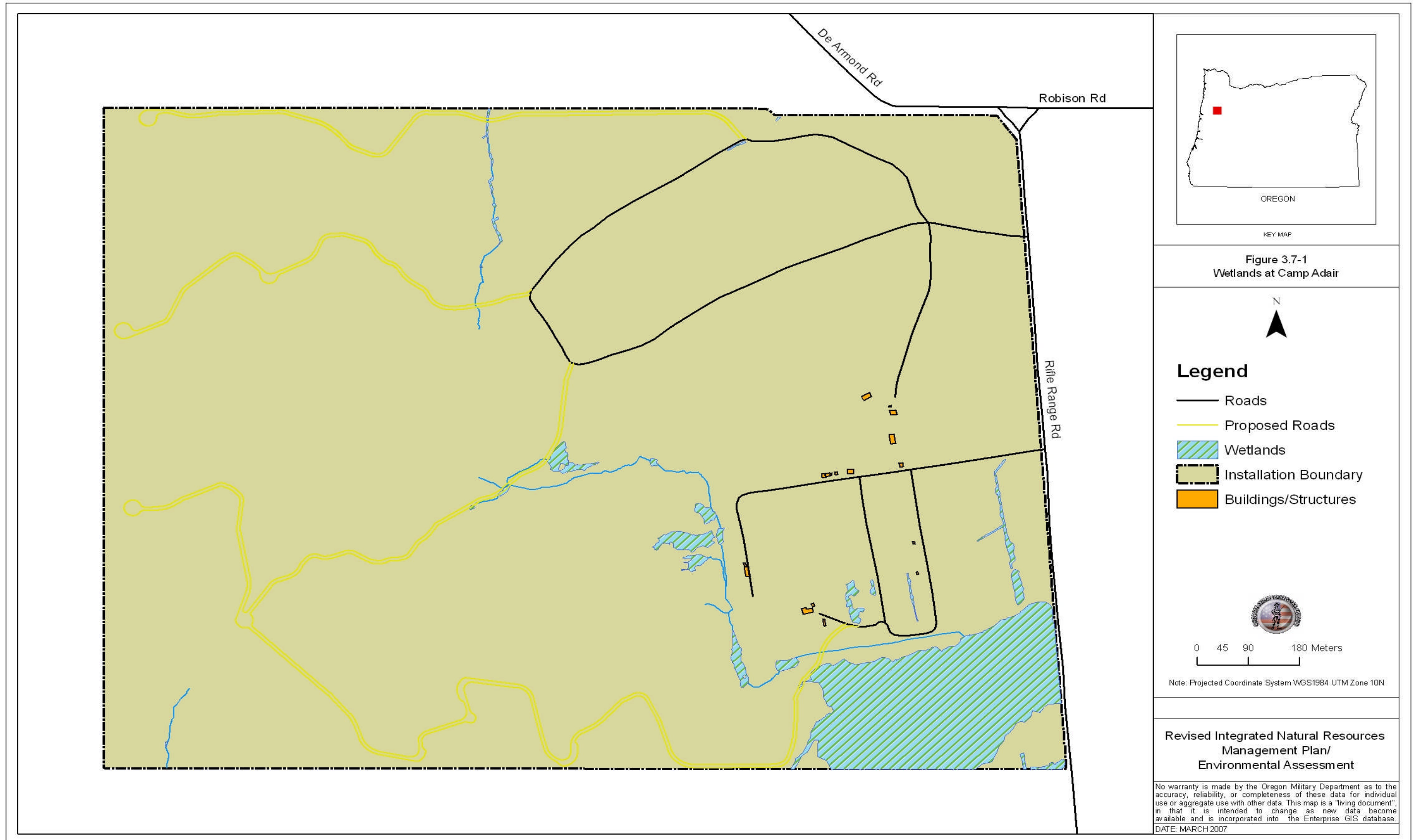
A wetlands delineation was completed in 1998 for the entire camp. It identified a total of 28.82 acres of jurisdictional wetlands in 20 separate locations. Individual size varied from a forested wetland of 23.76 acres to a wet meadow of 0.02 acres (Applied Technology, 1998). Figure 3.7-1 shows the jurisdictional wetlands of the camp and Table 3.7-1 presents the relevant data.

Before the U.S. Supreme Court issued its decision in the case of Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers in 2001, all of these wetlands were subject to the jurisdiction of the USACE, and all but three small artificial wetlands were subject to regulation by the Oregon Division of State Lands. The USACE must now make a determination if the wetlands on Camp Adair are within the agency's jurisdiction. These determinations are made on a case-by-case basis and require consideration of various factors (i.e., whether they are isolated, contiguous, connected to another waterbody, etc). Wetland delineations must be updated every five years if the ORARNG is planning any type of activities that may affect the wetlands (personal communication, Jim Goudzwaard, Portland District, US Army Corps of Engineers, August 2005).

**Table 3.7-1
Wetlands Data**

Description	Cowardin Class	No. of Areas	Acres
Wet meadow, seasonally flooded	PEME	8	1.02
Wet meadow, seasonally saturated	PEMY	5	1.2
Shrub, seasonally flooded	PSSE	2	1.51
Shrub, seasonally saturated	PSSY	1	0.13
Forest, seasonally saturated	PFOY	2	23.76
Pond, manmade	PUBx	1	0.17
Intermittent stream	R4	1	1.03
TOTALS		20	28.82

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3.8 WILDLIFE

3.8.1 Vertebrate Faunal Inventory

The Forest and Rangeland Ecosystem Science Center, Biological Resources Division of the U.S. Geological Survey (USGS) conducted a vertebrate faunal inventory at Camp Adair from January through December 1998 (Henny, et al., 1999). Methods included avian point counts, small mammal trapping, arboreal mammal trapping, infrared monitoring, mist netting, spotlighting, amphibian and reptile searches, habitat measurements, and incidental observations. USGS staff made 86 visits to the camp and documented the presence of 85 bird species, 34 mammal species, and 12 species of amphibians and reptiles. Avian point counts conducted in the spring were the most productive, and more bird species were found in edge and savannah scrub than in forested habitats. Winter wrens (*Troglodytes troglodytes*) and American robins (*Turdus migratorius*) had the highest frequency and relative abundances. The grassland plant community had the highest diversity index for small mammals. Deer mice (*Peromyscus maniculatus*) were the most frequently captured species. Five species of bats were captured during mist netting, with one additional species identified from incidental observations. Rough-skinned newts (*Taricha granulosa*) (81%) and western fence lizards (*Sceloporous occidentalis*) (50%) were the most commonly encountered amphibian and reptile species, respectively. Appendix E contains the species lists for birds, mammals, and amphibians and reptiles. Additional data can be obtained from the full report (Henny, et al., 1999). Of all the species recorded, eight were non-native, five of them birds.

3.8.2 Lepidoptera Survey

A survey of moths and butterflies was completed during 2000 and 2001. Two hundred seventy-eight (278) species of moths and 30 species of butterflies were collected and identified, but no rare, uncommon, or unique species of moths or butterflies were found (Miller, et al., 2002).

3.8.3 Key Habitat Areas

A number of key habitat areas that appeared to be important for wildlife have been identified (Schreiber, 2002c). The area of upland coniferous forest supports a diverse community during spring and summer, and represents a major percentage of the plant communities available. The small, man-made water impoundment is heavily used by wildlife. Because no other permanent water sources exist on Camp Adair, this impoundment is important in maintaining the biodiversity of the area. During spring, extensive breeding by amphibians is observed in this impoundment. Throughout the summer, the site becomes a focus of avian and mammal activities as other water sources disappear. Evidence from tracks and infrared monitors shows that the area is used during all hours through mid-October as a water source and for foraging. The abandoned orchard has extensive visitation and nesting/denning during spring, summer and fall. The advanced age fruit trees provide numerous cavities for avian and mammalian species, and fruit production serves as a food source for large herbivores, small

mammals, carnivores, and many bird species. The bottomland hardwood community is another area that appears to be important to wildlife, especially during spring and summer. The results of the single point count in this zone show a possible concentration of breeding birds using the interior and edges of the hardwood zone. Incidental observations of birds and mammal sign provide further support that it is important to Camp Adair's overall biodiversity in spite of its small size.

Since the USGS inventory only lasted one year, much of the year-to-year variation of wildlife populations and their use of habitat were not documented. For example, a plant community that contains high numbers of species one year may prove to be less significant the following year with changes in annual precipitation, land use on adjacent properties, and a host of other variables. Data from one- or two-year inventories can only provide a partial look at the identification of key habitats on a study site. Furthermore, some species that were expected to occur were not recorded (see table in Appendix E, Wildlife Species List). Therefore, multi-year assessments of wildlife and habitats are needed to identify population and diversity trends and account for variations.

In accordance with the Migratory Bird Treaty Act (MBTA), activities conducted on Camp Adair must be assessed for their potential to harm migratory birds, even if the harm is inadvertent. In general, implementing the INRMP should benefit birds, but some actions could inadvertently harm some birds. The ORARNG is responsible for analyzing and describing the potential effects from its activities on migratory birds and minimizing any adverse effects.

The Corvallis Chapter of the National Audubon Society has conducted Christmas bird counts in an area that includes Camp Adair for several years. Except for 1998, data for the camp has not been recorded separately from the larger area. The OMD does not plan to pursue obtaining separate Christmas bird count data for the camp because Camp Adair is a relatively small training site, with light use of the facilities. The amount of available bird habitat on the camp and in the surrounding area is quite large.

3.8.4 Deer and Elk

No studies of deer or elk at Camp Adair have been conducted. Therefore, anecdotal information, observations, and statistics from the ODFW's Alsea Wildlife Management Unit are the only sources of information. ODFW has not completed any surveys of deer or elk for the area around the camp, so no real statistical data exists. However, it is known that there is a local resident herd of elk that spends most of its time in the Paul Dunn Forest. This herd of 50-70 animals often winters on the OSU property along Soap Creek, spending the rest of the year scattered in smaller groups. Elk from this herd have been observed within Camp Adair on numerous occasions. The orchard appears to be one of their favorite haunts.

Overall, elk in the Alsea Unit are doing very well and are close to the management objectives for herd composition and population size.

Knowledge of local deer comes from harvest data for the MacDonald-Dunn Forest. The long-term harvest rate averages 16 deer per square mile, one of the highest in the state. This high sustainable harvest rate indicates a healthy population. In addition, deer in the Alsea unit exceed the objectives for herd composition and population size. Outbreaks of parasitic lungworms have been noted to be adversely affecting some local herds.

3.9 THREATENED, ENDANGERED AND SPECIAL STATUS SPECIES

Appendix F (Oregon Natural Heritage Program List) lists the federal, state, and Oregon Natural Heritage Program (ONHP) species of concern at Camp Adair. Species of concern includes those listed as threatened or endangered under the federal Endangered Species Act or Oregon law, as well as candidates for ESA listing, state-critical, state-vulnerable, and ONHP watch list categories. The most current list, dated May 2004, is based on a statewide database and is available on the Internet at http://oregonstate.edu/ornhic/2004_t&e_book.pdf.

Four projects have been conducted to determine whether any special status species are present within the camp. The first was a brief inventory conducted by the ONHP in the spring/summer of 1993. This inventory failed to document the occurrence of any sensitive species (Kagan, 1993). ONHP reported that a lack of suitable habitat precluded the presence of many listed species, although the presence of five species of sensitive plants was possible, but deemed unlikely (Kagan, 1993). This is due to habitat alterations by historic grazing, logging, and fire suppression. However, those areas within the camp that were closer to their natural condition (such as a small area dominated by tufted hairgrass [*Deschampsia cespitosa*]) were more carefully searched during the ONHP inventory.

The second project consisted of floristic surveys for vascular plants, conducted by OSU Botany. Surveys were conducted during the growing season in 1998, 1999, and 2000 (Kagen, 1993). The presence of two listed species was confirmed: *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine) and *Sidalcea nelsoniana* (Nelson's checkermallow). Both the state and federal endangered species act lists these plants as threatened. The presence of meadow checkermallow (*Sidalcea campestris*), a candidate for state threatened status, also was identified during these surveys.

The third project consisted of vertebrate faunal surveys conducted by the Biological Resources Division of the USGS during 1998 (Henny, et al., 1999). USGS did not record any listed species on any of their 86 visits to the camp. However, one frog species (northern red-legged frog) and five bird species (olive-sided flycatcher, western bluebird, western meadowlark, yellow-breasted chat,

and pileated woodpecker) that the state or USFWS considers vulnerable or of concern were recorded (see Appendix F).

The fourth project consisted of surveys to identify the presence of the pileated woodpecker, Northern spotted owl, rare songbirds, and Fender's blue butterfly, conducted in the summer of 2002 (Schreiber, 2002b). Only the pileated woodpecker and some rare songbirds were found to be present at Camp Adair. None of the species found are listed as requiring protection by state or federal Endangered Species acts.

Two populations of plants listed as "threatened" under both state and federal endangered species acts are found at Camp Adair: Kincaid's lupine and Nelson's checkermallow. In addition, Meadow checkermallow (*Sidalcea campestris*), a State candidate species, is known to grow on the property.

Nelson's checkermallow was surveyed in 2001 (Sundberg, 2001). There were 593 occupied square meters in the summer of 2001. Management has consisted of limited efforts to control competing vegetation by use of herbicides, conducting a prescribed burn, and limited hand removal of competing vegetation. A total of 40 stems were detected in 15 localities, all within the forested wetlands in the southeast corner of the camp. For comparison, 90 total stems were counted during surveys in 1997 and 1998, including two patches along the southern fence that were not seen in 1999. This is thought to be due to reduced flowering in 1999. In 2000, several plants were observed in the large field north of the forested wetlands, adjacent to the trees and close to the fence.

Kincaid's lupine was surveyed in the spring of both 2001 and 2002, a cooperative effort between the OMD and the USFWS. For Kincaid's lupine, seven patches were identified with an estimated total area of 11,000 square feet (0.25 acres). As with Nelson's checkermallow, it is impossible to say exactly how many individual plants are present, due to the fact that both plants spread by underground stems (rhizomes) and are highly variable in size. However, percent cover of lupine was estimated for each patch, which averaged about 12 percent for the total area. All lupine patches are located on Oak Hill in the northeast sector of the camp, in an area with scattered patches of young Douglas fir trees, rose bushes, and snowberry bushes. A 34% increase in occupied square meters was documented through the 2001 and 2002 surveys (455 total meters in 2002), likely due to invasive vegetation management efforts. A status report was submitted to the USFWS in August 2002, documenting OMD management actions and the resulting increase.

In the spring of 2000, Howell's montia (*Montia howellii*) was discovered behind the target berm of the rifle range. This plant is listed as a candidate for state threatened status. However, in 2006, the ONHIC indicated Howell's montia is

likely to be dropped as a candidate species because it has been found in greater numbers than before as a result of increased survey efforts.

Figure 3.9-1 shows the locations of observed plants or patches of plants for the three species of concern. Appendix G (Modified Plant Community and Listed Species Photographs) has a photograph of each species.

In spring 2006, the OMD contracted with the ONHIC to conduct surveys for Nelson's checkermallow, Meadow checkermallow (a State candidate species), and Kincaid's lupine. The survey found small declines in the Kincaid's lupine population based on the aerial extent and locations of previously surveyed patches. Three distinct plant occurrences comprising a 1999 metapopulation have been extirpated. A total of 7 metapopulations continue to persist. No new patches were identified. The aerial extent of patches ranged from 18 to 246 square meters. Despite apparently few plant losses since 1999, habitat suitability for continued lupine persistence is currently declining due to the dominance of non-native species and conversion of upland prairie to conifer woodland. All lupine plants are currently experiencing high competition for light and nutrients from non-native herbaceous vegetation. In addition, canopy shading from trees and shrubs is increasing and reducing light and microsite availability for lupine plants. Douglas-fir trees, ranging in age from 3 to 15 years and in height from 0.3 to 15 meters, are also establishing in the vicinity of lupine patches and are further modifying habitat conditions.

The 2006 survey found the Nelson's checkermallow population has increased throughout the bottomland ash forest occupying the southeastern portion of Adair based on the number of observed occurrences and their aerial extent. A total of 27 discrete occurrences were identified in 2006 including sites supporting single plants to polygons with up to 25 stem clusters. A total of 11 polygons were mapped with areas ranging from 11 to 178 square meters. Twelve new occurrences were discovered that were not identified in preceding surveys. Three previously observed metapopulations are now apparently extirpated. The population appears to have increased despite high competition for light and nutrients from generally dense shrub strata. A significant number of observed checker mallow occurrences are located on trails or forests edges where periodic mowing reduces shrub cover.

A total of 44 Meadow checkermallow plants or stem clusters were identified during the 2006 field surveys. A majority of the observed occurrences were restricted to the wet prairie site in the southeastern corner of Adair. The remaining occurrences were located on the edges of the forest and adjacent to mowed trails. Several observed *Sidalcea* spp. plants exhibited floral characteristics apparently intermediate between those of *S. campestris* and *S. nelsoniana* indicating that these species may be hybridizing. Plants with ambiguous characters were generally identified as *Sidalcea campestris*.

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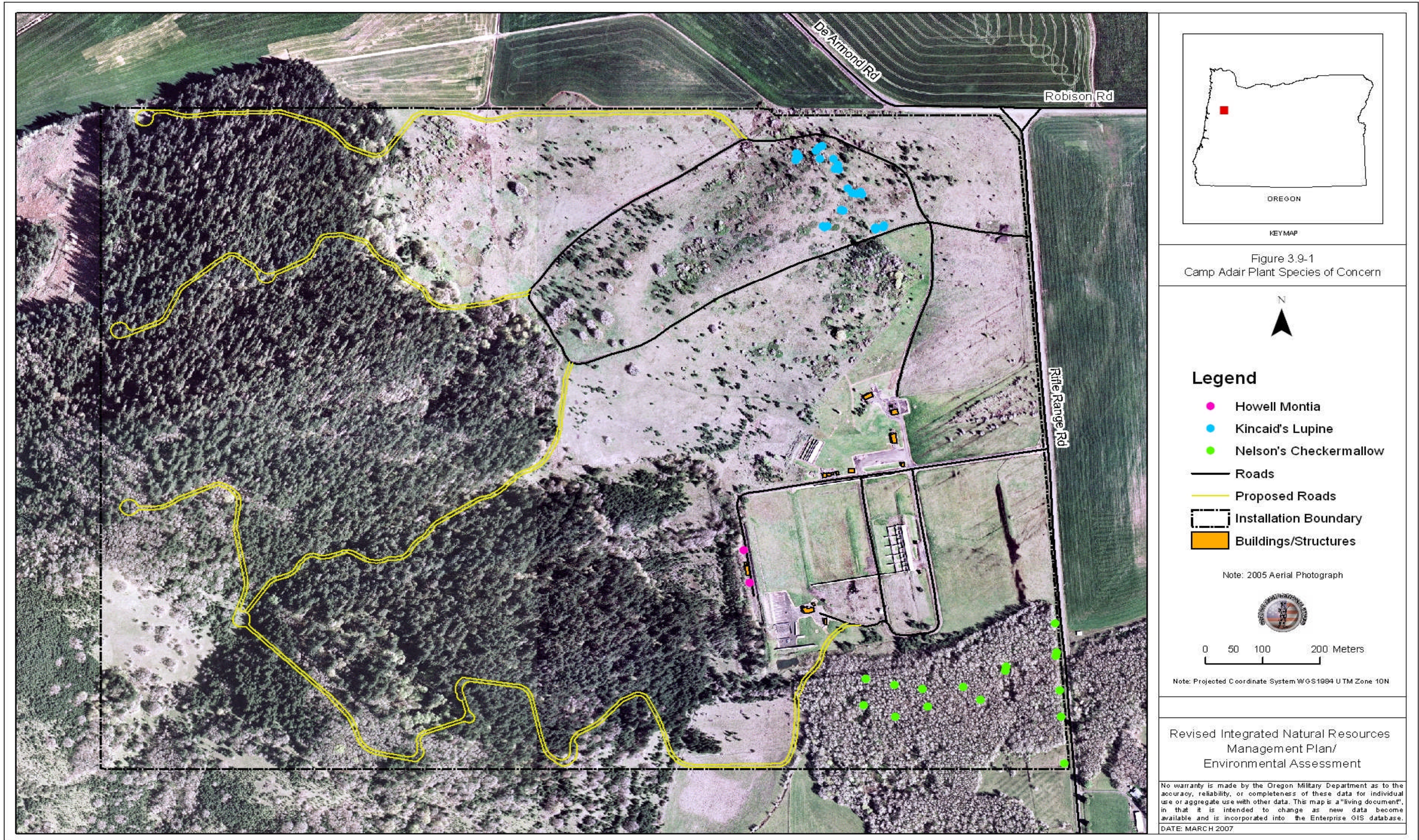


Figure 3.9-1
Camp Adair Plant Species of Concern



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Dr. Paul Hammond of the OSU Department of Entomology conducted informal searches for the Fender's blue butterfly, federally listed as endangered. In the summer of 1999, Dr. Hammond thoroughly searched the open grasslands and woodlands of the camp, especially the patches of Kincaid's lupine that are the host plant for this species. No Fender's blue butterflies were observed.

3.10 CULTURAL RESOURCES

An Integrated Cultural Resources Management Plan (ICRMP) was developed by the OMD and adopted in March 2002. The ICRMP covers all ORARNG facilities, including Camp Adair. All of Camp Adair has been surveyed for cultural resources (Sloan and Roth 1998). Prior to any ground disturbing activities or structure modification, the ICRMP is consulted to determine the probability of adversely effecting known cultural resources or properties listed in or eligible to the National Register of Historic Places. Management of Camp Adair's cultural resources complies with all federal and state statutes, EOs, DoD instructions and policies, and Army regulations.

The entire camp was systematically surveyed by an archaeological field survey crew from OSU Department of Anthropology in the summer of 1998. The survey identified eight prehistoric archaeological sites and two prehistoric/historic dual component sites have been determined as potentially eligible for the NRHP. All identified resources occur in the northwest sector of the camp.

There are no known Native American concerns regarding natural resource issues. However, the federally recognized tribes are afforded the ongoing opportunity to coordinate and consult with the ORARNG to ensure that tribal interests are given due consideration in a manner consistent with tribal sovereign authority for cultural and natural resource management. The Confederated Tribes of Grande Ronde and Confederated Tribes of Siletz were invited to participate in the development of the INRMP.

3.11 AIR QUALITY

3.11.1 Existing Sources of Air Emissions

The federal Clean Air Act (CAA), as amended, authorizes the Environmental Protection Agency (EPA) to establish national ambient air quality standards to protect public health and welfare. Federal ambient air quality standards have been adopted for the following six criteria pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, inhalable and fine particulate matter (PM₁₀ and PM_{2.5}), and lead. PM₁₀ refers to particles 10 microns in diameter and smaller. Particles of this size can lodge deep in the lungs for weeks and months, aggravating asthma, heart disease, and other circulatory and respiratory conditions. PM_{2.5} refers to particles that are 2.5 microns in diameter and smaller.

States are required to adopt standards that are at least as stringent as the national standards; Oregon has adopted the national ambient air quality standards, with the exception of sulfur dioxide, for which stricter standards have

been adopted. Areas that violate a federal air quality standard are designated as nonattainment. Nonattainment designations for ozone, carbon monoxide, and PM10 include subcategories indicating the severity of the air quality problem.

Table 3.11.1-1 shows the federal and state ambient air quality standards. Benton County is in attainment for all of the federal ambient air quality standards. Vehicles and fugitive dust are the primary sources of air emissions at Camp Adair.

The Oregon Department of Forestry (ODF) conducted a planned, prescribed burn at Camp Adair for the OMD in October 2001. The burn was conducted on five acres of dry prairie and six acres of wet prairie along the eastern boundary of the camp, adjacent to Rifle Range Road. The objective of the burn was to remove dead non-native vegetation, to promote the growth of native vegetation, and to demonstrate the suitability and safety of conducting a prescribed burn at the site. The burn was conducted according to a plan, with notice given to the local fire district and nearby residents. It was successful.

A lightning strike of a snag on Smith Hill in 2003 also resulted in a small fire. The snag fell and burned or smoldered for a few hours until it was extinguished by personnel from the local fire department. The fire was limited to the immediate area of the snag.

Both fires had insignificant, temporary impacts to air quality.

3.11.2 Regulatory Considerations

The federal CAA requires each state to develop, adopt, and implement a State Implementation Plan (SIP) to achieve, maintain, and enforce federal air quality standards throughout the state. SIP documents are developed on a pollutant-by-pollutant basis whenever one or more air quality standards are being violated. Section 176(c) of the CAA, USC § 7506(c), requires federal agencies to ensure that actions undertaken in nonattainment or maintenance areas are consistent with the CAA and with federally enforceable air quality management plans. The EPA has promulgated separate rules that establish conformity analysis procedures for transportation-related actions and for other (general) federal agency actions. The EPA general conformity rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emission thresholds that trigger requirements of the conformity rule are called *de minimis* levels. The CAA conformity guidelines do not apply to Camp Adair because it is within an attainment/unclassified area.

**Table 3.11.1-1
Ambient Air Quality Standards – 2003**

Pollutant	Averaging Time	National Ambient Air Quality Standard (NAAQS) Violation Determination ¹	Federal Standard (NAAQS) Exceedance Level	State Standard Exceedance Level
Carbon Monoxide	1-hour	Not to be exceeded more than once/year.	35 ppm	35 ppm
	8-hour	Not to be exceeded more than once/year.	9 ppm	9 ppm
Lead	Calendar Quarter	Quarterly arithmetic mean	1.5 µg/m ³	1.5 µg/m ³
Nitrogen Dioxide	Annual	Annual arithmetic mean	0.053 ppm	0.053 ppm
Ozone	1-hour	The expected number of days per calendar year with max hourly average concentrations above 0.12 ppm is equal to or less than 1.	0.12 ppm	0.12 ppm
	8-hour	3-year average of the annual 4th highest daily maximum 8-hour average concentration.	0.08 ppm	
PM2.5	24 hour	98th percentile of the 24-hour values determined for each year. 3-year average of the 98th percentile values.	65 µg/m ³	
	Annual Average	3-year average of the annual arithmetic mean	15 µg/m ³	
PM10	Annual Average	3-year average of the annual arithmetic mean	50 µg/m ³	50 µg/m ³
	24 hour	The expected number of days per calendar year with a 24-hour average concentration above 150 µg/m ³ is equal to or less than 1 over a 3-year period.	150 µg/m ³	150 µg/m ³
Sulfur Dioxide	Annual Arithmetic Mean	Not to be exceeded more than once per calendar year.	0.03 ppm	0.02 ppm
	24 hour	Not to be exceeded more than once per calendar year.	0.14 ppm	0.10 ppm
	3 hour	Not to be exceeded more than once per calendar year.	N/A	0.050 ppm

Source: http://www.deq.state.or.us/aq/forms/2004ar/naaqs_Tbl5.pdf

3.12 NOISE

3.12.1 Noise Level Criteria and Standards

Noise Management

Sound travels through the air in waves of minute air pressure fluctuations caused by some type of vibration. Sound level meters are designed to detect these

sound waves and to register different sound frequency ranges on a logarithmic decibel (dB) scale.

Because the human ear is not equally sensitive to all frequencies, an “A-weighted” decibel scale (dBA) is commonly used to represent the response of the human ear. Average noise exposure over a 24-hour period often is presented as a day-night average noise level (DNL). DNL values are calculated from 24-hour averages in which nighttime values (10 PM to 7 AM) are increased by 10 dB to account for the greater disturbance potential from nighttime noises.

Federal Agency Guidelines

The federal Noise Control Act of 1972 (42 USC 4901 - 4918) requires all federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. However, local and state agencies have no regulatory authority over military aircraft operations. Federal agencies also were directed to administer their programs in a manner that promotes an environment free from noise that jeopardizes public health or welfare. EO 13045 (62 Federal Register 19885) establishes a requirement that federal agencies identify, assess, and address the extent to which agency programs and activities create disproportionate environmental health and safety risks for children.

State Agency Guidelines

State noise standards and guidelines include airport noise standards, guidelines for noise elements of general plans, and noise insulation standards for hotels, motels, and new multiple unit residential developments. The Oregon Department of Environmental Quality (ODEQ) regulates noise control under ORS Chapter 467.

Local Guidelines and Criteria

Benton County maintains a county noise control ordinance under Ordinance 203.11 §§ 1, 1980, (also codified as Chapter 8.08) as pursuant to the provisions outlined under ORS 467. Chapter 8.08 identifies and defines unreasonably loud or raucous noises that could adversely affect the public peace, health, safety, and general welfare of county residents. Various state and federal agencies, including the EPA and the ODEQ are responsible for monitoring and maintaining the quality of air, water and land resources. The Comprehensive Plan (revised 2001), under the Environmental Quality section, states that the County shall develop a local program to identify excessive noise and glare sources and, with the cooperation of ODEQ, develop measures to mitigate or eliminate those sources when practicable outside of Forest Conservation and Exclusive Farm Use Zones (click Comprehensive Plan, and then click Environmental Quality at: <http://www.co.benton.or.us/development/>).

3.12.2 Existing Noise Conditions

Sensitive Noise Receptors

Small arms weapons firing is the main source of noise produced from Camp Adair. All four ranges are clustered into the southeast portion of the camp. Motor vehicles, including trucks and tractors are used regularly on the property. Helicopters occasionally land on and take off from the installation in conjunction with training exercises.

Most of the land surrounding Camp Adair is a mix of farm, forest, and rural residential land, with the largest residential community (Adair Village) being 3 miles away. According to Army policy, sensitive noise receptors include residences, schools, libraries, hospitals, and other similar land uses where people generally expect and need a quiet environment. In the vicinity of Camp Adair, residences currently are the only sensitive noise receptors.

Residential development in the Camp Adair area is rural in character. Although the residential development is relatively light by urban or suburban standards, Camp Adair has had a history of noise concerns due to military and police training raised by the local residents. This is in part due to the nature of rural landscapes, meaning there are few, if any, other loud noise generating activities in the area. A 1998 study monitored four nearby residential sites for noise levels and found that the ambient noise environment around Camp Adair is very quiet. Thus, noises that may normally be masked by background noise in an urban or suburban environment may be clearly heard in a rural landscape.

The OMD has worked with the local community to develop and implement a noise management program for Camp Adair. Sound levels from existing and planned training activities were documented in 1998. In an effort to mitigate training noise at Camp Adair, the OMD and DPSST constructed noise containment structures near the KD and DPSST ranges in 2000, implemented restricted small arms training hours, and suspended most aviation (rotary-wing) activities at the camp. An agreement to notify local citizens before any live-fire training occurs is also in place. In addition, the area between the small arms firing ranges and south boundary of the camp is used as a low-noise training area to lessen impacts to the residential area south of the camp. No activities that produce loud noises are conducted in this area, including the use of explosive simulations or noise-producing pyrotechnics.

An Operational Noise Management Plan, covering all OMD installations, was prepared by the US Army Center for Health Promotion and Preventive Medicine (USACHPPM) in July 2005. Modeling conducted as part of the plan indicates that some nearby residents could be annoyed by peak noise levels from small arms firing ranges about 15 percent of the time, if weather conditions favoring noise propagation existed. This is consistent with the findings from CHPPM and others hired by the residents around Camp Adair in 1998.

The efforts taken to reduce and mitigate operation noise from Camp Adair appear to be effective, as no formal noise complaints have been received since the efforts have been implemented. It is important for ORARNG personnel to monitor any changes in current land use around the installation in order to avoid future incompatible land uses nearby and sustain the viability of the Camp Adair training site (USACHPPM, 2005).

Area Noise Sources

There are no permanent noise sources at Camp Adair. Motor vehicles and the small-arms firing ranges are intermittent sources of noise and are the major contributors to noise in the vicinity of Camp Adair. Sound levels in the vicinity of the military training site are generally low. Since the area surrounding Camp Adair is primarily resource-oriented, the use of equipment related to resource management (tractors and other farm equipment, log trucks and other equipment related to timber management) also occurs in the area and on lands adjacent or near to rural residential areas.

3.13 PUBLIC HEALTH AND SAFETY

Specific elements concerning the public health and safety management program at Camp Adair include dust abatement and potential accidents. Using the concept of risk management, Camp Adair ensures not only the physical safety of military personnel, but the integrity of natural resources and personal property as well. The risk management concept used by Camp Adair is integrated into the decision-making process by identifying and assessing potential hazards, developing means to avoid or control such hazards, determining residual risks, and implementing mitigation controls.

3.13.1 Hazardous Materials and Hazardous Waste

As defined by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (42 USC 9601 - 9675), and the Superfund Amendments and Reauthorization Act of 1986, a hazardous material is a substance, pollutant, or contaminant that, due to its quantity, concentration, or physical or chemical characteristics, poses a potential hazard to human health and safety or to the environment if released into the workplace or the environment.

The Resource Conservation and Recovery Act (RCRA) of 1976, as amended (42 USC 6901 - 6992k), defines a hazardous waste as a solid waste or combination of wastes that, due to its quantity, concentration, or physical, chemical, or infectious characteristics, could cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or could pose a substantial present or future hazard to human health or the environment when improperly treated, stored, disposed of, or otherwise managed. A solid waste is a hazardous waste if it is not excluded from regulation as a hazardous waste, if it

exhibits a defined ignitable, corrosive, reactive, or toxic characteristic, or if it is specifically listed. RCRA requires that hazardous wastes be managed through a recordkeeping system that requires manifesting properly labeled hazardous shipments from point of generation to ultimate disposal. Also required by federal law are proper labeling, storage, containerization, training, and emergency procedures for hazardous waste. ORARNG Regulation 210-6 describes responsibilities of ORARNG personnel in planning for and responding to spills of regulated substances to the environment. Additionally, ORARNG Regulation 420-47 specifies management requirements for hazardous materials and disposing of hazardous waste generated on ORARNG facilities in accordance with federal and state regulations. Hazardous materials are used for military activities involving vehicular maneuvers at Camp Adair in support of the military mission and are handled, stored, and transported in accordance with EPA, Occupational Safety and Health Administration, US Department of Transportation, state, and Army requirements. Hazardous materials used on-site can include petroleum, oils, and lubricants, antifreeze, brake, hydraulic, and transmission fluids, acids, caustic materials, and pesticides. These materials are used at the locations detailed below.

Storage Tanks and Fuel

Camp Adair has no aboveground storage tanks or underground storage tanks that store hazardous substances or petroleum products. A small number of 55-gallon or smaller containers of fuel, pesticides, paints and similar products are stored onsite in secondary containment structures. If refueling of equipment was needed at the camp, mobile refuelers, set inside temporary secondary containment structures, would be used.

Ordnance and Explosives

No ordnance or explosives are stored at Camp Adair. Training units are responsible for supplying and transporting blank or live ammunition from off-site locations for use at Camp Adair. Ammunition is removed from Camp Adair when weapons training or qualification is completed.

In general, storage of hazardous materials and wastes is limited to facilities designed for that purpose, and use/handling is by persons trained to deal with these materials and wastes (this is often required). Except for the application of pesticides, all hazardous materials and wastes used or created in the training areas are promptly removed to approved facilities in the developed area of the camp. Wastes are then disposed of in accordance with state and federal regulations.

3.13.2 Wildfire Control

Unlike active military installations that have intensive ground training and live-fire components, there are few activities at Camp Adair that generate fire hazards (e.g., live ammunition and flares). However, there are activities at the camp that

generate fire hazards from spark emissions (e.g., firing blank ammunition and using pyrotechnics, such as smoke grenades, artillery simulators, and aerial flares). The camp does not maintain a wildfire fighting crew and relies on the services of the local rural fire service district for fire control.

3.13.3 Dust Abatement

Blowing dust is not a problem at Camp Adair. Vegetative cover aids in preventing wind erosion and dust. As with all safety issues, minimizing this risk is a primary objective.

3.14 SOCIOECONOMIC RESOURCES

3.14.1 Definition of Resource

Socioeconomics includes data on population, employment, income, housing, earnings, and schools. Population includes the number of residents in the area and the recent change in population growth. Employment data includes labor sectors, labor force, and statistics on unemployment. Income information is provided as an annual total by county and as per capita income. Housing includes numbers of multifamily units, single-family homes, and mobile homes and their vacancy rate. Earnings-by-industry provides a measure of the health of local business activity. School enrollment and capacity are important considerations in assessing the effects of potential growth.

3.14.2 Affected Area

The affected socioeconomic area for Camp Adair is Benton County. The affected area was selected based on the assumption that most base personnel commute to work from and spend dollars within the county. QuickFacts on Benton County are provided in Table 3.14.2-1.

3.15 ENVIRONMENTAL JUSTICE

This section addresses specific topics related to environmental justice, as required by NEPA. Specifically, a discussion of issues related to environmental justice are presented in accordance with EO 12898, and issues related to protecting children from environmental health risks are presented in accordance with EO 13045.

3.15.1 Executive Order 12898

On February 11, 1994, President Clinton issued EO 12898, entitled “Federal Actions to Address Environmental Justice in Minority and Low-income Populations.” This order requires that “each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities, on minority populations and low-income populations” (EO 12898, 59 FR 7629 [Section 1-101]). On April 21, 1995, the Secretary of Defense submitted a formal environmental justice strategy and implementation plan to the EPA. To comply with the order, the following actions have occurred concurrently with this INRMP:

- Economic, racial, and demographic information generated from the 2000 census have been gathered to identify areas of low income and high minority populations in and around Camp Adair;
- Alternatives for disproportionate impacts resulting from onsite activities associated with the proposed action were assessed; and
- Input into this plan from community members and public agencies were solicited through public notification of the draft document, as identified in Sections 1.8 and 1.9.

Existing Demographics

Table 3.14.2-1 above provides demographic information for Benton County, compared with the state of Oregon. In 1999, the percentage of the population below the poverty level in Benton County was 14.6%, higher than the 11.6% poverty level for the state of Oregon.

**Table 3.14.2-1
Benton County Socioeconomic Data**

People QuickFacts	Benton County	Oregon
Population, 2003 estimate	79,335	3,559,596
Population, percent change, April 1, 2000 to July 1, 2003	1.5%	4.0%
Population, 2000	78,153	3,421,399
Population, percent change, 1990 to 2000	10.4%	20.4%
Persons under 5 years old, percent, 2000	5.1%	6.5%
Persons under 18 years old, percent, 2000	21.3%	24.7%
Persons 65 years old and over, percent, 2000	10.3%	12.8%
Female persons, percent, 2000	50.2%	50.4%
White persons, percent, 2000 ²	89.2%	86.6%
Black or African American persons, percent, 2000 ²	0.8%	1.6%
American Indian and Alaska Native persons, percent, 2000 ²	0.8%	1.3%
Asian persons, percent, 2000 ²	4.5%	3.0%
Native Hawaiian and Other Pacific Islander, percent, 2000 ²	0.2%	0.2%
Persons reporting some other race, percent, 2000 ²	1.9%	4.2%
Persons reporting two or more races, percent, 2000	2.6%	3.1%
White persons, not of Hispanic/Latino origin, percent, 2000	86.8%	83.5%
Persons of Hispanic or Latino origin, percent, 2000 ³	4.7%	8.0%
Living in same house in 1995 and 2000 ¹ , pct age 5+, 2000	42.3%	46.8%
Foreign born persons, percent, 2000	7.6%	8.5%
Language other than English spoken at home, pct age 5+, 2000	10.0%	12.1%
High school graduates, percent of persons age 25+, 2000	93.1%	85.1%
Bachelor's degree or higher, pct of persons age 25+, 2000	47.4%	25.1%
Persons with a disability, age 5+, 2000	9,521	593,301
Mean travel time to work (minutes), workers age 16+, 2000	17.8	22.2
Housing units, 2002	33,179	1,495,582
Homeownership rate, 2000	57.3%	64.3%

Table 3.14.2-1 (continued)

People QuickFacts	Benton County	Oregon
Housing units in multi-unit structures, percent, 2000	29.8%	23.1%
Median value of owner-occupied housing units, 2000	\$169,800	\$152,100
Households, 2000	30,145	1,333,723
Persons per household, 2000	2.43	2.51
Median household income, 1999	\$41,897	\$40,916
Per capita money income, 1999	\$21,868	\$20,940
Persons below poverty, percent, 1999	14.6%	11.6%

Business QuickFacts	Benton County	Oregon
Private non-farm establishments with paid employees, 2001	1,936	101,003
Private non-farm employment, 2001	28,257	1,364,924
Private non-farm employment, percent change 2000-2001	3.7%	0.7%
Nonemployer establishments, 2000	4,184	212,165
Manufacturers shipments, 1997 (\$1000)	1,391,885	47,665,990
Retail sales, 1997 (\$1000)	473,892	33,396,849
Retail sales per capita, 1997	\$6,112	\$10,297
Minority-owned firms, percent of total, 1997	4.4%	6.2%
Women-owned firms, percent of total, 1997	25.0%	27.6%
Housing units authorized by building permits, 2002	369	22,186 ¹
Federal funds and grants, 2002 (\$1000)	359,882	19,839,214

Geography QuickFacts	Benton County	Oregon
Land area, 2000 (square miles)	676	95,997
Persons per square mile, 2000	115.5	35.6
Metropolitan Area	Corvallis, OR MSA	
FIPS Code	003	41

Source: <http://quickfacts.census.gov/qfd/states/41/41003.html>

Notes:

1. Includes data not distributed by county.
2. Includes persons reporting only one race.
3. Hispanics may be of any race, so also are included in applicable race categories.

3.15.2 Executive Order 13045

EO 13045, entitled "Protection of Children from Environmental Health Risks and Safety Risks" (EO 13045, 62 FR 19885), states that each federal agency shall make it a high priority to identify and assess environmental health risks and safety risks that could disproportionately affect children and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Environmental health risks and safety risks mean risks to health or to safety that are attributable to products or substances that the child is likely to come into contact with or to ingest.

SECTION 4 EXISTING MANAGEMENT PROGRAMS AND INITIATIVES

4.1 INTRODUCTION

The OMD strives to maximize its ability to manage Camp Adair's natural resources by utilizing in-house personnel and equipment to plan, design, and implement proposed projects when ever feasible. Fiscally conservative program planning is central to all activities at ORARNG facilities. This INRMP Update is prepared to facilitate Camp Adair's military training mission while providing a planning tool for maintaining good stewardship of the resources.

This section provides a brief overview of existing management plans and programs in place at Camp Adair. Applicable components of these plans have been integrated into this INRMP Update and support the goals, objectives, and management strategies presented in Section 5.

4.2 LAND USE PLANNING

The Range and Training Land Program (RTLTP) Development Plan for Camp Adair (ORARNG 2000) is used for land use planning. The development plan provides a summary of the existing infrastructure, facilities, and improved structures used by the ORARNG at Camp Adair. The development plan identifies short-term and long-term management techniques for maintaining the physical integrity of these improvements at Camp Adair.

4.3 INTEGRATED TRAINING AREA MANAGEMENT

The Army's Integrated Training Area Management (ITAM) Program seeks to balance military mission requirements with the long-term ecological sustainability in managing military training installations. The Army and the ARNG are implementing this approach on their installations and training areas. The goal of ITAM is to achieve and sustain the optimum use of training lands to support training and mission requirements indefinitely, while ensuring protection of natural resources. The ORARNG strives to achieve the goals of the ITAM program in the management of natural resources at Camp Adair. ITAM is composed of four components that should be implemented as a whole in order to meet its overall goal. A synopsis of the four components is provided below.

Training Requirements Integration

Training Requirements Integration (TRI) uses Range and Training Land Assessment (RTLTA) information (formerly called Land Condition-Trend Analysis or LCTA) and Army training requirements to select appropriate training sites for units requesting training, and for the placement of training facilities. It applies the carrying capacity concept and seeks to minimize adverse impacts to training lands. TRI mandates a high level of coordination between operations, range control, engineering, and environmental staffs.

The procedure for conducting training at Camp Adair begins with either a written or electronic request from the unit or group to the RTI in Monmouth. RTI then verifies the information and reserves the appropriate facilities and areas needed by the unit, using the RFMSS. Priorities, resource conditions, and the suitability of the training area for the requested use are considered along with unit needs when training facilities are assigned and reservations are confirmed. After the unit completes its training and after-action reports are completed and filed with RTI, RFMSS information is then edited to reflect the actual training that occurred. This data is then used to help identify LRAM projects and for analysis with existing LCTA data.

Land Rehabilitation and Maintenance

LRAM is the planning, design, and implementation of projects to maintain the environmental condition of training lands. These projects should be based on LCTA information and priorities derived through the ITAM process. Although LRAM often focuses on repairing military damage, the goal is to maintain training areas in an acceptable condition to support realistic training opportunities. Official ITAM-funded land rehabilitation and maintenance projects were started at Camp Adair in FY 1998 and are ongoing.

Range and Training Land Assessments

The Range and Training Land Assessment (RTLA) program inventories and monitors condition, and manages and analyzes natural resource information. Formerly known as the Land Condition-Trend Analysis (LCTA) program, the new name, RTLA, reflects a renewed focus on the sustained use of training and testing lands.

Data and the results pertinent to the management of training and testing lands provide inputs toward decisions that promote sustained and multiple uses of military lands. The RTLA program is a long-term effort designed to evaluate land use and condition. Because training activities conducted at Camp Adair have a very low potential to cause any significant land damage, the OMD has decided not to implement RTLA at Camp Adair at this time. Should training activities with the potential to cause significant land damage be proposed for Camp Adair, the ORARNG would implement an RTLA program at the installation.

Environmental Awareness

Environmental awareness involves using educational opportunities and materials to help the land user understand the impacts of their action. This applies to training site staff and units conducting training, although these materials are also valuable to others interested in the site. Examples include awareness briefings and videos, posters, and instructional field cards. The first ITAM-funded environmental awareness project at Camp Adair was the installation of environmental protection signs around patches of Kincaid's Lupine, a federally-threatened plant. This project was completed in August 1999.

4.4 ENVIRONMENTAL PERFORMANCE ASSESSMENT SYSTEM

The Environmental Performance Assessment System (EPAS) program assists all Army commanders and facility staff in attaining, sustaining, and monitoring compliance with federal, state, and local environmental laws and regulations, as well as DOD, Army and Army National Guard requirements. The EPAS external and internal multimedia assessments identify noncompliance and deficiencies, suggest immediate and long-term corrective actions, and indicate resources needed for implementation. Military training site commanders, including those at Camp Adair, use environmental compliance assessments, in combination with regulatory agency inspections and sound day-to-day environmental management procedures, as a means of attaining, sustaining, and monitoring compliance with applicable environmental regulations.

4.5 CULTURAL RESOURCES

The ORARNG ICRMP (ORARNG 2002) has been developed in accordance with the requirements outlined in AR 200-4 to support the military mission and to meet the legal requirements of federal historic preservation laws and regulations in a manner consistent with the sound principles of cultural resources stewardship (US Army 1998).

The ICRMP establishes priorities for identifying, and standards for evaluating, historic properties on ORARNG installations and provides a schedule for accomplishing program objectives.

Camp Adair was systematically surveyed in the summer of 1998. The survey identified eight prehistoric archaeological sites and two prehistoric/historic dual component sites (Sloan and Roth, 1998). The archaeological sites and dual component sites have been determined to be potentially eligible for inclusion on the National Register of Historic Places. All identified resources occur in the northwest sector of Camp Adair.

4.6 FISH AND WILDLIFE MANAGEMENT

The goal in managing Camp Adair's wildlife is to achieve and maintain healthy populations of native wildlife, primarily through habitat management. No fish exist on Camp Adair. The ORARNG does not attempt to actively manage game or nongame wildlife populations on the installation. Because of Camp Adair's relatively small size and the type and frequency of training activities that occur, hunting is not allowed on the installation.

Specific management for deer, elk, and other mammals is not needed. However, ORARNG staff will continue to cooperate with ODFW, the E.E. Wilson Wildlife Area staff, and MacDonald-Dunn Forest staff to manage wide-ranging species on a regional basis, as needed and as requested.

4.7 FIRE MANAGEMENT

The ORARNG Wildland Fire Program implements the U.S. Army's Wildland Fire Policy Guidance of 4 September 2002. The purpose of the ORARNG's Wildland Fire Program is to integrate Wildland Fire Policy Guidance, and regulatory direction contained within Army Regulation (AR) 200-1, Environmental Sustainability and Stewardship (1997), and AR 420-90, Fire and Emergency Services (2006), into the development of Integrated Wildland Fire Management Plans (IWFMP), for each of the ORARNG's training centers, within each training center's INRMP. Presently, none of the ORARNG's training centers are authorized or have professional fire departments with full-time fire staff. This Wildland Fire Program retains the option that at some future time, one or more of the training centers may have a fire department. Currently, a IWFMP has not been prepared for Camp Adair.

Access Roads

A system of access roads through the camp and around much of its perimeter was proposed in the 1990s. The roads were not constructed, but the OMD plans to construct a less extensive system of three maneuver trails to the western portions of the camp (see Figure 3.3.2-1), as resources become available. These roads would greatly improve emergency response to wildland fires. The chief of the Adair Rural Fire and Rescue Department reviewed the alignments of the proposed maneuver trails and indicated his support for the project to improve fire control in the area. The potential environmental effects from construction and operation of these proposed roads will be evaluated in a separate environmental analysis prior to construction.

Prescribed Burning

Prescribed burning has been used once on a relatively small scale at Camp Adair. The Oregon Department of Forestry (ODF) conducted a planned, prescribed burn at Camp Adair for the OMD in October 2001. The burn was conducted on five acres of dry prairie and six acres of wet prairie along the eastern boundary of the Camp, adjacent to Rifle Range Road. The objective of the burn was to remove dead nonnative vegetation, to promote the growth of native vegetation, and to demonstrate the suitability and safety of conducting a prescribed burn at the site. The burn was conducted according to a plan, with notice given to the local fire district and nearby residents. It was successful.

Prescribed fire will be used to protect, maintain and enhance resources and, as nearly as possible, be allowed to function in its natural ecological role so long as it is not a threat to improvements on Camp Adair or to adjoining properties. Use of fire as a natural resource management tool will be based on approved prescribed burn plans, the IWFMP, and will follow specific prescriptions contained in operational plans.

4.8 GEOGRAPHIC INFORMATION SYSTEM

Camp Adair made progress toward achieving several of the goals and objectives identified in the 2001 INRMP, as identified in Section 6. Through field surveys and application of GIS technology, long-range planning, and data analysis, Camp Adair has made significant progress toward better understanding and management of its resources.

The GIS data layers provided in this revised INRMP contribute to good stewardship of Camp Adair's natural resources for proper management and decision making. The GIS data layers in the INRMP Update include:

- Base Map of Camp Adair (an aerial map showing boundaries, vegetation and improvements)
- Training area facilities and roads (also shows buildings)
- Topography (contours, Camp boundary, roads)
- Nearby land use (farmland, forestry, residential, and other land use within Benton County, where information was available)
- Soil Mapping Units and potential soil loss areas
- Vegetation Types (Douglas fir forest, ash wetland, developed and managed, evergreen-deciduous forest, oak woodland, orchard, perennial forb, wet grassland, and wooded herbaceous)
- Plant Species of Concern (Kincaid's Lupine, Nelson's Checkermallow)
- Wetlands

Regarding GIS equipment, Camp Adair is supported by the OMD Headquarters and RTI. There is no GIS equipment physically located at Camp Adair.

OMD is currently using ESRI ArcGIS desktop, specifically ArcGIS 9.1. GIS mapping is prepared for site plans, NEPA documentation, preplanning documentation, and other related plans.

4.9 OPERATIONAL RANGE ASSESSMENT PROGRAM

As part of the Army's Sustainable Range Program (SRP), the Army began a process to assess contamination migrating from operational training ranges. The Operational Range Assessment Program (ORAP) includes Army National Guard training ranges. The purpose of the ORAP is to ensure the Army National Guard and the U.S. Army have the best available data to support range operations and address concerns about the potential off-range migration of munitions constituents of concern (MCOC).

In 2006, an ORAP contractor of the U.S. Army conducted a Phase I qualitative assessment of the operational training ranges on Camp Adair. Besides its maneuver training range areas, Camp Adair contains two Oregon Army National Guard small arms weapons training ranges and a small arms range operated by the Oregon Department of Public Safety Standards and Training, under separate license from the U.S. Army Corps of Engineers. The 2006 ORAP assessment did not evaluate the Oregon Department of Public Safety Standards and Training small arms range. The 2006 assessment, the first phase of the Army's ORAP, consisted of a review of readily available data and evaluation of the potential for MCOCs to migrate off the ranges at levels posing a risk to human health or the environment. The assessment is expected to result in one of three possible, subsequent courses of action: referral to an appropriate cleanup program, recommendation for additional Phase II investigation and assessment, or recommendation that the range be re-evaluated in five years. At the time this INRMP was completed, the initial 2006 ORAP assessment of the Camp Adair ranges had not been completed.

The OMD's Camp Adair is a small portion of the original Camp Adair, which was established in 1942 and operated primarily between 1942 and 1944 as a three-regiment division training installation. The existing small arms ranges on OMD's Camp Adair are located within the footprint of a larger World War II era weapons training range complex, which extended beyond the current Camp Adair boundaries. Other former weapons training ranges also exist throughout the area near the current Camp Adair.

At the time this INRMP revision, the U.S. Army Corps of Engineers also was engaged in conducting a Site Investigation (SI) of training ranges on the original Camp Adair, under the Corps' Formerly Used Defense Site (FUDS) program. The results from those investigations had not been published at the time this INRMP revision was completed. The OMD expects the Corps' FUDS SI on the original Camp Adair will help guide further evaluation of potential environmental effects from the existing small arms ranges on the current Camp Adair.

4.10 PEST MANAGEMENT

Pest management activities on Camp Adair are conducted in accordance with the OMD's Integrated Pest Management Plan (IPMP). The IPMP is in the form of a regulation, ORARNGR 200-5, most recently revised in January 2007. The IPMP is a statewide plan, with its primary emphasis on human safety and minimizing environmental impacts during pest management activities. The IPMP requires OMD personnel to meet applicable federal and state pesticide management and use requirements and it contains best management practices for pesticide use and management, including:

- Obtain thorough training and appropriate certification prior to any pesticide use.

- Read and follow all label instructions for chemical mixing and pesticide application.
- Maintain a current MSDS for each pesticide on hand.
- Keep pest and pesticide records and report pesticide use to AGI-ENV.
- Consider the effects of pest control measures on the environment and nontarget organisms and consider the use of mechanical, biological, or cultural pest management measures whenever feasible.
- Use the least toxic and persistent pesticides whenever feasible.
- Consider pesticide and site characteristics to determine the suitability of using the pesticide at a particular location.
- Maintain application equipment in good working condition and calibrate equipment frequently to ensure pesticide application does not exceed the allowable application rate.
- Optimize pesticide application rate, timing, and placement to achieve the greatest efficiency, reduce the potential for off-site transport of pesticide, and avoid the need for re-treatment.
- Employ pesticide application techniques which increase efficiency and allow the lowest effective labeled application rate, such as the use of spot applications.
- Use application techniques that avoid or minimize overspray and drift.
- Maintain a 100-foot buffer zone from threatened or endangered species habitat, designated critical habitat, and areas of undisturbed, unique natural vegetation or important wildlife habitat.
- Avoid pesticide application within wetland areas and surface waters, unless specific approval for the use has been obtained from AGI-ENV.
- Wear the appropriate protective equipment specified on the pesticide product label to minimize unnecessary exposure and clean protective gear after each day's use.

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SECTION 5

PROPOSED NATURAL RESOURCES MANAGEMENT ACTIONS

Natural resources management goals, objectives, and projects for Camp Adair are presented in Table 5.1-1. These also are discussed by the primary plant communities that comprise natural resources management units on the Camp (see Figure 3.6.2-2). In addition, topics that cut across management units are discussed after the seven management units. Representative photographs of each management unit are in Appendix G.

In the discussions of individual management units, the “Management Approach Rationale” section explains how and why management decisions are being made and why any training activities are restricted. The “Training Activities” section describes types of training activities that typically are or are not compatible with the natural resources management goals that apply to each management unit. Although this plan may limit some training opportunities, it does not result in any significant losses of training lands.

The primary goal in managing the natural resources on Camp Adair is to provide as many appropriate military training opportunities as possible within a natural environment. Overall, the camp’s natural resources are managed through an ecosystem approach that focuses on systemic qualities rather than on single species or elements, in order to enhance biodiversity, ecosystem health, and biotic/ecologic integrity. Integrating human activities into naturally functioning communities and taking a landscape perspective are also emphasized. This system of management uses fire, native species, erosion control, and other techniques to achieve its goals.

5.1 MANAGEMENT GOALS, OBJECTIVES, AND PROJECTS

The OMD’s natural resources management goals, objectives, and projects are presented in Table 5.1-1. The information presented in Table 5.1-1 is supplemented by Table 6.5-2 which identifies responsibilities, schedules, and potential funding sources for implementation of the projects.

**Table 5.1-1
2007 Revised INRMP Goals, Objectives, and Projects**

Management Goal	Management Units	Objective	Project	Action Time Frame(s)
1. CONSERVE FEDERALLY LISTED THREATENED, ENDANGERED SPECIES AND FEDERAL CANDIDATE SPECIES PRESENT ON CAMP ADAIR	Oak Savanna Wetlands	1.1 Monitor the extent and vigor of species' populations and identify adverse habitat conditions.	1.1.1 Visually monitor conditions of known and potential Kincaid's Lupine and Nelson's Checkermallow habitats to evaluate the extent and vigor of the respective species' populations and identify adverse habitat conditions.	Annually
			1.1.2 Survey known and potential Kincaid's Lupine and Nelson's Checkermallow habitats every five years to determine the extent and vigor of the respective populations and identify adverse habitat conditions.	2011
		1.2 Protect existing listed species populations.	1.2.1 Participate in planning and monitor execution of all activities at Camp Adair to see that known listed and candidate species are protected from adverse effects that could occur.	Ongoing
			1.2.2 Maintain Sibert stakes around Kincaid's lupine populations and mark newly found populations to minimize potential for trampling.	Annually and as needed
			1.2.3 Eliminate adverse habitat conditions in and around Kincaid's lupine populations through manual removal of exotic and invasive species, periodic prescribed burns, or other approved means.	Annually or as needed

Management Goal	Management Units	Objective	Project	Action Time Frame(s)
			1.2.4 Eliminate harmful habitat conditions in and around Nelson's Checkermallow populations.	Annually or as needed
			1.2.5 Initiate consultation with USFWS and ODA (state-listed floral species) and ODFW (state-listed faunal species) if proposed actions may affect listed species.	As needed
		1.3 Foster expansions of listed species populations present on Camp Adair.	1.3.1 Improve potential habitat for Kincaid's lupine through manual removal of exotic and invasive species, periodic prescribed burns, or other approved means.	Annually or as appropriate
			1.3.2 Improve potential habitat for Nelson's checkermallow habitat in southeast quadrant of Camp Adair by creating additional open areas using manual removal of trees, prescribed burning, or other approved means.	Annually, or as appropriate
2. CONSERVE MEADOW CHECKERMALLOW. (State candidate species)	Developed area Wetlands Perennial forbs	2.1 Determine the extent and vigor of Meadow checkermallow populations and identify adverse habitat conditions.	2.1.1 Visually monitor known and potential Meadow checkermallow habitats to evaluate the extent and vigor of the population and identify adverse habitat conditions.	Annually
			2.1.2 Survey known and potential Meadow checkermallow habitats every five years to determine the extent and vigor of the population and identify adverse habitat conditions.	2011

Management Goal	Management Units	Objective	Project	Action Time Frame(s)
		2.2 Protect existing Meadow checkermallow population.	2.2.1 Participate in planning and monitor execution of all activities at Camp Adair to see the Meadow checkermallow population is protected from adverse effects that could occur.	Ongoing
			2.2.2 Eliminate adverse habitat conditions in and around Meadow checkermallow populations	Annually or as needed
		2.3 Foster expansion of candidate species populations.	2.3.1 Expand potential Meadow checkermallow habitat by removing shading trees and other invasive species.	Annually
3. APPROPRIATELY MANAGE THE ORCHARD AREA.	Orchard	3.1 Determine whether the orchard area requires protection as a historic resource and if so, how to appropriately conserve it.	3.1.1 Work with USDA Agriculture Research Service pomologist to determine the types of trees present, their age, and historic significance.	2007
			3.1.2 If the orchard is historically significant, work with USDA, ORARNG Cultural Resources Manager, and State Historic Preservation Office to determine how to appropriately conserve it.	2008
		3.2 If the orchard is a historic resource, determine and implement appropriate management actions.	3.2.1 No specific actions identified at this time.	Once actions are determined

Management Goal	Management Units	Objective	Project	Action Time Frame(s)
		3.3 Improve training opportunities in orchard area, consistent with its historical significance, as appropriate.	3.3.1 Remove and control invasive vegetation in and around orchard area consistent with potential training uses for the area.	Annually beginning in 2008
4. PREVENT ADVERSE EFFECTS FROM WILDLAND FIRES WHILE PROVIDING DESIRED NATURAL RESOURCE AND TRAINING CONDITIONS.	All	4.1 Maintain acceptable fire fuel loads.	4.1.1 Evaluate fire fuel loads throughout the Camp and develop plans to decrease them, as appropriate.	2008, with annual review and evaluation
			4.1.2 Remove vegetation, through manual removal, mowing, prescribed burns, and other appropriate methods to reduce fire danger and improve training conditions.	Annual operations (prescribed burns would be conducted every three to five years in an area)
		4.2 Improve and maintain firefighting access to all areas of the facility.	4.2.1 Improve selected existing maneuver trails and construct new trails for firefighting and security maintenance access, training, and natural resources management support.	When Real Property Operations, and Maintenance (RPOM) funding is available
			4.2.2 Maintain maneuver trails in good condition for firefighting access.	Annual monitoring, with work as needed
5. PREVENT LOSS OR DEGRADATION OF WETLANDS.	Wetlands Developed area Evergreen Forest Oak woodland	5.1 Maintain up-to-date delineations of wetlands on Camp Adair.	5.1.1 Update wetlands planning level survey. (see project 11.1.1)	As needed, based on proposed projects and activities
		5.2 Avoid adverse effects to existing wetlands from all activities.	5.2.1 AGI-ENV staff works with projects/activity proponents to avoid or minimize wetland impacts and obtain state and/or federal permits.	As projects/activities are identified

Management Goal	Management Units	Objective	Project	Action Time Frame(s)
		5.3 Identify damage to wetlands.	5.3.1 Visually monitor the condition of wetlands, particularly in and near areas where activities have occurred.	Annually and as needed
		5.4 Repair damages to wetlands as quickly as possible.	5.4.1 Plan and implement wetland repairs as quickly as possible once problems are identified.	As needed
6. PREVENT SOIL EROSION FROM ACTIVITIES AND OPERATIONS.	All	6.1 Prevent soil erosion problems.	6.1.1 AGI-ENV staff works with project/activity proponents to identify potential erosion threats and identify methods to avoid or minimize them.	As projects/activities are identified
		6.2 Identify erosion problems as quickly as possible.	6.2.1 Visually monitor areas where projects and activities have occurred or are occurring, to identify erosion problems.	Annually and as needed during projects with erosion potential
		6.3 Repair erosion problems as quickly as possible.	6.3.1 Plan and implement erosion repairs as quickly as possible, once problems have been identified.	When problems are identified
7. PREVENT NON-POINT SOURCE WATER POLLUTION FROM ACTIVITIES AND OPERATIONS.	All	7.1 Prevent non-point water pollution problems through project and activity planning.	7.1.1 AGI-ENV staff works with project and activity proponents to identify potential non-point source pollution threats identify methods to avoid or minimize them, and identify and obtain required stormwater discharge permits.	As projects and activities are identified
		7.2 Identify non-point source water pollution as quickly as possible.	7.2.1 Visually monitor the Camp, especially areas where projects and activities have occurred or are occurring, to identify non-point water pollution problems.	Annually and as needed during projects with water pollution potential

Management Goal	Management Units	Objective	Project	Action Time Frame(s)
		7.3 Stop and correct water quality problems as quickly as possible.	7.3.1 Plan and implement water quality remediation measures as quickly as possible once problems have been identified.	When problems are identified
8. ELIMINATE EXOTIC AND INVASIVE PLANT SPECIES FROM THE CAMP.	All	8.1 Monitor the types and extent of exotic and invasive species.	8.1.1 Survey the types and extent of exotic and invasive species present on the Camp every five years.	2008
		8.2 Eradicate exotic and invasive species, focusing on State-listed noxious weeds as the highest priority.	8.2.1 Determine feasibility of introducing biological controls and introduce them where feasible.	2009, with annual reviews/updates
			8.2.2 Conduct mowing, prescribed burning, and/or herbicide application to remove or control exotic and invasive species.	Annually
9. SUPPORT SUSTAINABLE TRAINING OPPORTUNITIES THROUGHOUT THE CAMP.	All	9.1 Identify barriers to sustainable training uses, such as impassible or harmful vegetation.	9.1.1 AGI-ENV staff works with ORARNG training staff to identify sustainable training activities and barriers.	Ongoing
		9.2 Remove barriers to sustainable training uses.	9.2.1 No specific projects currently identified. Projects listed under other management goals also will support this objective.	Ongoing
10. CONSERVE NATIVE BIODIVERSITY, VEGETATION STRUCTURAL COMPONENTS, AND TREE AGE MIXES CONSISTENT WITH DESIRED TRAINING CONDITIONS.	All except Orchard and Developed Area	10.1 Identify undesirable conditions or changes to native biodiversity, vegetation structural components, or tree age mixes.	10.1.1 Visually monitor general environmental conditions at the Camp to identify undesirable conditions or changes requiring action.	Annually

Management Goal	Management Units	Objective	Project	Action Time Frame(s)
	All	10.2 Develop and implement plans to improve native biodiversity, vegetation structural components, or tree age mixes.	10.2.1 No specific projects currently identified. Projects listed under other management goals will support this objective.	As needed
	Oak woodland	10.3 Foster increases in native bird and bat populations.	10.3.1 Install appropriate nest boxes for resident bird species that would benefit from them.	2008
			10.3.2 Install appropriate bat houses for resident bat species.	2009
			10.3.3 Visually monitor the use of nesting boxes and bat houses and relocate or remove them if they are not being used.	Annually
			10.3.4 Maintain nesting boxes and bat houses.	Annually
		10.4 Achieve more pre-historic conditions in the oak woodland portions of the Camp.	10.4.1 Remove colonizing conifers, young oaks, and nonnative shrubs and trees that threaten the long-term viability of the oaks, native grasses and wildflowers.	Annual operations
			10.4.2 Plant oaks, native grasses, and herbaceous plants if management actions do not result in desired natural increases.	Annual operations, as needed
	11. MAINTAIN AND USE UP-TO-DATE NATURAL RESOURCES INFORMATION	All	11.1 Conduct or update natural resources planning level surveys	11.1.1 Update the planning level survey of wetlands.
11.1.2 Update the planning level survey for vascular plants and vegetation communities				Every five years, next in 2008

Management Goal	Management Units	Objective	Project	Action Time Frame(s)
			11.1.3 Update planning level survey for sensitive fauna species	Every five years, next in 2009
			11.1.4 Update surveys for federally listed threatened, endangered, and candidate species that are known to occur or have a high potential to occur on Camp Adair. As of 2007, those species are: <ul style="list-style-type: none"> • Kincaid's lupine (known) • Nelson's checkermallow (known) • Fender's blue butterfly (potential) • Taylor's checkerspot butterfly (potential) • Northern spotted owl (potential) 	Every five years, next in 2011
		11.2 Analyze and use the most current natural resources information available in planning and management actions.	11.2.1 Analyze planning level survey data and data from other natural resources monitoring efforts.	Ongoing
			11.2.2 Apply updated survey data and other updated natural resources information to existing and new projects and management actions to achieve desired natural resource adaptive management and military training opportunity outcomes.	Ongoing

5.2 WETLANDS

5.2.1 Management Goals

Natural resources management goals that apply to the Wetlands are:

- Comply with regulatory requirements
- Protect Nelson's checkermallow population
- Prevent adverse effects from wildfires consistent with desired natural resource and training conditions
- Prevent loss or degradation of wetlands
- Prevent soil erosion
- Prevent non-point source water pollution
- Eliminate exotic and invasive species
- Provide appropriate training opportunities and accessibility
- Conserve native biodiversity, vegetation structural components, and tree age mixes consistent with desired training conditions

Objectives and projects to accomplish these goals are listed in Table 5.1-1.

5.2.2 Management Approach Rationale

Appropriate training activities are limited in wetlands in recognition of their values, wetlands protection requirements, and the fact that physical conditions limit what can be done there. Wetlands provide flood control, water quality protection, and plant and wildlife habitat. The wet prairie portion of Camp Adair's wetlands are rare in the Willamette Valley and therefore, very valuable to conservation of biodiversity. Some of the wetlands also harbor a state and federally-listed species (Nelson's checkermallow), which require conservation protection under the ESA. For the approximately 29 acres of jurisdictional wetlands on Camp Adair, Section 404 of the Clean Water Act and the Department of State Lands (DSL) removal/fill law both prohibit removal/fill activities without a permit. Operation of heavy equipment/tracked vehicles and digging has been interpreted to be a removal/fill activity. Most infantry training can be conducted in wetlands without serious risk to the functions and values of this community, including wetland vegetation and the existence of listed species. Management actions (e.g., mowing and weed control) need to be carefully conducted in the wetlands and adjacent areas to avoid or limit adverse impacts. Using units, camp staff, and OMD project planners will be briefed on the location, value, and sensitivity of this community and state and federal wetlands regulations.

5.2.3 Training Activities

Primarily because of wetlands regulations, areas classified as jurisdictional wetlands cannot be used for training that involves digging and the use of tracked vehicles. All of these wetlands were subject to the jurisdiction of the USACE, and all but three small artificial wetlands were subject to regulation by the Oregon DSL. Because of the SWANCC decision of 2001 (see Section 3.7), the Portland District Corps of Engineers must now make a jurisdiction/no jurisdiction

determination if the wetlands in Camp Adair are waters of the United States. The DSL also must determine whether state wetlands regulations apply. This classification of “jurisdictional” wetlands may be reevaluated in the near future; however, they will still be protected from loss and degradation.

5.3 EVERGREEN FOREST

5.3.1 Management Goals

Natural resources management goals that apply to the Evergreen Forest are:

- Provide appropriate training opportunities and accessibility.
- Prevent adverse effects from wildfires while providing desired natural resource and training conditions.
- Prevent loss or degradation of wetlands.
- Prevent soil erosion from activities and operations.
- Prevent non-point source water pollution from activities and operations.
- Eliminate exotic and invasive plant species.
- Conserve native biodiversity, native vegetation structural components, and tree age mixes consistent with desired training conditions.

Objectives and projects to accomplish these goals are listed in Table 5.1-1.

5.3.2 Management Approach Rationale

The Evergreen Forest is managed to provide ideal military training opportunities while protecting the health and integrity of the ecosystem as a whole. Through silvicultural actions, OMD creates and maintains maneuver corridors, bivouac sites, and generally increases access and maneuverability through the forest.

This conifer forest is an excellent area for realistic infantry training, although, some types of training are limited mainly due to steep slopes, highly erodible soils, and the presence of cultural resources. Much of the terrain is steep and susceptible to sheet erosion if vegetative cover is removed. Cultural resources are present in the area and additional undiscovered cultural resources also could be present. In addition, the forest is important for maintaining camp biodiversity. The species mix and structural variability provides different habitats for a wide variety of species. An area along the northeast edge of the forest has been designated for tracked vehicle concealment training. This required training must use heavy vegetation and this area has been the best and most accessible upland location for this activity. Once additional access is provided, other areas that are suitable for this training may be identified.

5.3.3 Training Activities

The evergreen forest area can be used for a wide range of training activities. Currently, due to access limitations, only dismounted infantry training activities are practical in the area. If the proposed maneuver trails are constructed, it is likely

that other training activities which do not cause significant environmental effects, such as erosion, also can be conducted in the area. Off-road tracked vehicle training is restricted to established roads and appropriate areas of the forest where damage can be avoided or readily repaired. Currently, the 100-meter edge, south of the orchard, shown in Figure 1.4-1, is used for M-113 armored personnel carrier concealment training. Additional areas for this training, if needed, may be identified after access to the western portion of Camp Adair is provided. Activities that involve digging are not allowed within the area that contains known cultural resources. Training activities that produce loud noise (except firing blanks) are not allowed in the southern two-thirds of the forest (south of the old road).

5.4 OAK SAVANNA

5.4.1 Management Goals

Natural resources management goals that apply to the Oak Savanna are:

- Conserve Kincaid's lupine.
- Prevent adverse effects from wildfires while providing desired natural resource and training conditions.
- Prevent soil erosion from activities and operations.
- Prevent non-point source water pollution from activities and operations.
- Eliminate exotic and invasive plant species.
- Provide appropriate training opportunities and accessibility.
- Conserve native biodiversity, native vegetation structural components, and tree age mixes, consistent with desired training conditions.

Objectives and projects to accomplish these goals are listed in Table 5.1-1.

5.4.2 Management Approach Rationale

This open grassland is an excellent area for most types of training, and is especially well suited to maneuver training. However, some limitations are present, such as areas of steep slopes with high erosion potential and threatened plants. All limitations are on Oak Hill, so mechanized, ground-disturbing activities will be limited to the flat area to the northwest, to better avoid extensive and costly mitigation and restoration work. Documented locations of the state- and federally-listed Kincaid's lupine on Oak Hill must be protected as required by the federal ESA and Oregon law. Oak savanna is also important for maintaining camp biodiversity, and has the potential to greatly increase biodiversity. The open grasslands and numerous large oak trees provide edge habitat, nesting opportunities, and foraging areas for a wide variety of species, including bird species of concern like the western bluebird, western meadowlark, and yellow-breasted chat. Oak savanna has become a relatively rare plant community, both globally and in the Willamette Valley due to development and fire suppression. This very valuable habitat would be improved by continued efforts to remove exotic and invasive plant species, which should allow the native wildflowers,

including Kincaid's lupine, to flourish. If the lupine flourishes and expands its population, dismounted infantry training will be allowed with fewer or no restrictions in the one-acre area currently containing the Kincaid's lupine. Using units, camp staff, and AGI-ENV project planners will be briefed on locations of Kincaid's lupine and the federal regulations that protect this species.

5.4.3 Training Activities

Off-road wheeled vehicles, tracked vehicle training, and digging will only be permitted northwest of Oak Hill during the dry weather season. No training activities in areas containing Kincaid's lupine (currently less than one acre) are conducted during the growing season (March 1 – October 31). During plant dormancy only light foot traffic will be allowed. Training restrictions will be temporary if the plant is removed from state and federal "threatened" status. If that occurs, increased infantry training will be allowed. Vehicles are allowed on roads at all times and seasonally in the dry-season engineer/off-road vehicle training area located northwest of Oak Hill (see Figure 1.4-1). This area is used for other ground-disturbing training activities in the dry season as well.

5.5 OAK WOODLAND

5.5.1 Management Goals

Natural resources management goals that apply to the Oak Woodland are:

- Prevent adverse effects from wildfires while providing desired natural resource and training conditions.
- Prevent loss or degradation of wetlands.
- Prevent soil erosion from activities and operations.
- Prevent non-point source water pollution from activities and operations.
- Eliminate exotic and invasive plant species.
- Provide appropriate training opportunities and accessibility.
- Conserve native biodiversity, native vegetation structural components, and tree age mixes in the camp's various vegetation communities consistent with desired training conditions.

Objectives and projects to accomplish these goals are listed in Table 5.1-1.

5.5.2 Management Approach Rationale

This fairly open woodland is an excellent area for most types of training, but is limited by size and location. Steep slopes exist in some areas, and would be susceptible to sheet erosion if vegetative cover is removed. It also has some potential for undiscovered cultural resources. For these reasons, no mechanized training or facilities development is proposed. Part of the oak woodland is along the south boundary and close to the Trillium Lane residential area, so any intensive training activities there would likely lead to noise complaints. This ecological community is important for maintaining and possibly improving camp biodiversity. The numerous large oak trees provide edge and nesting

opportunities, and foraging areas for a wide variety of species, including bird species of concern like the western bluebird, western meadowlark, and yellow-breasted chat. Improvement could be achieved by removal of nonnative species, such as meadow knapweed. Removal of colonizing conifers and young oaks could benefit native grasses and herbaceous plants.

5.5.3 Training Activities

Off-road, tracked vehicle training, digging, and loud noise-producing training activities are not permitted. Driver training in wheeled or tracked vehicles may be conducted on roadways.

5.6 PERENNIAL FORBS

5.6.1 Management Goals

Natural resources management goals that apply to the Perennial Forbs are:

- Conserve Meadow Checkermallow.
- Prevent adverse effects from wildfires while providing desired natural resource and training conditions.
- Prevent soil erosion from activities and operations.
- Prevent non-point source water pollution from activities and operations.
- Eliminate exotic and invasive plant species.
- Provide appropriate training opportunities and accessibility.
- Conserve native biodiversity, native vegetation structural components, and tree age mixes in the camp's various vegetation communities consistent with desired training conditions.

Objectives and projects to accomplish these goals are listed in Table 5.1-1.

5.6.2 Management Approach Rationale

This community is very open, and excellent for all types of training, including activities that disturb the ground. In fact, the northeast corner of the camp is the best location for ground-disturbing training since it has no wetlands, listed species, slopes, or significant erosion potential. The plant community is similar to oak savanna in terms of wildlife habitat, but it lacks large oak trees and nonnative species, such as meadow knapweed, occur in the area.

5.6.3 Training Activities

All training allowed by the Camp Adair SOP is conducted (i.e., infantry training, nonfiring artillery training, and engineer training, including off-road vehicle maneuvers) in the northeast corner of the camp. During wet weather, ground-disturbing activities are limited to graveled areas within this area. The perennial forb's area along the southern boundary of the camp is limited in size and will be used for activities consistent with adjacent wetland and oak woodland areas.

5.7 ORCHARD

5.7.1 Management Goals

Natural resources management goals that apply to the Orchard are:

- Protect historic orchard.
- Prevent adverse effects from wildfires.
- Prevent soil erosion from activities and operations.
- Prevent non-point source water pollution from activities and operations.
- Eliminate exotic and invasive plant species.

Objectives and projects to accomplish these goals are listed in Table 5.1-1.

5.7.2 Management Approach Rationale

The orchard is a remainder of an old homestead that occupied the camp, and was determined to be a historic resource in 1998. The orchard is an important foraging and cover area for deer, elk, small mammals, and birds. Controlling use of the orchard will ensure compliance with state and federal cultural resources laws and regulations. Most infantry training, without vehicles, is allowed since it poses little risk to the orchard resources. Protection of the orchard is accomplished through the Camp Adair Standard Operating Procedure (SOP), and users will be briefed on cultural resources rules and regulations prior to conducting activities.

5.7.3 Training Activities

The orchard is off-limits for off-road vehicle training due to cultural resources requirements, which requires protection or mitigation of impacts.

5.8 DEVELOPED AREA MANAGEMENT

5.8.1 Management Objectives

Natural resources management goals that apply to the Developed Area are:

- Conserve Nelson's checkermallow, Howell's montia, and Meadow checkermallow.
- Prevent adverse effects from wildfires while providing desired natural resource and training conditions.
- Prevent loss or degradation of wetlands.
- Prevent soil erosion from activities and operations.
- Prevent non-point source water pollution from activities and operations.
- Eliminate exotic and invasive plant species.
- Provide appropriate training opportunities and accessibility.

Objectives and projects to accomplish these goals are listed in Table 5.1-1.

5.8.2 Management Approach Rationale

Management of the developed area is necessary because much of it is not actually developed at this time and contains significant natural resources, including wetlands and Meadow checkermallow, a candidate for state threatened or endangered species listing. For the jurisdictional wetlands, if they are still considered jurisdictional, Section 404 of the Clean Water Act and the DSL removal/fill law prohibit removal/fill activities without a permit. The Oregon and federal endangered species laws require protection of the Nelson's checkermallow. Areas without facilities are regularly mowed, and the herbaceous layer is dominated by non-native grasses and weedy species. Herbicide spraying has been, and continues to be, conducted regularly to control and eliminate exotic species, such as meadow knapweed. Despite the predominance of nonnative species, there is wildlife habitat value and use, such as large mammal and bird foraging, and nesting by species that prefer gravel.

5.8.3 Training Activities

Training activities are not restricted, except in wetlands and rare/listed plant locations, which are off-limits to vehicle use and digging. During wet weather, ground-disturbing activities are limited to graveled areas.

5.9 GENERAL WILDLIFE MANAGEMENT

Natural resources management by plant communities addresses the needs of many wildlife species. However, some wildlife species use multiple plant communities, particularly wide-ranging species like birds and mammals. The needs of these species are addressed in this general wildlife management section.

The general wildlife management goal is to maintain and, where practicable, improve native wildlife habitat. If projects to restore native ecosystems and native vegetation are successful, there will be positive benefits to wildlife. Measures beyond those discussed in this plan are not necessary. However, there are several general wildlife management measures that will further environmental stewardship efforts. Several years ago, some bird houses were installed at the camp, but only a couple still exist because they were not maintained. The OMD will solicit interest and work with volunteer groups to install and maintain additional bat and birdhouses to ensure suitable places for native songbirds and bats to nest or roost. Attempts to control or eliminate undesired, nonnative nuisance wildlife species, such as English sparrows and European starlings, without acting in conjunction with many other landowners on a broad regional effort are not practical to undertake because of the large sizes of the animal populations and the large amount of suitable habitat in the area.

In accordance with the Migratory Bird Treaty Act (MBTA), activities conducted on Camp Adair must be assessed for their potential to harm migratory birds, even if the harm is inadvertent. In general, implementing the INRMP should benefit birds, but some actions could inadvertently harm some birds. The ORARNG is

responsible for analyzing and describing the potential effects from its activities on migratory birds and minimizing any adverse effects.

Specific management plans for deer, elk, and other mammals are not needed. Managing Camp Adair to maintain and improve native vegetation and natural habitats should help maintain the local animal populations. In addition, the OMD and Camp Adair staff will continue to coordinate and cooperate with ODFW and the E.E. Wilson Wildlife Area staff and MacDonald-Dunn Forest staff to assist them in managing wide-ranging species on a regional basis, as needed and as requested.

5.10 THREATENED AND ENDANGERED SPECIES MANAGEMENT

The Oregon Endangered Species Act and the federal Endangered Species Act (Section 7, since actions at the camp are federal actions) require consultation with appropriate state or federal agency for actions that may affect listed species. Implementation of this plan will potentially affect two listed plant species. For these plants, compliance with regulations of the Oregon Department of Agriculture and the USFWS is required. Camp Adair is federal land, owned by the U.S. Army Corps of Engineers. The OMD has a permit for use of the property, but does not have a lease or recorded easement. Consequently, the consultation and approval requirements of ORS 564.115 do not apply to OMD management actions on Camp Adair. In the interest of conserving the threatened and endangered plant species on Camp Adair, OMD will consult with ODA in coordination with the USFWS. On-site discussions with agency personnel have not occurred during the revision of the plan, but were held during development of the 2001 INRMP.

Two plants require active management at the camp: Nelson's checkermallow (*Sidalcea nelsoniana*) and Kincaid's lupine (*Lupinus sulphureus* var. *kincaidii*), both of which are state- and federal-listed threatened species. Another plant species, Meadow checkermallow (*Sidalcea campestris*), is a candidate for state listing and will be actively managed to help conserve it. These species occur within designated military training areas, although, historically, there has been little to no field training activities occurring near the areas occupied by these plants. Management of these plant species will primarily continue to consist of avoiding known plant locations by military training activities and projects that disturb the ground, suppression of competing plants (mostly nonnative species), and monitoring.

Maintenance activities, such as mowing and weed control, have the potential to adversely affect Nelson's checkermallow plants along the fence line and in the developed area north of the ash wetlands (southeast corner of the camp). Adverse impacts from mowing will be avoided by delaying mowing until the plants are dormant (usually after September 1). If mowing or other potentially damaging activities, such as fence repair, must be conducted in the area, or cannot be delayed until after September 1, the area will be surveyed for the presence of Nelson's checkermallow plants. Nelson's checkermallow plant locations will be

marked with pin flags, prior to conducting the activity, so the plants can be avoided. Adverse impacts from herbicide applications for weed control will be avoided by spraying only in calm conditions, covering Nelson's checkermallow plants, and spot spraying. These actions will make maintenance a beneficial effect as it should give the plants of concern a competitive advantage.

Suppression and control of competitive plants will focus on removing blackberries, meadow knapweed, reed canary grass, and woody species that are encroaching into the Kincaid's lupine patches and shading Nelson's checkermallow plants. Control/removal will include targeted herbicide applications, prescribed burning, mechanical cutting, bio-controls, and hand removal, as appropriate. Herbicides will not be used if they cannot be controlled to guarantee no contact with any of these plants of concern. Meadow knapweed which dominated the herbaceous layer of a significant area on Oak Hill was sprayed with the herbicide "Transline" in the spring of both 2001 and 2002 and the knapweed has been substantially reduced. In the summer of 2002, a contract botanist (Sundberg) completed surveys to determine the presence, species, and locations of undesired plants. Some invasive grasses, English holly, and English hawthorns have been removed and/or sprayed with the herbicides "Roundup" and "Crossbow." Additional hand removal is needed within the Kincaid's lupine patches, unless another treatment method is approved by the USFWS. After consultation with ODA and USFWS and with the approval of USFWS, Nelson's checkermallow locations away from the fence line (i.e., the southeast corner, within the ash wetlands, and in the developed area) will be mowed or burned, after the plants become senescent, approximately every three years, to control woody vegetation and expand the extent of the plants. Hand removal of vegetation will be considered where mowing or burning is not feasible. Vegetation control methods will be conducted in accordance with the ORARNG's Integrated Pest Management Plan (IPMP), adopted as Oregon Army National Guard Regulation 210-5 (ORARNGR 210-5).

Military training will be limited to infantry training, without ground-disturbing activities or support vehicles, near the Nelson's checkermallow and Kincaid's lupine locations during the active growing season of these plants. During dormant periods, limited infantry training can be allowed through the plant locations.

For the lupine area within the Oak Hill area (currently one-acre), limited, non-vehicular, infantry training will be allowed only during the plant dormancy period (Nov. 1 to March 1) until the population can be expanded. If the Kincaid's lupine population exceeds 25,000 occupied square meters (10 percent of the area, estimated from a sample), OMD will consult with the USFWS and the ODA and seek USFWS approval to allow limited, year-round, non-vehicular, infantry training in these lupine-occupied areas. The ability to conduct year-round training in lupine areas would be subject to USFWS' approval of a biological assessment of the effects of the proposed training activities. Continued year-round training use of lupine-occupied areas would depend on the results of subsequent assessments of damage to the lupine. If the number of broken or bruised lupine stems

exceeded 80 stems per 1,000 square meters, infantry training during the growing season would be suspended. Also, if sampling showed a decrease in the size of the lupine population over time to less than 25,000 occupied square meters, infantry training during the growing season would be suspended. This approach does not apply to Nelson's checkermallow areas since there are many more plants and they are not located in areas that could be trampled by soldiers on foot.

Plant censuses of Nelson's checkermallow, Kincaid's lupine, Howell's montia, and Meadow checkermallow were completed in 2001. A survey of Nelson's checkermallow, Kincaid's lupine, and Meadow checkermallow was conducted in 2006 and will be repeated every five years. A survey of Howell's montia was not conducted in 2006 because the Oregon Natural Heritage Information Center (ONHIC) has reported that it has been found in large enough numbers and is likely to be removed as a candidate species for state listing as a threatened species. At the time this revision to the INRMP was completed, a final report on the results of the 2006 surveys was not complete. Preliminary data from the surveys appear to indicate that Nelson's checkermallow and Kincaid's lupine plants are approximately as numerous and occupy the same locations they did in 2001.

Future surveys of Nelson's checkermallow, Kincaid's lupine, and Meadow checkermallow plants will be conducted by measuring square meters occupied, stem counts, or measuring the plants in accordance with an ODA- and USFWS-accepted protocol, if available. Multiple checkermallow stems within a square meter will be counted as a single plant. For the three plant species, when census efforts exceed 10 work days (three person crew) per species, monitoring will switch to a sampling approach to estimate the size of the population. Effects of infantry training on Kincaid's lupine during the growing season will be assessed by walking transects through areas with lupines and counting broken or bruised lupine stems. This count must be conducted within two weeks of a training event. In the years between the more complete surveys, OMD will visually monitor the areas occupied by the plants to identify damage to the plants or conditions that are adversely affecting them. Photo points will be used to document conditions in a systematic manner during annual visual monitoring. Visual monitoring of areas also will be conducted following military training or other activities, if those occurred in or near areas occupied by the these species.

The OMD believes that proposed actions described in this INRMP will not adversely affect the two state- and federally-listed plants. Rather, effects from management should be beneficial for these two plants, and a positive response from the USFWS is expected. The alternative to not managing these plants or their habitats is likely to have adverse effects to these species populations.

Monitoring and survey projects may document the presence of other listed species in the future, such as Fender's blue butterfly, Taylor's checkerspot

butterfly, and the northern spotted owl. If this occurs, management plans will be developed in consultation with the USFWS and ODA.

5.11 SOIL EROSION MANAGEMENT

To maintain the productivity of the land and to keep excess sediment from entering streams and other surface waters, it is necessary to control soil erosion or potential soil erosion. This is especially true for areas with high potential soil loss estimates or erodibility indexes (see Figure 3.4.1-2). Bare ground areas will be promptly covered with soil amendments and vegetation. Areas of recurring ground-disturbing training will be considered for hardening with gravel or other materials. Best management practices developed for western Oregon will be employed at Camp Adair. These include using native grasses and other plants, and using geotextile fabrics and straw mulches, among other things. The Benton County Soil and Water Conservation District and U.S. Natural Resources Conservation Service will be contacted to ensure that erosion control projects are properly designed and implemented, as appropriate.

5.12 INTEGRATED PEST MANAGEMENT

Integrated pest management (IPM) activities will affect the natural resources of the camp. Much of this effort involves controlling unwanted vegetation and animal pests in the developed area. However, IPM activities have occurred in the training areas, such as removal of nonnative vegetation (Scots broom, meadow knapweed, etc.) and control of nonnative animals. About 80% of the reed canary grass along the eastern boundary line has been eliminated through the spraying of "Roundup". Meadow knapweed within the oak community's area was sprayed with "Transline", resulting in a 60% reduction. Other invasive plants (English holly and English hawthorns) were removed and/or sprayed with "Roundup" and "Crossbow". A statewide Integrated Pest Management Plan (ORARNGR 210-5), which includes Camp Adair, was updated in 2007. This plan encourages nonchemical over chemical control, but allows controlled use of pesticides, herbicides, and insecticides. Except for uncontrolled infestations of invasive plants, it is likely that nonchemical methods can effectively control pest plants and animals in the training areas. Selective use of herbicides on hardened areas, along fence lines, and on Scots broom or other nuisance or noxious plants is expected. Herbicide use will be limited to the extent necessary and only after other control methods, including the introduction of beneficial insects, the use of mechanical mowing, manual cutting, or pulling, have been considered. The use of chemicals or biological control agents in areas where they may adversely affect threatened plant species will be undertaken only after consultation with the USFWS and ODA and with the approval of USFWS.

5.13 CULTURAL RESOURCES MANAGEMENT

The entire camp was systematically surveyed by an archaeological field survey crew from the OSU Department of Anthropology in the summer of 1998. The survey identified several prehistoric archaeological and prehistoric/historic dual component sites (Sloan and Roth, 1998). The archaeological sites and dual

component sites have been determined as potentially eligible for the National Register of Historic Places. All identified resources occur in the northwest sector of the camp.

A statewide Integrated Cultural Resources Management Plan (ICRMP) more thoroughly addresses compliance with Federal and State laws and regulations, as well as the DoD Annotated Policy on Indian Tribes and Alaska Natives of October 1999. Cultural resource protection has been incorporated into this plan by prohibiting ground-disturbing activities in the areas identified as having a high potential for undiscovered archaeological resources and those containing documented cultural resources. In addition, the ICRMP provides a procedure to be followed for inadvertent discovery of cultural resources.

Prior to Euroamerican settlement of Oregon, the Kalapuyan people occupied and used much of the Willamette Valley, including the Camp Adair area. Descendants of the Kalapuyans now are members of the Confederated Tribes of Siletz and the Confederated Tribes of Grande Ronde. There are no known Native American concerns regarding natural resources issues on Camp Adair. However, the federally recognized tribes are afforded the ongoing opportunity to coordinate and consult with the ORARNG to ensure that tribal interests are given due consideration in a manner consistent with tribal sovereign authority for cultural and natural resource management.

5.14 PUBLIC USE AND OUTDOOR RECREATION

Public use of Camp Adair is very limited and unorganized outdoor recreation is not allowed, because much of the Camp is within the surface danger zones of the small arms firing ranges. There are plenty of outdoor recreation areas in the vicinity of Camp Adair, so public recreational use of the camp is not really necessary. Public uses primarily have consisted of children participating in instructed use of the Ropes course and historical military reenactors. Other public uses may include the Audubon Christmas Bird Counts, educational open houses, and scientific research. In these cases, the public would be allowed or encouraged to visit and tour the camp on specific dates, primarily when there is no use of the firing ranges.

5.15 PUBLIC SAFETY

Public safety and enforcement of laws and regulations are provided primarily by the camp caretaker. RTI also provides this service when staff is present, which is usually only during selected training events. Local law enforcement agencies and emergency services agencies, such as fire departments, are requested as necessary.

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SECTION 6 IMPLEMENTATION OF THE INRMP

6.1 ORGANIZATIONS, ROLES, AND RESPONSIBILITIES

6.1.1 Introduction

The ORARNG is responsible for seeing that its activities and operations comply with applicable federal, state, and local environmental laws and regulations, as well as DoD, DA, and NGB policy, regulations, and implementing guidance. Consequently, the ORARNG has the primary role and responsibility for directing the implementation of this INRMP. The training center manager (RTI), range maintenance worker at the camp, and AGI-ENV are responsible for the daily management and oversight of the camp's natural resources management program.

6.1.2 National Guard Bureau Responsibilities

The Environmental Programs Division (NGB-ARE) ensures operational readiness by promoting environmental quality and an environmental ethic throughout the ARNG and is responsible for tracking projects, providing technical assistance, conducting quality assurance of written materials, and providing funding to support the programs. The NGB-ARE is responsible for reviewing and approving the INRMP/EA. Such approval should be documented by signing both the signature page in the document and a Finding of No Significant Impact. NGB-ARE is also responsible for advising the ORARNG before formal submission to the USFWS and ODFW.

6.1.3 OMD/ORARNG Responsibilities

The Adjutant General (TAG) for Oregon is responsible for the operation and maintenance of Camp Adair, which includes implementation of this INRMP. TAG ensures that all facility land users are aware of and comply with procedures, requirements, or applicable laws and regulations that accomplish the goals and objectives of the INRMP. TAG also ensures coordination of projects and construction between environmental, training, and engineering staffs.

The Deputy Chief of Staff Operations and Training (J-3) has the primary responsibility for scheduling military training and safety of all personnel while training exercises are being conducted. Secondary to scheduling is maintaining a high-quality training environment. The J-3 will coordinate with commands and assist the AGI-ENV in training of personnel, assist the AGI-ENV in coordinating environmental program projects and budget requirements, and ensure appropriate NEPA documents are prepared before implementing various plans or programs.

The AGI-ENV is responsible for characterizing the natural and cultural resources of the training sites, identifying compliance needs, and advising the ORARNG on the best ways to comply with federal and state environmental laws and regulations. The AGI-ENV provides technical assistance to training site personnel

including developing projects, securing permits, conducting field studies, providing environmental awareness materials, locating and mapping natural and cultural resources, preparing plans, and coordinating the review of and revising the INRMP every five years. The AGI-ENV also coordinates the ITAM program and oversees the NEPA process for the ORARNG.

Daily management and oversight of the Camp Adair natural resources management program falls to the Camp Adair range maintenance worker and AGI-ENV staff. The Camp Adair range maintenance worker has extensive knowledge of all aspects of the training site, including training schedules (and conflicts), locations of training facilities, impairments or problems with human-made structures or natural functions, and needs for improvement or maintenance of the training land.

The AGI provides a full range of engineering disciplines for all agency facilities, including Camp Adair. The AGI is responsible for master planning and ensuring that all construction projects comply with environmental regulations by consulting with the AGI-ENV prior to any construction. The AGI also provides necessary assistance with design and oversight of construction projects, such as roads and erosion control projects.

The Public Affairs Office is expected to provide expertise in the development and production of environmental awareness materials for distribution to training site managers and unit commanders. The Public Affairs Office also functions as a liaison with the public in public meetings and community educational events.

The Judge Staff Advocate advises the Adjutant General, J-3, AGI, and AGI-ENV on laws and regulations that affect training land use and environmental compliance. Depending on the issue, however, this may be the responsibility of the State Attorney General, as mandated by state law.

6.2 LABOR RESOURCES

Day-to-day maintenance and operations at Camp Adair are conducted by a single part-time range maintenance worker, with part-time assistance from a second OMD facility maintenance worker. Maintenance and construction projects also are conducted by private contractors via state contracts and by ORARNG units. AGI, including AGI-ENV, provides administrative support and technical assistance staff for the natural resources program at Camp Adair.

6.3 CONTINUING COORDINATION WITH RESOURCE MANAGEMENT AGENCIES

OMD will initiate and conduct routine communications and coordination with appropriate state and federal natural resource management agencies on any natural resources matters or issues of concern, whether or not they are addressed in the INRMP. OMD invites state and federal natural resource management agencies to do likewise. At Camp Adair, these state and federal agencies

primarily are the U.S. Fish and Wildlife Service, the Oregon Department of Fish and Wildlife, and the Oregon Department of Agriculture.

Annually, OMD will prepare a report on the previous year's INRMP project implementation and effectiveness and share that report with the U.S. Fish and Wildlife Service, the Oregon Department of Fish and Wildlife, and the Oregon Department of Agriculture. OMD will use the annual report and its cover letter as the primary method to conduct annual coordination on the INRMP with the agencies.

6.4 PLAN REVISION AND AMENDMENT PROCESS

This plan covers calendar years 2007 through 2011. At that time, the OMD will review the plan for operational effects and will determine the need to revise the plan for 2011 through 2016. If the plan is revised, the process will include consultation with the appropriate state and federal agencies, Native American tribes, and the local community. Prior to the scheduled review and possible revision, it may be necessary to amend the plan to reflect management changes. Changes are likely because adaptive management is part of the plan. A change in the installation's mission, such as a force realignment or restructure, may require an update earlier than five years. Proposed amendments will be drafted into a letter or other appropriate document and mailed to the appropriate state and federal agencies, Native American tribes, and interested parties for review and comments. If no comments are received, or no substantial issues are raised, the amendment will be adopted into the plan. This INRMP will be reviewed per the Environmental Performance Assessment System, which is discussed in Section 4.5. Table 6.4-1 provides master lists for updating the INRMP.

6.5 INRMP FUNDING

6.5.1 Military Funding

Funding for Camp Adair is provided by NGB, which receives an annual budget from congressional appropriations. To receive funding for natural resources projects, proposed management actions must be shown to comply with federal laws and mandates before funds are appropriated. Funding requirements for this INRMP are identified by AGI-ENV and submitted in accordance with current NGB guidance.

6.6 IMPLEMENTATION AND FUNDING PRIORITY FOR THE INRMP

To facilitate the INRMP implementation process, an implementation priority and funding priority rating system has been developed. The purpose of the system is to allow the ORARNG and Camp Adair to forecast funding requests and staffing needs. It is designed to justify why certain management actions are needed to secure funding and to emphasize the importance of certain projects over others.

**Table 6.4-1
INRMP Master Lists for Updating INRMP
2007 - 2011**

Report Number	Date Created	INRMP Section	Page	Project/Action
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Report Number _____ Type of Update: Supplement Existing Project or Action
 INRMP Section _____, Page _____ Remove Existing Project or Action
 Prepared by _____ Create New Project or Action

1. Project or Action.					
2. Goal / objective for the project or action.					
3. Related projects. List relevant INRMP sections and pages. Indicate if these projects are contingent on completion of project or action listed in 1 above.					
4. Anticipated start / end dates. Indicate whether one-time (e.g., survey) or routine (e.g., monitoring).					
5. Resources needed.					
Initial Costs (+) / Savings (-): \$			Yearly Costs (+) / Savings (-): \$		
Installation Labor:		Volunteer Labor:		Contractor Labor:	
	hours		hours		hours
Equipment:					
Training:					
IT/Information Management:					

NOTE: Use this INRMP master update list and the INRMP update reports to keep your INRMP current. Consolidate forms from each staff member when completing annual or 5-year INRMP updates. Log each INRMP update report on this INRMP master update list. Complete this form electronically or in hard copy, and insert into the INRMP. Create more pages as necessary.

Due to budgetary limitations, DoD-related environmental funding tends to be allocated for those actions fulfilling legal requirements and is more limited for stewardship actions that are not mandated by regulatory requirements. Thus, funding priorities sometimes differ from the implementation priorities of an ecosystem-based INRMP. Funding priority is defined by the “Environmental Quality Conservation Compliance Classes,” as detailed in DoD Instruction 4715.3, and is summarized in Table 6.6-1. Implementation priorities tend to be based on legal, institutional, and ecological principles related to ecosystem-based natural resource management. Implementation priorities are determined by the following criteria:

- High priority—Legally required activities or actions deemed important to the military mission, ecology, or personnel safety. These actions would be ongoing or would be expected to be implemented as soon as possible, but no later than within one year, depending on the availability of funding (fiscal years 2007 – 2009).
- Medium priority—Compliance or stewardship actions that need to be implemented in time to meet the established deadlines defined in the INRMP or within the next six years, depending on the availability of funding (fiscal years 2006 – 2011).
- Low priority—Activities and projects that enhance natural resources but are not specifically required by law or military mission needs. These activities or projects are likely to be implemented if staffing and funding is available.

The Camp Adair INRMP management projects are summarized in Table 6.5-2. This table lists each management project presented in Section 5 and compares the implementation priority to the funding priority. The table is based on an initial review of funding needs, and includes the likely source of funds and the party responsible for each management strategy. In most cases, environmental funding is allocated to strategies that are compliance and policy-based, while ITAM funds can be used for projects relating to maintaining, monitoring, and restoring training lands. Where possible, other funding sources have been identified.

Projects will be established in NGB-required databases and undertaken as funding becomes available. Inclusion of projects on this list does not obligate the ORARNG to complete required actions if funding is not available from federal sources. If federal, state, or local regulatory requirements are involved, activities may be restricted in order to ensure compliance.

**Table 6.6-1
Definition of DoD-Related Funding Priorities**

Conservation Compliance Class	Description of Requirement	DoD-Related Funding Priority
0	Recurring: Includes activities needed to cover the recurring administrative, personnel, and other costs associated with managing the military training site conservation program that are necessary to meet applicable compliance requirements or that are in direct support of the military mission. Also included are environmental management activities associated with operating facilities and the military training site.	High
I	Current Compliance: Includes projects and activities that are needed because a military training site is out of compliance with current legal requirements or will be out of compliance if the project or activities are not implemented in the current program year, or the projects and activities are immediate and essential to maintain operational integrity or to sustain readiness of the military mission.	High
II	Maintenance: Includes those projects and activities that are not currently out of compliance, but will be out of compliance if projects and activities are not implemented in time to meet an established deadline beyond the current program year.	Medium
III	Enhancement Actions Beyond Compliance: Includes projects and activities that enhance conservation resources or the integrity of the military training site mission or that are needed to address overall environmental goals and objectives but that are not specifically required by law.	Low

Source: DoD Instruction 4715.3

**Table 6.6-2
2007 – 2011 Projects Proposed for Implementation**

Project	Funding priority (Priority within category)	Funding source	Schedule	Responsible Party
GOAL 1. CONSERVE FEDERALLY LISTED THREATENED, ENDANGERED SPECIES AND FEDERAL CANDIDATE SPECIES PRESENT ON CAMP ADAIR.				
Objective 1. Monitor the extent and vigor of species' populations and identify adverse habitat conditions.				
1.1.1. Visually monitor conditions of known and potential Kincaid's Lupine and Nelson's Checkermallow habitats to evaluate the extent and vigor of the respective species' populations and identify adverse habitat conditions.	High (1)	ENV, or other 2065 fund source.	Annually.	AGI-ENV
1.1.2. Survey known and potential Kincaid's Lupine and Nelson's Checkermallow habitats every five years to determine the extent and vigor of the respective populations and identify adverse habitat conditions.	High (4)	ENV	2011	AGI-ENV
Goal 1, Objective 2. Protect existing listed species populations				
1.2.1 Participate in planning and monitor execution of all activities at Camp Adair to see that known listed and candidate species are protected from adverse effects that could occur.	High (6)	ENV	Ongoing	AGI-ENV
1.2.2. Maintain Sibert stakes around Kincaid's lupine populations and mark newly found populations to minimize potential for trampling.	High (2)	ENV, or other 2065 fund source.	Annually and as needed.	AGI-ENV
1.2.3. Eliminate adverse habitat conditions in and around Kincaid's lupine populations through manual removal of exotic and invasive species, periodic prescribed burns, or other approved means.	High (3)	ENV, or other 2065 fund source.	Annually or as needed.	AGI-ENV

Project	Funding priority (Priority within category)	Funding source	Schedule	Responsible Party
1.2.4. Eliminate harmful habitat conditions in and around Nelson's Checkermallow populations.	High (3)	ENV, or other 2065 fund source.	Annually or as needed.	Camp Adair/ AGI-ENV
1.2.5. Initiate consultation with USFWS and ODA (for state-listed floral species) and ODFW (for state-listed faunal species) if proposed actions may affect listed species.	High (7)	ENV, or other 2065 fund source.	As needed.	Camp Adair/ AGI-ENV
Goal 1, Objective 3. Foster expansions of listed species populations present on Camp Adair.				
1.3.1. Improve potential habitat for Kincaid's lupine through manual removal of exotic and invasive species, periodic prescribed burns, or other approved means.	Low (20)	ENV, or other 2065 fund source.	Annually or as appropriate.	Camp Adair/ AGI-ENV
1.3.2. Improve potential habitat for Nelson's checkermallow habitat in southeast quadrant of Camp Adair by creating additional open areas using manual removal of trees, prescribed burning, or other approved means.	Low (21)	ENV, or other 2065 fund source.	Annually or as appropriate.	Camp Adair/ AGI-ENV
GOAL 2. CONSERVE MEADOW CHECKERMALLOW. (State candidate species). Objective 1. Determine the extent and vigor of Meadow checkermallow populations and identify adverse habitat conditions.				
2.1.1. Visually monitor known and potential Meadow checkermallow habitats to evaluate the extent and vigor of the population and identify adverse habitat conditions.	Low (22)	ENV, or other 2065 fund source.	Annually	Camp Adair/ AGI-ENV
2.1.2. Survey known and potential Meadow checkermallow habitats every five years to determine the extent and vigor of the population and identify adverse habitat conditions.	Low (23)	ENV, or other 2065 fund source.	2011	Camp Adair/ AGI-ENV

Project	Funding priority (Priority within category)	Funding source	Schedule	Responsible Party
Goal 2, Objective 2. Protect existing Meadow checkermallow population.				
2.2.1 Participate in planning and monitor execution of all activities at Camp Adair to see the Meadow checkermallow population is protected from adverse effects that could occur.	Low (24)	ENV	Ongoing	AGI-ENV
2.2.2. Eliminate adverse habitat conditions in and around Meadow checkermallow populations.	Low (25)	ENV, or other 2065 fund source.	Annually or as needed.	Camp Adair/ AGI-ENV
Goal 2, Objective 3. Foster expansion of candidate species populations.				
2.3.1. Expand potential Meadow checkermallow habitat by removing shading trees and other invasive species.	Low (26)	ENV, or other 2065 fund source.	Annually	Camp Adair/ AGI-ENV
GOAL 3. APPROPRIATELY MANAGE THE ORCHARD AREA.				
Objective 1. Determine whether the orchard area requires protection as a potential historic resource and if so, how to appropriately conserve it.				
3.1.1 Work with USDA Agriculture Research Service pomologist to determine the types of trees present, their age, and historic significance.	Medium (1)	ENV, or other 2065 fund source.	2007	AGI-ENV
3.1.2 If the orchard is historically significant, work with USDA, ORARNG Cultural Resources Manager, and State Historic Preservation Office to determine how to appropriately conserve it.	Medium (2)	ENV, or other 2065 fund source.	2007-2008	AGI-ENV
Goal 3, Objective 2. If the orchard is a historic resource, determine and implement appropriate management actions.				
3.2.1 No specific actions identified at this time.	Medium (3)	ENV, or other 2065 fund source.	2007, with annual maintenance	Camp Adair/ AGI-ENV

Project	Funding priority (Priority within category)	Funding source	Schedule	Responsible Party
Goal 3, Objective 3. Improve training opportunities in orchard area, consistent with its historical significance, as appropriate.				
3.3.1. Remove and control invasive vegetation in and around orchard area consistent with potential training uses for the area.	Low (10)	ENV, or other 2065 fund source.	2007, with annual maintenance.	Camp Adair/ AGI-ENV
GOAL 4. PREVENT ADVERSE EFFECTS FROM WILDFIRES WHILE PROVIDING DESIRED NATURAL RESOURCE AND TRAINING CONDITIONS. Objective 1. Maintain acceptable fire fuel loads.				
4.1.1. Evaluate fire fuel loads throughout the Camp and develop plans to decrease them, as appropriate.	Low (3)	ENV, or other 2065 fund source.	2007, with annual review and evaluation.	Camp Adair/ AGI-ENV
4.1.2. Remove vegetation, through manual removal, mowing, prescribed burns, and other appropriate methods to reduce fire danger and improve training conditions.	Low (6)	ENV, or other 2065 fund source.	Annually	Camp Adair/ AGI-ENV
Goal 4, Objective 2. Improve and maintain firefighting access to all areas of the facility.				
4.2.1. Improve selected existing maneuver trails and construct new trails for firefighting and security maintenance access, training, and natural resources management support.	Low (4)	2065 fund source.	2010	Camp Adair/ AGI-ENV
4.2.2. Maintain maneuver trails in good condition for firefighting access.	Low (5)	ENV, or other 2065 fund source.	Annually.	Camp Adair/ AGI-ENV
GOAL 5. PREVENT LOSS OR DEGRADATION OF WETLANDS. Objective 1. Maintain up-to-date delineations of wetlands on Camp Adair.				
5.1.1 Update 1998 planning level survey of Camp Adair's wetlands and incorporate new data into GIS.	High (5)	ENV	2008	AGI-ENV

Project	Funding priority (Priority within category)	Funding source	Schedule	Responsible Party
Goal 5, Objective 2. Avoid adverse effects to existing wetlands from all activities.				
5.2.1. AGI-ENV works with project and activity proponents in planning projects and activities to avoid or minimize impacts to wetlands.	Medium (4)	ENV	As projects and activities are identified.	AGI-ENV
Goal 5, Objective 3. Identify damage to wetlands.				
5.3.1. Monitor the condition of wetlands within and near areas where activities have occurred.	Medium (5)	ENV or other 2065 fund source.	Annually and as needed.	Camp Adair/ AGI-ENV
Goal 5, Objective 4. Repair damages to wetlands as quickly as possible.				
5.4.1. Plan and implement wetland repairs as quickly as possible once problems have been identified.	Medium (6)	ENV or other 2065 fund source.	As needed.	Camp Adair/ AGI-ENV
GOAL 6. PREVENT SOIL EROSION FROM ACTIVITIES AND OPERATIONS.				
Objective 1. Prevent soil erosion problems.				
6.1.1 AGI-ENV works with project and activity proponents to identify potential erosion threats and identify methods to avoid or minimize them.	Medium (7)	ENV.	As projects and activities are identified.	AGI-ENV
Goal 6, Objective 2. Identify erosion problems as quickly as possible.				
6.2.1. Visually monitor the Camp, especially areas where projects and activities have occurred or are occurring, to identify erosion problems.	Medium (8)	ENV or other 2065 fund source.	As needed.	Camp Adair/ AGI-ENV
Goal 6, Objective 3 Repair erosion problems as quickly as possible.				
6.3.1. Plan and implement erosion repairs as quickly as possible, once problems have been identified.	Medium (9)	ENV or other 2065 fund source.	Ongoing.	Camp Adair/ AGI-ENV

Project	Funding priority (Priority within category)	Funding source	Schedule	Responsible Party
GOAL 7. PREVENT NON-POINT SOURCE WATER POLLUTION FROM ACTIVITIES AND OPERATIONS.				
Objective 1. Prevent non-point water pollution problems through project and activity planning.				
7.1.1. AGI-ENV staff works with project and activity proponents to identify potential non-point source pollution threats identify methods to avoid or minimize them, and identify and obtain required stormwater discharge permits.	Medium (10)	ENV	As projects and activities are identified.	AGI-ENV
Goal 7, Objective 2. Identify non-point source water pollution as quickly as possible.				
7.2.1. Visually monitor the Camp, especially areas where projects and activities have occurred or are occurring, to identify non-point water pollution problems.	Medium (11)	ENV or other 2065 fund source.	Annual survey and as needed.	Camp Adair/ AGI-ENV
Goal 7, Objective 3. Stop and correct water quality problems as quickly as possible.				
7.3.1. Plan and implement water quality remediation measures as quickly as possible once problems have been identified.	Medium (12)	ENV or other 2065 fund source.	Annual survey and as needed.	Camp Adair/ AGI-ENV
GOAL 8. ELIMINATE EXOTIC AND INVASIVE PLANT SPECIES FROM THE CAMP.				
Objective 1. Monitor the types and extent of exotic and invasive species.				
8.1.1. Survey the types and extent of exotic and invasive species present on the Camp every five years.	Low (7)	ENV or other 2065 fund source.	Every five years, next in 2008	Camp Adair/ AGI-ENV
Goal 8, Objective 2. Eradicate exotic and invasive species, focusing on species that preclude or hinder training activities and State-listed noxious weeds as the highest priorities.				
8.2.1. Determine feasibility of introducing biological controls for exotic and invasive species and introduce them where feasible.	Low (8)	ENV or other 2065 fund source.	2009, with annual reviews and updates.	Camp Adair/ AGI-ENV

Project	Funding priority (Priority within category)	Funding source	Schedule	Responsible Party
8.2.3. Conduct mowing, prescribed burning, and/or herbicide application to remove or control exotic and invasive species.	Low (9)	ENV or other 2065 fund source.	Annually	Camp Adair/ AGI-ENV
GOAL 9. SUPPORT SUSTAINABLE TRAINING OPPORTUNITIES THROUGHOUT THE CAMP.				
Objective 1. Identify barriers to sustainable training uses, such as impassable or harmful vegetation.				
9.1.1. AGI-ENV staff works with ORARNG training staff to identify sustainable training activities and natural resources-related barriers	Low (1)	ENV	As projects and activities are identified.	AGI-ENV
Goal 9, Objective 2. Remove barriers to sustainable training uses.				
9.2.1 No specific projects currently identified. Projects listed under other management goals also will support this objective.	Low (2)	ENV or other 2065 fund source.	As projects are identified	Camp Adair/ AGI-ENV
GOAL 10. CONSERVE NATIVE BIODIVERSITY, NATIVE VEGETATION STRUCTURAL COMPONENTS, AND TREE AGE MIXES CONSISTENT WITH DESIRED TRAINING CONDITIONS.				
Objective 1. Identify undesirable conditions or changes to native biodiversity, vegetation structural components, or tree age mixes.				
10.1.1 Visually monitor general environmental conditions at the Camp to identify undesirable conditions or changes requiring action.	Low (11)	ENV or other 2065 fund source.	Annually	Camp Adair/ AGI-ENV
Goal 10, Objective 2. Develop and implement plans to improve native biodiversity, vegetation structural components, or tree age mixes.				
10.2.1 No specific projects currently identified. Projects listed under other management goals will support this objective.	Low (18)	ENV or other 2065 fund source.	Annually.	Camp Adair/ AGI-ENV
Goal 10, Objective 3. Foster increases in native bird and bat populations.				
10.3.1 Install appropriate nest boxes for resident bird species that would benefit from them.	Low (14)	ENV or other 2065 fund source.	2008 and ongoing, as needed	Camp Adair/ AGI-ENV

Project	Funding priority (Priority within category)	Funding source	Schedule	Responsible Party
10.3.2 Install appropriate bat houses for resident bat species.	Low (15)	ENV or other 2065 fund source.	2008 and ongoing, as needed	Camp Adair/ AGI-ENV
10.3.3 Visually monitor the use of nesting boxes and bat houses and relocate or remove them if they are not being used.	Low (16)	ENV or other 2065 fund source.	Annually.	Camp Adair/ AGI-ENV
10.3.4. Maintain nesting boxes and bat houses.	Low (17)	ENV or other 2065 fund source.	Annually.	Camp Adair/ AGI-ENV
Goal 10, Objective 4. Achieve more prehistoric conditions in the oak woodland portion of the Camp.				
10.4.1. Remove colonizing conifers, young oaks, and nonnative shrubs and trees that threaten the long-term viability of oak trees, native grasses and wildflowers.	Low (12)	ENV or other 2065 fund source.	Annually.	Camp Adair/ AGI-ENV
10.4.2. Plant oaks, native grasses, and herbaceous plants if management actions do not result in natural increases.	Low (13)	ENV or other 2065 fund source.	Beginning in 2010.	Camp Adair/ AGI-ENV
GOAL 11. MAINTAIN AND USE UP-TO-DATE NATURAL RESOURCES INFORMATION				
Objective 1. Conduct or update natural resources planning level surveys				
11.1.1 Update the planning level survey of wetlands.	High (8)	ENV or other 2065 fund source.	As needed, based on proposed projects or activities.	AGI-ENV
11.1.2 Update the planning level survey for vascular plants and vegetation communities.	High (9)	ENV	Every five years, next in 2008	AGI-ENV
11.1.3 Update planning level survey for sensitive fauna species	High (10)	ENV	Every five years, next in 2009	AGI-ENV

Project	Funding priority (Priority within category)	Funding source	Schedule	Responsible Party
11.1.4 Update surveys for federally listed threatened, endangered, and candidate species that are known to occur or have a high potential to occur on Camp Adair. As of 2007, those species are: <ul style="list-style-type: none"> • Kincaid's lupine (known) • Nelson's checkermallow (known) • Fender's blue butterfly (potential) • Taylor's checkerspot butterfly (potential) • Northern spotted owl (potential) 	High (11)	ENV	Every five years, next in 2008 for butterflies and owl See project 1.1.2 for surveys of Kincaid's lupine and Nelson's checkermallow.	AGI-ENV
Goal 11, Objective 2. Analyze and use the most current natural resources information available in planning and management actions.				
11.2.1 Analyze planning level survey data and data from other natural resources monitoring efforts.	High (12)	ENV	Ongoing	AGI-ENV
11.2.2 Apply updated survey data and other updated natural resources information to existing and new projects and management actions to achieve desired natural resource adaptive management and military training opportunity outcomes.	High (13)	ENV	Ongoing	AGI-ENV

6.7 PROJECTS IMPLEMENTED FOR THE 2001 – 2005 INRMP

Table 6.7-1 lists the projects that were proposed for the 2001 – 2005 INRMP, and identifies projects that were implemented and those that were reconsidered and their rationale for being reconsidered.

**Table 6.7-1
INRMP Project List for 2001-2006**

Project	Planned accomplishment	Planned Schedule	Status
Wetlands buffer; signs or stakes (for jurisdictional wetlands)	AGI-ENV Natural Resources Specialist (NRS) and range maintenance worker	2000 – 2001	Project considered unnecessary after further consideration and was not conducted. Controls implemented through installation SOP.
Elimination of reed canary grass (ash wetlands)	NRS and range maintenance worker	2000 – 2001	Hand removal and limited pesticide spraying conducted in 2000 and 2001. Continued monitoring and control work required.
Water/groundwater sampling	NRS and contract lab	2000 – 2006	Project not conducted due to NGB guidance.
Butterfly/moth survey	OSU Dept. of Entomology	2000 – 2003	Completed in 2003.
Hydrology investigation; wet prairie restoration plan	OSU or Contractor; NRS, and USFWS	2000 – 2001	Project considered unnecessary after further consideration and was not conducted. Restoration considered not feasible and would result in potential loss of training lands.
Control of woody species in selected wetlands; wet prairie restoration	NRS, USFWS, and range maintenance worker (ODF for prescribed burning)	2001 – 2006	Consulted with botanist; ODF conducted controlled burn of 11 acres in 2001.
Oak communities restoration plan	NRS and USFWS	2000 – 2001	Project considered not feasible and was not conducted.
Oak communities restoration (knapweed/nonnative plant control and tree and shrub removal)	NRS, range maintenance worker, ONHP, OSU, and USFWS (ODF for prescribed burning)	2000 – 2006	Consulted with botanist and conducted annual knapweed/other herbicide spraying. Additional work subject to development of a plan.
ESA listed plant monitoring and management	NRS, ONHP, and/or USFWS	2000 – 2006	Contractor surveyed plants in 2001. Survey planned for 2006.
Native plant seed collection and propagation	NRS, USFWS, and/or contractor	2001 – 2006	Project not conducted because it was not considered a priority.

Project	Planned accomplishment	Planned Schedule	Status
LCTA monitoring (plots, photo points, orthophoto - campwide)	NRS, ONHP, and/ or USFWS	2000 – 2006	Potential plots and photo points identified. Monitoring conducted in 2000 and 2001, with limited changes observed. LCTA (now RTLA) monitoring not continued due to absence of ground-disturbing training activities or major environmental enhancement efforts.
Red-legged frog, pileated woodpecker, Northern spotted owl, songbird, and Fender's blue surveys	USFWS, ONHP, and/or OSU	2001 – 2002 and 2004 – 2005	Survey for presence of Pileated woodpeckers, Northern spotted owls, and other sensitive bird species completed in 2002. Survey for presence of Fender's blue butterflies completed in 2002
Wildlife tree identification (evergreen forest)	NRS, ONHP, and/or USFWS	2001 – 2002	Contractor completed in 2002.
Signs or stakes for wildlife trees, orchard, concealment area	NRS and range maintenance worker	2001 – 2002	Project not considered necessary and was not conducted. Controls implemented through installation SOP.
Installation of nest boxes	NRS and range maintenance worker	2001 - 2002 and 2004 – 2005	Nest boxes installed in 2001; only two remain due to lack of maintenance.
Nonnative fauna control (campwide)	NRS, ONHP, and/or USFWS	2001 – 2005	Project not considered necessary or feasible and was not conducted.
Undesired plant survey/removal (campwide; includes knapweed)	Contractors	2001 – 2005	Botanist was consulted and contract spraying has been conducted annually.
Ecological restoration monitoring	ONHP	2001 – 2006	Project not conducted because restoration work was not conducted.
Howell's montia grading	Range maintenance worker	2002 – 2003	Project not conducted due to lack of equipment and personnel.
Orthophotography and/or videography	Contractors	2003 – 2004	Completed in 2004.
Survey of Kincaid's lupine, Nelson's checkermallow, and Meadow checkermallow	Contractor	2006	Surveys conducted in Spring 2006; report received April 2007.

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SECTION 7

LIST OF INRMP PREPARERS AND REVIEWERS

Individuals from the ORARNG, Camp Adair/Regional Training Institute, OMD Environmental Branch, the Oregon Army National Guard Operations Directorate, and contractor personnel who were involved in the preparation and review of the INRMP are listed below.

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APPENDIX A
COORDINATION PROCESS, MAILING LIST AND
LETTERS OF RESPONSE

APPENDIX A
COORDINATION PROCESS AND MAILING LIST
AND
LETTERS OF RESPONSE

Mr. Bill Fujii
Natural Resources Specialist III
Oregon Water Resources Department
725 Summer Street NE
Salem, OR 97301

Mr. Kemper McMaster
State Supervisor
U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Avenue
Portland, OR 97266

Ms. Nancy Gilbert
Field Supervisor
U.S. Fish and Wildlife Service
Bend Field Office
20310 Empire Ave., Suite A-100
Bend, Oregon 97701

Mr. Tim Butler
Weed Specialist
Oregon Department of Agriculture
635 Capitol Street NE

Mr. Steve Gisler
Oregon Department of Agriculture
635 Capitol Street NE
Salem, OR 97301-2532

Mr. James Hamrick
Deputy State Historic Preservation Officer
Oregon Parks and Recreation Department
State Historic Preservation Office
725 Summer Street NE, Suite C
Salem, OR 97301

Ms. Kathy Schutt
Planning Manager
Oregon Parks and Recreation Department
725 Summer Street NE, Suite C
Salem, OR 97301

Mr. Will High
Oregon Department of Fish and Wildlife
3406 Cherry Ave. NE
Salem, OR 97303-3406

Ms. Donna Schmitz
Benton Soil and Water Conservation District
305 SW C Avenue, Suite 2
Corvallis, OR 97333

Oregon State University
Department of Botany and Plant Pathology
Corvallis, OR 97331-4501

Mr. Steve Elefant
Oregon Department of Forestry
2600 State Street
Salem, OR 97310

Chairwoman Cheryle Kennedy
Confederated Tribes of Grande Ronde
9615 Grand Ronde Road
Grand Ronde, OR 97347

Mr. Cliff Adams (CF:)
General Manager
Confederated Tribes of Grande Ronde
9615 Grand Ronde Road
Grand Ronde, OR 97347

Ms. June Olson (CF:)
Cultural Resource Manager
Confederated Tribes of Grande Ronde
9615 Grand Ronde Road
Grand Ronde, OR 97347

Chairwoman Delores Pigsley
Confederated Tribes of Siletz
PO Box 549
Siletz, OR 97380

Mr. Mike Kennedy (CF)
Natural Resource Manager
Confederated Tribes of Siletz
PO Box 549
Siletz, OR 97380

Mr. Robert Kentta (CF)
Cultural Specialist
Confederated Tribes of Siletz
PO Box 549
Siletz, OR 97380

Mr. Steve Purchase
Assistant Director, Field Operations
Oregon Department of State Lands
775 Summer St. NE Suite 100
Salem, OR 97301-1279

Mr. John Lilly
Assistant Director, Policy & Planning
Oregon Department of State Lands
775 Summer St. NE Suite 100
Salem, OR 97301-1279

U.S. Army Corps of Engineers
PO Box 2946
Portland, OR 97208-2946

Mr. Steve Campbell
Natural Resources Conservation Service
Redmond Service Center
(Deschutes & Crook Counties)
625 SE Salmon Ave, Building A
Redmond, OR 97756-8695



OREGON MILITARY DEPARTMENT
JOINT FORCE HEADQUARTERS, OREGON NATIONAL GUARD
INSTALLATIONS DIVISION
1776 MILITIA WAY
P.O. BOX 14350
SALEM, OREGON 97309-5047

December 29, 2004

Mr. Bill Fujii
Natural Resources Specialist III
Oregon Water Resources Department
725 Summer Street NE
Salem, OR 97301

COPY


Dear Mr. Fujii:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendment provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

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Should you have any questions or would like to provide your agency's input in the planning process prior to sending formal comments to the consultant by February 15, 2005, please contact Mr. Gerald Elliott, ORARNG Environmental Program Manager, at (503) 584-3868. The consultant Project Manager is Ms. Gloria Hagge who can be reached at (830) 980-1830. Please forward all information to: EES, Inc., 2631 Bulverde Road, Suite 104, Bulverde, TX 78163. You may also fax information to (830) 980-1831 or email ghagge@envexpress.com.

Sincerely,


GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager

Enclosure



OREGON MILITARY DEPARTMENT
JOINT FORCE HEADQUARTERS, OREGON NATIONAL GUARD
INSTALLATIONS DIVISION
1776 MILITIA WAY
P.O. BOX 14350
SALEM, OREGON 97309-5047

December 29, 2004

Mr. Kemper McMaster
State Supervisor
U.S. Fish and Wildlife Service
Oregon Fish and Wildlife Office
2600 SE 98th Avenue
Portland, OR 97266

COPY

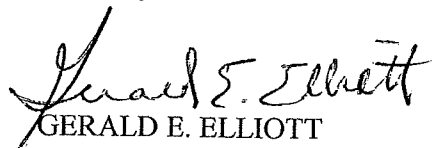
Dear Mr. McMaster:

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Sincerely,



GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager

Enclosure



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SALEM, OREGON 97309-5047

December 29, 2004

COPY

Ms. Nancy Gilbert
Field Supervisor
U.S. Fish and Wildlife Service
Bend Field Office
20310 Empire Ave., Suite A-100
Bend, Oregon 97701

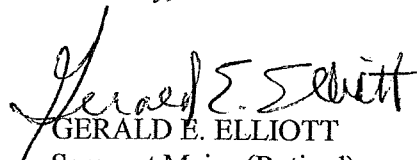
Dear Ms. Gilbert:

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Sincerely,


GERALD E. ELLIOTT

Sergeant Major (Retired)
Environmental Program Manager

Enclosure



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SALEM, OREGON 97309-5047

December 29, 2004

Mr. Tim Butler
Weed Specialist
Oregon Department of Agriculture
635 Capitol Street NE
Salem, OR 97301-2532

COPY

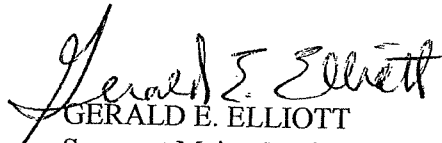
Dear Mr. Bulter:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

We request your assistance by providing us with any information on noxious/invasive vegetation species and any other pertinent information at Camp Adair, Oregon, and its immediate surroundings. A map showing the Camp Adair Military Training Site, which is located 10 miles north of Corvallis, Oregon at 39432 Rifle Range Road, Corvallis, Oregon is provided for your use. Also, the existing 2001–2006 INRMP can be viewed at the OMD website: <http://www.mil.state.or.us/AGI-E/>.

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GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager

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SALEM, OREGON 97309-5047

December 29, 2004

Mr. Steve Gisler
Oregon Department of Agriculture
635 Capitol Street NE
Salem, OR 97301-2532

COPY

Dear Mr. Gisler:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

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SALEM, OREGON 97309-5047

December 29, 2004

Mr. James Hamrick
Deputy State Historic Preservation Officer
Oregon Parks and Recreation Department
State Historic Preservation Office
725 Summer Street NE, Suite C
Salem, OR 97301

COPY

Dear Mr. Hamrick:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

Camp Adair is within Benton County and near Adair Village. This letter is a request for consultation regarding the proposed INRMP update in accordance with 36 CFR 800. A map showing the Camp Adair Military Training Site, which is located 10 miles north of Corvallis, Oregon at 39432 Rifle Range Road, Corvallis, Oregon is provided for your use. Also, the existing 2001–2006 INRMP can be viewed at the OMD website:
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GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager

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P.O. BOX 14350
SALEM, OREGON 97309-5047

December 29, 2004

Ms. Kathy Schutt
Planning Manager
Oregon Parks and Recreation Department
725 Summer Street NE, Suite C
Salem, OR 97301

COPY

Dear Ms. Schutt:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

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Sergeant Major (Retired)
Environmental Program Manager

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P.O. BOX 14350
SALEM, OREGON 97309-5047

December 29, 2004

COPY

Mr. Will High
Oregon Department of Fish and Wildlife
3406 Cherry Avenue NE
Salem, OR 97303

Dear Mr. High:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

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Environmental Program Manager

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SALEM, OREGON 97309-5047

December 29, 2004

Ms. Donna Schmitz
Benton Soil and Water Conservation District
305 SW C Avenue, Suite 2
Corvallis, OR 97333

COPY

Dear Ms. Schmitz:

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Sincerely,

GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager

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SALEM, OREGON 97309-5047

December 29, 2004

Mr. Scott Sundberg
Oregon State University
Department of Botany and Plant Pathology
Corvallis, OR 97331-4501

COPY


Dear Mr. Sundberg:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

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Environmental Program Manager

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SALEM, OREGON 97309-5047

December 29, 2004

COPY

Mr. Steve Elefant
Oregon Department of Forestry
Western Oregon District
24533 Alsea Highway
Philomath, OR 97370

Dear Mr. Elefant:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

We request your assistance by providing us with any information on forestry resources on Camp Adair, Oregon, and its immediate surroundings. A map showing the Camp Adair Military Training Site, which is located 10 miles north of Corvallis, Oregon at 39432 Rifle Range Road, Corvallis, Oregon is provided for your use. Also, the existing 2001–2006 INRMP can be viewed at the Oregon Military Department's website: <http://www.mil.state.or.us/AGI-E/>.

Should you have any questions or would like to provide your agency's input in the planning process prior to sending formal comments to the consultant by February 15, 2005, please contact Mr. Gerald Elliott, ORARNG Environmental Program Manager, at (503) 584-3868. The consultant Project Manager is Ms. Gloria Hagge who can be reached at (830) 980-1830. Please forward all information to: EES, Inc., 2631 Bulverde Road, Suite 104, Bulverde, TX 78163. You may also fax information to (830) 980-1831 or email ghagge@envexpress.com.

Sincerely,

GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager

Enclosure



OREGON MILITARY DEPARTMENT
JOINT FORCE HEADQUARTERS, OREGON NATIONAL GUARD
INSTALLATIONS DIVISION
1776 MILITIA WAY
P.O. BOX 14350
SALEM, OREGON 97309-5047

December 29, 2004

Mr. Steve Purchase
Assistant Director, Field Operations
Oregon Department of State Lands
775 Summer St. NE Suite 100
Salem, OR 97301-1279

COPY

Dear Mr. Purchase:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

We request your assistance by providing us with any information on land use and related pertinent information at Camp Adair, Oregon, and its immediate surroundings. A map showing the Camp Adair Military Training Site, which is located 10 miles north of Corvallis, Oregon at 39432 Rifle Range Road, Corvallis, Oregon is provided for your use. Also, the existing 2001–2006 INRMP can be viewed at the OMD website: <http://www.mil.state.or.us/AGI-E/>.

Should you have any questions or would like to provide your agency's input in the planning process prior to sending formal comments to the consultant by February, 15, 2005, please contact Mr. Gerald Elliott, ORARNG Environmental Program Manager, at (503) 584-3868. The consultant Project Manager is Ms. Gloria Hagge who can be reached at (830) 980-1830. Please forward all information to: EES, Inc., 2631 Bulverde Road, Suite 104, Bulverde, TX 78163. You may also fax information to (830) 980-1831 or email ghagge@envexpress.com.

Sincerely,

GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager

Enclosure



OREGON MILITARY DEPARTMENT
JOINT FORCE HEADQUARTERS, OREGON NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
1776 MILITIA WAY
P.O. BOX 14350
SALEM, OREGON 97309-5047

COPY

December 29, 2004

Chairwoman Cheryle Kennedy
Confederated Tribes of Grand Ronde
9615 Grand Ronde Road
Grand Ronde, OR 97347

Dear Chairwoman Kennedy:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau (NGB) policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your tribe for input. The updating of the INRMP also includes the preparation of an Environmental Assessment (EA) to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

The NGB and OMD believe that close coordination and consultation with affected tribes during the updating of the INRMP and EA will provide a meaningful and collaborative effort. We would like to begin the consultation process with your tribal leadership and staff to ensure your concerns regarding significant natural resources, cultural resources, and properties of traditional, customary, religious or cultural importance are addressed. Your input will be invaluable in our planning process and environmental documentation, and conducted pursuant to Department of Defense “American Indian and Alaska Native Policy” and other federal legislation.

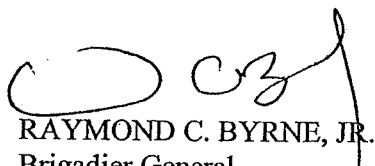
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<http://www.mil.state.or.us/AGI-E/>.

Should you have any questions or would like to provide input in the planning process prior to sending formal comments to the consultant by February 15, 2005, please contact Mr. Gerald Elliott, ORARNG Environmental Program Manager, at (503) 584-3868. The consultant Project Manager is Ms. Gloria Hagge who can be reached at (830) 980-1830.

Please forward any information to Ms. Hagge at:

EES, Inc.
2631 Bulverde Road, Suite 104
Bulverde, TX 78163
FAX: (830) 980-1831
Email: ghagge@envexpress.com

Sincerely,



RAYMOND C. BYRNE, JR.
Brigadier General
Acting Adjutant General

Enclosure

CF: (w/encl)
Mr. Cliff Adams, General Manager
Ms. June Olson, Cultural Resource Manager



OREGON MILITARY DEPARTMENT
JOINT FORCE HEADQUARTERS, OREGON NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
1776 MILITIA WAY
P.O. BOX 14350
SALEM, OREGON 97309-5047

December 29, 2004

Chairwoman Delores Pigsley
Confederated Tribes of Siletz
PO Box 549
Siletz, OR 97380

COPY

Dear Chairwoman Pigsley:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau (NGB) policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your tribe for input. The updating of the INRMP also includes the preparation of an Environmental Assessment (EA) to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

The NGB and OMD believe that close coordination and consultation with affected tribes during the updating of the INRMP and EA will provide a meaningful and collaborative effort. We would like to begin the consultation process with your tribal leadership and staff to ensure your concerns regarding significant natural resources, cultural resources, and properties of traditional, customary, religious or cultural importance are addressed. Your input will be invaluable in our planning process and environmental documentation, and conducted pursuant to Department of Defense “American Indian and Alaska Native Policy” and other federal legislation.

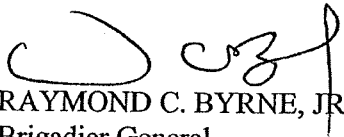
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<http://www.mil.state.or.us/AGI-E/>.

Should you have any questions or would like to provide input in the planning process prior to sending formal comments to the consultant by February 15, 2005, please contact Mr. Gerald Elliott, ORARNG Environmental Program Manager, at (503) 584-3868. The consultant Project Manager is Ms. Gloria Hagge who can be reached at (830) 980-1830.

Please forward any information to Ms. Hagge at:

EES, Inc.
2631 Bulverde Road, Suite 104
Bulverde, TX 78163
FAX: (830) 980-1831
Email: ghagge@envexpress.com

Sincerely,


RAYMOND C. BYRNE, JR.
Brigadier General
Acting Adjutant General

Enclosure

CF: (w/encl)
Mr. Mike Kennedy, Natural Resource Manager
Mr. Robert Kentta, Cultural Specialist



OREGON MILITARY DEPARTMENT

JOINT FORCE HEADQUARTERS, OREGON NATIONAL GUARD
INSTALLATIONS DIVISION
1776 MILITIA WAY
P.O. BOX 14350
SALEM, OREGON 97309-5047

December 29, 2004

Mr. John Lilly
Assistant Director, Policy & Planning
Oregon Department of State Lands
775 Summer St. NE Suite 100
Salem, OR 97301-1279

COPY

Dear Mr. Lilly:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

We request your assistance by providing us with any information on land use and related pertinent information at Camp Adair, Oregon, and its immediate surroundings. A map showing the Camp Adair Military Training Site, which is located 10 miles north of Corvallis, Oregon at 39432 Rifle Range Road, Corvallis, Oregon is provided for your use. Also, the existing 2001–2006 INRMP can be viewed at the OMD website: <http://www.mil.state.or.us/AGI-E/>.

Should you have any questions or would like to provide your agency's input in the planning process prior to sending formal comments to the consultant by February 15, 2005, please contact Mr. Gerald Elliott, ORARNG Environmental Program Manager, at (503) 584-3868. The consultant Project Manager is Ms. Gloria Hagge who can be reached at (830) 980-1830. Please forward all information to: EES, Inc., 2631 Bulverde Road, Suite 104, Bulverde, TX 78163. You may also fax information to (830) 980-1831 or email ghagge@envexpress.com.

Sincerely,

GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager

Enclosure



OREGON MILITARY DEPARTMENT
JOINT FORCE HEADQUARTERS, OREGON NATIONAL GUARD
INSTALLATIONS DIVISION
1776 MILITIA WAY
P.O. BOX 14350
SALEM, OREGON 97309-5047

December 29, 2004

Mr. Steve Campbell
Natural Resources Conservation Service
Redmond Service Center (Deschutes & Crook Counties)
625 SE Salmon Ave, Building A
Redmond, OR 97756-8695

COPY


Dear Mr. Campbell:

The Oregon Military Department (OMD), administrative head of the Oregon Army National Guard, is in the process of updating its existing 2001–2006 Integrated Natural Resources Management Plan (INRMP) for Camp Adair. Revisions are required by the Sikes Act Improvement Act and current National Guard Bureau policy within five years of plan adoption. The coordination requirement of the Sikes Act Improvement Act Amendments provides an opportunity for cooperation with your agency for input. The updating of the INRMP also includes the preparation of an Environmental Assessment to identify and evaluate all potential environmental impacts that may result from the proposed implementation of the INRMP.

We request your assistance by providing us with any information on soils and plants and related information at Camp Adair, Oregon, and its immediate surroundings. A map showing the Camp Adair Military Training Site, which is located 10 miles north of Corvallis, Oregon at 39432 Rifle Range Road, Corvallis, Oregon is provided for your use. Also, the existing 2001–2006 INRMP can be viewed at the OMD website: <http://www.mil.state.or.us/AGI-E/>.

Should you have any questions or would like to provide your agency's input in the planning process prior to sending formal comments to the consultant by February 15, 2005, please contact Mr. Gerald Elliott, ORARNG Environmental Program Manager, at (503) 584-3868. The consultant Project Manager is Ms. Gloria Hage who can be reached at (830) 980-1830. Please forward all information to: EES, Inc., 2631 Bulverde Road, Suite 104, Bulverde, TX 78163. You may also fax information to (830) 980-1831 or email ghagge@envexpress.com.

Sincerely,


GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager

Enclosure

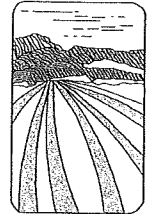


Oregon

Theodore R. Kulongoski, Governor

Department of Agriculture

635 Capitol Street NE
Salem, OR 97301-2532



January 13, 2005

Mr. Gerald E. Elliott
Oregon Military Department
Joint Forces Headquarters, Oregon National Guard
Installations Division
P.O. Box 14350
Salem, Oregon 97309-5047

RECEIVED AGI
JAN 19 10 4 36 AM '05

Dear Sergeant Major Elliott:

This letter is in reply to your request for assistance with the revision of the 2001-2006 Integrated Natural Resources management Plan (INRMP) for Camp Adair. The Oregon Department of Agriculture's Native Plant Conservation Program works to conserve the state's native plants. While we do some work with noxious weeds in conjunction with this mission, that is not our program's main focus. The best source of information about noxious weeds/invasive vegetation species is probably the regional Invasive Vegetation Management Coordinator for the area in which Camp Adair is located, Tom Forney (503-986-4621, tforney@oda.state.or.us). You may also find Oregon Department of Agriculture noxious weed information on the department's website (http://egov.oregon.gov/ODA/PLANT/weed_index.shtml).

As the state agency responsible for issuing permits for any disturbance of endangered or threatened plants on state lands, we are very interested in being kept informed about the status of the Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*) and Nelson's checkermallow (*Sidalcea nelsoniana*) populations at Adair Camp, and appreciate being included in the revision process. The current management plan seems to adequately provide for the protection of these populations. If the revised plan is going to include any changes which might impact the populations of either of these species, our agency would like to review and provide input on those changes.

Also, in looking over our files, I noticed that we have a copy of the 2001 Monitoring/Management Report, prepared by Greg Mitchell, but we don't have a copy of the 2004 report (the INRMP states that the populations will be monitored every three years). Would it be possible to receive a copy of the more recent monitoring report for our files?

Finally, I wanted to let you know that Steve Gisler is no longer working with the Oregon Department of Agriculture. If you have any further questions, please feel free to contact either myself (541-737-4333) or Dr. Robert Meinke (541-737-2317). Again, thank you for including us in your revision process.

Sincerely,

A handwritten signature in black ink, appearing to read "Rebecca Currin". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Rebecca Currin
Native Plant Conservation Program
Oregon Department of Agriculture
Oregon State University
Cordley 2082
Corvallis, Oregon 97330
currinr@science.oregonstate.edu



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266

Phone: (503)231-6179 FAX: (503)231-6195

Reply To: 8330.02352(05)
File Name: Camp_Adair_INRMP.doc
TS Number: 05-871

FEB 14 2005

Gerald E. Elliott
Sergeant Major (Retired)
Environmental Program Manager
Oregon Military Department
P.O. Box 14350
Salem, Oregon 97309

Subject: Botanical review of Camp Adair 2001-2006 Integrated Natural Resources Management Plan

To Mr. Gerald E. Elliott:

We have reviewed the 2001-2006 Integrated Natural Resources Management Plan (INRMP) as requested and provide the following comments. In order to thoroughly update the INRMP, we recommend a revision to the appendices by including the updated threatened and endangered species list recently sent to Oregon Military Department by the Service. None of the Candidate species on the Service's list occurs at Camp Adair. However, of the five threatened or endangered vascular plant species identified by the Service as potentially occurring at Camp Adair, only the *Sidalcea nelsoniana* (Nelson's checkermallow) and the *Lupinus sulphureus* var. *kincaidii* (Kincaid's lupine) have been located on site. The Service's concurrence letter dated May, 2001, indicated that these two species were adequately addressed in the INRMP. Because the INRMP's protective measures proposed at that time have not been revised, the Service continues to support their implementation.

As described in the INRMP (page 34), a census of the Nelson's checkermallow and the Kincaid's lupine was to occur every three years starting in 2001. We request a copy of the results from the proposed surveys (2001 and 2004) for our records and future consideration of management options. The results of regular monitoring are expected to help determine the effects of infantry training in the vicinity of the plants. It would be helpful to know if the protective measures identified for these species were implemented and effective.

As you likely know, Kincaid's lupine is the primary host plant for the endangered Fender's blue butterfly (*Icaricia icarioides fenderi*). Since Camp Adair supports a population of Kincaid's lupine, we request you consider the possibility of reintroducing the butterfly to your property in

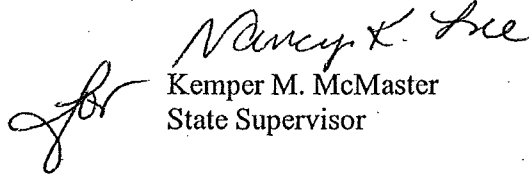
Printed on 100 percent chlorine free/60 percent post-consumer content paper.



the future. The Service is currently developing a final recovery plan for the federally listed Willamette Valley prairie species (including the Fender's blue butterfly). One of the options in the recovery plan will likely be the reintroduction of the Fender's blue butterfly into historical sites from which it was extirpated.

If you have any questions, please contact Mikki Collins or Jeff Dillon (503) 231-6195.

Sincerely,



Kemper M. McMaster
State Supervisor



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266
Phone: (503) 231-6179 FAX: (503) 231-6195

Reply To: 8330.SP01(05)
File Name: Sp0177.wpd
TS Number: 05-0871

FEB 07 2005

Gerald E. Elliot
Oregon Military Department
P.O. Box 14350
Salem, Oregon 97309-5047

Subject: 2001-2006 Integrated Natural Resource Management Plan for Camp Adair Project
USFWS Reference # 1-7-05-SP-0177

Dear Mr. Elliot:

This is in response to your letter, dated December 29, 2004, requesting information on listed and proposed endangered and threatened species that may be present within the area of the 2001-2006 Integrated Natural Resource Management Plan for Camp Adair Project in Benton County. The Fish and Wildlife Service (Service) received your correspondence on January 21, 2005.

We have attached a list (Enclosure A) of threatened and endangered species that may occur within the area of the 2001-2006 Integrated Natural Resource Management Plan for Camp Adair Project. The list fulfills the requirement of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). U. S. Army (ARMY) requirements under the Act are outlined in Enclosure B.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems on which they depend may be conserved. Under section 7(a)(1) and 7(a)(2) of the Act and pursuant to 50 CFR 402 *et seq.*, ARMY is required to utilize their authorities to carry out programs which further species conservation and to determine whether projects may affect threatened and endangered species, and/or critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) which are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (NEPA) (42 U.S.C. 4332 (2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to the Biological Assessment be prepared to determine whether they may affect listed and proposed species. Recommended contents of a Biological Assessment are described in Enclosure B, as well as 50 CFR 402.12.

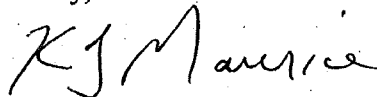
If ARMY determines, based on the Biological Assessment or evaluation, that threatened and endangered species and/or critical habitat may be affected by the project, ARMY is required to consult with the Service following the requirements of 50 CFR 402 which implement the Act.

Enclosure A includes a list of candidate species under review for listing. The list reflects changes to the candidate species list published May 4, 2004, in the Federal Register (Vol. 69, No. 86, 24876) and the addition of "species of concern." Candidate species have no protection under the Act but are included for consideration as it is possible candidates could be listed prior to project completion. Species of concern are those taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

If a proposed project may affect only candidate species or species of concern, ARMY is not required to perform a Biological Assessment or evaluation or consult with the Service. However, the Service recommends addressing potential impacts to these species in order to prevent future conflicts. Therefore, if early evaluation of the project indicates that it is likely to adversely impact a candidate species or species of concern, ARMY may wish to request technical assistance from this office.

Your interest in endangered species is appreciated. The Service encourages ARMY to investigate opportunities for incorporating conservation of threatened and endangered species into project planning processes as a means of complying with the Act. If you have questions regarding your responsibilities under the Act, please contact Kevin Maurice or Corissa Larvik at (503) 231-6179. All correspondence should include the above referenced file number. For questions regarding salmon and steelhead trout, please contact NOAA Fisheries Service, 525 NE Oregon Street, Suite 500, Portland, Oregon 97232, (503) 230-5400.

Sincerely,



Kemper M. McMaster
State Supervisor

Enclosures
1-7-05-SP-0177

cc electronic:
Nongame, Oregon Department of Fish and Wildlife, Salem, Oregon.

FEDERALLY LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES,
CANDIDATE SPECIES AND SPECIES OF CONCERN THAT MAY OCCUR WITHIN THE
AREA OF THE 2001-2006 INTEGRATED NATURAL RESOURCE MANAGEMENT PLAN
FOR CAMP ADAIR PROJECT
1-7-05-SP-0177

LISTED SPECIES^{11/}Birds

Bald eagle ^{4/}	<i>Haliaeetus leucocephalus</i>	T
Northern spotted owl ^{5/}	<i>Strix occidentalis caurina</i>	CH T

Fish

Steelhead (Upper Willamette River) ^{6/}	<i>Oncorhynchus mykiss</i>	**T
--	----------------------------	-----

Invertebrates

Fender's blue butterfly ^{9/}	<i>Icaricia icarioides fenderi</i>	E
---------------------------------------	------------------------------------	---

Plants

Golden Indian paintbrush ^{10/}	<i>Castilleja levisecta</i>	T
Willamette daisy ^{9/}	<i>Erigeron decumbens</i> var. <i>decumbens</i>	E
Bradshaw's lomatium	<i>Lomatium bradshawii</i>	E
Kincaid's lupine ^{9/}	<i>Lupinus sulphureus</i> var. <i>kincaidii</i>	T
Nelson's checkermallow	<i>Sidalcea nelsoniana</i>	T

PROPOSED SPECIES

None

CANDIDATE SPECIES^{11/}Birds

Yellow-billed cuckoo ^{12/}	<i>Coccyzus americanus</i>
Streaked horned lark	<i>Eremophila alpestris strigata</i>

Invertebrates

Taylor's checkerspot	<i>Euphydryas editha taylori</i>
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SPECIES OF CONCERNMammals

White-footed vole	<i>Arborimus albipes</i>
Red tree vole	<i>Arborimus longicaudus</i>
Pacific western big-eared bat	<i>Corynorhinus townsendii townsendii</i>
Silver-haired bat	<i>Lasionycteris noctivagans</i>
Long-eared myotis (bat)	<i>Myotis evotis</i>
Fringed myotis (bat)	<i>Myotis thysanodes</i>
Long-legged myotis (bat)	<i>Myotis volans</i>
Yuma myotis (bat)	<i>Myotis yumanensis</i>
Camas pocket gopher	<i>Thomomys bulbivorus</i>

Birds

Band-tailed pigeon
Olive-sided flycatcher
Yellow-breasted chat
Acorn woodpecker
Mountain quail
Oregon vesper sparrow
Purple martin

Columba fasciata
Contopus cooperi borealis
Icteria virens
Melanerpes formicivorus
Oreortyx pictus
Pooecetes gramineus affinis
Progne subis

Amphibians and Reptiles

Northwestern pond turtle
Northern red-legged frog
Southern torrent salamander

Emys marmorata marmorata
Rana aurora aurora
Rhyacotriton variegatus

Fish

Pacific lamprey
Coastal cutthroat trout (Upper Willamette)

Lampetra tridentata
Oncorhynchus clarki clarki

Invertebrates

American acetropis grass bug
Siskiyou chloealtis grasshopper
Oregon giant earthworm

Acetropis americana
Chloealtis aspasma
Megascolides macelfreshi

Plants

White top aster
Willamette Valley larkspur
Peacock larkspur
Shaggy horkelia
Thin-leaved peavine

Aster curtus
Delphinium oregonum
Delphinium pavonaceum
Horkelia congesta ssp. congesta
Lathyrus holochlorus

(E) - Listed Endangered

(T) - Listed Threatened

(CH) - Critical Habitat has been designated for this species

(PE) - Proposed Endangered

(PT) - Proposed Threatened

(PCH) - Critical Habitat has been proposed for this species

(S) - Suspected

(D) - Documented

Species of Concern - Taxa whose conservation status is of concern to the Service (many previously known as Category 2 candidates), but for which further information is still needed.

(CF) - Candidate: National Marine Fisheries Service designation for any species being considered by the Secretary for listing for endangered or threatened species, but not yet the subject of a proposed rule.

** Consultation with National Marine Fisheries Service may be required.

^{1/} U. S. Department of Interior, Fish and Wildlife Service, October 31, 2000, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12

^{2/} Federal Register Vol. 57, No. 10, January 15, 1992, Final Rule-Critical Habitat for the Northern Spotted Owl

^{3/} Federal Register Vol. 64, No. 57, March 25, 1999, Final Rule - Middle Columbia and Upper Willamette River Steelhead

^{4/} Federal Register Vol. 65, No. 16, January 25, 2000, Final Rule-Erigeron decumbens var. decumbens, Lupinus sulphureus ssp. kincaidii and Fender's blue butterfly

^{10/} Federal Register Vol. 62, No. 112, June 11, 1997, Final Rule-Castilleja levisecta

^{11/} Federal Register Vol. 69, No. 86, May 4, 2004, Notice of Review - Candidate or Proposed Animals and Plants

^{12/} Federal Register Vol. 66, No. 143, July 25, 2001, 12-Month Finding for a Petition To List the Yellow-billed Cuckoo

^{13/} Federal Register Vol. 63, No. 53, March 19, 1998, Final Rule-West Coast Steelhead

ATTACHMENT B

FEDERAL AGENCIES RESPONSIBILITIES UNDER SECTION 7(a) and (c)
OF THE ENDANGERED SPECIES ACT

SECTION 7(a)-Consultation/Conference

Requires:

- 1) Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;
- 2) Consultation with FWS when a Federal action may affect a listed endangered or threatened species to insure that any action authorized, funded or carried out by a Federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of Critical Habitat. The process is initiated by the Federal agency after they have determined if their action may affect (adversely or beneficially) a listed species; and
- 3) Conference with FWS when a Federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed Critical Habitat.

SECTION 7(c)-Biological Assessment for Major Construction Projects¹

Requires Federal agencies or their designees to prepare a Biological Assessment (BA) for construction projects only. The purpose of the BA is to identify proposed and/or listed species which are/is likely to be affected by a construction project. The process is initiated by a Federal agency in requesting a list of proposed and listed threatened and endangered species (list attached). The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the species list, the accuracy of the species list should be informally verified with our Service. No irreversible commitment of resources is to be made during the BA process which would foreclose reasonable and prudent alternatives to protect endangered species. Planning, design, and administrative actions may be taken; however, no construction may begin.

To complete the BA, your agency or its designee should: (1) conduct an on-site inspection of the area to be affected by the proposal which may include a detailed survey of the area to determine if the species is present and whether suitable habitat exists for either expanding the existing population or for potential reintroduction of the species; (2) review literature and scientific data to determine species distribution, habitat needs, and other biological requirements; (3) interview experts including those within FWS, National Marine Fisheries Service, State conservation departments, universities, and others who may have data not yet published in scientific literature; (4) review and analyze the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; (5) analyze alternative actions that may provide conservation measures and (6) prepare a report documenting the results, including a discussion of study methods used, any problems encountered, and other relevant information. The BA should conclude whether or not a listed species will be affected. Upon completion, the report should be forwarded to our Portland Office.

¹A construction project (or other undertaking having similar physical impacts) which is a major Federal action significantly affecting the quality of the human environment as referred to in NEPA (42 U.S.C. 4332. (2)c). On projects other than construction, it is suggested that a biological evaluation similar to the biological assessment be undertaken to conserve species influenced by the Endangered Species Act.



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SALEM, OREGON 97309-5047

December 8, 2005

Mr. Joseph Duncan
Chief of Real Estate
Real Estate Division
Seattle District, U.S. Army Corps of Engineers
P.O. 3755
Seattle, Washington 98124-3755

Dear Mr. Duncan:

The Oregon Military Department has begun to revise the Integrated Natural Resources Management Plan (INRMP) for Camp Adair, Oregon, to cover the years 2006 through 2010. We also are preparing an environmental assessment (EA) to evaluate the potential environmental impacts of the proposed INRMP revision. Because the U.S. Army Corps of Engineers (USACE) owns Camp Adair, I am writing to invite the USACE to participate in the preparation of the INRMP and the associated EA, to the degree the USACE desires, including serving as a cooperating or collaborating agency for the EA. During preparation of the initial INRMP, which was adopted in 2001, your agency did not choose to participate with us. However, if things have changed, we are more than willing to discuss your interests in managing this 527-acre parcel of land.

We also would appreciate learning of any natural resource management concerns or priorities the USACE has concerning Camp Adair, so that we can consider them for inclusion in the INRMP. We plan to send you a copy of the draft INRMP and EA for USACE review and comment. We also plan to send you a copy of the final INRMP and EA when completed.

Please contact Jeff Mach, Natural Resources Specialist, at (503) 584-3493 or DSN 355-3493, if you or a member of your staff have any questions, would like further information, or would like to discuss any aspect of our natural resources management efforts at Camp Adair.

Sincerely,

GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager



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INSTALLATIONS DIVISION
1776 MILITIA WAY
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SALEM, OREGON 97309-5047

August 24, 2006

Don Steffeck
Region 1 Sikes Act Coordinator
U.S. Fish and Wildlife Service
911 NE 11 th Ave.
Portland, OR 97232

Dear Mr. Steffeck:

The Oregon Army National Guard (ORARNG) is in the process of revising its August 2001 *Integrated Natural Resources Management Plan* (INRMP) for the Camp Adair training site. This revision is being undertaken pursuant to the requirements of the Sikes Act and related guidance issued by the DoD and NGB, including the November 1, 2004, Assistant Under Secretary of Defense memorandum, entitled "Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning INRMP Reviews." This INRMP is required by Army Policy to reflect the mutual agreement of the U.S. Fish and Wildlife Service (USFWS) and the State fish and wildlife agency concerning conservation, protection and management of fish and wildlife resources.

We solicited input on the Camp Adair INRMP from the USFWS in December 2004. We now are distributing a draft revised INRMP for 2007 through 2011 and an environmental assessment for public and agency review. Enclosed with this letter is a copy of those documents.

Camp Adair is a 527-acre military training site, located in northern Benton County, owned by the U.S. Army Corps of Engineers (USACE), and managed under license from the USACE by the ORARNG. The use of a portion of the property also is licensed separately by the USACE to the Oregon Department of Public Safety Standards and Training (DPSST). The Camp contains a small cantonment area, two National Guard small-arms weapons training ranges, and a DPSST small-arms weapons training range. The remainder of the Camp is available for other training activities, as appropriate to the specific location, including maneuvers in vehicles or on foot. The cantonment area is the most intensively maintained. The primary natural resource management activities conducted on the Camp during the past five years have been to reduce populations of meadow knapweed and Reed canary grass, protect known populations of the federally listed Kincaid's lupine and Nelson's checkermallow, and protect the State candidate species meadow checkermallow and Howell's montia.

The purpose of the INRMP is to document the policies and desired future direction of ORARNG's natural resources management program at the training site. The INRMP



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August 24, 2006

Jon Germond
Acting Land Resources Program Manager
Oregon Department of Fish and Wildlife
3406 Cherry Ave. NE
Salem, OR 97303

Dear Mr. Germond:

The Oregon Army National Guard (ORARNG) is revising its August 2001 *Integrated Natural Resources Management Plan* (INRMP) for Camp Adair. This revision is being undertaken pursuant to the requirements of the Sikes Act and related guidance issued by the DoD and NGB, including the November 1, 2004, Assistant Under Secretary of Defense memorandum, entitled "Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning INRMP Reviews." This INRMP is required by Army Policy to reflect the mutual agreement of the U.S. Fish and Wildlife Service (USFWS) and the State fish and wildlife agency concerning conservation, protection and management of fish and wildlife resources.

We solicited input on the Camp Adair INRMP from the ODFW in December 2004. We now are distributing the enclosed draft revised INRMP for 2007 through 2011 together with its environmental assessment for agency review. We also have sent copies of the document to Mr. Charlie Bruce, ODFW Wildlife Division, and Ms. Nancy Taylor, ODFW South Willamette Watershed District Office, with a copy of this letter. We have sent a copy of the documents to you because it is Army Policy is to obtain concurrence for the final INRMP from the USFWS and the State fish and wildlife agency at the State office level.

Camp Adair is a 527-acre military training site, located in northern Benton County, owned by the U.S. Army Corps of Engineers (USACE), and managed under license from the USACE by the ORARNG. A portion of the Camp also is licensed separately for use by the Oregon Department of Public Safety Standards and Training (DPSST). The Camp contains a small cantonment area, two National Guard small-arms weapons training ranges, and a DPSST small-arms weapons training range. The remainder of the Camp is available for other training activities, as appropriate to the specific location, including maneuvers in vehicles or on foot. The cantonment area is partially developed and is the most intensively maintained. The primary natural resource management activities conducted on the Camp during the past five years have been to reduce



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August 25, 2006

Delores Pigsley
Chairman
Confederated Tribes of Siletz
P.O. Box 549
Siletz, OR 97380

Dear Chairman Pigsley:

The Oregon Army National Guard is in the process of revising its Integrated Natural Resources Management Plan for Camp Adair, in Benton County, for the years 2007 through 2011. This revision is being undertaken pursuant to the requirements of the Sikes Act and related guidance issued by the DoD and NGB, including the November 1, 2004, Assistant Under Secretary of Defense memorandum, entitled "Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning INRMP Reviews." We wrote the Tribe in December 2004 to initiate consultation on this project. We now are releasing a draft of the INRMP and a draft environmental assessment (EA) for this proposed action for a 30-day public review and comment period, beginning August 29 and ending September 29, 2006.

We believe close coordination and consultation with affected Tribes during our assessment of potential environmental effects from the proposed ranges is important, and your input on the draft INRMP and EA is valuable to us. We are providing copies of the document on compact disk (CD) to Mike Kennedy, Natural Resources Manager, and Robert Kentta, Cultural Resources Specialist, with a copy of this letter. We look forward to receiving comments from the Confederated Tribes of Siletz.

If you or tribal staff members have any questions regarding the draft INRMP or EA or need further information on Camp Adair, please contact Jeff Mach, Natural Resources Specialist, Oregon Military Department, Installations Division, Environmental Branch (Attn: Jeff Mach), P.O. Box 14350, Salem, OR 97309. You also may contact Mr. Mach by telephone: (503) 584-3493, fax: (503) 584-3584, or email: Jeff.Mach@us.army.mil.

Thank you for your interest and assistance in this important effort and in the continued cooperative relationship for identifying and resolving issues in the future.

Sincerely,

RAYMOND F. REES
Major General
The Adjutant General



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OFFICE OF THE ADJUTANT GENERAL
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August 25, 2006

Cheryle Kennedy
Chairwoman
The Confederated Tribes of the Grande Ronde Community of Oregon
9615 Grande Ronde Road
Grande Ronde, OR 97347

Dear Chairwoman Kennedy:

The Oregon Army National Guard is in the process of revising its Integrated Natural Resources Management Plan (INRMP) for Camp Adair, in Benton County, for the years 2007 through 2011. This revision is being undertaken pursuant to the requirements of the Sikes Act and related guidance issued by the DoD and NGB, including the November 1, 2004, Assistant Under Secretary of Defense memorandum, entitled "Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning INRMP Reviews." We wrote the Tribe in December 2004 to initiate consultation on this project. We now are releasing a draft of the INRMP and a draft environmental assessment (EA) for this proposed action for a 30-day public review and comment period, beginning August 29 and ending September 29, 2006.

We believe close coordination and consultation with affected Tribes during our assessment of potential environmental effects from the proposed ranges is important and your input on the draft INRMP and EA is valuable to us. We also are providing copies of the document on compact disk (CD) to the Mr. Cliff Adams, General Manager, and to Ms. June Olson, Cultural Resources Program Manager, with a copy of this letter. We look forward to receiving comments from The Confederated Tribes of the Grande Ronde Community of Oregon.

If you or tribal staff members have any questions regarding the draft INRMP or EA or need further information on Camp Adair, please contact Jeff Mach, Natural Resources Specialist, Oregon Military Department, Installations Division, Environmental Branch (Attn: Jeff Mach), P.O. Box 14350, Salem, OR 97309. You also may contact Mr. Mach by telephone: (503) 584-3493, fax: (503) 584-3584, or email: Jeff.Mach@us.army.mil.

Thank you for your interest and assistance in this important effort and in the continued cooperative relationship for identifying and resolving issues in the future.

Sincerely,

RAYMOND F. REES
Major General
The Adjutant General



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SALEM, OREGON 97309-5047


August 30, 2006

Dr Robert Meinke
Native Plant Conservation Program Leader
Oregon Department of Agriculture
635 Capitol Street NE
Salem, Oregon 97301-2532

Dear Dr. Meinke:

Attached for review and comment by your office is a copy of the Draft Revised Integrated Natural Resources Management Plan (INRMP) and Environmental Assessment (EA) for Camp Adair, Oregon. The proposed Plan would be effective from 2007 through 2011. If your office has comments on the draft INRMP or EA, please submit them, no later than September 29, 2006, to Jeff Mach, Natural Resources Specialist, at this address. You or you staff also may contact Mr. Mach at (503) 584-3493 or DSN 355-3493, if you have any questions, would like further information, or would like to discuss any aspect of our natural resources management efforts at Camp Adair.

Sincerely,


GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager



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SALEM, OREGON 97309-5047

August 30, 2006

Mr. Joseph Duncan
Chief of Real Estate
Real Estate Division
Seattle District, U.S. Army Corps of Engineers
P.O. 3755
Seattle, Washington 98124-3755

Dear Mr. Duncan:

Attached for review and comment by your office is a copy of the Draft Revised Integrated Natural Resources Management Plan (INRMP) and Environmental Assessment (EA) for Camp Adair, Oregon. The proposed Plan would be effective from 2007 through 2011. If your office has comments on the draft INRMP or EA, please submit them, no later than September 29, 2006, to Jeff Mach, Natural Resources Specialist, at this address. You or you staff also may contact Mr. Mach at (503) 584-3493 or DSN 355-3493, if you have any questions, would like further information, or would like to discuss any aspect of our natural resources management efforts at Camp Adair.

Sincerely,


GERALD E. ELLIOTT
Sergeant Major (Retired)
Environmental Program Manager

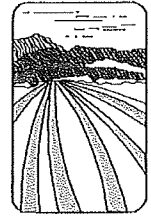


Oregon

Theodore R. Kulongoski, Governor

Department of Agriculture

635 Capitol Street NE
Salem, OR 97301-2532



September 22, 2006

Mr. Gerald E. Elliot
Oregon Military Department
Joint Forces Headquarters, Oregon National Guard
Installations Division
P.O. Box 14350
Salem, Oregon 97309-5047

Dear Sergeant Major Elliott:

This letter is in reply to your request for review of the 2001-2006 Integrated Natural Resources management Plan (INRMP) for Camp Adair, received on September 11, 2006. As the state agency responsible for consulting with state land managers before any land action involving potential or actual disturbance of endangered or threatened (T&E) plants on state lands occurs, the Oregon Department of Agriculture (ODA) is very interested in being kept informed about the status of the Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*) and Nelson's checkermallow (*Sidalcea nelsoniana*) populations at Adair Camp, and appreciates being included in the review process. Overall, ODA feels that the management of T&E species at Camp Adair has been proactive (especially with weed control efforts), and fairly effective. We do, however, have several comments relating to Section 5.10, titled Threatened and Endangered Species Management, which are listed below:

- 1. Page 5-20, Paragraph 3, starting with "Maintenance activities..."**
The current management plan for Nelson's checkermallow includes delaying mowing until plants are dormant (usually after August 1). The ODA agrees with this aspect of the current management plan. However, when staff visited Nelson's checkermallow sites in early July of 2006, we noticed that a strip roughly four meters in width had been recently mowed along the fence in the southeastern corner of the Camp Adair facility. This is precisely where many of the remaining Nelson's checkermallow plants occur, and we noticed several flowering plants had, in fact, been mowed. While the plan itself does not need revising regarding the time when mowing occurs, implementation of the plan might need to be reviewed with staff at Camp Adair.
- 2. Page 5-20, Paragraph 4, starting with "Suppression and control..." (last line):**
Because Camp Adair is considered "state lands", any change in treatments within Kincaid's lupine patches is required by Oregon Revised Statute 564 to be approved by ODA (as well as the currently listed USFWS). Whether or not a consultation has

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occurred with USFWS, a consultation needs to occur with ODA. (Often when both USFWS and ODA have jurisdiction, state land managers are able to involve both agencies in a single consultation process.) ODA requests that this sentence be amended to state "...approved by ODA and USFWS."

3. **Page 5-21, Paragraph 3, starting with "For the lupine area..." (first line):**
The ODA does not object to limited infantry training during Kincaid's lupine dormancy, as long as the training does not involve vehicular traffic in lupine areas. ODA requests that this sentence be amended to read "...limited non-vehicular infantry training..."
4. **Page 5-21, Paragraph 3, starting with "For the lupine area..." (second sentence):**
Any change involving training activities within the Kincaid's lupine habitat during the time period when the plant is non-dormant must involve a consultation with ODA. As it currently stands, ODA does not agree or sanction any activity which might involve trampling/disturbance of the Camp Adair lupine population during the time when the plant is non-dormant, regardless of the size of that population. If rare plant monitoring efforts (proposed to be conducted every five years) show that the size of the Camp Adair Kincaid's lupine population has changed drastically (either by increasing or decreasing), then ODA will be happy to work with the Oregon Military Department (OMD) to develop an adjusted management plan for the species. ODA requests that this paragraph be amended to reflect state law requirements.

Finally, ODA would like to request copies of the results of recent and future rare plant monitoring conducted at Camp Adair. This would greatly assist our program's efforts to track threatened and endangered plant populations on state lands and review the overall status of these species in Oregon.

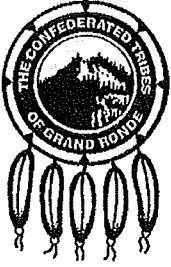
Once again, thank you for including ODA in the review process. If you have any further questions, please feel free to contact either myself (541-737-4333) or Dr. Robert Meinke (541-737-2317).

Sincerely,



Rebecca Currin
Native Plant Conservation Program
Oregon Department of Agriculture
Oregon State University
Cordley 2082
Corvallis, Oregon 97330
currinr@science.oregonstate.edu

cc. Jeff Mach, Natural Resource Specialist, OMD



The Confederated Tribes of the Grand Ronde Community of Oregon

Cultural Resources
Phone (503) 879-5211
1-800 422-0232
Fax (503) 879-2126

9615 Grand Ronde Rd
Grand Ronde, OR 97347

October 2, 2006

Jeff Mach
Natural Resource Specialist
Oregon Military Department
Installations Division
Environmental Branch
PO Box 14350
Salem, OR 97309

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STATE OF OREGON

Re: Integrated Natural Resources Management Plan (INRMP) for Camp Adair

Dear Mr. Mach,

The Confederated Tribes of Grand Ronde Community of Oregon Cultural Resources Department has received a copy of the Integrated Natural Resources Management Plan for Camp Adair.

The INRMP has indicated that surveys for cultural material and archaeological sites have been conducted previously. Ten sites were located eight of them with prehistoric contexts and two of them with joint historic/prehistoric components. The Tribe highly recommends that this area and the archaeological sites be avoided when implementing the INRMP. If ground disturbance activity is intended in these areas consultation with the Tribe should begin at the soonest possible time. In addition the Cultural Resources Department would appreciate any copies of the previous surveys and assessments of the cultural resources that are held by the Oregon Military Department.

The Confederated Tribes of Grand Ronde Community of Oregon Cultural Resources Department would like to thank you for the opportunity to contribute to the Integrated Natural Resource Management Plan for Camp Adair. If you have any question please contact me at 1-971-241-2696.

Sincerely,

Eirik Thorsgard
Cultural Protection Specialist
Confederated Tribes of Grand Ronde Community of Oregon

Mach, Jeffery L.

From: Nancy Taylor [Nancy.C.Taylor@coho2.dfw.state.or.us]
Sent: Friday, October 13, 2006 9:10 AM
To: Mach, Jeffery L.
Subject: RE: Draft Revised Camp Adair INRMP and EA
Follow Up Flag: Follow up
Flag Status: Red

Jeff,

The Oregon Department of Fish and Wildlife recently reviewed the 2006 INRMP for Camp Adair and has determined that this effort will result in no significant impacts to the wildlife of the state.

The invasive plant management actions are beneficial to the site.

The proposed placement of the three roads will avoid wetlands and prairie as requested in our 2001 comments. The road use may even serve to discourage the elk from using the property as refuge cover, which has become problematic on the site.

Thank you for the opportunity to comment on this project.

Nancy Taylor
District Wildlife Biologist
South Willamette Watershed District
7118 NE Vandenberg Ave
Corvallis, OR 97330
541 757-4186 ext 226

From: Mach, Jeffery L. [mailto:jeff.mach@us.army.mil]
Sent: Tuesday, October 10, 2006 4:35 PM
To: Jon Germond; Charles Bruce; Nancy Taylor
Subject: Draft Revised Camp Adair INRMP and EA

Dear Msrs. Germond and Bruce and Ms. Taylor,
Several weeks ago, I mailed copies of our draft revised INRMP and EA for Camp Adair, Oregon to Mr. Germond and Ms. Taylor for review and comment by the ODFW. I have not received any comments from the ODFW and wanted to check on whether we should expect to receive any before we proceed to complete the INRMP. Once completed, we will send ODFW a copy of the Final INRMP requesting ODFW concurrence at the state office level. I want to make sure that we identify any issues requiring resolution, prior to sending ODFW the Final INRMP for concurrence.

Thank you.

Jeff Mach
Natural Resources Specialist

Environmental Branch
Oregon Military Department
1776 Militia Way SE
P.O. Box 14350
Salem, OR 97309-5047

11/8/2006



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266
Phone: (503)231-6179 FAX: (503)231-6195



Reply To: 7574.0015
File Name: CampAdair2007-11_INRMP_EA
TS Number: 07-86

Gerald E. Elliott
Sergeant Major (Retired)
Environmental Program Manager
Oregon Military Department
P.O. Box 14350
Salem, Oregon 97309

NOV. 1 2006

Subject: Review of Camp Adair's 2007-2011 Integrated Natural Resources Management Plan and Draft Environmental Assessment, Benton County, Oregon (Tails Number: 13420-2007-FA-0012)

Dear Mr. Elliott:

The Fish and Wildlife Service (Service) has reviewed the draft 2007-2011 Integrated Natural Resources Management Plan (INRMP) and corresponding Environmental Assessment (EA) as requested. We appreciate the opportunity to review the documents and provide comments for your consideration. These comments have been prepared under the authority of and in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), the Sikes Act (16 U.S.C. 670a et seq.) and Sikes Act Improvement Amendments, and the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). If the Oregon Military Department (OMD) determines that a federally listed threatened or endangered species and/or critical habitat may be affected by the implementation of this INRMP, then OMD is required to consult with the Service following the requirements of 50 CFR 402 which implement the ESA.

The Service uses three criteria to determine if an INRMP provides adequate special management or protection. The criteria include whether the plan provides a conservation benefit to species, gives assurances that the management plan will be implemented, and provides assurances that conservation efforts will be effective. Based on our review we provide the following comments:

1. Species List:

a. INRMP appendices were updated since the Service requested they be changed to reflect which species currently occur on Camp Adair in a letter dated February 14, 2005. Only two federally threatened species, Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*) and Nelson's checker-mallow (*Sidalcea nelsoniana*), are currently found on Camp Adair property.

2. Kincaid's Lupine and Nelson's Checker-mallow Monitoring:

- a. Under the 2001-2006 INRMP, Nelson's checker-mallow and Kincaid's lupine populations were to be monitored every three years. We received and thank you for the results of the 2001 Nelson's checker-mallow and 2002 Kincaid's lupine censuses. The current INRMP draft referenced a 2006 Nelson's checker-mallow census but did not provide results of this effort. We request a copy of census results and suggest they be included in the final draft of the 2007-2011 INRMP. If there is also an updated Kincaid's lupine census, then we also request a copy, and suggest it also be incorporated into the final 2007-2011 INRMP.
- b. The proposed INRMP will only conduct thorough population monitoring on a 5-year schedule (as opposed to a 3-year schedule). There is a provision for annual visual monitoring, but the INRMP does not specify what this involves, and it assigns annual monitoring a low funding priority. If thorough population monitoring will occur less often than in the past, then we recommend that annual visual monitoring be given a higher funding priority, and that it be completed systematically (i.e. using photo points or other suitable alternative).
- c. Monitoring the effects of infantry training on Kincaid's lupine populations has been accomplished by counting damaged stems in a training area within two weeks of a training event. It is not clear whether this action is tied to goal 1.2.1 or 5.3.1 (Table 6.5.2 of INRMP). If the latter, then this action is given a low funding priority. We recommend that this be assigned a higher funding priority (along with annual visual monitoring) to more accurately determine effects of infantry training in the vicinity of plants and whether protective measures are implemented and effective.
- d. Figure 1.2.1-1 shows an overlap of infantry training and Nelson's checker-mallow populations. However, page 5-21 of the INRMP mentions that Nelson's checker-mallow is located in areas that are not accessible to soldiers on foot. We request that you clarify this potential discrepancy. If Nelson's checker-mallow plants are clearly located outside of a training area then we suggest changing Figure 1.2.1-1 to reflect this difference. However, if training could occur within Nelson's checker-mallow populations, then we request you develop a simple method to evaluate the potential effects of training on these populations. We suggest using a method appropriate for the level of potential disturbance. For example, if Nelson's checker-mallow populations are located in areas that are poorly suited for training, and OMD already has a standard operating procedure that briefs soldiers to avoid these areas when possible, then OMD might consider monitoring effects only in instances when training was known to overlap population areas (based on feedback from soldiers after training exercises).
- e. The INRMP described the difficulty of counting Nelson's checker-mallow plants. Where there are multiple stems within one square meter, we recommend you consider all stems within this area as one plant. We are in the process of developing a recovery plan for Willamette Valley prairie species, including Nelson's checker-mallow and Kincaid's lupine. The recovery team will likely develop population monitoring guidelines for both species. We request that you review these guidelines

when they become available and consider monitoring populations in a manner consistent with these recommendations.

3. Proposed INRMP Projects for 2007-2011 Implementation:

- a. Seven projects have high funding priority, but most (forty-two projects) have low funding priority. We recommend an additional level of prioritization to help determine the relative priority of projects within the same level of funding priority.
- b. Annual monitoring is given a low funding priority while correcting potential harmful conditions in and around these populations is given a high priority. If sites are not visited annually, then potentially harmful conditions might only be identified every five years. This does not provide assurances that problematic conditions will be addressed annually or as needed.
- c. We appreciate OMD's past and continuing conservation efforts (i.e. monitoring, invasive species control through prescribed burns, mowing, and herbicide treatment, etc.). We are encouraged by your continued commitment to protect existing Kincaid's lupine and Nelson's checker-mallow populations. We hope OMD will also continue to support efforts to improve habitat throughout Camp Adair when it does not directly conflict with OMD's mission.
- d. On page 5-20, the INRMP recommends mowing areas with Nelson's checker-mallow after "plants are dormant (usually after August 1)." The Service developed Nelson's checker-mallow management guidelines that recommend mowing after September 1. We are enclosing a copy of these management guidelines for your consideration.
- e. Biological controls are included as a tool to control exotic and invasive species where feasible. The INRMP does not detail what type of controls might be used or which species would be targeted. We recommend future coordination with the Service and Oregon Department of Agriculture (ODA) when designing bio-control projects to avoid potential negative impacts to listed and candidate species.

4. Contaminants:

- a. We noted in the revised INRMP that Camp Adair maintains a small-arms range, which receives significant use from the ORARNG, other military, and police. The lead accumulation from shooting range operations can present environmental contamination issues, including the potential for contamination of groundwater. We recommend that such issues be addressed in the revised IMRMP for 2007-2011. For example, according to Table 6.6-1, as part of the 2001-2005 INRMP water/groundwater sampling was planned for sometime between 2000 and 2006 but ultimately was not conducted. Given the shooting range operations at Camp Adair, we strongly recommend that this sampling be conducted. In addition, we recommend that the overall management of the shooting range be specifically addressed in the IMRMP for 2007-2011. The U.S. Environmental Protection Agency has developed materials that are useful in understanding and managing

some of the environmental issues associated with shooting ranges (<http://www.epa.gov/region2/waste/leadshot/>) and information from the Department of the Interior may be beneficial as well (<http://www.doi.gov/greening/sustain/shooting.html>).

5. Fender's blue butterfly:

- a. As you know, Kincaid's lupine is the primary host plant for the endangered Fender's blue butterfly (*Icaricia icarioides fenderi*). We request you consider the possibility of reintroducing the butterfly to your property in the future. The Service is developing a recovery plan for the several Willamette Valley prairie species, including the Fender's blue butterfly. One of the options in the recovery plan will likely be the reintroduction of the Fender's blue butterfly into historical sites from which it was extirpated.

6. Maneuver Trails:

- a. Since trails will cross wetlands and culverts will be installed, we recommend that OMD surveys for listed plants early in the project planning process. If listed plants are found within the project area, we request that you work with the Service and ODA to avoid or minimize impacts.

7. Reporting:

- a. When determining whether a plan provides assurances that conservation efforts will be effective, the Service looks for provisions to report progress on implementation (based on compliance with the implementation schedule) and effectiveness (based on evaluation of quantifiable parameters) of the conservation effort. We request that the INRMP includes information on how OMD will report progress on project implementation.

8. Miscellaneous INRMP Comments:

- a. Figure 3.7-1 does not clearly indicate where the ephemeral creek is located.
- b. Consider representing species locations by survey year in Figure 3.9-1.
- c. It is difficult to see where training overlaps Nelson's checker-mallow locations in Figure 1.2.1-1.
- d. Using similar colors for multiple features in Figures 3.4.1-1 and 3.6.2-2 makes it difficult to differentiate between map features.
- e. In table 3.6.2-2, it appears the oak savanna category should also include perennial forbs in the USNVCS column (based on information included in Figure 3.6.2-1).
- f. Please cite all biological surveys and include them in the references section (i.e. Kagan 1993; 2000-2001 butterfly surveys, and vascular plant surveys).

- g. We suggest you reword Goal 5.3.1 to say "monitor the condition of wetlands within and near areas where activities have occurred".
- h. Page 3-26 of the INRMP refers to Appendix F as a list of rare species occurring on Camp Adair. However, this is actually a list of rare species for all of Oregon.

9. EA Comments:

- a. Page 1-5 of the INRMP mentioned that maneuver trails were evaluated under the 1997 EA and that OMD will undergo additional environmental analysis as needed prior to project implementation. Page 4-4 of the INRMP mentioned that potential effects of access roads (including maneuver trails) were evaluated in a 1998 EA. It is not clear whether the 2006 EA is the final environmental analysis provided for the construction of the three maneuver trails. The 2006 EA describes best management practices to protect soil resources during project implementation and trail maintenance. However, the 2006 INRMP and EA provide few details of actual project design or specific erosion control measures. If maneuver trails need additional environmental analysis, then we recommend summarizing all of the appropriate project details in the final analysis that are necessary to evaluate the potential effects of the proposed action.
- b. Proposed maneuver trails are placed in areas with higher erosion potential. OMD expects the construction and maintenance will result in short-term, localized soil erosion from soil disturbance. OMD mentions some general management practices that will be used to minimize erosion potential. We recommend that OMD clarifies the best management practices that will be applied during trail construction, use, and maintenance.
- c. On page 11 of the EA, OMD mentions that native vegetation would be used in active revegetation efforts when feasible. The EA does not provide an alternative for when this is not feasible. The Service strongly encourages using site-appropriate native plants for erosion control. Further, the Service recommends a long-term plan to ensure that native plantings become established after project implementation.
- d. Page 13 of the EA specifies that pesticide treatments will be restricted in wet areas and drainages. It does not specify what types of restrictions this may include. OMD should describe specific best management practices for this area (i.e. buffer zones, application methods, etc.) in the EA.

Thank you again for the opportunity to review the INRMP and EA, and to provide comments for your consideration. We are interested in future discussions, particularly regarding invasive and woody species control in areas containing listed plants. We would also like to arrange an on-site meeting with you to discuss plant management methods and conservation opportunities. We are interested in working collaboratively with OMD to implement the goals and objectives of the INRMP, and would like to provide technical assistance and help seek potential funding sources as needed. If you have any questions regarding these comments, or need more information, please

Mr. Gerald E. Elliot

6

contact Jodie Delavan or Rollie White at (503) 231-6179.

Sincerely,



Kemper M. McMaster
State Supervisor

*Acting
for*

Enclosure

cc:

Craig Tuss, Service, Roseburg Field Office, Roseburg, Oregon

Ted Buerger, Service, Oregon Fish and Wildlife Office, Portland, Oregon

Nelson's checker-mallow (*Sidalcea nelsoniana*) Management Guidelines

Mowing

- The primary management tool used to maintain and enhance Nelson's checker-mallow populations is late season mowing. Mowing should be conducted after September 1st each year when seeds are set and plants are dormant. Late summer/fall mowing has been found to knock back small diameter woody vegetation and shrubs, reduce thatch surrounding plants, and facilitate seed dispersal within suitable habitats. Mowing can be done with several different types of equipment depending on the nature of the site. The Willamette Valley National Wildlife Refuge Complex (WVNWRC) employs both low impact rubber-tracked skid steer loaders (equipped with a five foot rotary mower) and medium farm tractor running a PTO driven 15' 'batwing' mower.

Tree/shrub removal

- Sites with excessive large diameter (>2" dbh) woody vegetation may require manual removal of trees and/or shrubs to facilitate late season maintenance mowing and/or expansion of the Nelson's checker-mallow population. This work is best implemented in late summer/early fall (approximately September 1st – October 15th) to minimize impacts to *Sidalcea nelsoniana* and other native plants during the growing season. Woody vegetation should be removed from suitable habitats and brought to appropriate off-site areas for disposal (e.g. pile burning). Hardwood tree/shrub stumps should be flush cut at ground level to facilitate future mowing and treated with herbicide (Garlon 3A works well) to prevent re-sprouting.

Transplanting

- If management prescriptions dictate the need to transplant a plant (or plants) the following guidelines should be employed:
 - Identify a suitable site to place the transplanted individual(s) based on plant community, soil types, and hydrology. A good option is to inter-plant within another known Nelson's checker-mallow site, if available.
 - Plants should be transplanted between approximately February 1st and April 1st in any given year. Nelson's checker-mallow plants are easy to find and identify at this time of year, and wet winter/spring weather reduces transplant shock.
 - Plants may have extensive and deep or shallow root networks depending on the source site. This needs to be considered when determining the best method to transplant the individual(s), whether shovel vs. backhoe.
 - If possible, attempt to conduct transplanting efforts on a wet, cool, or overcast day to minimize transplant shock. Be prepared to water transplants if necessary.

Seed Collection

- Seed may be collected and grown out to provide either plugs or seed for planting. Berry Botanic Garden guidelines recommend that no more than 5% of the total seed is collected from a population at one time. Plugs planted in appropriate habitat fare well. Seed can be hand sown or planted utilizing a seed drill if sufficient quantities are available. Plugs can be planted between December 1st and April 1st of a given season. Seed should be sown between late September and early October.

Permit Requirements

- Nelson's checker-mallow was federally listed as threatened on February 12, 1993 (58 FR 8243). A critical habitat determination has not been made for the species. All management activities for Nelson's checker-mallow that are funded, authorized, or carried out by a federal agency, or occur on federal lands, require a Section 7 consultation or a Section 10(a)1(A) permit under the Endangered Species Act. Please contact Rachel Rounds or Rollie White at the Oregon Fish and Wildlife Office at 503-231-6179 for more information.
- Nelson's checker-mallow is state listed as a threatened species, which protects the plant on state-owned and state-managed lands. State lands are defined by law to include any non-federal public lands in Oregon. The Oregon Department of Agriculture (ODA) has regulatory jurisdiction over listed plant species on state lands. The state endangered species regulations can be found at http://arcweb.sos.state.or.us/rules/OARS_600/OAR_603/603_073.html. The ODA should be consulted before conducting activities on state lands which may impact Nelson's checker-mallow. For more information on state regulations contact Dr. Robert Meinke of the Native Plant Conservation Program (ODA) at 541-737-2317.



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ENVIRONMENTAL BRANCH, INSTALLATIONS DIVISION
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SALEM, OREGON 97309-5047

November 8, 2006

Mr. Erik Thorsgard
Cultural Resources Specialist
Confederated Tribes of the Grande Ronde Community of Oregon
9615 Grande Ronde Road
Grande Ronde, OR 97347

Dear Mr. Thorsgard:

Thank you for your letter of October 2, 2006, commenting on the Oregon Military Department's Draft 2007 – 2011 Revised Integrated Natural Resources Management Plan for Camp Adair. In your letter requested a copy of any cultural resources surveys or assessments conducted at Camp Adair. I have enclosed a copy of the only survey we have had conducted of the Camp. If you have any questions or need further information concerning this report or other cultural resources matters on Camp Adair, please contact Mr. Kris Mitchell, NEPA/Cultural Resources Manager, at (503) 584-3164 or kris.mitchell@us.army.mil or at the address provided above.

Sincerely,

Jeff Mach
Natural Resources Specialist



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Oregon Fish and Wildlife Office

2600 SE 98th Avenue, Suite 100

Portland, Oregon 97266

Phone: (503) 231-6179 FAX: (503) 231-6195

Reply To: 7574.0015
File Name: CampAdair2007-11_INRMP_2.doc
TS Number: 07-685

JAN 18 2007

Gerald E. Elliott
Sergeant Major (Retired)
Environmental Program Manager
Oregon Military Department
P.O. Box 14350
Salem, Oregon 97309

RECEIVED AGI
2007 JAN 22 A 8:13
MILITARY DEPARTMENT

Subject: Review of Edits to Camp Adair's 2007-2011 Integrated Natural Resources Management Plan, Benton County, Oregon (Tails Number: 13420-2007-FA-0057)

Dear Mr. Elliott:

The Fish and Wildlife Service (Service) reviewed edits made to the draft 2007-2011 Integrated Natural Resources Management Plan (INRMP) that were incorporated in response to comments in our letter dated November 1, 2006. We appreciate having another opportunity to review the draft INRMP, and provide further comments for your consideration. These comments have been prepared under the authority of and in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), the Sikes Act (16 U.S.C 670a et seq.) and Sikes Act Improvement Amendments, and the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.).

The Oregon Military Department (OMD) appears to have modified many sections of the INRMP to address our initial comments and/or concerns with the draft INRMP, particularly those dealing with Nelson's checker-mallow (*Sidalcea nelsoniana*) and Kincaid's lupine (*Lupinus sulphureus ssp. kincaidii*). While we have not seen the final INRMP's language, it appears that OMD has taken many steps to ensure that management actions (i.e. monitoring) are implemented and that protective measures are effective. We appreciate OMD's cooperative efforts in the development of the 2007-2011 INRMP.

In our initial comments, we requested that OMD address potential environmental contamination of lead leaching from the small-arms weapons ranges. OMD responded that this is addressed separately from natural resources management and is outside the scope of the INRMP. It is our understanding that INRMPs are management tools to ensure that military operations and natural resource conservation are integrated and consistent with stewardship and legal requirements. It is also our understanding that INRMPs address landscape-level management, but should have no net loss in the capability of military installation lands to support the military mission of the

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Mr. Gerald E. Elliot

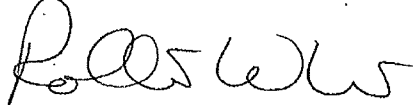
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installation. We therefore reiterate our request that you consider the potential impact of the existing use and foreseeable long-term operation that the small-arms ranges may have on natural resources before finalizing the INRMP.

The Service also suggested that the INRMP discuss Camp Adair's pesticide program and that OMD describe any best management practices that are incorporated into this program. This may include, as you mention, the use of only state-licensed applicators and pesticides in accordance with label restrictions. However, this alone does not always ensure sufficient protection of natural resources.

We remain interested in future discussions and are available to meet on-site to discuss plant management methods, conservation opportunities, and/or contaminants-related issues. Thank you for another opportunity to review the INRMP and to provide comments for your consideration. If you have any questions regarding these comments, or need more information, please contact Jodie Delavan or Rollie White at (503) 231-6179.

Sincerely,



Kemper M. McMaster
State Supervisor

Acting
for

cc:

Jeff Mach, Oregon Military Department, Salem, Oregon

Ted Buerger, Service, Oregon Fish and Wildlife Office, Portland, Oregon

Don Steffek, Service, Regional Office, Portland, Oregon



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SALEM, OREGON 97309-5047

May 22, 2007

Don Steffek
Sikes Act Coordinator
Division of Habitat Conservation
U.S. Fish and Wildlife Service – Pacific Region
911 NE 11th Ave.
Portland, OR 97232

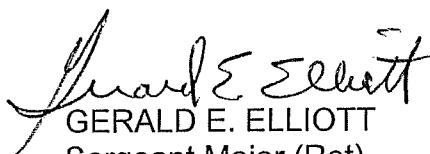
Dear Mr. Steffek:

The Oregon Military Department (OMD) has revised its Integrated Natural Resources Management Plan (INRMP) for Camp Adair, in Benton County. We now are seeking a letter of concurrence from the U.S. Fish and Wildlife Service (USFWS) for implementation of this revised INRMP. Enclosed with this letter is a printed and an electronic copy of the final draft revised Camp Adair INRMP. We also have sent a copy of this letter and copies of the INRMP to Mr. Rollie White in the USFWS Oregon Fish and Wildlife Office.

The OMD contacted the USFWS in December 2004, prior to beginning revision of the INRMP, to solicit comments concerning the existing INRMP and proposed revision. OMD also provided the Service with the draft revised INRMP, in August 2006, for review and comment. We have considered the comments we received from Service, made appropriate changes, and contacted USFWS staff informally to confirm that the changes we made were acceptable. A summary of the USFWS comments received and our responses to them also is enclosed with this letter.

Please contact Mr. Jeff Mach on my staff, by telephone at (503) 584-3493 or by email at Jeff.Mach@us.army.mil, if you have any questions or concerns regarding the revised Camp Adair INRMP or your agency's concurrence for implementation of the plan.

Sincerely,



GERALD E. ELLIOTT
Sergeant Major (Ret)
Environmental Program Manager



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SALEM, OREGON 97309-5047

May 22, 2007

Jon Germond
Land Resources Program Manager
Oregon Department of Fish and Wildlife
3406 Cherry Ave. NE
Salem, OR 97303

Dear Mr. Germond:

The Oregon Military Department (OMD) has revised its Integrated Natural Resources Management Plan (INRMP) for Camp Adair, in Benton County. We now are seeking a letter of concurrence from the Oregon Department of Fish and Wildlife (ODFW) for implementation of this revised INRMP. Enclosed with this letter is an electronic copy of the final draft revised Camp Adair INRMP. We also have sent a copy of this letter and a copy of the INRMP to Ms. Nancy Taylor in ODFW's South Willamette Watershed District Office.

The OMD contacted the ODFW in December 2004, prior to beginning revision of the INRMP, to solicit comments concerning the existing INRMP and proposed revision. OMD also provided the ODFW with the draft revised INRMP, in August 2006, for review and comment. We received no comments from ODFW recommending changes to the draft INRMP.

Please contact Mr. Jeff Mach on my staff, by telephone at (503) 584-3493 or by email at Jeff.Mach@us.army.mil, if you have any questions or concerns regarding the revised Camp Adair INRMP for 2007-2011 or your agency's concurrence for implementation of the plan.

Sincerely,

GERALD E. ELLIOTT
Sergeant Major (Ret)
Environmental Program Manager



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SALEM, OREGON 97309-5047

May 2007

Dr Robert Meinke
Native Plant Conservation Program Leader
Oregon Department of Agriculture
635 Capitol Street NE
Salem, Oregon 97301-2532

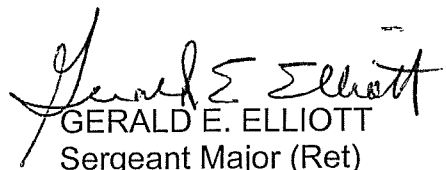
Dear Dr. Meinke:

The Oregon Military Department (OMD) has revised its Integrated Natural Resources Management Plan (INRMP) for Camp Adair, in Benton County. We now are seeking a letter of concurrence from the Oregon Department of Agriculture (ODA) for implementation of this revised INRMP. Enclosed with this letter is a printed copy of the final draft revised Camp Adair INRMP.

The OMD contacted the ODA in December 2004, prior to beginning revision of the INRMP, to solicit comments concerning the existing INRMP and proposed revision. OMD also provided the ODA with the draft revised INRMP, in August 2006, for review and comment. We have considered the comments we received from the ODA, made appropriate changes, and contacted your staff informally to confirm that the changes we made were acceptable. A summary of the comments received and our responses to them also is enclosed with this letter.

Please contact Mr. Jeff Mach of my staff, by telephone at (503) 584-3493 or by email at Jeff.Mach@us.army.mil, if you have any questions or concerns regarding the revised Camp Adair INRMP for 2007-2011 or your agency's concurrence for implementation of the plan.

Sincerely,


GERALD E. ELLIOTT
Sergeant Major (Ret)
Environmental Program Manager



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SALEM, OREGON 97309-5047

June 12, 2007

Mr. Rollie White,
Supervisory Fish and Wildlife Biologist
Oregon State Office
U.S. Fish and Wildlife Service
2600 98th Ave., Suite 100
Portland, OR 97266

Dear Mr. White:


The Oregon Military Department (OMD) is revising its Integrated Natural Resources Plan (INRMP) for Camp Adair, a 527-acre military training installation in Benton County, about 10 miles north of Corvallis. A copy of the draft final revised INRMP and an environmental assessment (EA) required by the National Environmental Policy Act were transmitted to the Service under a separate letter to fulfill the federal Sikes Act requirements. This letter is to fulfill our responsibilities under Section 7 of the federal Endangered Species Act.

The Camp Adair INRMP contains management provisions for two federally listed threatened species: Kincaid's lupine and Nelson's checkermallow. These plants were discovered on the Camp in 1998, during floristic surveys conducted by Oregon State University. A subsequent survey of these species was conducted by the Oregon Natural Heritage Information Center in 2006. Our knowledge of these plants is discussed on pages 3-34 and 3-35 of the INRMP and management plans for the species are discussed on pages 5-2 and 5-3. Our assessment of potential effects from implementation of the revised INRMP is presented on pages 15 and 16 of Appendix H. The INRMP was developed in consultation with your staff. We believe the revised INRMP will not adversely affect and should beneficially affect these species in the long term.

Please review the INRMP and, if you agree, provide us with concurrence that implementation of the revised INRMP may affect, but would not adversely affect the two listed plant species, and may benefit the species long-term. We have furnished a copy of this request to Mr. Don Steffek in the Service's Regional Office for his information.

If you have questions or concerns with the management plans or biological assessment for the two listed species, please contact Jeff Mach of my staff at (503) 584-3493. We would be happy to meet with you and your staff to work out any identified problems.

Sincerely,



GERALD E. ELLIOTT

Sergeant Major (Retired)
Environmental Program Manager



United States Department of the Interior

FISH AND WILDLIFE SERVICE
911 NE. 11th Avenue
Portland, Oregon 97232-4181

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2007 JUL -6 P 9:18

MILITARY DEPARTMENT
JUL -3 2007

IN REPLY REFER TO:

FWS/R1/AES

Gerald E. Elliott, Sergeant Major (Retired)
Environmental Program Manager
Oregon Military Department
P.O. Box 14350
Salem, Oregon 97309

Dear Mr. Elliott:

This is in response to your letter, dated May 22, 2007, and received on May 30, 2007, requesting the Fish and Wildlife Service's (Service) agreement under the Sikes Act with the 2007-2011 Camp Adair Integrated Natural Resources Management Plan (INRMP). A separate letter, requesting concurrence under section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.), was received June 12, 2007. On July 3, 2007, we provided a letter of concurrence to meet requirements established under section 7 of the ESA, thereby concluding the consultation process.

This letter has been prepared under the authority of, and in accordance with, the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), the Sikes Act (16 U.S.C. 670a et seq.) and Sikes Act Improvement Amendments, and the ESA. We reviewed the final draft of Camp Adair's 2007-2011 INRMP and corresponding Environmental Assessment (EA). We considered three criteria to determine if the INRMP provides adequate special management or protection. The three criteria include: (1) whether the plan provides a conservation benefit to species, (2) gives assurances that the management plan will be implemented, (3) and provides assurances that conservation efforts will be effective. Based on the best available information, the draft 2007-2011 INRMP meets all three criteria.

We had previously inquired how the Oregon Military Department (OMD) will address potential environmental contamination of lead leaching from the small-arms weapons ranges. We understand this issue is addressed apart from the INRMP, through the Operational Range Assessment Program (ORAP), and that phase I results from the 2006 contaminants analysis are not currently available. The INRMP states that, depending on phase I results, the next course of action will be to clean up, conduct a phase II assessment, or retest in 5 more years, as appropriate. We request that you incorporate these results in future INRMP revisions and, since the INRMP may not be revised again until at least 2011, that we receive a copy of the contaminants analysis results when available. We are interested in discussing these results further and in providing technical assistance, upon request.

Mr. Gerald E. Elliot

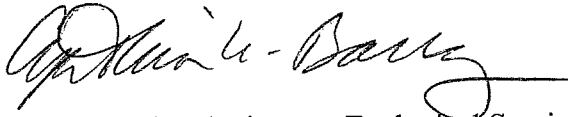
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We thank you for your coordination with us throughout the INRMP revision process. The OMD was responsive to our recommendations, particularly those applicable to Kincaid's lupine and Nelson's checker-mallow. We remain interested in working collaboratively with the OMD to implement the goals and objectives of the INRMP, and would like to provide technical assistance and help seek potential funding sources as needed.

If you have any questions, or need more information, please contact Jodie Delavan or Rollie White at our Oregon Fish and Wildlife Office at (503) 231-6179, or Don Steffeck, Chief, Division of Natural Resource Conservation at the Regional Office at (503)-231-6223.

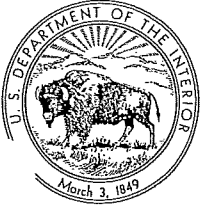
Sincerely,

6-21-03



Assistant Regional Director, Ecological Services

cc:
OFWO, R. White



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Oregon Fish and Wildlife Office
2600 SE 98th Avenue, Suite 100
Portland, Oregon 97266
Phone: (503)231-6179 FAX: (503)231-6195



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MILITARY DEPARTMENT
STATE OF OREGON

Reply To: 8330.I0180(07)
File Name: Adair2007-11_ESA_LOC
TS Number: 07-1759
Tails Number: 13420-2007-I-0180
Doc Type: Final

Gerald E. Elliott
Sergeant Major (Retired)
Environmental Program Manager
Oregon Military Department
P.O. Box 14350
Salem, Oregon 97309

Subject: Informal Consultation on Oregon Military Department Draft Integrated Natural Resources Management Plan, Benton County, Oregon (Tails Number: 13420-2007-I-0180, x-ref 13420-2007-FA-0012 and 13420-2007-FA-0057)

Dear Mr. Elliott:

This is in response to your letter and biological evaluation (BE) dated June 12, 2007, transmitting your evaluation of the impacts on Nelson's checker-mallow (*Sidalcea nelsoniana*) and Kincaid's lupine (*Lupinus sulphureus* ssp. *Kincaidii*) from implementation of the 2007-2011 Camp Adair Integrated Natural Resources Management Plan (INRMP). Your correspondence was received in this office on June 13, 2007. In your request for a letter of concurrence, you concluded that the project "may affect, but is not likely to adversely affect" Nelson's checker-mallow and Kincaid's lupine. This letter of concurrence is being provided in accordance with the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Project description

Camp Adair consists of 527 acres owned by the Army Corps of Engineers (COE) in the Willamette Valley, approximately 10 miles north of Corvallis, Oregon. The Oregon Military Department (OMD) trains Oregon Army National Guard units at Camp Adair under license from the COE. Although the Oregon Department of Public Safety Standards and Training (DPSST) operates a firing range on Camp Adair under a separate license from the COE, the OMD is responsible for all management activities at the camp.

The proposed action is to finalize and implement the 2007-2011 Camp Adair INRMP. The INRMP is an adaptive, program-level planning document that enables OMD to apply landscape-level natural resources management in a manner consistent with their military mission. The INRMP's natural resource goals include the conservation of federally-listed and candidate species, protection of the historic orchard area, fire management, prevention of wetland habitat loss or degradation,

prevention of soil erosion or non-point source water pollution, elimination of exotic and invasive plants, and conservation of the native plant structural components and biodiversity. Actions that may potentially affect Kincaid's lupine and Nelson's checker-mallow include military training, facilities maintenance and activities to manage listed plant populations. Kincaid's lupine and Nelson's checker-mallow will be managed by protecting and monitoring existing sites, and fostering expansion of populations on Camp Adair.

Management of Listed Plants

The OMD will suppress and control non-native, competitive plants (e.g., blackberries (*Rubus* spp.), meadow knapweed (*Centaurea pratensis*), reed canary grass (*Phalaris arundinacea*), and encroaching woody species) using targeted herbicide applications, prescribed burning, mechanical cutting, bio-controls, and hand removal. Hand removal of invasive plants may occur within Kincaid's lupine and Nelson's checker-mallow populations. Herbicide use will be restricted to methods resulting in no contact with listed plant species. Monitoring (i.e., population censuses) of Kincaid's lupine and Nelson's checker-mallow started in 2001, occurred in 2006, and will continue every five years. Visual monitoring will be conducted annually, in years lacking a population census, to identify any potential plant damage and site-specific conditions that may be affecting the status of the populations. Additionally, the effects of infantry training on Kincaid's lupine populations during the growing season will be assessed by walking transects through populations and counting the number of damaged stems within two weeks of a training event. The effects of training on Nelson's checker-mallow populations are not monitored as closely since these plants are generally inaccessible to foot soldiers.

The INRMP articulated the need for alternative treatments to hand removal in listed plant populations. However, OMD stated they will consult separately, as needed, with the Service on other treatments that may affect listed species (pp. 5-3, 5-20, and 5-22; Jeff Mach, OMD, pers. comm., 2007).

Military Training

Military training will be limited to infantry training, without ground disturbing activities or support vehicles, near the Nelson's checker-mallow locations during its active growing season. During dormant periods, limited infantry training may occur in Nelson's checker-mallow areas. Most of the Nelson's checker-mallow plants are located in areas where they could not easily be trampled by soldiers on foot. For the lupine area within the Oak Hill area (approximately one acre) limited, non-vehicular, infantry training may occur only during the lupine's dormant season (November 1 to March 1) until the population is expanded. If the population expands greater than 10 percent of its current area (or in excess of 25,000 occupied square meters) limited year round infantry training will be allowed, providing that damage to individual lupine stems does not exceed 80 stems per 1,000 square meters and the lupine population remained in excess of the 10 percent threshold. If the population expands, the OMD will consult with the Service if they plan to allow year-round training in Kincaid's lupine areas.

Facility Maintenance

Mowing and weed control maintenance along the fence line and in the southeast corner of the camp may occur in Nelson's checker-mallow populations. Adverse impacts from mowing will be avoided by delaying mowing until plants are dormant (usually after September 1). If mowing or potentially damaging actions must be conducted in the area, or cannot be delayed until after September 1, then the area will be surveyed for Nelson's checker-mallow plants. Plant locations will be flagged prior to conducting maintenance activities, and plants will be avoided. To avoid adverse effects from herbicide applications, Nelson's checker-mallow plants will be covered, and weeds will be spot sprayed under calm conditions.

Conclusion

Based on Service review of the draft 2007-2011 Camp Adair INRMP, the best available scientific information, and telephone communications among staff of this office and OMD, the Service concurs with your determination that the proposed action may affect, but is not likely to adversely affect, Kincaid's lupine and Nelson's checker-mallow for the following reasons:

1. Controlling succession and reducing invasive, non-native species is expected to benefit listed plants. Control methods (i.e., targeted hand removal, mechanical, chemical, prescribed fire, and bio-control) will be implemented to avoid damage (i.e., direct mortality) to listed plants and will conserve and enhance their habitats (p. 15 of EA, Appendix H).
2. Herbicide applications will not come into contact with listed plants. The OMD will apply herbicides following their Integrated Pest Management Plan (IPMP). The IPMPs' best management practices include, but are not limited to: using the least toxic and persistent pesticides wherever feasible, consideration of pesticide and site characteristics in project design, optimizing the application rate, timing, and placement to achieve the greatest application efficiency, reducing potential for off-site transport, and using application techniques to avoid or minimize overspray and drift. The IPMP also includes a 100-foot buffer zone around listed plants. This buffer zone, by itself may not be sufficient to prevent exposure of listed plants to chemicals under all conditions, depending on application type and wind direction. However, this buffer will be used in combination with the other best management practices, and herbicide applications will be specifically designed to avoid contact with listed plants.
3. They will separately consult with the Service before implementing plant management actions (i.e., prescribed fire, herbicide treatment, bio-control, and mechanical control) that may adversely affect listed plants (pp. 5-3, 5-20, and 5-22). This will provide the opportunity to provide conservation recommendations to avoid and/or minimize potentially adverse impacts.
4. Military training activities within known listed plant populations are limited to non-ground disturbing, infantry exercises. Training in Kincaid's lupine populations will only occur during their dormant season, and training will in Nelson's checker-mallow populations will largely avoid plants since they are not readily accessible to foot soldiers. Kincaid's lupine populations will be staked to minimize the potential for trampling, and Kincaid's lupine

populations will be monitored within two weeks of training events to evaluate the impact of training.

5. The OMD will conduct a complete population census every five years. They will also conduct annual visual monitoring surveys with photo points (p. 5-21). The annual surveys will evaluate the extent and vigor of populations and identify any adverse habitat conditions.
6. Based on the rationale outlined above, effects from implementation of the INRMP are insignificant and discountable.

The requirements established under section 7(a)(2) and 7(c) of the ESA, have been met, thereby concluding the consultation process. We remain interested in future discussions and are available to meet on site to discuss plant management methods and conservation opportunities. If you have any questions or need more information, please contact Jodie Delavan or Rollie White at (503) 231-6179.

Sincerely,



Acting
for

Kemper M. McMaster
State Supervisor

Literature Cited

Buechling, A. 2007. Rare plant monitoring report at Camp Adair: 2006 survey results. Prepared for the Oregon Military Department, Salem, Oregon. 20 pp.

CH2M Hill 1997. Studies of *Sidalcea nelsoniana*. Unpublished annual research report prepared for the City of McMinnville Water and Light Department.

U.S. Fish and Wildlife Service (USFWS). 1998. Recovery Plan for the Threatened Nelson's Checker-mallow (*Sidalcea nelsoniana*). Portland, Oregon. 61 pp.



Oregon

Theodore R. Kulongoski, Governor

Department of Fish and Wildlife
South Willamette Watershed District Office
7118 NE Vandenberg Ave.
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MILITARY DEPARTMENT
STATE OF OREGON



October 1, 2007

Mr. Jeffrey Mach
Oregon Military Dept.
Installations Division
P.O. Box 14350
Salem, OR 97309

Dear Mr. Mach,

The Oregon Department of Fish and Wildlife (ODFW) reviewed the Revised Integrated Natural Resources Management Plan and Environmental Assessment Dated May 2007. ODFW recognizes the need to augment the Camp Adair facilities and roads for accessing the western portions of the property for military maneuvers. We have no major habitat or wildlife concerns with your proposed project.

ODFW appreciates the Military Department's efforts to align the training roads along habitat boundaries so as to avoid the orchard and upland prairie on the property. The orchard and upland prairie habitats are heavily utilized for foraging by upland birds, migratory birds and many mammals species including deer, elk, and raccoon.

Camp Adair has become a refuge for a growing elk population in the Soap Creek Area, since elk hunting and elk hazing are not deemed compatible with military operations on the property. The proposed addition of three roads through the western portion of the property will help haze elk that contribute to damage on adjacent properties.

Thank you for the opportunity to comment on this Revised Integrated Natural Management Plan. Feel free to call me with any questions at (541) 757-4186 ext 226.

Sincerely,

Nancy Taylor
District Wildlife Biologist
Oregon Dept. of Fish and Wildlife
7118 NE Vandenberg Ave
Corvallis, OR 97330

Cc: Marx, Wolfer, Germond



Oregon

Theodore R. Kulongoski, Governor

Department of Agriculture

635 Capitol Street NE
Salem, OR 97301-2532

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MILITARY DEPARTMENT



October 1, 2007

Gerald E. Elliott
Sergeant Major (Retired)
Oregon Military Department
1776 Militia Way
P.O. Box 14350
Salem, OR 97309

Subject: Oregon Department of Agriculture Letter of Concurrence for Camp Adair
Integrated Natural Resources Management Plan

Dear Mr. Elliott:

The Oregon Department of Agriculture (ODA) has received both draft and final versions of the Camp Adair Integrated Natural Resources Management Plan (INRMP). Staff reviewed the draft plan and provided feedback to Oregon Military Department (OMD) Natural Resource Specialist Jeff Mach in September of 2006. ODA had the opportunity to review the final version of the Plan in May of 2007. OMD did an excellent job of incorporating ODA's suggestions regarding management of the listed plant species populations found at Camp Adair in the final draft.

ODA concurs with the goals and guidelines of the Camp Adair INRMP. We appreciate being included in the process of reviewing the INRMP, and look forward to working with the Oregon Military Department to protect and conserve the state-listed plant species located at Camp Adair in the future.

Sincerely,

Dr. Robert Meinke
Program Manager
Native Plant Conservation Program
Oregon Department of Agriculture

Errata Sheet
Oregon Department of Agriculture, Native Plant Conservation Program on
Draft Revised INRMP & EA for Camp Adair, Oregon
November 2006

Comment #	The comment refers to:				Comment	Reviewer	Agency	Action Taken by State to Address the Comment
	Chapter	Section	Page	Paragraph				
1	5		5-20	3	The INRMP indicates mowing in areas occupied by Nelson's checkermallow plants will be delayed during the summer until after the plants are dormant, usually August 1. ODA visited Cp Adair in July 2006 and noted that some mowing had occurred along the southeastern fence line and had resulted in the mowing of some Nelson's checkermallow plants. ODA recommends reviewing implementation of the INRMP with Cp Adair maintenance staff.	Rebecca Currin	ODA	Based on comments received from USFWS, the INRMP has been revised to state that mowing in Nelson's checkermallow areas will be delayed, if possible, until after September 1. If mowing cannot be delayed or other activities potentially damaging to Nelson's checkermallow plants need to be conducted in the area during the growing season, OMD would survey and mark the locations of checkermallow plants so they can be avoided.
2	5		5-20	4	ODA recommends changing the INRMP to require consultation with and approval from ODA, in addition to USFWS, before changing treatments within Kincaid's lupine patches, because Camp Adair is considered "state lands."	Rebecca Currin	ODA	Although the OMD owns other lands in Oregon, Camp Adair is federal land, owned by the U.S. Army Corps of Engineers. The OMD has a permit for the use of the property from the Corps, but does not have a lease or recorded easement for use of the property. Consequently, the consultation and approval requirements of ORS 564.115 do not apply to OMD management actions on Camp Adair. In the interest of conserving Kincaid's lupine on Camp Adair, the INRMP has been revised to indicate that OMD will consult with ODA, in conjunction with USFWS, concerning proposed actions that may affect the species.

3	5		5-21	3	ODA does not object to limited infantry training in areas occupied by Kincaid's lupine during plant dormancy, as long as the training does not involve vehicular traffic in the areas and recommends amending the wording read "limited non-vehicular infantry training."	Rebecca Currin	ODA	OMD has amended the INRMP to add "non-vehicular" to the sentence, as suggested.
4	5		5-21	3	Changes involving training activities within Kincaid's lupine areas during the growing season must involve consultation with and approval from ODA, as well as USFWS. ODA does not sanction any activity which may result in trampling or disturbance to of the plants during the growing season, regardless of the size of the population.	Rebecca Currin	ODA	See action under Comment 2, above. The INRMP has been revised to indicate that OMD will consult with ODA, in conjunction with USFWS, concerning proposed actions that may affect the species.

Errata sheet
U.S. Fish and Wildlife Service on
2007 Draft Revised INRMP & EA for Camp Adair, Oregon
January 2007

Comment #	Comment	Reviewer	Agency	Action Taken by State to Address the Comment
1	The INRMP appendices were updated since the 2/14/2005 letter from USFWS requesting the change to reflect species actually occurring on Cp Adair.	Jody Delavan	USFWS	No action required.
2	OMD should include the results of the 2006 Kincaid's lupine and Nelson's checkermallow survey in the INRMP. The USFWS also requests to receive a copy of the surveys.	Jody Delavan	USFWS	The results of the 2006 plant were received by the OMD in April 2007. OMD has added a summary of the findings from the survey to Section 3.9. OMD has sent a copy of the 2006 survey to the USFWS.
3	OMD should give annual visual monitoring of Kincaid's lupine and Nelson's checkermallow a higher funding priority (now shown as a low funding priority).	Jody Delavan	USFWS	The annual visual monitoring the condition of Kincaid's lupine and Nelson's checkermallow populations had been assigned a low priority for funding of because it will be conducted using existing staff resources and is not expected to require additional funding. OMD misinterpreted guidance. Table 6.6-2 has been revised to assign it a "high" funding priority.
4	OMD should conduct annual visual monitoring of Kincaid's lupine and Nelson's checkermallow in a systematic manner.	Jody Delavan	USFWS	Annual visual monitoring is intended to identify damage to plants or conditions that are adversely affecting the plants and to detect gross or catastrophic changes in their populations. Quantitative monitoring is anticipated to occur every five years. The INRMP has been revised to indicate that photo points will be used to conduct this monitoring in a systematic manner.

Errata sheet
U.S. Fish and Wildlife Service on
2007 Draft Revised INRMP & EA for Camp Adair, Oregon
January 2007

5	It is not clear whether monitoring the effects of infantry training on Kincaid's lupine populations is tied to project 1.2.1 or 5.3.1, in Table 6.5.2.	Jody Delavan	USFWS	Monitoring the condition of Kincaid's lupine populations, including effects from human and wildlife use of the installation and from other natural conditions, supports Management Goal 1. Conserve Kincaid's Lupine, Fender's Blue Butterfly, and Nelson's Checkermallow. The goals, objectives, and projects presented in the INRMP are not necessarily mutually exclusive of one another. Therefore, the condition of the lupine, could lead to implementation of project 1.2.2. But, project 5.3.1, which involves repairs to wetland areas, would not be applicable, because Kincaid's lupine plants are not located in wetlands areas.
6	OMD should assign monitoring of Kincaid's lupine a higher funding priority so it to more accurately determines the effects of infantry training and effectiveness of protective measures.	Jody Delavan	USFWS	Kincaid's lupine patches are marked with Seibert stakes (universal Army off-limits markers) and the installation currently receives almost no infantry maneuver training use. If infantry maneuvers were to occur in the area, the Seibert stakes would alert personnel to stay out of the areas occupied by Kincaid's lupine patches. As discussed under comment 2, monitoring has been assigned a high priority.
7	OMD should clarify whether the area occupied by Nelson's checkermallow is within a training area.	Jody Delavan	USFWS	The area occupied by Nelson's checkermallow plants is within a designated training area. However, this portion of the training area in the southeast corner of the property is almost never used for training activities because it is very wet and contains a lot of poison oak and biting/stinging insects. Disturbance of the Nelson's checkermallow is most likely to result from installation maintenance activities, such as mowing vegetation along the fence line.
8	OMD should use a method to monitor the effects of human use on Nelson's checkermallow in areas occupied by the plant.	Jody Delavan	USFWS	The INRMP has been revised to include monitoring the area occupied by the Nelson's checkermallow soon after any training or other human use of the area.
9	OMD should count multiple stems of Nelson's checkermallow within one square meter as a single plant.	Jody Delavan	USFWS	The INRMP has been revised to include this recommendation.

Errata sheet
U.S. Fish and Wildlife Service on
2007 Draft Revised INRMP & EA for Camp Adair, Oregon
January 2007

10	OMD should use USFWS population monitoring guidelines for Kincaid's lupine and Nelson's checkermallow, once the guidelines are developed and adopted.	Jody Delavan	USFWS	OMD will review the guidelines, when they become available. OMD expects to use the guidelines, if feasible.
11	OMD should assign priorities among projects of the same funding priority.	Jody Delavan	USFWS	The INRMP has been revised to prioritize projects of the same funding priority.
12	A low funding priority for funding suggests that annual monitoring of threatened and endangered species may not be conducted and that harmful conditions may not be corrected in a timely manner.	Jody Delavan	USFWS	The annual visual monitoring the condition of Kincaid's lupine and Nelson's checkermallow populations was assigned a low priority for funding because it will be conducted using existing staff resources and is not expected to require additional funding. OMD misinterpreted guidance. Table 6.6-2 has been revised to assign it a "high" funding priority.
13	OMD should continue to support efforts to improve habitat on Camp Adair when it does not conflict with OMD's mission.	Jody Delavan	USFWS	No action required.
14	OMD should delay mowing in Nelson's checkermallow areas until after September 1, rather than August 1, as now stated in the INRMP.	Jody Delavan	USFWS	OMD has revised the INRMP. Mowing will be delayed until after September 1, if possible. If mowing or another activity which could potentially damage the checkermallows (e.g., fence repair) must be conducted in the area prior to September 1, OMD will survey the area and mark checkermallow plants prior to conducting activities that potentially could damage the plants.
15	OMD should coordinate with the USFWS and ODA when designing biological control projects to avoid potential adverse effects to listed and candidate species.	Jody Delavan	USFWS	The INRMP has been revised to include consultation with USFWS and ODA concerning proposed uses of biological controls.

Errata sheet
 U.S. Fish and Wildlife Service on
 2007 Draft Revised INRMP & EA for Camp Adair, Oregon
 January 2007

16	<p>OMD should address potential environmental contamination from lead leaching from the small –arms weapons ranges by conducting groundwater sampling.</p> <p>OMD should address overall management of the small-arms ranges in the INRMP.</p>	Jody Delavan	USFWS	<p>A new section 4.9 has been added to discuss the U.S. Army's Operational Range Assessment Program (ORAP), which includes Army National Guard training ranges. The ORAP is intended to periodically assess the potential for contaminants to migrate off of ranges and lead to further investigation or remediation, if warranted. An initial assessment of training ranges on Camp Adair is in the process of being conducted by an ORAP team.</p> <p>The Army and Army National Guard are using the ORAP to characterize and assess training ranges for off-range releases of munitions-related constituents and guide future management of the ranges. The ORAP assessment now in preparation will result in future periodic re-assessments, further investigation of potential releases, or remediation of known releases.</p>
17	OMD should consider reintroducing the Fender's blue butterfly on Camp Adair.	Jody Delavan	USFWS	OMD cannot afford to incur potential restrictions to military training activities from the reintroduction of a federally-listed threatened species on the property.
18	OMD should conduct surveys for listed plants in wetland areas crossed by the proposed access roads and work with USFWS and ODA if listed plants are found.	Jody Delavan	USFWS	Potential effects on threatened and endangered species will be evaluated as part of the environmental analysis of the proposed action. However, OMD is reasonably confident that no listed plants occur in the wetland areas that would be crossed by the potential maneuver trails. OMD has thoroughly surveyed the entire property for vascular plants, has reviewed the species found on the property against state and federal species listings, and has conducted surveys of the property to identify the locations of known listed and candidate threatened or endangered species.
19	The INRMP should describe how OMD will report on project implementation and project effectiveness.	Jody Delavan	USFWS	Section 6.3 of the INRMP has been revised to include more information on reporting on project implementation and effectiveness.
20	Figure 3.7-1 should clearly indicate where the ephemeral creek is located.	Jody Delavan	USFWS	The figure has been revised to show watercourses on the installation.

Errata sheet
 U.S. Fish and Wildlife Service on
 2007 Draft Revised INRMP & EA for Camp Adair, Oregon
 January 2007

21	In Figure 3.9-1, OMD should consider representing species locations by survey year.	Jody Delavan	USFWS	OMD will consider depicting species locations by year, if presentation of the data can be shown in a meaningful way. OMD is developing a GIS system and expects to be able to show species location data by year as products from that system.
22	Use of similar colors in Figures 3.4.1-1 (soil mapping units) and 3.6.2-1 (seven plant communities/management units) makes it difficult to distinguish between map features.	Jody Delavan	USFWS	The color scheme used in Figure 3.6.2-1 has been changed to better differentiate between the plant communities.
23	It appears that Table 3.6.2-2 should include perennial forbs in the USNVCS column.	Jody Delavan	USFWS	The comment revealed an error in Figure 3.6.2-1, which has been corrected. No change to the table is needed.
24	OMD should cite all biological surveys conducted at Camp Adair in the reference section in the references section.	Jody Delavan	USFWS	The references section has been updated.
25	Project 5.3.1 should be reworded to say, "Monitor the condition of wetlands within and near areas where activities have occurred"	Jody Delavan	USFWS	The INRMP has been revised to incorporate the suggestion.
26	The INRMP EA is not clear whether the document constitutes the final environmental analysis for the three proposed maneuver trails.	Jody Delavan	USFWS	The OMD will conduct a separate environmental analysis for the proposed maneuver trails. References to proposed maneuver trails have been removed from the INRMP EA to avoid any confusion.
27	The INRMP and EA should provide more details of actual project design or specific erosion control measures for the proposed maneuver trails. If additional analysis is conducted, then all appropriate project details needed to evaluate potential effects of the proposed action should be included in the analysis.	Jody Delavan	USFWS	Further details on project design and erosion control measures for the proposed maneuver trails will be presented in a separate environmental analysis.
28	OMD should clarify the BMPs to be used in association maneuver trail construction, use and maintenance since portions of the trails are in areas with higher erosion potential.	Jody Delavan	USFWS	OMD expects to apply for and obtain a stormwater discharge permit for construction of the proposed maneuver trails. BMPs would be addressed in the stormwater permit. Erosion control associated with the proposed trails will be evaluated as part of a separate environmental analysis.

Errata sheet
 U.S. Fish and Wildlife Service on
 2007 Draft Revised INRMP & EA for Camp Adair, Oregon
 January 2007

29	Concerning the mention of revegetation on page 11 of the EA, the USFWS encourages OMD to use site-appropriate native plants for erosion control and to monitor plantings to see that they become established.	Jody Delavan	USFWS	Revegetation of the proposed maneuver trails will be discussed in a separate environmental analysis. OMD would use native vegetation when the option is available and if it is feasible to do so. Revegetation monitoring would be conducted with existing resources.
30	Concerning the discussion of pesticide treatments on page 13 of the EA, OMD should describe how it will restrict the use of pesticides near wetlands and drainages and what specific BMPs (e.g., buffer zones, application methods, etc.) would be used.	Jody Delavan	USFWS	The discussion in the EA has been revised to state that pesticides would be applied in accordance with OMD's Environmental Compliance Notebook (ORARNG PAM 200-1) and OMD's Integrated Pest Management Plan (ORARNGR 200-5). Section 4.10 has been added to the INRMP to discuss the IPMP and the best management practices that it includes.

APPENDIX B
FEDERAL REQUIREMENTS AND OTHER GUIDELINES

APPENDIX B

FEDERAL REQUIREMENTS AND OTHER GUIDELINES

Army facilities, including Army National Guard installations, are subject to numerous regulations affecting use and management of natural resources, including federal laws, EOs, and Army regulations. Table 2-1 lists applicable laws, regulations, and policies, and this section discusses the most important of these. Military regulations, directives, and guidelines are enforced by the ORARNG and NGB. All other federal regulations, except for those related to wildlife resources, are enforced by the agencies that have adopted them. The USFWS and ODFW are responsible for enforcing laws and regulations pertaining to wildlife resources, especially the management of threatened and endangered species.

MILITARY INSTRUCTIONS ON INRMPS

This section provides an overview of NGB, DOD, and Army policies and instructions, as well as the Sikes Act, which establishes requirements and guidance for the preparation of INRMPS and is part of the need for this document. NGB's All-States Memorandum P00-0039 of June 15, 2000 is the main guidance for preparation and implementation of INRMPS and is discussed below.

National Guard Bureau Regulations

It is NGB policy to prepare an INRMP and EA for all federally supported military training sites used by the Army National Guard. NGB's All-States Memorandum P00-0039 of June 15, 2000 provides policy and guidance for preparation and implementation of INRMPS at Army National Guard training sites (NGB 2000a). The directives presented in this memorandum incorporate a variety of other guidance documents and regulations, including but not limited to the Sikes Act, the Sikes Act Improvement Act of 1997, DOD instructions, multiple Army regulations, and various other guidance memorandums, procedure manuals, and policies. The most important of these are discussed in the following sections.

Department of Defense Instruction 4715.3

DOD Instruction 4715.3 implements policy, assigns responsibilities, and prescribes procedures for the integrated management of natural and cultural resources on property under military control. The instruction states that "all DOD conservation programs shall work to guarantee continued access to [DOD] land, air, and water resources for realistic military training and testing while ensuring that the natural and cultural resources entrusted to DOD care are sustained in a healthy condition for scientific research, education, and other compatible uses by future generations" (DOD 1996).

DOD Instruction 4715.3 also designates DOD executive agents to lead the military services in implementing key conservation issues, including preparing, maintaining, and monitoring of INRMPS on all military installations. Instruction 4715.3 notes that conservation management is a dynamic process, yet prescribes that a consistent conservation management approach include those systematic procedures that should be used by each DOD installation, as follows:

- Assess military mission;
- Prepare detailed inventory of resources;
- Analyze and assess risk to the resources;
- Prepare and implement management plans;
- Monitor and assess results;
- Conduct needs assessment survey;
- Reassess inventories;

- Reanalyze and reassess risk to resources; and
- Adjust program as necessary.

Army Regulations

The *US Army Environmental Strategy into the 21st Century* (US Army 1992) provides the framework to ensure that environmental considerations are integral to the Army mission and that an environmental stewardship ethic governs all Army activities. The Army's environmental strategy is illustrated as a building with a foundation and four pillars supporting the overall vision of environmental stewardship. The strategy's goals focus on the four pillars, which represent environmental compliance, restoration, pollution prevention, and natural resources conservation.

The general goal of the conservation pillar is to conserve, protect, and enhance environmental, natural, and cultural resources using all practical means consistent with Army missions, so that present and future generations can use and enjoy them. Natural resources management in the conservation pillar is focused on conservation.

Conservation involves the responsible stewardship of Army-managed lands to ensure long-term natural resources productivity so the Army can fulfill its military mission. Conservation balances the need for long-term resource use and resource protection. Conservation is also essential for ensuring the future integrity of valuable national resources, such as wetlands, soils, endangered species habitat, and historic and cultural sites. The Army Regulation (AR) 200-series describes in detail the natural resources and environmental protection programs to be employed on lands used by the Army. These regulations are as follows:

AR 200-1: *Environmental Protection and Enhancement* (US Army 1997), requires conducting an integrated, multiple-use natural resources and land management program on lands under Army jurisdiction.

Environmental Effects of Army Actions, codified as 32 CFR 651, replaced AR 200-2: *Environmental Effect of Army Actions* (US Army 1988) in March 2002. As with AR 200-2, 32 CFR 651 sets forth policy, responsibilities, and procedures for integrating environmental considerations into Army planning and decision making. Specifically, 32 CFR 651 requires environmental analyses and other documentation required by the regulations to be integrated as much as practicable with other environmental reviews, laws, and EOs.

The Army's commitment to the conservation of natural resources is further reflected in AR 200-3, *Natural Resources – Land, Forest, and Wildlife Management*. AR 200-3 "sets forth the policy, procedures, and responsibilities for the conservation, management, and restoration of land and the natural resources thereon consistent with the military mission and in consonance with national policies" (US Army 1995).

AR 200-4: *Cultural Resources Management* (US Army 1998), promotes the Army's policy for managing cultural resources to meet legal compliance requirements and to support the military mission.

AR 200-1 currently is being extensively revised and, when reissued, will incorporate AR 200-3, AR 200-4, and AR 200-5 *Pest Management*. AR 200-1 is scheduled to be reissued in January 2006 as a Part of 32 CFR.

Oregon Army National Guard Regulations

The ORARNG also has separate regulations pertaining to natural resources management. Those regulations that could be pertinent to the management of military activities at Camp Adair include the following:

□

- ORARNG Circular 350 (Draft): *Camp Adair Users Guide*. The circular contains administrative, personnel, training, and environmental guidance for military personnel using Camp Adair for training (ORARNG 2000a).
- ORARNG Regulation 200-1: *Environmental Compliance*. This regulation defines the responsibilities of commands, directorates, and individuals of the ORARNG in meeting the requirements of AR 200-1, 200-2, 200-3, and 200-4, NGB regulations and policies, and applicable federal, state, and local environmental regulations. Directorates, commands, and personnel must execute defined responsibilities in order to ensure that ORARNG activities and operations comply with applicable requirements (ORARNG 1999a).
- ORARNG Regulation 210-5: *Integrated Pest Management Plan*. This regulation identifies pest management requirements and defines resources, administrative, safety, and environmental requirements to control pests at ORARNG facilities and installations (ORARNG 1999c).
- ORARNG Regulation 210-6: *Installation Spill Contingency Plan*. This regulation describes responsibilities of units, supervisors, and individuals of the ORARNG in planning for and responding to spills of regulated substances to the environment. In order to comply with the law and to meet DOD and DA directives on environmental stewardship, the provisions of Regulation 210-6 are followed to the maximum extent practicable on ORARNG installations (ORARNG 1998).
- ORARNG Regulation 420-47: *Hazardous Waste Management Plan*. This regulation provides responsibilities and guidance for managing hazardous materials and for disposing of hazardous waste generated at ORARNG facilities and installations in accordance with federal and state regulations (ORARNG 1999b).
- ORARNG Regulation 350-25: *Integrated Training Area Management*. Integrated Training Area Management (ITAM) is a management approach that seeks to match military mission requirements with the long-term ecological integrity of military training sites. The Army and Army National Guard have embraced this approach and are implementing it on their installations and training areas. The goal of ITAM is to achieve and sustain the optimum use of training lands to support training and mission requirements indefinitely, while ensuring protection of natural resources. ITAM consists of four components that should be implemented as a whole in order to meet its overall goal (ORARNG 2000d). Section 4.4 provides a synopsis of the four components: LCTA, Training Requirements Integration (TRI), Land Rehabilitation and Maintenance (LRAM), and Environmental Awareness.

ENDANGERED SPECIES ACT (16 USC 1531 - 1534)

Under the ESA, all federal agencies, in consultation with the Secretary of the Interior, must take all necessary precautions to ensure that agency actions do not jeopardize federally threatened or endangered species or adversely modify or destroy critical habitat. Any agency whose action could affect (positively or negatively) the continued existence of a federally listed threatened or endangered species must consult with USFWS (see 50 CFR 17 and 50 CFR 402). Section 7(A)(1) of the ESA states that "All other Federal agencies shall, in consultation with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered

species and threatened species listed pursuant to Section 4 of the ESA.” Consultations under the ESA are divided into two categories: formal and informal. In general, no formal consultation is required if the action agency finds, with the USFWS’s written concurrence, that the proposed action “may affect, but is not likely to adversely affect” listed species or critical habitat. This finding can be made only if all of the reasonably expected effects of the proposed action will be beneficial, insignificant, or discountable. The action agency must request concurrence in writing from the USFWS for this finding. Preparation of a biological assessment is required before formal consultation begins and also is required for informal consultation in cases involving major construction activity where listed species or critical habitat are present. Anywhere from a few weeks to more than a year could be required to finalize a biological assessment before it can be submitted to the USFWS as part of the request to initiate formal consultations. Formal consultations involve up to 90 days and an additional 45 days for the USFWS to prepare a biological opinion (135 days total). A biological opinion is a written statement from the USFWS regarding its opinion and a summary of the information on which the opinion is based, detailing how the agency action affects the species and/or its critical habitat. The biological opinion may provide nondiscretionary “reasonable and prudent” measures that should be implemented in conjunction with a proposed action to avoid or minimize impacts. The USFWS also provides nonbinding conservation recommendations as part of the biological opinion.

CLEAN WATER ACT (33 USC 1251 - 1387)

The Clean Water Act (CWA) is the law under which most US Army Corps of Engineers (USACE) permits are issued for discharging fill into wetlands. Most of the act deals with water pollution, which is the purview of the EPA. Responsibility for disposing of dredged material was delegated to the USACE because of its historic role in that arena, but the EPA still maintains ultimate responsibility for overseeing the program. The COE regulations are published at 33 CFR 320 - 384; those of the EPA are published at 40 CFR 230 - 233 and are often referred to as Section 404(b)(1) guidelines. Section 404 of the Act defines dredge and fill responsibilities under the CWA. Exemptions for Section 404 permits are granted for normal agricultural, livestock grazing, and silvicultural activities, as well as for maintaining existing drains, culverts, farm ponds, and roads. The USACE manages the wetland permitting program, but the EPA has veto power over COE permit decisions, and the USFWS and National Marine Fisheries Service have consultative rights. The USACE and the EPA share enforcement authority. States can adopt administration of parts of the program from the USACE, with EPA oversight. The point of contact for Section 404 permit issues is the USACE. Section 319 of the CWA addresses nonpoint source pollution by requiring all states to report to EPA all major sources of nonpoint source pollution. States must develop management programs with identified best management practices suitable for reducing nonpoint source pollution. Section 319(h) grants are awarded to states with approved nonpoint source pollution programs. Such grant money supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects.

RELEVANT EXECUTIVE ORDERS

EO 11990—Protection of Wetlands. This order requires federal agencies to avoid adverse impacts associated with the destruction or modification of wetlands wherever there is a practicable alternative. Projects in wetlands should include all feasible measures to minimize harm to wetlands.

EO 11644—Use of Off-road Vehicles on Public Lands. This order requires federal agencies to establish policies and provide for procedures to ensure that the use of off road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands. The order clarifies agency

authority to define zones of use by off-road vehicles on public lands by exempting fire, military, emergency, law enforcement, or combat/combat support vehicles.

EO 13112—Invasive Species. This order requires that to the extent permitted by law, federal agencies will restrict the introduction of exotic species into the natural ecosystems on lands and waters that they own, lease, or hold for purposes of administration, and they will encourage the states, local governments, and private citizens to prevent the introduction of exotic species into natural ecosystems of the United States. It also requires executive agencies, to the extent permitted by law, to restrict the use of federal funds, programs, or authorities to export native species for the purpose of introducing such species into ecosystems outside the United States where they do not naturally occur.

EO 13175—Consultation and Coordination with Indian Tribal Governments. This order requires federal agencies to have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.

OTHER FEDERAL ACTS

In addition to the laws discussed above, there are a number of other laws that must be considered in natural resource management. Table 2-1 lists the major federal natural resource laws and regulations, along with a qualitative assessment on the likely influence they have on management activities at Camp Adair. The Legal Information Institute, at <http://www.law.cornell.edu/topics/environmental.html>, conveniently provides the complete text of codified laws.

APPENDIX C
SOIL EROSION HAZARD DATA

Camp Adair Soil Erosion Hazard Data

MAP UNIT SYMBOL	MAP UNIT NAME	COMPONENT NAME	R	K	Kf	SLOPE LOW (%)	SLOPE HIGH (%)	SLOPE AVG. (%)	AVG. SLOPE LENGTH (FT)	AVG. RUSLE LS	T	POTENTIAL SOIL LOSS (R x K x LS) tons/acre/yr - bare soil surface	RUSLE Erodibility Index (EI)
2301A	AMITY SILT LOAM, 0 TO 3 PERCENT SLOPES	AMITY	60	0.28	0.28	0	3	2	500	0.36	5	6.0	1.2
2305A	CONCORD SILT LOAM, 0 TO 2 PERCENT SLOPES	CONCORD	60	0.37	0.37	0	2	1	500	0.18	5	4.0	0.8
2306A	DAYTON SILT LOAM, 0 TO 2 PERCENT SLOPES	DAYTON	60	0.37	0.37	0	2	1	500	0.18	5	4.0	0.8
2702D	DIXONVILLE SILTY CLAY LOAM, 12 TO 20 PERCENT SLOPES	DIXONVILLE	60	0.32	0.37	12	20	16	400	5.86	3	112.5	37.5
2702E	DIXONVILLE SILTY CLAY LOAM, 20 TO 30 PERCENT SLOPES	DIXONVILLE	60	0.32	0.37	20	30	25	350	9.59	3	184.1	61.4
2702C	DIXONVILLE SILTY CLAY LOAM, 3 TO 12 PERCENT SLOPES	DIXONVILLE	60	0.32	0.37	3	12	8	450	2.14	3	41.1	13.7
2711C	JORY SILTY CLAY LOAM, 2 TO 12 PERCENT SLOPES	JORY	60	0.15	0.20	2	12	7	450	1.81	5	16.3	3.3
2718D	JORY-NEKIA COMPLEX, 12 TO 20 PERCENT SLOPES	JORY	60	0.15	0.20	12	20	16	400	5.86	5	52.7	10.5
2718D	JORY-NEKIA COMPLEX, 12 TO 20 PERCENT SLOPES	NEKIA	60	0.15	0.20	12	20	16	400	5.86	2	52.7	26.4
2718E	JORY-NEKIA COMPLEX, 20 TO 30 PERCENT SLOPES	JORY	60	0.15	0.20	20	30	25	350	9.59	5	86.3	17.3
2718E	JORY-NEKIA COMPLEX, 20 TO 30 PERCENT SLOPES	NEKIA	60	0.15	0.20	20	30	25	350	9.59	2	86.3	43.2
2208B	MCALPIN SILTY CLAY LOAM, 3 TO 6 PERCENT SLOPES	MCALPIN	60	0.15	0.20	3	6	5	500	1.23	5	11.1	2.2
2020A	MCALPIN SILTY CLAY LOAM, RARELY FLOODED, 0 TO 3 PERCENT SLOPES	MCALPIN	60	0.15	0.20	0	3	2	500	0.36	5	3.2	0.6
2719F	PRICE-MACDUNN-RITNER COMPLEX, 30 TO 60 PERCENT SLOPES	PRICE	60	0.20	0.28	30	60	45	250	14.13	5	169.6	33.9
2719F	PRICE-MACDUNN-RITNER COMPLEX, 30 TO 60 PERCENT SLOPES	MACDUNN	60	0.20	0.32	30	60	45	250	14.13	3	169.6	56.5

Camp Adair Soil Erosion Hazard Data

MAP UNIT SYMBOL	MAP UNIT NAME	COMPONENT NAME	R	K	Kf	SLOPE LOW (%)	SLOPE HIGH (%)	SLOPE AVG. (%)	AVG. SLOPE LENGTH (FT)	AVG. RUSLE LS	T	POTENTIAL SOIL LOSS (R x K x LS) tons/acre/yr - bare soil surface	RUSLE Erodibility Index (EI)
2719F	PRICE-MACDUNN-RITNER COMPLEX, 30 TO 60 PERCENT SLOPES	RITNER	60	0.20	0.32	30	60	45	250	14.13	2	169.6	84.8
2012A	WALDO SILTY CLAY LOAM, 0 TO 3 PERCENT SLOPES	WALDO	60	0.15	0.24	0	3	2	500	0.36	5	3.2	0.6
2734C	WITHAM SILTY CLAY LOAM, 2 TO 12 PERCENT SLOPES	WITHAM	60	0.32	0.32	2	12	7	450	1.81	5	34.8	7.0
2746D	WITZEL-RITNER COMPLEX, 12 TO 30 PERCENT SLOPES	WITZEL	60	0.20	0.37	12	30	21	350	7.73	1	92.8	92.8
2746D	WITZEL-RITNER COMPLEX, 12 TO 30 PERCENT SLOPES	RITNER	60	0.20	0.32	12	30	21	350	7.73	2	92.8	46.4
2735C	WITZEL-RITNER COMPLEX, 3 TO 12 PERCENT SLOPES	WITZEL	60	0.20	0.37	3	12	8	450	2.14	1	25.7	25.7
2735C	WITZEL-RITNER COMPLEX, 3 TO 12 PERCENT SLOPES	RITNER	60	0.20	0.32	3	12	8	450	2.14	2	25.7	12.8
2746E	WITZEL-RITNER COMPLEX, 30 TO 60 PERCENT SLOPES	WITZEL	60	0.20	0.37	30	60	45	250	14.13	1	169.6	169.6
2746E	WITZEL-RITNER COMPLEX, 30 TO 60 PERCENT SLOPES	RITNER	60	0.20	0.32	30	60	45	250	14.13	2	169.6	84.8
2310A	WOODBURN SILT LOAM, 0 TO 3 PERCENT SLOPES	WOODBURN	60	0.28	0.28	0	3	2	500	0.36	5	6.0	1.2
<i>Source: U.S. Department of Agriculture, Natural Resources Conservation Service, Benton County Area Soil Survey</i>													

APPENDIX D
PLANT SPECIES AT CAMP ADAIR

Camp Adair Plant List

Family	Scientific Name	Other name(s)	Common name	Local Abundance	Heritage Rank	Federal Status	Oregon Status	2004 ONHIC List	
Threatened and Endangered Species									
Fabaceae	<i>Lupinus sulphureus</i> Dougl. ex Hook. ssp. <i>kincaidii</i>		Kincaid's lupine	occasional	G5T2 S2	LT	LT	1	
Malvaceae	<i>Sidalcea nelsoniana</i> Piper		Nelson's checker mallow; Nelson's sidalcea	occasional	G2 S2	LT	LT	1	
Species of Concern									
Malvaceae	<i>Sidalcea campestris</i> Greene		meadow sidalcea; meadow checker mallow	occasional	G4 S4	-----	C	4	
Portulacaceae	<i>Montia howellii</i>		Howell's montia, Howell's miner's lettuce	scarce	G3G4 S3	---	C	4	
Native Species									
Pinaceae	<i>Abies grandis</i>		grand fir, lowland white fir	abundant					
Aceraceae	<i>Acer circinatum</i>		vine maple	common					
Aceraceae	<i>Acer macrophyllum</i>		bigleaf maple	abundant					
Asteraceae	<i>Achillea millefolium</i>		yarrow, milfoil	common					
Asteraceae	<i>Adenocaulon bicolor</i>		trailplant, pathfinder	abundant					
Asteraceae	<i>Agoseris grandiflora</i>		large flowered agoseris	occasional					
Poaceae	<i>Agrostis exarata</i>		spike bentgrass	occasional					
Liliaceae	<i>Allium amplexens</i>		slim leaf onion	occasional					
Rosaceae	<i>Amelanchier alnifolia</i> var. <i>semiintegrifolia</i>		Pacific serviceberry	occasional					
Ranunculaceae	<i>Aquilegia formosa</i>		red columbine, sitka columbine	occasional					
Ericaceae	<i>Arbutus menziesii</i>		Pacific madrone, madroño	occasional					
Asclepidaceae	<i>Asclepias speciosa</i>		showy milkweed, Greek milkweed	scarce					
Asteraceae	<i>Aster hallii</i>	<i>Aster chilensis</i> ssp. <i>Hallii</i> (FPN)	Hall's aster	scarce					
Asteraceae	<i>Aster subspicatus</i>		Douglas' aster	common					
Dryopteridaceae	<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>		northwestern lady fern	common					
Brassicaceae	<i>Barbarea orthoceras</i>		American wintercress	common					
Poaceae	<i>Beckmannia syzigachne</i>		American sloughgrass	occasional					
Berberidaceae	<i>Berberis aquifolium</i>		shining Oregon grape, tall Oregon grape	common					
Ophioglossaceae	<i>Botrychium multifidum</i>		leather grapefern	scarce					
Liliaceae	<i>Brodiaea elegans</i> ssp. <i>hooveri</i>		elegant brodiaea	common					
Liliaceae	<i>Calochortus tolmiei</i>		Tolmie's mariposa, Oregon mariposa lily	common					
Orchidaceae	<i>Calypso bulbosa</i>		calypso orchid, fairy slipper	common					
Liliaceae	<i>Camassia quamash</i> var. <i>maxima</i>		small camas	occasional					
Brassicaceae	<i>Cardamine nuttallii</i> var. <i>nuttallii</i>		Nuttall's toothwort	common					
Brassicaceae	<i>Cardamine oligosperma</i>		little western bittercress	occasional					
Brassicaceae	<i>Cardamine penduliflora</i>		Willamette Valley bittercress, wetlands bittercress	scarce					
Cyperaceae	<i>Carex aurea</i>		golden sedge, pumpkin sedge	scarce					
Cyperaceae	<i>Carex densa</i>		dense sedge	occasional					
Cyperaceae	<i>Carex deweyana</i> ssp. <i>leptopoda</i>		Dewey's sedge	common					
Cyperaceae	<i>Carex hendersonii</i>		Henderson's sedge	scarce					
Cyperaceae	<i>Carex obnupta</i>		slough sedge	abundant					
Cyperaceae	<i>Carex ovalis</i>	<i>Carex leporina</i> (FPN)	hare sedge	occasional					
Cyperaceae	<i>Carex pachystachya</i>		thick headed sedge	occasional					
Cyperaceae	<i>Carex pellita</i>	<i>Carex lanuginosa</i> (FPN)	woolly sedge	occasional					
Cyperaceae	<i>Carex tumulicola</i>		foothill sedge	occasional					
Scrophulariaceae	<i>Castilleja attenuata</i>	<i>Orthocarpus attenuatus</i> (FPN)	narrowleaf paintbrush; valley tassels	scarce					
Onagraceae	<i>Circaea alpina</i> ssp. <i>pacifica</i>		enchanter's nightshade	common					
Onagraceae	<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	<i>Clarkia quadrivulnera</i> (FPN)	small flowered godetia	scarce					
Portulacaceae	<i>Claytonia sibirica</i>	<i>Montia sibirica</i> (FPN)	Siberian candyflower	common					

Camp Adair Plant List

Cornaceae	<i>Cornus sericea</i>	<i>Cornus stolonifera</i> var. <i>occidentalis</i> (FPN)	red osier dogwood, creek dogwood	common				
Betulaceae	<i>Corylus cornuta</i> var. <i>californica</i>		California hazelnut	common				
Rosaceae	<i>Crataegus suksdorfii</i>	<i>Crataegus douglasii</i> var. <i>suksdorfii</i> (FPN)	Suksdorf's hawthorn	scarce				
Boraginaceae	<i>Cynoglossum grande</i>		Pacific hound's tongue	occasional				
Poaceae	<i>Danthonia californica</i>		California danthonia, California oatgrass	common				
Ranunculaceae	<i>Delphinium menziesii</i>		Menzies' larkspur, Puget Sound larkspur	common				
Poaceae	<i>Deschampsia cespitosa</i>		tufted hairgrass	common				
Liliaceae	<i>Dichelostemma congestum</i>	<i>Brodiaea congesta</i> (FPN)	cluster lily, ookow	occasional				
Primulaceae	<i>Dodecatheon hendersonii</i>		Henderson's shooting star, broadleaf shooting star	scarce				
Campanulaceae	<i>Downingia elegans</i>		showy downingia, elegant downingia	common				
Brassicaceae	<i>Draba verna</i>		spring whitlow grass	common				
Cyperaceae	<i>Eleocharis palustris</i>		creeping spike rush	scarce				
Poaceae	<i>Elymus glaucus</i> ssp. <i>glaucus</i>		blue wildrye, western wildrye	common				
Onagraceae	<i>Epilobium ciliatum</i> ssp. <i>ciliatum</i>	<i>Epilobium watsonii</i> var. <i>occidentale</i> (FPN)	purple leaved willowherb	common				
Onagraceae	<i>Epilobium densiflorum</i>	<i>Boisduvalia densiflora</i> (FPN)	denseflower spike primrose	scarce				
Equisetaceae	<i>Equisetum arvense</i>		field horsetail, common horsetail	occasional				
Asteraceae	<i>Eriophyllum lanatum</i> var. <i>lanatum</i>		common eriophyllum, common woolly sunflower	occasional				
Poaceae	<i>Festuca roemerii</i> var. <i>roemerii</i>		Roemer's fescue	occasional				
Poaceae	<i>Festuca subuliflora</i>		crinkle awn fescue, Coast Range fescue	scarce				
Rosaceae	<i>Fragaria virginiana</i> var. <i>platypetala</i>		broad petal strawberry, wild strawberry	abundant				
Oleaceae	<i>Fraxinus latifolia</i>		Oregon ash	abundant				
Rubiaceae	<i>Galium aparine</i>		stickywilly, cleavers	common				
Rubiaceae	<i>Galium trifidum</i> var. <i>pacificum</i>		small bedstraw	common				
Rubiaceae	<i>Galium triflorum</i>		sweetscented bedstraw	common				
Geraniaceae	<i>Geranium oreganum</i>		western geranium	scarce				
Rosaceae	<i>Geum macrophyllum</i> var. <i>macrophyllum</i>		large leaved avens	common				
Poaceae	<i>Glyceria occidentalis</i>		western mannagrass	occasional				
Poaceae	<i>Glyceria striata</i>	<i>Glyceria elata</i> (FPN)	fowl mannagrass	occasional				
Asteraceae	<i>Gnaphalium palustre</i>		lowland cudweed	common				
Scrophulariaceae	<i>Gratiola ebracteata</i>		bractless hedge hyssop	scarce				
Apiaceae	<i>Heracleum lanatum</i>		cow parsnip	occasional				
Rosaceae	<i>Holodiscus discolor</i>		creambush oceanspray	occasional				
Poaceae	<i>Hordeum brachyantherum</i>		northern meadow barley, meadow barley	occasional				
Iridaceae	<i>Iris tenax</i>		Oregon iris	scarce				
Juncaceae	<i>Juncus acuminatus</i>		tapered rush, sharp fruited rush	occasional				
Juncaceae	<i>Juncus bufonius</i>		toad rush	common				
Juncaceae	<i>Juncus effusus</i> var. <i>gracilis</i>		shiny rush	common				
Juncaceae	<i>Juncus oxymeris</i>		pointed rush	occasional				
Juncaceae	<i>Juncus patens</i>		spreading rush	common				
Juncaceae	<i>Juncus tenuis</i>		slender rush	common				
Juncaceae	<i>Juncus xiphioides</i> var. <i>triandrus</i>	<i>Juncus ensifolius</i> var. <i>ensifolius</i> (FPN)	swordleaf rush, dagger leaved rush	occasional				
Lemnaceae	<i>Lemna minor</i>		common duckweed, water lentil	scarce				
Apiaceae	<i>Ligusticum apiifolium</i>		celery leaved lovage, parsley leaved lovage	common				
Apiaceae	<i>Lomatium dissectum</i> var. <i>dissectum</i>		fernleaf lomatium, fernleaf desert parsley	scarce				
Apiaceae	<i>Lomatium macrocarpum</i>		large fruited lomatium	scarce				
Caprifoliaceae	<i>Lonicera hispidula</i> var. <i>hispidula</i>		hairy honeysuckle	common				
Caprifoliaceae	<i>Lonicera involucrata</i> var. <i>involucrata</i>		black twinberry	scarce				
Fabaceae	<i>Lotus formosissimus</i>		seaside lotus	scarce				
Fabaceae	<i>Lotus purshianus</i>		Pursh's lotus	common				
Fabaceae	<i>Lupinus bicolor</i>	<i>Lupinus micranthus</i> (FPN)	two color lupine, miniature lupine	common				
Fabaceae	<i>Lupinus polyphyllus</i> var. <i>polyphyllus</i>		bigleaf lupine, many leaved lupine	common				
Juncaceae	<i>Luzula comosa</i>	<i>Luzula campestris</i> (FPN)	common woodrush	occasional				
Asteraceae	<i>Madia sativa</i>		coast tarweed	common				
Liliaceae	<i>Maianthemum stellatum</i>	<i>Smilacina stellata</i> (FPN)	small or starry false Solomon's seal	occasional				
Rosaceae	<i>Malus fusca</i>	<i>Pyrus fusca</i> (FPN)	western crabapple, Oregon crabapple	common				
Cucurbitaceae	<i>Marah oreganus</i>		Oregon bigroot, old man in the ground	scarce				

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Lamiaceae	<i>Mentha arvensis</i> var. <i>canadensis</i>		field mint, corn mint	occasional				
Scrophulariaceae	<i>Mimulus guttatus</i>		seep monkeyflower, common monkeyflower	common				
Scrophulariaceae	<i>Mimulus moschatos</i>		musk monkeyflower	occasional				
Ericaceae	<i>Monotropa hypopitys</i>	<i>Hypopitys monotropa</i> (FPN)	pinemap	scarce				
Portulacaceae	<i>Montia fontana</i>		water chickweed	scarce				
Portulacaceae	<i>Montia linearis</i>		narrowleaf montia, line leaf Indian lettuce	scarce				
Polemoniaceae	<i>Navarretia intertexta</i> ssp. <i>intertexta</i>		needleleaf navarretia	occasional				
Polemoniaceae	<i>Navarretia squarrosa</i>		skunkweed	occasional				
Hydrophyllaceae	<i>Nemophila parviflora</i> var. <i>parviflora</i>		small flowered nemophila	abundant				
Rosaceae	<i>Oemleria cerasiformis</i>		osoberry	common				
Apiaceae	<i>Oenanthe sarmentosa</i>		Pacific water parsley	common				
Apiaceae	<i>Osmorhiza berteroi</i>	<i>Osmorhiza chilensis</i> (FPN)	mountain sweet cicely	abundant				
Apiaceae	<i>Perideridia gairdneri</i> ssp. <i>borealis</i>		Gairdner's yampah	scarce				
Poaceae	<i>Phalaris arundinacea</i>		reed canary grass	occasional				
Viscaceae	<i>Phoradendron villosum</i>	<i>Phoradendron flavescens</i> var. <i>villosum</i> (FPN)	oak mistletoe	common				
Rosaceae	<i>Physocarpus capitatus</i>		Pacific ninebark	occasional				
Orchidaceae	<i>Piperia elegans</i>	<i>Habenaria greenei</i> , <i>H. elegans</i> (FPN)	hillside rein orchid, elegant rein orchid	occasional				
Boraginaceae	<i>Plagiobothrys scouleri</i>		Scouler's popcorn flower	occasional				
Polygonaceae	<i>Polygonum bistortoides</i>		American bistort, western bistort	scarce				
Polygonaceae	<i>Polygonum douglasii</i> var. <i>douglasii</i>		Douglas knotweed	occasional				
Polypodiaceae	<i>Polypodium glycyrrhiza</i>		licorice fern	common				
Dryopteridaceae	<i>Polystichum munitum</i>		common sword fern	abundant				
Salicaceae	<i>Populus trichocarpa</i>		black cottonwood	occasional				
Rosaceae	<i>Potentilla gracilis</i> var. <i>gracilis</i>		graceful cinquefoil	occasional				
Lamiaceae	<i>Prunella vulgaris</i> var. <i>lanceolata</i>		native heal all	common				
Rosaceae	<i>Prunus emarginata</i>		bitter cherry	occasional				
Pinaceae	<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>		coast Douglas fir, Douglas fir	abundant				
Asteraceae	<i>Psilocarphus elatior</i>		tall woollyheads	occasional				
Dennstaedtiaceae	<i>Pteridium aquilinum</i> var. <i>pubescens</i>		bracken fern, brake fern	abundant				
Fagaceae	<i>Quercus garryana</i> var. <i>garryana</i>		Oregon white oak	abundant				
Ranunculaceae	<i>Ranunculus alismifolius</i> var. <i>alismifolius</i>		plantain leaved buttercup	scarce				
Ranunculaceae	<i>Ranunculus aquatilis</i> var. <i>aquatilis</i>		stiff leaved water buttercup	scarce				
Ranunculaceae	<i>Ranunculus flammula</i>		creeping buttercup, lesser spearwort	occasional				
Ranunculaceae	<i>Ranunculus occidentalis</i> var. <i>occidentalis</i>		western buttercup	common				
Ranunculaceae	<i>Ranunculus orthorhynchus</i> var. <i>orthorhynchus</i>		straightbeak buttercup, bird's foot buttercup	common				
Ranunculaceae	<i>Ranunculus uncinatus</i>		little buttercup	occasional				
Rhamnaceae	<i>Rhamnus purshiana</i>		casarea, chittam	common				
Brassicaceae	<i>Rorippa curvisiliqua</i>		curvedop yellowcress, western yellowcress	occasional				
Rosaceae	<i>Rosa gymnocarpa</i>		little wild rose	scarce				
Rosaceae	<i>Rosa nutkana</i> var. <i>nutkana</i>		Nootka rose	abundant				
Rosaceae	<i>Rubus leucodermis</i> var. <i>leucodermis</i>		western black raspberry, western blackcap	occasional				
Rosaceae	<i>Rubus ursinus</i>		Pacific blackberry, Pacific dewberry	abundant				
Polygonaceae	<i>Rumex salicifolius</i> var. <i>salicifolius</i>		willow dock	scarce				
Caryophyllaceae	<i>Sagina apetala</i>		common pearlwort, arctic pearlwort	occasional				
Salicaceae	<i>Salix hookeriana</i>	<i>Salix piperi</i> (FPN) (plants at Adair)	coastal willow, Hooker's willow	common				
Salicaceae	<i>Salix lucida</i> ssp. <i>lasiandra</i>	<i>Salix lasiandra</i> var. <i>lasiandra</i> (FPN)	Pacific willow	occasional				
Salicaceae	<i>Salix prolixa</i>		Mackenzie's willow	occasional				
Salicaceae	<i>Salix sitchensis</i>		Sitka willow	occasional				
Rosaceae	<i>Sanguisorba occidentalis</i>		annual burnet	occasional				
Apiaceae	<i>Sanicula bipinnatifida</i>		purple sanicle, purple snakeroot	occasional				
Apiaceae	<i>Sanicula crassicaulis</i>		Pacific snakeroot, western snakeroot	common				
Saxifragaceae	<i>Saxifraga integrifolia</i>		wholeleaf saxifrage, common western saxifrage	scarce				
Cyperaceae	<i>Scirpus microcarpus</i>		panicled bulrush, small fruited bulrush	occasional				
Malvaceae	<i>Sidalcea virgata</i>		rose sidalcea, rose checker mallow	occasional				
Caryophyllaceae	<i>Silene hookeri</i>		Hooker's pink	scarce				
Iridaceae	<i>Sisyrinchium bellum</i>	<i>Sisyrinchium angustifolium</i> (FPN)	beautiful or handsome blue eyed grass	occasional				

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Rosaceae	<i>Spiraea douglasii</i> var. <i>douglasii</i>		Douglas spiraea	occasional				
Lamiaceae	<i>Stachys cooleyae</i>		great betony, Cooley's hedgenettle	scarce				
Lamiaceae	<i>Stachys rigida</i>		rigid betony, rigid hedgenettle	scarce				
Caryophyllaceae	<i>Stellaria borealis</i> ssp. <i>sitchana</i>	<i>Stellaria calycantha</i> var. <i>sitchana</i> (FPN)	few flowered northern starwort	occasional				
Caprifoliaceae	<i>Symphoricarpos albus</i> var. <i>laevigatus</i>		common snowberry	abundant				
Saxifragaceae	<i>Tellima grandiflora</i>		large fringe cup	common				
Ranunculaceae	<i>Thalictrum occidentale</i>		western meadowrue	occasional				
Ranunculaceae	<i>Thalictrum polycarpum</i>		tall western meadowrue, many fruited meadowrue	scarce				
Anacardiaceae	<i>Toxicodendron diversilobum</i>	<i>Rhus diversiloba</i> (FPN)	poison oak	abundant				
Primulaceae	<i>Trientalis latifolia</i>		western starflower	occasional				
Liliaceae	<i>Trillium albidum</i>		giant trillium, sessile trillium	occasional				
Liliaceae	<i>Trillium ovatum</i>		western trillium	scarce				
Liliaceae	<i>Triteleia hyacinthina</i>	<i>Brodiaea hyacinthina</i> (FPN)	hyacinth triteleia, hyacinth brodiaea	occasional				
Typhaceae	<i>Typha latifolia</i>		common cattail, broad leaf cattail	occasional				
Urticaceae	<i>Urtica dioica</i> ssp. <i>gracilis</i>		northwest nettle, American stinging nettle	occasional				
Liliaceae	<i>Veratrum viride</i> var. <i>eschscholtzii</i>		Indian poke, green false hellebore	scarce				
Scrophulariaceae	<i>Veronica americana</i>		American brooklime	common				
Scrophulariaceae	<i>Veronica peregrina</i> var. <i>xalapensis</i>		hairy purslane speedwell	occasional				
Scrophulariaceae	<i>Veronica scutellata</i>		marsh speedwell, skullcap speedwell	occasional				
Poaceae	<i>Vulpia microstachys</i>	<i>Festuca microstachys</i> (FPN)	desert fescue, small fescue	common				
Asteraceae	<i>Wyethia angustifolia</i>		narrowleaf wyethia, narrow leaved mule's ears	occasional				
Liliaceae	<i>Zigadenus venenosus</i> var. <i>venenosus</i>		meadow deathcamas, deadly zigadenus	occasional				
Exotic Species								
Liliaceae	<i>Allium vineale</i>		crow garlic, field garlic	scarce				
Poaceae	<i>Alopecurus pratensis</i>		meadow foxtail	common				
Asteraceae	<i>Anthemis cotula</i>		mayweed chamomile, dogfennel	occasional				
Poaceae	<i>Anthoxanthum odoratum</i>		sweet vernalgrass	abundant				
Apiaceae	<i>Anthriscus caucalis</i>	<i>Anthriscus scandicina</i> (FPN)	bur chervil	scarce				
Asteraceae	<i>Arctium minus</i>		common burdock	scarce				
Poaceae	<i>Avena fatua</i>		wild oat	occasional				
Asteraceae	<i>Bellis perennis</i>		English daisy, lawn daisy	common				
Poaceae	<i>Briza minor</i>		little quakinggrass	occasional				
Poaceae	<i>Bromus hordeaceus</i>	<i>Bromus mollis</i> (FPN)	soft brome	occasional				
Poaceae	<i>Bromus rigidus</i>		ripgut brome	occasional				
Callitrichaceae	<i>Callitriche stagnalis</i>		pond water starwort	scarce				
Asteraceae	<i>Centaurea pratensis</i>		meadow knapweed	abundant			Nx-B	
Gentianaceae	<i>Centaureum erythraea</i>	<i>Centaureum umbellatum</i> (FPN)	common centaury, European centaury	occasional				
Caryophyllaceae	<i>Cerastium glomeratum</i>	<i>Cerastium viscosum</i> (FPN)	sticky chickweed, sticky cerastium	common				
Asteraceae	<i>Cirsium arvense</i>		Canada thistle, creeping thistle	common			Nx-B	
Asteraceae	<i>Cirsium vulgare</i>		bull thistle, common thistle	common			Nx-B	
Convolvulaceae	<i>Convolvulus arvensis</i>		field morning glory, field bindweed	common			Nx-B	
Rosaceae	<i>Crataegus monogyna</i>		one seeded hawthorn, English hawthorn	occasional				
Asteraceae	<i>Crepis capillaris</i>		smooth hawksbeard	common				
Asteraceae	<i>Crepis setosa</i>		rough hawksbeard, bristly hawksbeard	scarce				
Poaceae	<i>Cynosurus cristatus</i>		crested dogtail	occasional				
Poaceae	<i>Cynosurus echinatus</i>		hedgehog dogtail	common				
Fabaceae	<i>Cytisus scoparius</i>		Scots broom	common			Nx-B	
Poaceae	<i>Dactylis glomerata</i>		orchard grass, cock's foot grass	abundant				
Apiaceae	<i>Daucus carota</i>		wild carrot, Queen Anne's lace	common				
Caryophyllaceae	<i>Dianthus armeria</i>		Deptford pink, grass pink	occasional				
Scrophulariaceae	<i>Digitalis purpurea</i>		foxglove	scarce				
Poaceae	<i>Digitaria sanguinalis</i>		hairy crabgrass	occasional				
Dipsacaceae	<i>Dipsacus fullonum</i>	<i>Dipsacus sylvestris</i> (FPN)	fuller's teasel	occasional				
Asteraceae	<i>Erechtites minima</i>		Australian burnweed, toothed coast fireweed	occasional				
Poaceae	<i>Festuca arundinacea</i>		tall fescue	abundant				

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Poaceae	<i>Festuca pratensis</i>		meadow fescue, English fescue	occasional				
Poaceae	<i>Festuca rubra</i> var. <i>commutata</i>		Chewings fescue, Chewings red fescue	common				
Rubiaceae	<i>Galium parisiense</i>		wall bedstraw	occasional				
Geraniaceae	<i>Geranium dissectum</i>		cutleaf geranium	occasional				
Geraniaceae	<i>Geranium robertianum</i>		herb Robert, Robert geranium	common				
Poaceae	<i>Holcus lanatus</i>		common velvetgrass, Yorkshire fog	abundant				
Hypericaceae	<i>Hypericum perforatum</i>		Klamathweed, common St. John's wort	common			Nx-B	
Asteraceae	<i>Hypochaeris radicata</i>		rough cat's ear, hairy cat's ear	abundant				
Scrophulariaceae	<i>Kickxia elatine</i>		sharp leaved fluellin	scarce				
Asteraceae	<i>Lactuca muralis</i>		wall lettuce	abundant				
Asteraceae	<i>Lapsana communis</i>		nipplewort	occasional				
Fabaceae	<i>Lathyrus angulatus</i>		angled pea	occasional				
Fabaceae	<i>Lathyrus aphaca</i>		yellow vetchling	scarce				
Asteraceae	<i>Leontodon taraxacoides</i> ssp. <i>taraxacoides</i>	<i>Leontodon nudicaulis</i> ssp. <i>Taraxacoides</i> (FPN)	hairy hawkbit, rough hawkbit	common				
Asteraceae	<i>Leucanthemum vulgare</i>	<i>Chrysanthemum leucanthemum</i> (FPN)	oxeye daisy	abundant				
Linaceae	<i>Linum bienne</i>	<i>Linum angustifolium</i> (FPN)	pale flax, narrow leaved flax	occasional				
Poaceae	<i>Lolium perenne</i>		perennial ryegrass	common				
Fabaceae	<i>Lotus corniculatus</i>		birdsfoot trefoil	common				
Lythraceae	<i>Lythrum portula</i>		purslane loosestrife, water purslane	occasional				
Rosaceae	<i>Malus domestica</i>	<i>Pyrus malus</i> (FPN)	domestic apple	occasional				
Fabaceae	<i>Melilotus alba</i>		white sweet clover	occasional				
Lamiaceae	<i>Mentha pulegium</i>		pennyroyal	occasional				
Boraginaceae	<i>Myosotis discolor</i>		yellow and blue forget-me-not, scorpion grass	occasional				
Scrophulariaceae	<i>Parentucellia viscosa</i>		yellow parentucellia	occasional				
Poaceae	<i>Phalaris aquatica</i>		Harding grass	common				
Poaceae	<i>Phleum pratense</i>		cultivated timothy	occasional				
Plantaginaceae	<i>Plantago major</i>		common plantain	common				
Poaceae	<i>Poa annua</i>		annual bluegrass	common				
Poaceae	<i>Poa pratensis</i> ssp. <i>pratensis</i>		Kentucky bluegrass	common				
Poaceae	<i>Poa trivialis</i>		roughstalk bluegrass	occasional				
Polygonaceae	<i>Polygonum arenastrum</i>		common knotweed, doorweed	common				
Portulacaceae	<i>Portulaca oleracea</i>		common purslane	scarce				
Rosaceae	<i>Prunus avium</i>		sweet cherry	occasional				
Rosaceae	<i>Prunus cerasifera</i>		cherry plum	occasional				
Rosaceae	<i>Rosa eglanteria</i>		sweet briar rose, eglantine rose	common				
Rosaceae	<i>Rosa multiflora</i>		multiflower rose	occasional				
Rosaceae	<i>Rubus armeniacus</i>	<i>Rubus discolor</i> (FPN)	Himalayan blackberry	abundant			Nx-B	
Rosaceae	<i>Rubus laciniatus</i>		evergreen blackberry, cut leaved blackberry	occasional				
Polygonaceae	<i>Rumex conglomeratus</i>		clustered dock	occasional				
Polygonaceae	<i>Rumex crispus</i>		curly dock	common				
Asteraceae	<i>Senecio jacobaea</i>		tansy ragwort	occasional			Nx-B, T	
Asteraceae	<i>Senecio vulgaris</i>		old man in the spring, common groundsel	common				
Rubiaceae	<i>Sherardia arvensis</i>		blue field madder	occasional				
Solanaceae	<i>Solanum dulcamara</i>		bittersweet, climbing nightshade	occasional				
Asteraceae	<i>Sonchus asper</i>		prickly sow thistle	occasional				
Caryophyllaceae	<i>Stellaria media</i>		common chickweed	common				
Poaceae	<i>Taeniatherum caput-medusae</i>	<i>Elymus caput-medusae</i> (FPN)	medusahead wildrye	occasional			Nx-B	
Apiaceae	<i>Torilis arvensis</i>		spreading hedge parsley	occasional				
Asteraceae	<i>Tragopogon dubius</i>		yellow salsify	occasional				
Fabaceae	<i>Trifolium dubium</i>		least hop clover	common				
Fabaceae	<i>Trifolium pratense</i>		red clover	occasional				
Fabaceae	<i>Trifolium repens</i>		white clover, Dutch clover	common				
Fabaceae	<i>Trifolium subterraneum</i>		subterranean clover	occasional				
Fabaceae	<i>Vicia hirsuta</i>		hairy vetch, tiny vetch	occasional				
Fabaceae	<i>Vicia sativa</i> var. <i>angustifolia</i>		common vetch, tare	occasional				
Fabaceae	<i>Vicia tetrasperma</i>		smooth tare	occasional				

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Fabaceae	<i>Vicia villosa var. villosa</i>		hairy vetch, fodder vetch	occasional					
NOTES:									
1. Plant listing and abundance information from Sundberg and Kuykendall. 1999. A Floristic Survey of Camp Adair Rifle Range.									
2. Heritage rank, Federal and Oregon Status, and OHNIC List information for native plants from Oregon Natural Heritage Information Center. 2004. Rare, Threatened and Endangered Species of Oregon.									
3. Oregon status of exotic plants as noxious weeds from Oregon Department of Agriculture (ODA) Noxious Weed Control Policy and Classification System 2005									
3. FPN = Hitchcock & Cronquist. 1998. Flora of the Pacific Northwest (11th ed.).									
4. G2 = Species is imperiled throughout its range.									
5. G4 = Species is not rare and is apparently secure throughout its range.									
6. G5T2 = Species is widespread, abundant and secure throughout its range, but subspecies is threatened or endangered in Oregon.									
7. S2 = Species is imperiled in Oregon.									
8. S4 = Species is not rare and is apparently secure in Oregon.									
9. LT = Listed as a threatened species									
10. C = Candidate for listing as Threatened or Endangered									
11. Nx-B = Listed by ODA as a noxious weed with a rating of "B," meaning that it is a weed of economic importance which is regionally abundant, but which may have limited distribution in some counties.									
12. Nx-B,T = Listed by ODA as a noxious weed with a rating of "B" and as a priority noxious weed designated by the Oregon State Weed Board as a target on which the Oregon Department of Agriculture will develop and implement a statewide management plan									

APPENDIX E
WILDLIFE SPECIES LIST

Animals of Camp Adair, Oregon

Family	Scientific Name	Other name(s)	Common name	Heritage Rank	Federal Status	Oregon Status	2004 ONHC List
Amphibians and Reptiles							
Threatened and Endangered Species	None						
Species of Concern							
Ranidae	<i>Rana aurora</i>		Northern Red-legged Frog	G4T4 S3S4	SOC	SV in Willamette Valley	4
Native Species							
Ambystomatidae	<i>Ambystoma macrodactylum</i>		Long-toed Salamander				
Anguidae	<i>Elgaria coerulea</i>		Northern Alligator Lizard				
Plethodontidae	<i>Ensatina eschscholtzi</i>		Ensatina				
Scincidae	<i>Eumeces skiltonianus</i>		Western Skink				
Colubridae	<i>Pituophis catenifer</i>		Gopher Snake				
Hylidae	<i>Pseudacris regilla</i>		Pacific Chorus Frog, Pacific Treefrog				
Anguidae	<i>Sceloporous occidentalis</i>		Western Fence Lizard				
Salamandridae	<i>Taricha granulosa</i>		Rough-skinned Newt				
Colubridae	<i>Thamnophis sirtalis</i>		Common Garter Snake				
Introduced and Exotic Species							
Ranidae	<i>Rana catesbiana</i>		Bullfrog				
Birds							
Threatened and Endangered Species	None						
Species of Concern							
Tyrannidae	<i>Contopus cooperi</i>	<i>Contopus borealis</i>	Olive-sided Flycatcher	G4 S3B	SOC	SV	4
Parulidae	<i>Icteria virens</i>		Yellow-breasted Chat	G5 S4B	SOC	SC	4
Odontophoridae	<i>Oreortyx pictus</i>		Mountain Quail	G5 S4	SOC	--	4
Columbidae	<i>Patagioenas fasciata</i>	<i>Columba fasciata</i>	Band-tailed Pigeon	G4 S3B	SOC	--	4
Turdidae	<i>Sialia mexicana</i>		Western Bluebird	G5 S4B, S4N	--	SV	4
Ictaridae	<i>Sturnella neglecta</i>		Western Meadowlark	G5 S4	--	SC	4

Family	Scientific Name	Other name(s)	Common name	Heritage Rank	Federal Status	Oregon Status	2004 ONHIC List
Native species							
Accipitridae	<i>Accipiter cooperii</i>		Cooper's Hawk				
Accipitridae	<i>Accipiter striatus</i>		Sharp-shinned Hawk				
Icteridae	<i>Agelaius phoeniceus</i>		Red-winged Blackbird				
Anatidae	<i>Aix sponsa</i>		Wood Duck				
Anatidae	<i>Anas platyrhynchos</i>		Mallard				
Corvidae	<i>Aphelocoma coerulescens</i>		Scrub Jay				
Tetraonidae	<i>Bonasa umbellus</i>		Ruffed Grouse				
Anatidae	<i>Branta canadensis</i>		Canada Goose				
Strigidae	<i>Bubo virginianus</i>		Great Horned Owl				
Accipitridae	<i>Buteo jamaicensis</i>		Red-tailed Hawk				
Accipitridae	<i>Buteo lagopus</i>		Rough-legged Hawk				
Scolopacidae	<i>Calidris minutilla</i>		Least Sandpiper				
Fringillidae	<i>Carduelis pinus</i>		Pine Siskin				
Fringillidae	<i>Carduelis tristis</i>		American Goldfinch				
Fringillidae	<i>Carpodacus mexicanus</i>		House Finch				
Fringillidae	<i>Carpodacus purpureus</i>		Purple Finch				
Cathartidae	<i>Cathartes aura</i>		Turkey Vulture				
Turdidae	<i>Catharus guttatus</i>		Hermit Thrush				
Turdidae	<i>Catharus ustulatus</i>		Swainson's Thrush				
Certhiidae	<i>Certhia americana</i>		Brown Creeper				
Apodidae	<i>Chaetura vauxi</i>		Vaux's Swift				
Charadriidae	<i>Charadrius vociferus</i>		Killdeer				
Accipitridae	<i>Circus cyaneus</i>		Northern Harrier, Marsh Hawk				
Fringillidae	<i>Coccothraustes vespertina</i>	<i>Coccothraustes vespertinus</i>	Evening Grosbeak				
Picidae	<i>Colaptes auratus</i>		Northern Flicker				
Tyrannidae	<i>Contopus sordidulus</i>		Western Wood-Pewee				
Corvidae	<i>Corvus brachyrhynchos</i>		American Crow				
Corvidae	<i>Corvus corax</i>		Common Raven				
Corvidae	<i>Cyanocitta stelleri</i>		Steller's Jay				
Phasianidae	<i>Dendragapus obscurus</i>		Blue Grouse				
Parulidae	<i>Dendroica coronata</i>		Yellow-rumped Warbler				
Parulidae	<i>Dendroica nigrescens</i>		Black-throated Gray Warbler				
Parulidae	<i>Dendroica townsendi</i>		Townsend's Warbler				
Picidae	<i>Dryocopus pileatus</i>		Pileated Woodpecker				
Tyrannidae	<i>Empidonax difficilis</i>		Pacific-slope Flycatcher, Western Flycatcher				
Alaudidae	<i>Eremophila alpestris</i>		Horned Lark, Shore lark				
Falconidae	<i>Falco sparverius</i>		American Kestrel				
Scolopacidae	<i>Gallinago gallinago</i>		Common Snipe				
Parulidae	<i>Geothlypis trichas</i>		Common Yellowthroat				
Strigidae	<i>Glaucidium gnoma</i>		Northern Pygmy-Owl				
Hirundinidae	<i>Hirundo rustica</i>		Barn Swallow				
Turdidae	<i>Ixoreus naevius</i>		Varied Thrush				
Emberizidae	<i>Junco hyemalis</i>		Dark-eyed Junco				
Laniidae	<i>Lanius excubitor</i>		Northern Shrike, Great Grey Shrike				
Anatidae	<i>Lophodytes cucullatus</i>		Hooded Merganser				

Family	Scientific Name	Other name(s)	Common name	Heritage Rank	Federal Status	Oregon Status	2004 ONHC List
Emberizidae	<i>Melospiza melodia</i>		Song Sparrow				
Icteridae	<i>Molothrus ater</i>		Brown-headed Cowbird				
Strigidae	<i>Otus kennicottii</i>	<i>Ottus kennicottii</i>	Western Screech-Owl				
Paridae	<i>Parus atricapillus</i>		Black-capped Chickadee				
Paridae	<i>Parus rufescens</i>		Chestnut-backed Chickadee, Chesnut-backed Titmouse				
Emberizidae	<i>Passerculus sandwichensis</i>		Savannah Sparrow				
Emberizidae	<i>Passerella iliaca</i>		Fox Sparrow				
Emberizidae	<i>Pheucticus melanocephalus</i>		Black-headed Grosbeak				
Picidae	<i>Picoides pubescens</i>		Downy Woodpecker				
Picidae	<i>Picoides villosus</i>		Hairy Woodpecker				
Emberizidae	<i>Pipilo erythrophthalmus</i>		Rufous-sided Towhee, Eastern Towhee				
Thraupidae	<i>Piranga ludoviciana</i>		Western Tanager, Scarlet Tanager				
Aegithalidae	<i>Psaltriparus minimus</i>		Common Bushtit				
Regulidae	<i>Regulus calendula</i>		Ruby-crowned Kinglet				
Regulidae	<i>Regulus satrapa</i>		Golden-crowned Kinglet				
Trochilidae	<i>Selasphorus rufus</i>		Rufous Hummingbird				
Sittidae	<i>Sitta canadensis</i>		Red-breasted Nuthatch				
Sittidae	<i>Sitta carolinensis</i>		White-breasted Nuthatch				
Picidae	<i>Sphyrapicus ruber</i>		Red-breasted Sapsucker				
Hirundinidae	<i>Tachycineta bicolor</i>		Tree Swallow				
Hirundinidae	<i>Tachycineta thalassina</i>		Violet-green Swallow				
Troglodytidae	<i>Thryomanes bewickii</i>		Bewick's Wren				
Troglodytidae	<i>Troglodytes troglodytes</i>		Winter Wren				
Turdidae	<i>Turdus migratorius</i>		American Robin				
Tytonidae	<i>Tyto alba</i>		Common Barn-Owl				
Parulidae	<i>Vermivora celata</i>		Orange-crowned Warbler				
Parulidae	<i>Wilsonia pusilla</i>		Wilson's Warbler				
Columbidae	<i>Zenaidura macroura</i>		Mourning Dove				
Emberizidae	<i>Zonotrichia atricapilla</i>		Golden-crowned Sparrow				
Emberizidae	<i>Zonotrichia leucophrys</i>		White-crowned Sparrow				
Introduced and Exotic Species							
Odontophoridae	<i>Callipepla californica</i>		California Quail				
Sturnidae	<i>Sturnus vulgaris</i>		European Starling				
Phasianidae	<i>Phasianus colchicus</i>		Ring-necked Pheasant				
Phasianidae	<i>Meleagris gallopavo</i>		Wild Turkey				
Mammals							
Threatened and Endangered Species	None						
Species of Concern							
Vespertilionidae	<i>Myotis californicus</i>		California Bat	G5 S3	--	--	4

Family	Scientific Name	Other name(s)	Common name	Heritage Rank	Federal Status	Oregon Status	2004 ONHIC List
Vespertilionidae	<i>Myotis evotis</i>		Long-eared Bat	G5 S4	SOC	SU	4
Vespertilionidae	<i>Myotis volans</i>		Long-legged Bat, Hairy-winged Bat	G5 S3	SOC	SU	4
Vespertilionidae	<i>Myotis yumanensis</i>		Yuma Bat	G5 S3	SOC	--	4
Sciuridae	<i>Sciurus griseus</i>		Western Gray Squirrel	G5 S4	--	SU	4
Native Species							
Canidae	<i>Canis latrans</i>		Coyote				
Castoridae	<i>Castor canadensis</i>		Beaver				
Cervidae	<i>Cervus elaphus roosevelti</i>		Roosevelt Elk				
Vespertilionidae	<i>Eptesicus fuscus</i>		Big Brown Bat				
Sciuridae	<i>Eutamias townsendi</i>		Townsend's Chipmunk				
Sciuridae	<i>Glaucomys sabrinus</i>		Northern Flying Squirrel				
Leporidae	<i>Lepus californicus</i>		Black-tailed Jackrabbit				
Felidae	<i>Lynx rufus</i>		Bobcat				
Mephitidae	<i>Mephitis mephitis</i>		Striped Skunk				
Muridae	<i>Microtus canicaudus</i>		Grey-tailed Vole				
Muridae	<i>Microtus oregoni</i>		Creeping Vole				
Muridae	<i>Microtus townsendii</i>		Townsend's Vole				
Vespertilionidae	<i>Myotis lucifugus</i>		Little Brown Bat				
Muridae	<i>Neotoma fuscipes</i>		Dusky-footed Woodrat				
Cervidae	<i>Odocoileus hemionus columbianus</i>		Columbia Black-tailed Deer				
Muridae	<i>Peromyscus maniculatus</i>		Deer Mouse				
Procyonidae	<i>Procyon lotor</i>		Raccoon				
Talpidae	<i>Scapanus townsendii</i>		Townsend's Mole				
Soricidae	<i>Sorex pacificus</i>		Pacific Shrew				
Soricidae	<i>Sorex trowbridgii</i>		Trowbridge's Shrew				
Soricidae	<i>Sorex vagrans</i>		Vagrant Shrew				
Sciuridae	<i>Spermophilus beecheyi</i>		Beechy's Ground Squirrel				
Leporidae	<i>Sylvilagus bachmani</i>		Brush Rabbit				
Sciuridae	<i>Tamiasciurus douglasi</i>		Douglas Squirrel				
Geomyidae	<i>Thomomys bulbivorus</i>		Camas Pocket Gopher				
Zapodidae	<i>Zapus trinotatus</i>		Pacific Jumping Mouse				
Introduced and Exotic Species							
Didelphidae	<i>Didelphis virginianus</i>		Virginia Opossum				
Felidae	<i>Felis catus</i>		Cat				
Leporidae	<i>Sylvilagus floridanus</i>		Eastern Cottontail Rabbit				

NOTES:

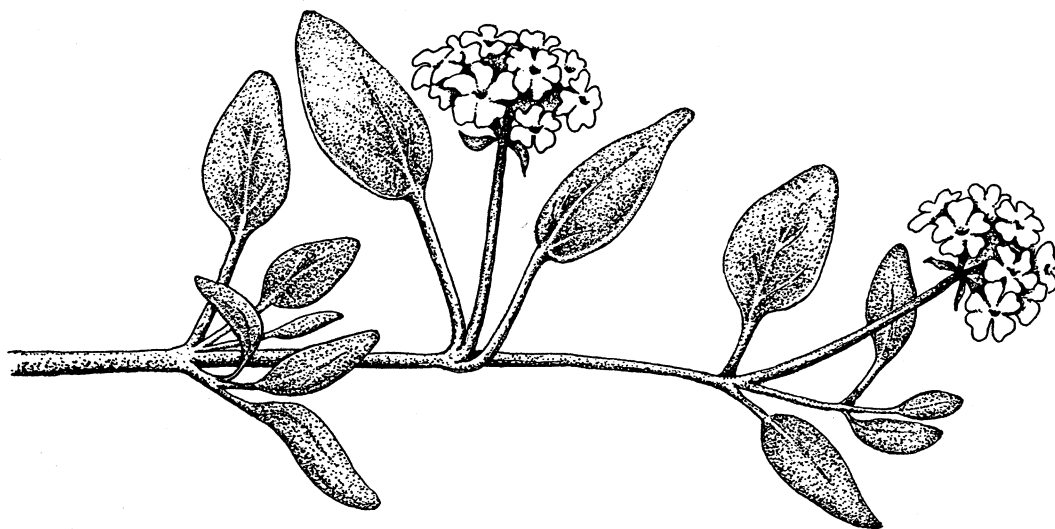
Heritage Rank G4: Globally not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences.

Heritage Rank G5: Globally widespread, abundant, and secure.

Family	Scientific Name	Other name(s)	Common name	Heritage Rank	Federal Status	Oregon Status	2004 ONHIC List
Heritage Rank G4T4:	Subspecies is globally not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences.						
Heritage Rank S3:	State populaton is rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences.						
Heritage Rank S3B:	State breeding populaton is rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences.						
Heritage Rank S3N:	State overwintering populaton is rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences.						
Heritage Rank S3S4:	State populaton is in the range of rare, uncommon or threatened, but not immediately imperiled, typically with 21-100 occurrences, to not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences.						
Heritage rank S4B:	State breeding population is not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences.						
Heritage Rank S4N:	State overwintering populaton is not rare and apparently secure, but with cause for long-term concern, usually with more than 100 occurrences						
Federal Status SOC:	Species which the USFWS is reviewing for consideration as Candidates for listing under the ESA.						
Oregon Status SC:	A "State Critical" sensitive species, for which listing as threatened or endangered would be appropriate if immediate conservation actions were not taken.						
Oregon Status SU:	A "State Undetermined" species, whose status as a potentially threatened or endangered species is unclear.						
Oregon Status SV:	A "State Vulnerable" sensitive species, which is not in imminent danger of being listing as threatened or endangered, but could become "sensitive-critical," "threatened," or endangered," with changes in populations, habitat or threats.						
ONHIC List 4:	List 4 contains species which are of conservation concern but are not currently threatened or endangered. This includes taxa which are very rare but are currently secure, as well as taxa which are declining in numbers or habitat but are still too common to be proposed as threatened or endangered. While these taxa may not currently need the same active management attention as threatened or endangered taxa, they do require continued monitoring.						

APPENDIX F
OREGON NATURAL HERITAGE PROGRAM LIST

RARE, THREATENED AND ENDANGERED
SPECIES OF OREGON



OREGON NATURAL HERITAGE
INFORMATION CENTER

May 2004

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHIC List
FISH					
<i>Acipenser medirostris</i> Green sturgeon	CR, WC?, WV; CA, WA + Clat, Colu, Coos, Curr, Doug, Lane, Linc, Mult, Till	G3 S3	SOC	-	4
<i>Catostomus microps</i> Modoc sucker	EC; CA Lake	G1 S1	LE	-	1
<i>Catostomus occidentalis lacusanserinus</i> Goose Lake sucker	EC; CA Lake	G5T2T3Q S2	SOC	SC	1
<i>Catostomus rimiculus</i> Jenny Creek sucker	EC, KM, WC; CA Jack	G5T2Q S2	SOC	SP	1
<i>Catostomus snyderi</i> Klamath largescale sucker	EC; CA Klam, Lake	G3 S3	SOC	-	4
<i>Catostomus tahoensis</i> Tahoe sucker	BR; CA, NV Malh	G5 S1	-	SP	2
<i>Catostomus warnerensis</i> Warner sucker	BR; NV Lake	G1 S1	LT	LT	1
<i>Chasmistes brevirostris</i> Shortnose sucker	EC; CA Klam	G1 S1	LE	LE	1
<i>Cottus bendirei</i> Malheur mottled sculpin	BM, BR, CR, WC, WV; WA + Colu, Gran, Ham, Lane, Linn, Wash	G4Q S4	SOC	SC	4
<i>Cottus marginatus</i> Margined sculpin	BM, CB; WA Morr, Umat	G3 S3	SOC	SV	4
<i>Cottus pitensis</i> Pit sculpin	EC; CA Lake	G4 S1	-	SP	2
<i>Cottus tenuis</i> Slender sculpin	EC Klam, Lake	G3 S3	SOC	-	3
<i>Deltistes luxatus</i> Lost River sucker	EC; CA Klam	G1 S1	LE	LE	1
<i>Gila alvordensis</i> Alvord chub	BR; NV Ham	G2 S2	SOC	SV	1
<i>Gila bicolor eurysoma</i> Sheldon tui chub	BR; NV Lake	G4T1 S1	SOC	SC	1
<i>Gila bicolor oregonensis</i> Oregon Lakes tui chub	BR, EC Lake	G4T2 S2	SOC	SV	1
<i>Gila bicolor</i> ssp. Hutton tui chub	BR Lake	G4T1 S1	LT	LT	1
<i>Gila bicolor</i> ssp. Summer Basin tui chub	BR Lake	G4T1 S1	SOC	SC	1
<i>Gila bicolor</i> ssp. Catlow tui chub	BR Ham, Lake	G4T1 S1	SOC	SV	1
<i>Gila bicolor</i> ssp. Warner Basin tui chub	BR Lake	G4T2Q S2	-	SP	1
<i>Gila bicolor thalassina</i> Goose Lake tui chub	EC; CA Lake	G4T2 S2	-	SP	1

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHIC List
<i>Gila boraxobius</i> Borax Lake chub	BR Ham	G1 S1	LE	LE	1
<i>Lampetra ayresi</i> River lamprey	CR; CA, WA + Clat, Colu, Coos, Doug, Linc, Till	G4 S3?	SOC	-	3
<i>Lampetra lethophaga</i> Pit-Klamath brook lamprey	EC; CA Jack, Klam, Lake	G3G4 S3	-	-	4
<i>Lampetra minima</i> Miller Lake lamprey	EC, WC Klam, Lake	G1 S1	SOC	-	1
<i>Lampetra tridentata</i> Pacific lamprey	BM, CB, CR, EC, KM, WC, WV; CA, ID, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Doug, Gill, Gran, Hood, Jack, Jose, Klam, Lake, Lane, Linc, Linn, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Yamh	G5 S3	SOC	SV	4
<i>Lampetra tridentata</i> ssp. Goose Lake lamprey	EC; CA Lake	G5T1 S1	SOC	SC	1
<i>Lavinia symmetricus mitrulus</i> Pit roach	EC; CA Lake	G5T3 S2?	SOC	SP	2
<i>Oncorhynchus clarki</i> Coastal cutthroat trout (Oregon Coast ESU)	CR, KM, WC, WV Bent, Clat, Colu, Coos, Curr, Doug, Lane, Linc, Polk, Till, Wash, Yamh	G4T3Q S3	SOC	SV	4
<i>Oncorhynchus clarki</i> Coastal cutthroat trout (Southwestern Washington/Columbia River ESU)	CB, CR, EC, WC, WV; WA Clac, Clat, Colu, Hood, Mari, Mult, Wasc, Wash	G4T2Q S2	-	SC	1
<i>Oncorhynchus clarki</i> Coastal cutthroat trout (Upper Willamette River ESU)	CR, WC, WV Bent, Clac, Clat, Colu, Lane, Linc, Linn, Mari, Mult, Polk, Wash, Yamh	G4T?Q S3?	SOC	-	4
<i>Oncorhynchus clarki</i> Coastal cutthroat trout (Southern Oregon/California Coasts ESU)	CR, KM, WC; CA Curr, Jack, Jose	G4T?Q S3?	SOC	SV	4
<i>Oncorhynchus clarki henshawi</i> Lahontan cutthroat trout	BR; CA, NV Ham, Malh	G4T3 S1	LT	LT	2
<i>Oncorhynchus clarki lewisi</i> Westslope cutthroat trout	BM; ID, WA + Gran	G4T3 S3	SOC	SV	1
<i>Oncorhynchus clarki</i> ssp. Alvord cutthroat trout	BR; NV Ham	G4TX SX	-	-	1-ex
<i>Oncorhynchus keta</i> Chum salmon (Columbia River ESU)	CR, WC, WV; WA Clat, Colu, Mult	G5T2Q S2	LT	SC	1
<i>Oncorhynchus keta</i> Chum salmon (Pacific Coast ESU)	CR; CA, WA Clat, Coos, Doug, Lane, Linc, Till	G5T3Q S2	-	SC	2
<i>Oncorhynchus kisutch</i> Coho salmon (Lower Columbia River/SW Washington Coast ESU)	CB, CR, EC, WC, WV; WA Clac, Clat, Colu, Hood, Mari, Mult, Wasc	G4T2Q S2	C	LE	1
<i>Oncorhynchus kisutch</i> Coho salmon (Southern Oregon/Northern California Coasts ESU)	CR, KM, WC; CA Curr, Jack, Jose	G4T2Q S2	LT	SC	1
<i>Oncorhynchus kisutch</i> Coho salmon (Oregon Coast ESU)	CR, KM, WC, WV Bent, Clat, Colu, Coos, Curr, Doug, Lane, Linc, Polk, Till, Wash, Yamh	G4T2Q S2	LT	SC	1
<i>Oncorhynchus mykiss gairdneri</i> Inland Columbia Basin redband trout	BM, BR, CB, EC, SP; ID, WA + Bake, Croo, Desc, Gill, Gran, Ham, Jeff, Klam, Malh, Morr, Sher, Umat, Unio, Wall, Wasc	G5T4 S3	SOC	SV	4

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHIC List
<i>Oncorhynchus mykiss</i> Steelhead (Snake River Basin ESU)	BM, CB, CR, EC, WC, WV; WA, ID Clat, Colu, Gill, Hood, Morr, Mult, Sher, Umat, Unio, Wall, Wasc	G5T2T3Q S2S3	LT	SV	1
<i>Oncorhynchus mykiss</i> Oregon Great Basin redband trout		G5T3Q S3	-	SV	3
<i>Oncorhynchus mykiss</i> Jenny Creek redband trout	EC Jack, Klam	G5T2Q S2	-	SV	1
<i>Oncorhynchus mykiss</i> Steelhead (Klamath Mountains Province ESU, summer run)	CR, KM, WC; CA Curr, Jack, Jose	G5T3Q S2S3	-	SV	2
<i>Oncorhynchus mykiss</i> Steelhead (Klamath Mountains Province ESU, winter run)	CR, KM, WC; CA Curr, Jack, Jose	G5T3Q S2S3	-	SV	2
<i>Oncorhynchus mykiss</i> Steelhead (Lower Columbia River ESU, summer run)	CR, EC, WC, WV; WA Clac, Clat, Colu, Hood, Mari, Mult	G5T2Q S2	LT	SC	1
<i>Oncorhynchus mykiss</i> Steelhead (Lower Columbia River ESU, winter run)	CR, EC, WC, WV; WA Clac, Clat, Colu, Hood, Mari, Mult	G5T2Q S2	LT	SC	1
<i>Oncorhynchus mykiss</i> Steelhead (Middle Columbia River ESU, summer run)	BM, CB, CR, EC, WC, WV; WA Clat, Colu, Croo, Gill, Gran, Hood, Jeff, Morr, Mult, Sher, Umat, Wasc, Whee	G5T2Q S2	LT	SV	1
<i>Oncorhynchus mykiss</i> Steelhead (Middle Columbia River ESU, winter run)	BM, CB, CR, EC, WC, WV; WA Clat, Colu, Croo, Gill, Gran, Hood, Jeff, Morr, Mult, Sher, Umat, Wasc, Whee	G5T2Q S2	LT	SC	1
<i>Oncorhynchus mykiss</i> Catlow Valley redband trout	BR Ham, Lake	G5T1Q S1	SOC	SV	1
<i>Oncorhynchus mykiss</i> Steelhead (Oregon Coast ESU, summer run)	CR, KM, WC, WV Bent, Clat, Colu, Coos, Curr, Doug, Lane, Linc, Polk, Till, Wash, Yamh	G5T2T3Q S2S3	C	SV	1
<i>Oncorhynchus mykiss</i> Steelhead (Oregon Coast ESU, winter run)	CR, KM, WC, WV Bent, Clat, Colu, Coos, Curr, Doug, Lane, Linc, Polk, Till, Wash, Yamh	G5T2T3Q S2S3	C	SV	1
<i>Oncorhynchus mykiss</i> Steelhead (Upper Willamette River ESU, winter run)	CR, WC, WV Bent, Clac, Clat, Colu, Linn, Mari, Mult, Polk, Wash, Yamh	G5T2Q S2	LT	SC	1
<i>Oncorhynchus mykiss</i> Steelhead (Southwest Washington ESU, winter run)	CR, WV; WA Clat, Colu	G5T3Q S2	-	SC	2
<i>Oncorhynchus mykiss</i> Warner Valley redband trout	BR, EC; CA, NV Lake	G5T2Q S2	SOC	SV	1
<i>Oncorhynchus mykiss</i> Goose Lake redband trout	EC; CA Lake	G5T2Q S2	SOC	SV	1
<i>Oncorhynchus nerka</i> Sockeye salmon (Snake River ESU)	BM; ID (migratory/non-breeder in OR, WA) Unio, Wall	G5T1Q SX	LE	-	1-ex
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Snake River ESU, fall run)	BM, CB, CR, EC, WC, WV; ID, WA Clat, Colu, Gill, Hood, Morr, Mult, Sher, Umat, Wall, Wasc	G5T1Q S1	LT	LT	1
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Lower Columbia River ESU, spring run)	CR, EC, WC, WV; WA Clac, Clat, Colu, Hood, Mult	G5T2Q S2	LT	SC	1

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHIC List
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Lower Columbia River ESU, fall run)	CR, EC, WC, WV; WA Clac, Clat, Colu, Hood, Mult	G5T2Q S2	LT	SC	1
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Upper Willamette River ESU, spring run)	CR, WC, WV Bent, Clac, Clat, Colu, Lane, Linn, Mari, Mult, Polk, Yamh	G5T2Q S2	LT	--	1
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Southern Oregon/Northern California Coast ESU, fall run)	CR, KM, WC; CA Curr, Jack, Jose	G5T3Q S2	--	SC	2
<i>Oncorhynchus tshawytscha</i> Chinook salmon (Snake River ESU, spring/summer run)	BM, CB, CR, EC, WC, WV; ID, WA Clat, Colu, Gill, Hood, Morr, Mult, Sher, Umat, Unio, Wall, Wasc	G5T1Q S1	LT	LT	1
<i>Oregonichthys crameri</i> Oregon chub	WC, WV Bent, Lane, Linn, Mari, Polk	G2 S2	LE	SC	1
<i>Oregonichthys kalawatseti</i> Umpqua chub	CR, KM, WC Doug	G2G3 S2S3	SOC	SV	1
<i>Rhinichthys cataractae</i> ssp. Millicoma dace	CR Coos, Doug	G5T2 S2	SOC	SP	1
<i>Rhinichthys osculus</i> ssp. Foskett Spring speckled dace	BR Lake	G5T1 S1	LT	LT	1
<i>Richardsonius egregius</i> Lahontan redbite	BR; CA, NV Malh	G5 S2	--	SP	2
<i>Salvelinus confluentus</i> Bull trout (Klamath River population)	EC, WC Klam, Lake	G3T2Q S2	LT	SC	1
<i>Salvelinus confluentus</i> Bull trout (Columbia River population)	BM, CB, EC, WC, WV; ID, MT, WA Bake, Desc, Doug, Gran, Harn, Hood, Jeff, Klam, Lane, Linn, Malh, Umat, Unio, Wall, Wasc	G3T2Q S2	LT	SC	1
AMPHIBIANS					
<i>Ambystoma tigrinum melanostictum</i> Blotched tiger salamander	BM, BR, EC; ID, WA + Desc, Harn, Klam, Malh, Wasc	G5T4 S2?	--	SU	3
<i>Aneides ferreus</i> Clouded salamander	CR, KM, WC, WV; CA Bent, Clac, Clat, Colu, Coos, Curr, Desc, Doug, Hood, Jack, Jeff, Jose, Klam, Lane, Linc, Linn, Mari, Mult, Polk, Till, Wasc, Wash, Yamh	G3 S3	--	SU	4
<i>Aneides flavipunctatus</i> Black salamander	KM; CA Jack, Jose	G4 S2	--	SP	2
<i>Ascaphus montanus</i> Inland tailed frog	BM; ID, WA + Bake, Unio, Wall	G4 S2	SOC	SV	2
<i>Ascaphus truei</i> Coastal tailed frog	CR, EC, KM, WC; CA, WA + Bent, Clac, Clat, Colu, Coos, Curr, Desc, Doug, Hood, Jack, Jeff, Jose, Klam, Lane, Linc, Linn, Mari, Mult, Polk, Till, Wall, Wasc, Wash, Whee, Yamh	G4 S3	SOC	SV	4
<i>Batrachoseps attenuatus</i> California slender salamander	CR, KM; CA Coos, Curr	G5 S2	--	SP	2
<i>Batrachoseps wrightorum</i> Oregon slender salamander	EC, WC, WV Clac, Desc, Doug, Hood, Jeff, Klam, Lane, Linn, Mari, Mult, Wasc	G2G3 S2S3	SOC	SU	1
<i>Bufo boreas</i> Western toad	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Harn, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G4 S3	--	SV	4

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHIC List
<i>Bufo woodhousii</i> Woodhouse's toad	BR, CB, SP; ID, NV, WA + Malh, Morr, Umat	G5 S2	--	SP	2
<i>Dicamptodon copei</i> Cope's giant salamander	CR, WC; WA Clac, Clat, Colu, Hood, Mult, Till, Wasc, Wash	G3G4 S2	--	SU	2
<i>Plethodon elongatus</i> Del Norte salamander	CR, KM; CA Coos, Curr, Doug, Jack, Jose	G4 S3	SOC	SV	4
<i>Plethodon larselli</i> Larch Mountain salamander	WC; WA Clac, Hood, Mult	G3 S2	SOC	SV	2
<i>Plethodon stormi</i> Siskiyou Mountains salamander	KM; CA Jack, Jose	G2G3 S2	SOC	SV	1
<i>Rana aurora aurora</i> Northern red-legged frog (SV in WV ecoregion; SU elsewhere)	CR, KM, WC, WV; CA, WA + Bent, Clac, Clat, Colu, Coos, Curr, Doug, Hood, Jack, Jose, Klam, Lane, Linc, Linn, Mari, Mult, Polk, Till, Wasc, Wash, Yamh	G4T4 S3S4	SOC	SV/SU	4
<i>Rana boylei</i> Foothill yellow-legged frog	CR, KM, WC, WV; CA Coos, Curr, Doug, Jack, Jose, Klam, Lane, Linn, Mari	G3 S2S3	SOC	SV	2
<i>Rana cascadae</i> Cascades frog	EC, KM, WC; CA, WA Clac, Desc, Doug, Hood, Jack, Jeff, Klam, Lane, Linn, Mari, Mult, Wasc	G3G4 S3	SOC	SV	4
<i>Rana luteiventris</i> Columbia spotted frog	BM, BR, CB; ID, NV, WA + Bake, Croo, Gran, Ham, Jeff, Lake, Malh, Umat, Unio, Wall, Whee	G4 S2S3	C	SU	2
<i>Rana pipiens</i> Northern leopard frog	BM, BR, CB, EC, KM, SP; CA, ID, NV, WA + Bake, Croo, Gill, Gran, Hood, Jack, Jeff, Klam, Malh, Morr, Sher, Umat, Wasc	G5 S1S2	--	SC	2
<i>Rana pretiosa</i> Oregon spotted frog	EC, WC, WV; CA, WA Bent, Clac, Colu, Croo, Desc, Hood, Jack, Jeff, Klam, Lane, Linn, Mari, Mult, Polk, Wasc, Wash, Yamh	G2 S2	C	SC	1
<i>Rhyacotriton cascadae</i> Cascade torrent salamander	WC; WA Clac, Hood, Lane, Linn, Mari, Mult	G3 S3	--	SV	4
<i>Rhyacotriton kezeri</i> Columbia torrent salamander	CR; WA Clat, Colu, Polk, Till, Wash, Yamh	G3 S3	--	SC	4
<i>Rhyacotriton variegatus</i> Southern torrent salamander	CR, KM, WC, WV; CA Bent, Coos, Curr, Doug, Jose, Lane, Linc, Polk, Till, Yamh	G3G4 S3	SOC	SV	4
<i>Taricha granulosa mazamae</i> Crater Lake newt	EC Klam	G5T1Q S1	--	--	1
REPTILES					
<i>Chrysemys picta</i> Painted turtle	BM, CB, WC, WV; ID, WA + Bake, Bent, Clac, Colu, Gran, Hood, Lane, Linn, Mari, Morr, Mult, Polk, Sher, Umat, Unio, Wall, Wasc, Wash, Yamh	G5 S2	--	SC	2
<i>Crotalus viridis</i> Western rattlesnake (SV in WV ecoregion only)	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linn, Malh, Mari, Morr, Sher, Umat, Unio, Wall, Wasc, Whee	G5 S5	--	SV	4
<i>Emys marmorata marmorata</i> Northwestern pond turtle	CR, EC, KM, WC, WV; CA, NV, WA Bent, Clac, Colu, Coos, Curr, Doug, Hood, Jack, Jose, Klam, Lane, Linn, Mari, Mult, Polk, Till, Wasc, Wash, Yamh	G3G4T3T4 S2	SOC	SC	2
<i>Lampropeltis getula</i> Common kingsnake	KM, WC; CA, NV + Curr, Doug, Jack, Jose	G5 S3	SOC	SV	4
<i>Lampropeltis zonata</i> California mountain kingsnake	CR, EC, KM, WC; CA, WA Curr, Doug, Jack, Jose	G4G5 S4	SOC	SV	4

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHC List
<i>Sceloporus graciosus graciosus</i> Northern sagebrush lizard (SV in CB ecoregion only)	BM, BR, CB, CR, EC, KM, WC; CA, ID, NV, WA	G5T5 S5	SOC	SV	4
<i>Sonora semiannulata</i> Ground snake	BR; CA, ID, NV + Harn, Malh	G5 S3	--	SP	4
BIRDS					
<i>Accipiter gentilis</i> Northern goshawk	BM, BR, CB, CR, EC, KM, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Coos, Croo, Curr, Desc, Doug, Gran, Harn, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Umat, Unio, Wall, Wasc, Whee	G5 S3B	SOC	SC	4
<i>Aechmophorus clarkii</i> Clark's grebe	BM, BR, CR, EC, KM, SP; CA, NV, ID, WA + Clat, Colu, Coos, Curr, Doug, Harn, Jack, Klam, Lake, Lane, Linc, Till	G5 S3B,S2N	--	--	4
<i>Aechmophorus occidentalis</i> Western grebe	BM, BR, CR, EC, KM, SP, WC, WV; CA, NV, ID, WA + Clat, Colu, Coos, Curr, Desc, Harn, Jack, Klam, Lake, Lane, Linc, Linn, Mult, Polk, Till, Wash	G5 S3B,S2S3N	--	--	4
<i>Aegolius funereus</i> Boreal owl	BM, EC, WC; ID, WA + Bake, Clac, Desc, Gran, Hood, Jeff, Klam, Lane, Linn, Mari, Umat, Unio, Wall, Wasc, Whee	G5 S3?	--	SU	3
<i>Agelaius tricolor</i> Tricolored blackbird	BM, CB, EC, KM, WV; CA Jack, Klam, Lake, Mult, Umat, Wasc, Whee	G3 S2B	SOC	SP	2
<i>Ammodramus savannarum</i> Grasshopper sparrow (SV in CB ecoregion; SP in WV ecoregion)	BM, BR, CB, KM, WV; CA, ID, NV, WA + Bake, Doug, Gill, Harn, Jack, Lane, Linn, Malh, Morr, Polk, Sher, Umat, Wall, Wasc	G5 S2B	--	SV/SP	2
<i>Amphispiza belli</i> Sage sparrow (SC in CB ecoregion only)	BM, BR, CB, EC, SP; CA, ID, NV, WA + Bake, Croo, Desc, Gill, Harn, Jeff, Lake, Malh, Morr, Umat, Whee	G5 S4B	--	SC	4
<i>Amphispiza bilineata</i> Black-throated sparrow	BM, BR, CB; CA, ID, NV, WA + Croo, Desc, Harn, Klam, Lake, Malh, Morr, Whee	G5 S3B	--	SP	4
<i>Anser albifrons elgasi</i> Tule goose	BR, EC; WA Harn, Klam, Lake	G5T2T3 S2S3N	--	--	1
<i>Athene cucularia hypugaea</i> Western burrowing owl (SC in WV, KM, CB and BM ecoregions only)	BM, BR, CB, EC, KM, SP, WV Bake, Bent, Croo, Desc, Doug, Gill, Gran, Harn, Jack, Jeff, Jose, Klam, Lake, Lane, Linn, Malh, Morr, Sher, Umat, Unio, Wall, Wasc, Whee	G4T4 S3B	SOC	SC	4
<i>Bartramia longicauda</i> Upland sandpiper	BM, EC; ID, WA + Croo, Gran, Klam, Lake, Umat, Unio	G5 S1B	SOC	SC	2
<i>Brachyramphus marmoratus</i> Marbled murrelet	CR, KM; CA, WA + Bent, Clat, Coos, Curr, Doug, Lane, Linc, Polk, Till	G3G4 S2	LT	LT	2
<i>Branta canadensis leucopareia</i> Aleutian Canada goose	CR, KM, WV; AK, CA, WA, BC Bent, Colu, Coos, Curr, Mari, Mult, Polk, Till, Wash, Yamh	G5T3 S2N	--	LE	2
<i>Branta canadensis occidentalis</i> Dusky Canada goose	CR, WV; WA + Bent, Colu, Lane, Linn, Mari, Mult, Polk, Till, Wash, Yamh	G5T2T3 S2S3N	--	--	1
<i>Bucephala albeola</i> Bufflehead	BM, BR, CB, CR, EC, KM, WC, WV; CA, ID, WA + Bake, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gran, Harn, Jack, Jeff, Jose, Klam, Lake, Lane, Linn, Malh, Mari, Morr, Mult, Till, Umat, Wall, Wasc, Wash, Whee, Yamh	G5 S2B,S5N	--	SU	2
<i>Bucephala islandica</i> Barrow's goldeneye	BM, BR, CB, EC, WC; CA, ID, WA + Bake, Clac, Desc, Doug, Hood, Jack, Jeff, Klam, Lake, Lane, Linn, Malh, Mari, Morr, Umat, Wall, Wasc	G5 S3B,S3N	--	SU	4
<i>Buteo regalis</i> Ferruginous hawk	BM, BR, CB, SP; CA, ID, NV, WA + Bake, Croo, Desc, Gill, Gran, Harn, Lake, Malh, Morr, Sher, Umat, Unio, Wall, Wasc, Whee	G4 S3B	SOC	SC	4
<i>Buteo swainsoni</i> Swainson's hawk	BM, BR, CB, EC, SP; CA, ID, NV, WA + Bake, Croo, Desc, Gill, Harn, Jeff, Lake, Malh, Morr, Sher, Umat, Unio, Wall, Wasc, Whee	G5 S3B	--	SV	4

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<i>Centrocercus urophasianus</i> Greater sage-grouse (SV in EC, CB and BM ecoregions only)	BM, BR, CB, EC; CA, NV, WA Bake, Croo, Desc, Gill, Gran, Ham, Klam, Lake, Malh, Unio, Wasc, Whee	G4 S3	SOC	SV	4
<i>Cerorhinca monocerata</i> Rhinoceros auklet	CR; CA, WA + Clat, Coos, Curr, Doug, Lane, Linc, Till	G5 S2B	-	--	2
<i>Charadrius alexandrinus nivosus</i> Western snowy plover (LT (Federal) for coastal pops. only)	BR, CR, EC, KM; CA, NV, WA + Clat, Coos, Curr, Doug, Ham, Klam, Lake, Lane, Linc, Till	G4T3 S2	PS:LT	LT	2
<i>Chlidonias niger</i> Black tern	BM, BR, EC, WV; ID, NV, WA + Bent, Croo, Desc, Gran, Ham, Klam, Lake, Lane, Linn, Malh, Polk	G4 S3B	SOC	-	4
<i>Chordeiles minor</i> Common nighthawk (SC in WV ecoregion only)	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G5 S5B	-	SC	4
<i>Coccyzus americanus</i> Yellow-billed cuckoo	BM, BR, EC, WC, WV; CA, ID, NV, WA + Bake, Clac, Desc, Gran, Ham, Klam, Lake, Linn, Malh, Mult, Umat, Unio, Wall	G5 SHB	C	SC	2-ex
<i>Contopus cooperi</i> Olive-sided flycatcher	BM, CR, EC, KM, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G4 S3B	SOC	SV	4
<i>Coturnicops noveboracensis</i> Yellow rail	EC; CA + Klam, Lake	G4 S1B	SOC	SC	2
<i>Cygnus buccinator</i> Trumpeter swan	BM, BR, CR, EC, WV; NV, ID, WA + Clat, Colu, Ham, Klam, Lake, Malh, Mult, Polk	G4 S1?B,S3N	-	--	2
<i>Cypseloides niger</i> Black swift	WC; CA, ID, WA + Doug, Hood, Jack, Lane	G4 S2B	-	SP	2
<i>Dolichonyx oryzivorus</i> Bobolink	BM, BR; ID, NV, WA + Bake, Croo, Gran, Ham, Lake, Malh, Umat, Unio, Wall	G5 S2B	-	SV	2
<i>Egretta thula</i> Snowy egret	BR, EC; CA, ID, NV, WA + Ham, Klam, Lake	G5 S2B	-	SV	2
<i>Elanus leucurus</i> White-tailed kite	CR, KM, WV; CA + Bent, Clat, Coos, Curr, Doug, Jack, Jose, Lane, Polk, Till	G5 S2B,S3N	-	--	2
<i>Empidonax traillii adastus</i> Willow flycatcher	BM, BR, CB, EC, KM, SP; CA, ID, NV, WA + Bake, Croo, Desc, Gran, Ham, Hood, Jeff, Klam, Lake, Malh, Morr, Umat, Unio, Wall, Wasc, Whee	G5T5 S3S4B	SOC	SU	4
<i>Empidonax traillii brewsteri</i> Little willow flycatcher	CR, KM, WC, WV; CA, WA + Bent, Clac, Clat, Colu, Coos, Curr, Doug, Hood, Jack, Jose, Lane, Linc, Linn, Mari, Mult, Polk, Till, Wash, Yamh	G5T3T4 S3S4B	-	SV	4
<i>Eremophila alpestris strigata</i> Streaked horned lark	CR, KM, WV; WA + Bent, Clac, Clat, Doug, Jack, Jose, Lane, Linn, Mari, Mult, Polk, Wash, Yamh	G5T2 S2B	C	SC	1
<i>Falcipecten canadensis</i> Spruce grouse	BM; ID, WA + Bake, Unio, Wall	G5 S3	-	SU	3
<i>Falco columbarius</i> Merlin	BR, CB, EC; ID, WA + Gill, Ham, Klam, Morr	G5 SHB	-	--	2-ex
<i>Falco peregrinus anatum</i> American peregrine falcon	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G4T3 S2B	-	LE	2

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<i>Fratercula cirrhata</i> Tufted puffin	CR, KM; CA, WA + Clat, Coos, Curr, Lane, Linc, Till	G5 S2B	--	--	2
<i>Grus canadensis canadensis</i> Lesser sandhill crane	BR; ID, NV Ham, Malh	G5T4 S3N	--	--	4
<i>Grus canadensis rowani</i> Canadian sandhill crane	WV; WA + Mult	G5T3T4 S2?N	--	--	3
<i>Grus canadensis tabida</i> Greater sandhill crane	BM, BR, EC, WC; CA, ID, NV, WA + Bake, Clac, Croo, Desc, Gran, Ham, Hood, Jack, Jeff, Klam, Lake, Lane, Linn, Malh, Mari, Umat, Unio, Wall, Wasc	G5T4 S3S4B	--	SV	4
<i>Gymnogyps californianus</i> California condor	CR, KM, WC, WV; CA	G1 SX	LE	--	1-ex
<i>Haematopus bachmani</i> Black oystercatcher	CR; CA, WA + Clat, Coos, Curr, Lane, Linc, Till	G5 S3	--	--	4
<i>Haliaeetus leucocephalus</i> Bald eagle	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G4 S4B,S4N	LT	LT	4
<i>Histrionicus histrionicus</i> Harlequin duck	BM, CR, EC, WC; ID, WA + Clac, Clat, Coos, Curr, Doug, Hood, Klam, Lane, Linc, Linn, Mari, Mult, Till, Wall	G4 S2B,S3N	SOC	SU	2
<i>Icteria virens</i> Yellow-breasted chat (SC in WV ecoregion only)	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G5 S4B	SOC	SC	4
<i>Ixobrychus exilis hesperis</i> Western least bittern	BR, EC; CA + Ham, Klam	G5T3T4 S1B	SOC	SP	3
<i>Lanius ludovicianus</i> Loggerhead shrike (SV in CB and BM ecoregions only)	BM, BR, CB, EC, KM, SP, WV; CA, ID, NV, WA + Bake, Croo, Desc, Gill, Gran, Ham, Jack, Jeff, Klam, Lake, Lane, Malh, Morr, Sher, Umat, Unio, Wall, Wasc, Whee	G4 S3B,S2N	--	SV	4
<i>Larus pipixcan</i> Franklin's gull	BR; CA, ID + Ham	G4G5 S2B	--	SP	2
<i>Leucosticte atrata</i> Black rosy-finch	BR; CA, ID, NV, WA + Ham	G4 S2B	--	SP	2
<i>Leucosticte tephrocotis wallowa</i> Wallowa rosy-finch	BM Wall	G5T2 S2B,S2?N	--	--	1
<i>Melanerpes formicivorus</i> Acorn woodpecker	CR, EC, KM, WV; CA, WA + Bent, Clac, Coos, Curr, Doug, Jack, Jose, Klam, Lane, Linn, Mari, Polk, Wasc, Wash, Yamh	G5 S3	SOC	--	4
<i>Melanerpes lewis</i> Lewis's woodpecker (SC in WV, KM, WC, EC and CB ecoregions only)	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G4 S2S3B	SOC	SC	2
<i>Numenius americanus</i> Long-billed curlew (SV in CB ecoregion only)	BM, BR, CB, EC, SP; CA, ID, NV, WA + Bake, Croo, Desc, Gill, Gran, Ham, Jeff, Klam, Lake, Malh, Morr, Sher, Umat, Unio, Wall, Wasc, Whee	G5 S3B	--	SV	4
<i>Oceanodroma furcata</i> Fork-tailed storm-petrel	CR; CA, WA + Clat, Curr, Till	G5 S2B	--	SV	2

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<i>Oreortyx pictus</i> Mountain quail (SU in EC and BM ecoregions only)	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G5 S4	SOC	SU	4
<i>Otus flammeolus</i> Flammulated owl	BM, BR, EC, KM, WC; CA, ID, NV, WA + Bake, Croo, Desc, Gran, Ham, Jack, Jeff, Klam, Lake, Morr, Umat, Unio, Wall, Wasc, Whee	G4 S3B	-	SC	4
<i>Patagioenas fasciata</i> Band-tailed pigeon	CR, KM, WC, WV; CA, ID, NV, WA + Bent, Clac, Clat, Colu, Coos, Curr, Doug, Hood, Jack, Jose, Lane, Linc, Linn, Mari, Mult, Polk, Till, Wasc, Wash, Yamh	G4 S3B	SOC	-	4
<i>Pelecanus erythrorhynchos</i> American white pelican	BR, EC; CA, ID, NV, WA + Ham, Klam, Lake	G3 S2B	-	SV	2
<i>Pelecanus occidentalis californicus</i> California brown pelican	CR; CA, WA + Clat, Coos, Curr, Doug, Lane, Linc, Till	G4T3 S2N	LE	LE	2
<i>Picoides albolarvatus</i> White-headed woodpecker	BM, EC, KM, WC; CA, ID, NV, WA + Bake, Croo, Curr, Desc, Doug, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Morr, Umat, Unio, Wall, Wasc, Whee	G4 S2S3	SOC	SC	2
<i>Picoides arcticus</i> Black-backed woodpecker	BM, EC, KM, WC; CA, ID, NV, WA + Bake, Clac, Croo, Desc, Doug, Gran, Ham, Hood, Jack, Jeff, Klam, Lake, Lane, Linn, Mari, Morr, Mult, Umat, Unio, Wall, Wasc, Whee	G5 S3	-	SC	4
<i>Picoides dorsalis</i> American three-toed woodpecker	BM, EC, WC; ID, NV, WA + Bake, Clac, Croo, Desc, Doug, Gran, Jack, Jeff, Klam, Lane, Linn, Mari, Mult, Umat, Unio, Wall, Wasc	G5 S3	-	SC	4
<i>Pinicola enucleator</i> Pine grosbeak	BM, EC, WC?; CA, ID, NV, WA + Bake, Desc, Gran, Jeff, Unio, Wall	G5 S2?	-	-	3
<i>Plegadis chihi</i> White-faced ibis	BR, EC; CA, NV + Ham, Klam, Lake, Malh	G5 S3B	SOC	-	4
<i>Podiceps auritus</i> Horned grebe	BM, BR, CB, CR, EC, WC, WV; ID, WA + Clat, Coos, Curr, Doug, Ham, Klam, Lake, Lane, Linc, Linn, Till, Wall	G5 S2B,S5N	-	SP	2
<i>Podiceps grisegena</i> Red-necked grebe	CR, EC, WC; ID, WA + Clat, Coos, Curr, Doug, Jack, Klam, Lane, Linc, Mult, Till	G5 S1B,S4N	-	SC	2
<i>Pooecetes gramineus affinis</i> Oregon vesper sparrow	CR, KM, WV; WA + Bent, Clac, Colu, Coos, Doug, Jack, Jose, Lane, Linn, Mari, Mult, Polk, Wash, Yamh	G5T3 S2B,S2N	SOC	SC	2
<i>Progne subis</i> Purple martin	CR, KM, WC, WV; CA, ID, WA + Bent, Clac, Clat, Colu, Coos, Curr, Doug, Hood, Jack, Jose, Klam, Lake, Lane, Linc, Linn, Mari, Mult, Polk, Till, Wasc, Wash, Yamh	G5 S2B	SOC	SC	2
<i>Ptychoramphus aleuticus</i> Cassin's auklet	CR; CA, WA + Clat, Coos, Curr, Lane, Linc, Till	G4 S2B	-	-	2
<i>Seiurus noveboracensis</i> Northern waterthrush	BM, EC, WC; ID, WA + Desc, Klam, Lane, Unio, Wall	G5 S2B	-	-	2
<i>Selasphorus platycercus</i> Broad-tailed hummingbird	BM, BR; CA, ID, NV + Ham, Lake, Malh, Unio, Wall	G5 S2?B	-	-	3
<i>Sialia mexicana</i> Western bluebird (SV in CR, WV, KM and WC ecoregions only)	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G5 S4B,S4N	-	SV	4
<i>Sitta carolinensis aculeata</i> Slender-billed nuthatch	CR, KM, WC, WV; CA, WA, BC, Mexico Bent, Clac, Colu, Curr, Doug, Jack, Jose, Klam, Lane, Linn, Mari, Polk, Wash, Yamh	G5T4 S3	-	-	4

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<i>Sterna forsteri</i> Forster's tern	BR, CB, EC, WC; CA, ID, NV, WA + Desc, Harn, Klam, Lake, Malh, Morr	G5 S3B	--	--	4
<i>Strix nebulosa</i> Great gray owl	BM, EC, KM, WC; CA, ID, WA + Bake, Clac, Desc, Doug, Gran, Jack, Jeff, Klam, Lake, Lane, Linn, Mari, Umat, Unio, Wall, Wasc, Whee	G5 S3	--	SV	4
<i>Strix occidentalis caurina</i> Northern spotted owl	CR, EC, KM, WC, WV; CA, WA, BC Bent, Clac, Clat, Colu, Coos, Curr, Desc, Doug, Hood, Jack, Jeff, Jose, Klam, Lane, Linc, Linn, Mari, Mult, Polk, Till, Wasc, Wash, Yamh	G3T3 S3	LT	LT	1
<i>Sturnella neglecta</i> Western meadowlark (SC in WV ecoregion)	BM, BR, CB, EC, KM, WV; CA, ID, NV, WA + Bake, Bent, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Harn, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G5 S4	--	SC	4
<i>Tympanuchus phasianellus columbianus</i> Columbian sharp-tailed grouse	BM, BR, CB, EC; CA, ID, MT, NV, WA, BC Bake, Croo, Desc, Gill, Gran, Harn, Hood, Jeff, Klam, Lake, Malh, Morr, Sher, Umat, Unio, Wall, Wasc, Whee	G4T3 S1	SOC	--	2
MAMMALS					
<i>Ammospermophilus leucurus</i> White-tailed antelope squirrel	BR, SP; CA, ID, NV + Harn, Lake, Malh	G5 S4?	--	SU	3
<i>Antrozous pallidus</i> Pallid bat	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Croo, Doug, Gill, Gran, Harn, Jack, Jeff, Jose, Klam, Lake, Lane, Malh, Mult, Umat, Wasc, Whee	G5 S2	SOC	SV	2
<i>Arborimus albipes</i> White-footed vole	CR, KM, WC, WV; CA Bent, Clat, Colu, Coos, Curr, Doug, Jose, Lane, Linc, Linn, Polk, Till, Wash, Yamh	G3G4 S3S4	SOC	SU	4
<i>Arborimus longicaudus longicaudus</i> Red tree vole	CR, KM, WC, WV; CA? Bent?, Clac, Coos, Curr, Doug, Hood, Jack, Jose, Lane, Linn, Mari, Mult	G3G4T3Q S3	SOC	--	4
<i>Arborimus longicaudus silvicola</i> Dusky tree vole	CR, WV? Bent, Clat, Colu, Linc, Polk, Till, Wash, Yamh	G3G4T1Q S1	SOC	--	1
<i>Bassariscus astutus</i> Ringtail	CR, EC, KM, WC; CA, NV + Coos, Curr, Doug, Jack, Jose, Klam, Lane	G5 S3	--	SU	4
<i>Brachylagus idahoensis</i> Pygmy rabbit	BM, BR, CB, EC, SP; CA, ID, NV, WA + Bake, Croo, Desc, Gran, Harn, Jeff, Klam, Lake, Malh, Unio, Wasc, Whee	G4 S2?	SOC	SV	2
<i>Canis lupus</i> Gray wolf	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Harn, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G4 SH	LT	LE	2-ex
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Coos, Croo, Curr, Desc, Doug, Gran, Harn, Jack, Jeff, Jose, Klam, Lake, Lane, Malh, Mari, Mult, Till, Umat, Unio, Wall, Wasc, Wash, Whee	G4 S2	SOC	SC	2
<i>Enhydra lutris</i> Sea otter	CR; CA, WA + Curr	G4 SH	LT	LT	2-ex
<i>Euderma maculatum</i> Spotted bat	BM, BR, CB; CA, ID, NV, WA + Croo, Desc, Gill, Gran, Harn, Jeff, Sher, Wall, Wasc, Whee	G4 S2	SOC	--	2
<i>Eumetopias jubatus</i> Northern sea lion	CR; CA, WA Clat, Coos, Curr, Lane, Linc, Till	G3 S2	LT	SV	2
<i>Gulo gulo luteus</i> California wolverine	BM, BR, CR, EC, KM, WC; CA, WA Bake, Clac, Croo, Desc, Doug, Gran, Harn, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Mari, Till, Umat, Unio, Wall, Wasc, Whee	G4T3Q S1?	SOC	LT	2

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHC List
<i>Lasionycteris noctivagans</i> Silver-haired bat	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Coos, Croo, Curr, Desc, Doug, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linn, Malh, Mari, Mult, Polk, Till, Umat, Unio, Wall, Wasc, Wash, Whee	G5 S3S4	SOC	SU	4
<i>Lasiurus cinereus</i> Hoary bat	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Clac, Clat, Croo, Curr, Desc, Doug, Gran, Ham, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Mult, Till, Umat, Unio, Wall, Wasc, Whee	G5 S3	-	-	4
<i>Lepus townsendii</i> White-tailed jackrabbit	BM, BR, CB, EC; CA, ID, NV, WA + Bake, Croo, Desc, Gill, Gran, Ham, Jeff, Klam, Lake, Malh, Morr, Sher, Umat, Unio, Wall, Wasc, Whee	G5 S4?	-	SU	3
<i>Lynx canadensis</i> Canada lynx	BM, BR, CB, EC, KM, WC, WV; ID, NV, WA + Bake, Bent, Clac, Croo, Desc, Doug, Gran, Ham, Jack, Klam, Lake, Lane, Linn, Morr, Mult, Sher, Umat, Unio, Wall, Wasc	G5 S1?	LT	-	2
<i>Martes americana</i> American marten	BM, CR, EC, KM, WC; CA, ID, NV, WA + Bake, Bent, Clac, Coos, Curr, Desc, Doug, Gran, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Mari, Mult, Till, Umat, Unio, Wall, Wasc, Wash, Yamh	G5 S3S4	-	SV	4
<i>Martes pennanti</i> Fisher	BM, CR, EC, KM, WC; CA, ID, WA Bake, Clac, Coos, Curr, Desc, Doug, Gran, Jack, Jose, Klam, Lake, Lane, Linc, Linn, Morr, Till, Umat, Unio, Wall, Wasc, Yamh	G5 S2	C	SC	2
<i>Myotis californicus</i> California myotis	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Coos, Curr, Doug, Gran, Ham, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Mari, Umat, Unio, Wall, Wasc, Whee, Yamh	G5 S3	-	-	4
<i>Myotis ciliolabrum</i> Western small-footed myotis	BM, BR, CB, EC, SP; CA, ID, NV, WA + Bake, Croo, Desc, Doug, Gran, Ham, Hood, Jeff, Klam, Lake, Malh, Morr, Sher, Umat, Unio, Wall, Wasc, Whee	G5 S3S4	SOC	SU	4
<i>Myotis evotis</i> Long-eared myotis	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Till, Umat, Unio, Wall, Wasc, Whee, Yamh	G5 S4	SOC	SU	4
<i>Myotis thysanodes</i> Fringed myotis	BM, BR, CR, EC, KM, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Curr, Doug, Gran, Ham, Jack, Jose, Klam, Lake, Lane, Linc, Linn, Till, Unio, Wall, Wash	G4G5 S2	SOC	SV	2
<i>Myotis volans</i> Long-legged myotis	BM, BR, CB, CR, EC; KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gran, Ham, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Mult, Till, Umat, Unio, Wall, Wasc, Wash, Whee	G5 S3	SOC	SU	4
<i>Myotis yumanensis</i> Yuma myotis	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G5 S3	SOC	-	4
<i>Odocoileus virginianus leucurus</i> Columbian white-tailed deer (LE for Columbia River DPS only; SV in CR ecoregion only)	CR, KM, WV; WA Clat, Colu, Doug, Lane, Mult	G5T2Q S2	PS:LE	SV	1
<i>Ovis canadensis canadensis</i> Rocky Mountain bighorn sheep	BM; ID, WA + Bake, Unio, Wall	G4T4Q S3	-	-	4
<i>Ovis canadensis nelsoni</i> Desert bighorn sheep	BM, BR, CB, EC; CA, NV Bake, Desc, Gill, Gran, Ham, Lake, Malh, Morr, Sher, Wasc, Whee	G4T4Q S3	SOC	-	4

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<i>Sciurus griseus</i> Western gray squirrel	CR, EC, KM, WC, WV; CA, NV, WA Bent, Clac, Colu, Coos, Curr, Desc, Doug, Hood, Jack, Jeff, Jose, Klam, Lane, Linc, Linn, Mari, Mult, Polk, Till, Wasc, Wash, Yamh	G5 S4	--	SU	4
<i>Sorex preblei</i> Preble's shrew	BM, BR, EC; CA, ID, NV, WA + Bake, Croo, Desc, Gran, Ham, Klam, Lake, Malh, Umat, Unio, Wall	G4 S3?	SOC	--	3
<i>Spermophilus elegans nevadensis</i> Wyoming ground squirrel	BR; ID, NV + Malh	G5T4 SH	--	--	2-ex
<i>Spermophilus washingtoni</i> Washington ground squirrel	CB; WA Gill, Morr, Umat	G2 S2	C	LE	1
<i>Tadarida brasiliensis</i> Brazilian free-tailed bat	EC, KM, WC, WV; CA, NV+ Doug, Jack, Jose, Klam, Lane, Wash	G5 S4	--	--	4
<i>Thomomys bottae detumidus</i> Pistol River pocket gopher	CR Curr	G5T2Q S2	SOC	--	2
<i>Thomomys bulbivorus</i> Camas pocket gopher	WV Bent, Clac, Colu, Lane, Linn, Mari, Mult, Polk, Wash, Yamh	G3G4 S3S4	SOC	--	4
<i>Thomomys mazama helleri</i> Gold Beach pocket gopher	CR Curr	G4G5T1T2 S1S2	SOC	--	2
<i>Ursus arctos horribilis</i> Grizzly bear	BM, BR, CB, CR, EC, KM, SP, WC, WV; CA, ID, NV, WA + Bake, Bent, Clac, Clat, Colu, Coos, Croo, Curr, Desc, Doug, Gill, Gran, Ham, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linc, Linn, Malh, Mari, Morr, Mult, Polk, Sher, Till, Umat, Unio, Wall, Wasc, Wash, Whee, Yamh	G4T3T4 SX	LT	--	2-ex
<i>Vulpes macrotis</i> Kit fox	BR, EC; CA, ID, NV + Desc, Ham, Klam, Malh	G4 S1	--	LT	2

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INVERTEBRATES					
Class Turbellaria - Flatworms					
Order Tricladida					
<i>Kenkia rhynchida</i> A flatworm (planarian)	BR Ham	G1G2 S1S2	SOC	-	1
Class Bivalvia - Clams, Oysters and Mussels					
Order Ostreoida					
<i>Ostrea conchaphila</i> Native oyster	CR; WA Linc, Till	GNR SNR	-	-	3
Order Unionoida					
<i>Anodonta californiensis</i> California floater (mussel)	BM, BR, CB, CR, EC, WC, WV; CA, ID, NV, WA + Clat, Colu, Coos?, Desc, Gran, Ham, Klam, Linn, Malh, Mult, Sher, Wasc, Wash	G3 S1	SOC	-	2
<i>Anodonta oregonensis</i> Oregon floater (mussel)	BR, CB, CR, EC, KM, WC, WV; CA, NV, UT, WA Bent, Clac, Clat, Colu, Coos, Doug, Ham, Klam, Lane, Linc, Mari, Mult, Polk, Sher, Wasc, Wash	G5 S3	-	-	4
<i>Anodonta wahlametensis</i> Willamette floater (mussel)	BR, CR, EC, WC, WV; CA, WA Clat, Colu, Ham, Mult, Wasc?	G2Q S1	-	-	1
<i>Gonidea angulata</i> Western ridgemussel	BM, BR, CB, EC, WC, WV; CA, ID, NV, WA, BC Clac, Colu, Desc, Ham, Klam, Linn, Malh, Mari, Mult, Wasc, Wash	G3 S2	-	-	2
<i>Margaritifera falcata</i> Western pearlshell	BM, BR, CB, CR, EC, WC, WV; CA, ID, NV, WA + Bent, Clac, Clat, Coos, Croo, Desc, Doug, Ham, Klam, Lane, Linc, Linn, Mari, Polk, Sher, Wasc, Wash, Whee	G4 S3	-	-	4
Order Veneroida					
<i>Pisidium</i> sp. nov. Modoc peaclam	EC; CA Klam	G1 S1	-	-	1
<i>Pisidium ultramontanum</i> Montane peaclam	EC; CA Klam	G1 S1	SOC	-	1
Class Gastropoda - Snails and Slugs					
Order Neotaenioglossa					
<i>Algamorda newcombiana</i> Newcomb's littorine snail	CR; CA, WA Coos	G1G2 S1	SOC	-	1
<i>Colligyrus depressus</i> Hamey Basin duskysnail	BR Ham	G1 S1	-	-	1
<i>Colligyrus</i> sp. nov. Blue Mountains duskysnail	BM Bake, Gran	G1 S1	-	-	1
<i>Colligyrus</i> sp. nov. Columbia duskysnail	CB, EC, WC, WV; WA Clac, Hood, Mult, Wasc	G2 S2	-	-	1
<i>Colligyrus</i> sp. nov. Klamath duskysnail	EC Klam	G1 S1	-	-	1
<i>Colligyrus</i> sp. nov. Link River duskysnail	EC Klam	G1 S1	-	-	1
<i>Colligyrus</i> sp. nov. Mare's egg duskysnail	EC Klam	G1 S1	-	-	1
<i>Colligyrus</i> sp. nov. Nodose duskysnail	EC Klam	G1 S1	-	-	1
<i>Fluminicola fuscus</i> Columbia pebblesnail or spire snail	BM, CB, WV; BC, ID, MT, WA, WY Mult, Wall, Wasc	G2 S1	SOC	-	1
<i>Fluminicola insolitus</i> Donner und Blitzen pebblesnail	BR Ham	G1 S1	-	-	1
<i>Fluminicola</i> sp. nov. Metolius pebblesnail	EC Jeff	G1 S1	-	-	1

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<i>Fluminicola</i> sp. nov. Nerite pebblesnail	WC Jack	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Odessa pebblesnail	EC Klam	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Ouxy Spring pebblesnail	EC Klam	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Tall pebblesnail	EC Klam	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Tiger lily pebblesnail	EC Klam	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Toothed pebblesnail	WC Jack	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Tuscan pebblesnail	CB Wasc	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Wood River pebblesnail	EC Klam	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Keene Creek pebblesnail	EC, KM Jack, Klam	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Casebeer pebblesnail	EC Klam	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Crooked Creek pebblesnail	EC Klam	G2 S2	--	--	1
<i>Fluminicola</i> sp. nov. Diminutive pebblesnail	WC Jack	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Fall Creek pebblesnail	WC Jack, Klam	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Klamath pebblesnail	EC; CA Klam, Lake	G1G2 S1S2	--	--	1
<i>Fluminicola</i> sp. nov. Klamath Rim pebblesnail	EC Klam	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Lake of the Woods pebblesnail	EC Klam	G1G2 S1S2	--	--	1
<i>Fluminicola</i> sp. nov. Lost River pebblesnail	EC Klam	G1 S1	--	--	1
<i>Fluminicola</i> sp. nov. Malheur pebblesnail	BR Harr, Malh	G1 S1	--	--	1
<i>Fluminicola turbiniformis</i> Turban pebblesnail	BR, EC; CA, NV Harr, Lake	G3 S1	--	--	1
<i>Juga acutifilosa</i> Scalloped juga (snail)	EC; CA Jack	G2 S1	--	--	1
<i>Juga bulbosa</i> Bulb juga (snail)	BM, CB Jeff, Sher, Wasc	G1 S1	--	--	1
<i>Juga hemphilli dallesensis</i> Dalles juga (snail)	EC, WC; WA Hood, Wasc	G2T1 S1	--	--	1
<i>Juga hemphilli hemphilli</i> Barren juga (snail)	WC, WV; WA Mult, Wasc	G2T1 S1	--	--	1

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<i>Juga hemphilli maupinensis</i> Purple-lipped juga (snail)	BM, CB Jeff, Sher, Wasc	G2T1 S1	-	-	1
<i>Juga hemphilli</i> ssp. nov. Indian Ford juga (snail)	EC Desc	G2T1 S1	-	-	1
<i>Juga</i> sp. nov. Basalt juga (snail)	EC, WC Hood, Wasc	G1 S1	-	-	1
<i>Juga</i> sp. nov. Blue Mountains juga (snail)	BM Gran	G1 S1	-	-	1
<i>Juga</i> sp. nov. Brown juga (snail)	WC; WA Hood, Mult	G1 S1	-	-	1
<i>Juga</i> sp. nov. Crooked River juga (snail)	BM, CB Jeff, Wasc	G1 S1	-	-	1
<i>Juga</i> sp. nov. Opal Springs juga (snail)	BM Croo	G1 S1	-	-	1
<i>Juga</i> sp. nov. Purple juga (snail)	CB Wasc	G1 S1	-	-	1
<i>Juga</i> sp. nov. Three-band juga (snail)	CB, EC, WC; WA Gill, Hood, Sher, Wasc	G1 S1	-	-	1
<i>Pomatiopsis binneyi</i> Robust walker	CR, KM; CA Curr, Jose	G1 S1	-	-	1
<i>Pomatiopsis californica</i> Pacific walker	CR; CA Coos, Lane	G1 S1	-	-	1
<i>Pomatiopsis chacei</i> Marsh walker	CR, KM; CA Curr	G1 S1	-	-	1
<i>Pristinicola hemphilli</i> Pristine springsnail	BM, CB, EC, WC; CA, ID, WA Bake, Clac, Gran, Hood, Jeff, Lane, Mult, Sher, Unio, Wall, Wasc	G3Q S2	-	-	3
<i>Pyrgulopsis archimedis</i> Archimedes springsnail	EC Klam	G1Q S1	-	-	1
<i>Pyrgulopsis hendersoni</i> Harney Lake springsnail	BR Harn, Lake	G1 S1	-	-	1
<i>Pyrgulopsis intermedia</i> Crooked Creek springsnail	BR; CA Malh	G1 S1	-	-	1
<i>Pyrgulopsis</i> sp. nov. Lake Abert springsnail	BR Lake	G1 S1	-	-	1
<i>Pyrgulopsis</i> sp. nov. Malheur springsnail	BR Malh	G1 S1	-	-	1
<i>Pyrgulopsis</i> sp. nov. Owyhee hot springsnail	BR Malh	G1 S1	-	-	1
<i>Pyrgulopsis</i> sp. nov. Lost River springsnail	EC Klam	G1 S1	-	-	1
<i>Pyrgulopsis</i> sp. nov. Columbia springsnail	CB; WA Sher, Umat, Wasc	G1Q S1	-	-	1
<i>Pyrgulopsis</i> sp. nov. Klamath Lake springsnail	EC Klam	G1 S1	-	-	1
Order Basommatophora					
<i>Fisherola nuttalli</i> Shortface lanx (=Giant Columbia River limpet)	CB, WV; ID, MT, WA, BC Jeff, Mult, Sher, Wall, Wasc	G2 S1S2	-	-	1

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<i>Helisoma newberryi newberryi</i> Great Basin ramshorn (snail)	BR, EC; CA Klam, Lake	G1T1 S1	--	--	1
<i>Lanx alta</i> Highcap lanx (snail)	EC, KM; CA Curr, Jack, Jose, Klam	G1 S1	--	--	1
<i>Lanx klamathensis</i> Scale lanx (snail)	EC; CA Klam	G1 S1	--	--	1
<i>Lanx subrotunda</i> Rotund lanx (snail)	KM Doug, Jack, Jose	G2 S2	--	--	1
<i>Petrophysa</i> sp. nov. Hotspring physa (snail)	BR Malh	G1 S1	--	--	1
<i>Physa megalochlamys</i> Large-mantle physa (snail)	BR; ID + Ham	G3 S1	--	--	2
<i>Physella columbiana</i> Rotund physa (snail)	CR, WC, WV; WA + Clat, Colu, Hood, Mult, Wasc	G2 SH	--	--	1
<i>Planorbella oregonensis</i> Borax Lake ramshorn (snail)	BR; UT? Ham	G1 S1	--	--	1
<i>Vorticifex effusus dalli</i> Dall's ramshorn (snail)	EC Klam	G3QT1 S1	--	--	1
<i>Vorticifex effusus diagonalis</i> Lined ramshorn (snail)	EC Klam	G3QT1 S1	--	--	1
<i>Vorticifex klamathensis klamathensis</i> Klamath ramshorn (snail)	EC; CA Klam	G1QT1 S1	--	--	1
<i>Vorticifex klamathensis sinitsini</i> Sinitsin ramshorn (snail)	EC Klam	G1QT1 S1	--	--	1
<i>Vorticifex neritoides</i> Nerite ramshorn (snail)	CR, WC, WV; WA Clat, Colu, Hood, Mult	G1Q SH	--	--	1
Order Stylommatophora					
<i>Cryptomastix devia</i> Puget oregonian (snail)	EC, WC, WV; WA Hood, Mult, Wasc	G2 S1	--	--	1
<i>Cryptomastix hendersoni</i> Columbia Gorge oregonian (snail)	CB, EC; WA Hood, Sher, Wasc	G1G2 S1S2	--	--	1
<i>Cryptomastix populi</i> Hell's Canyon land snail	BM; ID, WA Wall	G2 S1	--	--	1
<i>Cryptomastix</i> sp. nov. Disc oregonian (snail)	BM; ID, WA Wall	G1 S1	--	--	1
<i>Deroceras hesperium</i> Evening fieldslug	CR, EC, WC, WV; WA, BC Clac, Clat, Colu, Jack, Klam	G1 S1	--	--	1
<i>Gliabates oregonius</i> Salamander slug	CR, EC, WC; ID Clac, Hood, Lane, Linn	G1Q S1	--	--	1
<i>Helminthoglypta hertleini</i> Oregon shoulderband (snail)	KM, WC; CA Doug, Jack, Jose	G1 S1	--	--	1
<i>Hemphillia glandulosa</i> Warty jumping-slug	CR, WV; WA Bent, Linc, Till, Yamh	G3 S2	--	--	2
<i>Hemphillia malonei</i> Malone jumping-slug	CR, WC Bent, Clac, Hood, Mari, Mult	G3 S3	--	--	4
<i>Hesperarion mariae</i> Tillamook westernslug	CR Doug, Lane, Till	G2 S2	--	--	1

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<i>Hochbergellus hirsutus</i> Sisters hesperian (snail)	KM Curr	G1 S1	-	-	1
<i>Megomphix hemphilli</i> Oregon megomphix (snail)	CR, KM, WC, WV; WA Bent, Clat, Colu, Coos, Doug, Lane, Linn, Mari, Mult, Till, Wash, Yamh	G3 S3	--	-	4
<i>Megomphix lutarius</i> Umatilla megomphix (snail)	BM; WA Umat, Wall?	G1 SH	--	-	3
<i>Monadenia chaceana</i> Chace sideband (snail)	KM, WC; CA Doug, Jack, Jose	G1Q S1	--	-	1
<i>Monadenia fidelis beryllica</i> Green sideband (snail)	KM Coos, Curr	G4G5T1T2 S1S2	--	-	1
<i>Monadenia fidelis celeuthia</i> Traveling sideband (snail)	WC Jack	G4G5T1 S1	--	-	1
<i>Monadenia fidelis columbiana</i> Columbia sideband (snail)	WC; WA Hood	G4G5T1 S1	--	-	1
<i>Monadenia fidelis minor</i> Oregon snail (Dalles sideband)	CB; WA Sher, Wasc	G4G5T1 S1	SOC	-	1
<i>Monadenia fidelis</i> ssp. nov. Deschutes sideband (snail)	BM, CB Sher, Wasc	G4G5T1 S1	--	-	1
<i>Monadenia fidelis</i> ssp. nov. Modoc sideband (snail)	EC Klam	G4G5T1 S1	--	-	1
<i>Ogaridiscus subrupicola</i> Southern tightcoil (snail)	BM; ID, UT Umat, Wall	G1 S1	--	-	1
<i>Oreohelix</i> sp. nov. Hells Canyon mountainsnail	BM; ID, WA Wall	G2 S1?	--	-	1
<i>Oreohelix strigosa delicata</i> Blue mountainsnail	BM Wall	G5T1 S1	--	-	1
<i>Oreohelix variabilis</i> ssp. nov. Deschutes mountainsnail	CB Sher, Wasc	G1T1 S1	--	-	1
<i>Oreohelix variabilis variabilis</i> Dalles mountainsnail	CB Sher, Wasc	G1T1 S1	--	-	1
<i>Polygyrella polygyrella</i> Humped coin (snail)	BM; ID, MT, WA Umat	G2G3 SH	--	-	3
<i>Pristiloma arcticum crateris</i> Crater Lake tightcoil (snail)	EC, WC Desc, Doug, Jeff, Klam	G4T1 S1	--	-	1
<i>Pristiloma johnsoni</i> Broadwhorl tightcoil (snail)	CR, WC?; WA Doug?, Lane, Till	G3 S2?	--	-	2
<i>Pristiloma pilsbryi</i> Crowned tightcoil (snail)	CR; WA Linc	G1 S1	--	-	1
<i>Pristiloma wascoense</i> Shiny tightcoil (snail)	BM, EC; ID, WA Wall, Wasc	G2Q SH	--	-	3
<i>Prophysaon</i> sp. nov. Klamath tail-dropper	EC, KM; CA Doug, Jack, Jose, Klam	G2 S1S2	--	-	1
<i>Prophysaon vanatta</i> var. <i>pardalis</i> Spotted tail-dropper	CR, WC; WA Clac, Coos, Lane, Till	G4T2 S2	--	-	1
<i>Radiodiscus abietum</i> Fir pinwheel (snail)	BM; ID, MT, WA Unio, Wall	G3 S1	--	-	2

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<i>Vespericola depressus</i> Columbia Gorge hesperian (snail)	CB; WA Sher, Wasc	G2 S2	--	--	1
<i>Vespericola sierranus</i> Siskiyou hesperian (snail)	EC, KM, WC; CA Jack, Jose	G2 S1	--	--	1
<i>Vespericola</i> sp. nov. Oak Springs hesperian (snail)	CB Sher, Wasc	G1 S1	--	--	1
<i>Vespericola</i> sp. nov. Bald hesperian (snail)	WV Lane	G1 S1	--	--	1
Class Oligochaeta - Earthworms					
Order Haplotaxida					
<i>Driloleirus macelfreshi</i> Oregon giant earthworm	CR, WV Linc, Linn, Mari, Polk, Yamh	G1 S1	SOC	--	1
Class Arachnida - Spiders, Scorpions, Mites and Ticks					
Order Pseudoscorpiones					
<i>Apochthonius malheuri</i> Malheur pseudoscorpion	BR Ham	G1 S1	SOC	--	1
Class Branchiopoda - Crustaceans					
Order Anostraca					
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	KM; CA Jack	G2G3 S2S3	LT	--	1
Class Malacostraca - Crustaceans					
Order Isopoda					
<i>Amerigoniscus malheurensis</i> Malheur isopod	BR Ham	G1 S1	--	--	1
Order Amphipoda					
<i>Stygobromus hubbsi</i> Malheur Cave amphipod	BR Ham	G1 S1	SOC	--	1
<i>Stygobromus oregonensis</i> Oregon Cave amphipod	KM Jose	G1 S1	--	--	1
Class Insecta - Insects					
Order Collembola					
<i>Oncopodura mala</i> Malheur Cave springtail	BR; CA? Ham	G3G4 S1	--	--	1
Order Odonata					
<i>Gomphus lynnae</i> Lynn's clubtail dragonfly	BM, CB; WA Gill, Gran, Malh, Whee	G2 S1?	SOC	--	3
Order Orthoptera					
<i>Chloealtis aspasma</i> Siskiyou short-horned grasshopper	KM, WV Bent, Jack	G1 S1	SOC	--	1
Order Plecoptera					
<i>Zapada wahkeena</i> Wahkeena Falls flightless stonefly	WC Mult	G2 S2	SOC	--	1
Order Hemiptera					
<i>Acalypta cooleyi</i> Cooley's lace bug	BM, WC Ham, Jack	G2 S2	--	--	3
<i>Acalypta lillianus</i> Lillian's lace bug	WC; AR + Lane	G3 S1	--	--	3
<i>Acetropis americana</i> American grass bug	WV Bent, Yamh	G1 S1	SOC	--	1
<i>Atrazonotus umbrosus</i> Umbrose seed bug		G3 S2	--	--	3

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHIC List
<i>Boreostolus americanus</i> American unique-headed bug	KM, WC; WA + Jack, Lane, Linn	G2 S2?	--	--	3
<i>Cardiastethus borealis</i> Boreal minute pirate bug		G4 S2	--	--	3
<i>Criocoris saliens</i> Salien plant bug		G4 S2	--	--	3
<i>Dendrocoris arizonensis</i> Arizona stink bug	WV Bent, Jack	G4 S2	--	--	3
<i>Derephysia foliacea</i> Foliaceous lace bug	CR, WC, WV Bent, Lane	G2 S1	--	--	3
<i>Eurychiloptera</i> sp. nov. Oregon trunk-inhabiting plant bug	KM, WC Jack, Lane	G2 S2	--	--	3
<i>Hebrus buenoi</i> Bueno's velvet water bug	BR Ham, Lane	G4 S2	--	--	3
<i>Hesperocimex coloradensis</i> Colorado bed bug	BM Gran, Klam	G4 S2	--	--	3
<i>Hoplistoscelis heidemanni</i> Heidemann's damsel bug	KM, WV Bent, Curr	G4 S2	--	--	3
<i>Hydrometra martini</i> Martin's water-measurer	WV Bent	G5 S2	--	--	3
<i>Lygus oregonae</i> Oregon plant bug	CR; WA Linc, Till	G2 S2	--	--	2
<i>Macrotylus essigi</i> Essig's plant bug	WC Lane	G3 S2	--	--	3
<i>Malezonotus obrieni</i> Obrien's seed bug	WC Lane	G3 S2	--	--	3
<i>Mesovelia mulsanti</i> Mulsant's water treader	BR, CR, WC, WV Bent, Ham, Linn, Till, Yamh	G4 S2	--	--	3
<i>Micracanthia fennica</i> Hamey Hot Spring shore bug	BR; BC + Ham	G5 S1?	--	--	2
<i>Micracanthia schuhi</i> Schuh's shore bug	WC Clac	G3 S2	--	--	3
<i>Nabacula propinqua</i> Marsh damsel bug	CR Coos, Till	G5 S2	--	--	3
<i>Nabacula subcoleoprata</i> Black damsel bug	BM Wall	G5 S2	--	--	3
<i>Orectoderus schuhi</i> Schuh's plant bug	BR Klam	G3 S2	--	--	3
<i>Pinalitus solivagus</i> True fir plant bug	CR, KM, WC Bent, Hood, Jose, Lane	G5 S2	--	--	3
<i>Platylygus pseudotsugae</i> Douglas-fir plant bug	CR, WC Bent, Lane	G5 S2	--	--	3
<i>Pronotocrepis clavicornis</i> Thick-antennaed plant bug	BR Lake	G2 S2	--	--	3
<i>Saldula villosa</i> Hairy shore bug	CR; CA Coos	G3 S1	--	--	2
<i>Sixeonotus</i> sp. nov. A plant bug	WC Desc	G2 S1	--	--	2

<i>Scientific Name</i> Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHIC List
<i>Teratocoris paludum</i> Pale plant bug	CR Coos	G4 S1	-	-	2
<i>Vanduzeeina borealis californica</i> California shield-backed bug	WC Hood, Lane	G3T3 S1	-	-	2
Order Coleoptera					
<i>Acupalpus punctulatus</i> Marsh ground beetle	WV Bent, Wash	G2? S2?	-	-	3
<i>Agonum belleri</i> Beller's ground beetle	WC; WA Clac, Wasc	G3 S1?	SOC	-	2
<i>Bembidion tigrinum</i> Cryptic beach carabid beetle	CR; CA, WA Clat, Coos, Till	G5 S4	-	-	3
<i>Cicindela columbica</i> Columbia River tiger beetle	BM, CB, EC; ID, WA Gill, Hood, Sher, Umat, Wasc	G2 SH	-	-	1-ex
<i>Cicindela hirticollis siuslawensis</i> Siuslaw sand tiger beetle	CR; WA Coos, Lane, Linc, Till	G5T3 S3?	-	-	4
<i>Eusattus rectus</i> Sandbar darkling beetle	CB?, CR; WA Clat, Wasc?	GNR SH	-	-	3
<i>Nebria gebleri fragariae</i> Strawberry Mountains gazelle beetle	BM Gran	G4G5T3? S3?	-	-	4
<i>Nebria gebleri siskiyouensis</i> Siskiyou gazelle beetle	CR, KM; CA Curr, Jack, Jose	G4G5T4 S4	SOC	-	3
<i>Nebria piperi</i> Piper's gazelle beetle	WC; WA, BC + Lane	G5 S3?	-	-	3
<i>Pterostichus johnsoni</i> Johnson's waterfall carabid beetle	CR, WC?, WA Doug?, Lane, Till	G3 S2?	-	-	2
<i>Pterostichus rothi</i> Roth's blind ground beetle	CR Bent, Linc	G1 S1	SOC	-	1
Order Trichoptera					
<i>Agapetus denningi</i> Denning's agapetus caddisfly	WC Jack	GH SH	SOC	-	3
<i>Allomyia scotti</i> Scott's apatanian caddisfly	WC Clac	G1 S1	SOC	-	1
<i>Apatania tavalala</i> Cascades apatanian caddisfly	BM, EC, WC Clac, Croo, Doug, Jeff, Klam, Linn	G3 S3	SOC	-	4
<i>Eobrachycentrus gelidae</i> Mt. Hood brachycentrid caddisfly	WC; BC Clac, Doug, Hood, Linn, Mult	G3 S3	SOC	-	4
<i>Farula constricta</i> A caddisfly	WC Mult	G1? S1?	SOC	-	1
<i>Farula davisii</i> Green Springs Mountain farulan caddisfly	WC Jack	GH SH	SOC	-	3
<i>Farula jewetti</i> Mt. Hood farulan caddisfly	EC, WC Clac, Hood, Mult	G3 S3	SOC	-	4
<i>Farula reapii</i> Tombstone Prairie farulan caddisfly	WC Doug, Lane, Linn	G3 S3	SOC	-	4
<i>Goeracea oregona</i> Sagehen Creek goeracean caddisfly	WC; CA Doug, Jack	GNRQ SNR	SOC	-	3
<i>Homoplectra schuhi</i> Schuh's homoplectran caddisfly	EC, KM; CA Jack, Klam	G3Q S3	SOC	-	3

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHIC List
<i>Lepania cascada</i> A caddisfly	CR, WC; WA + Bent, Hood, Linc	G3 S3	SOC	-	3
<i>Moselyana comosa</i> A caddisfly	CR, WC; WA Bent, Clac, Doug, Hood, Jack, Klam, Lane	G3 S3	SOC	-	3
<i>Namamyia plutonis</i> A caddisfly	CR, WC; CA Bent, Doug, Lane, Mari	G3 S3	SOC	-	2
<i>Neothremma andersoni</i> Columbia Gorge caddisfly	WC Mult	G1 S1	SOC	-	1
<i>Oligophlebodes mostbento</i> Tombstone Prairie caddisfly	WC; BC, MT Lane, Linn	G3 S3	SOC	-	3
<i>Rhyacophila chandleri</i> A caddisfly	WC; CA Lane	G3 S3	SOC	-	2
<i>Rhyacophila colonus</i> O'brien rhyacophilan caddisfly	KM Jose	GH SH	SOC	-	3
<i>Rhyacophila haddocki</i> Haddock's rhyacophilan caddisfly	CR Bent	G1 S1	SOC	-	1
<i>Rhyacophila leechi</i> A caddisfly	WC; CA	G3 S3	SOC	-	2
<i>Rhyacophila unipunctata</i> One-spot rhyacophilan caddisfly	WC; WA? Hood, Lane	G3 S3	SOC	-	3
Order Lepidoptera					
<i>Agriades podarce</i> Gray blue (butterfly)	EC, WC; CA, NV Doug, Jack, Klam	G3G4 S2	-	-	2
<i>Boloria bellona toddi</i> Eastern meadow fritillary (butterfly)	BM; ID, WA + Umat	G5T4T5 S1	-	-	2
<i>Boloria selene atrocotalis</i> Silver-bordered fritillary (butterfly)	BM; ID, WA + Bake, Croo, Gran	G5T4Q S2	-	-	2
<i>Euphydryas editha taylori</i> Taylor's checkerspot (butterfly)	WV; WA Bent, Lane, Polk	G5T1 S1	C	-	1
<i>Icaricia icarioides fenderi</i> Fender's blue butterfly	WV Bent, Lane, Polk, Yamh	G5T1 S1	LE	-	1
<i>Incisalia polia maritima</i> Hoary elfin (butterfly)	CR; CA, WA + Curr, Linc	G5T2T3 S1?	-	-	1
<i>Mitoura johnsoni</i> Johnson's hairstreak (butterfly)	BM, CR, EC, KM, WC, WV; CA, WA + Bake, Coos, Curr, Doug, Hood, Jack, Jeff, Jose, Klam, Lake, Lane, Linn, Mari, Polk, Wall, Wasc	G2G3 S2?	-	-	1
<i>Ochlodes yuma</i> Yuma skipper (butterfly)	BM, BR; CA, NV, WA + Lake, Wall	G5 S1?	-	-	2
<i>Plebeius saepiolus littoralis</i> Insular blue butterfly	CR; CA Curr, Lane	G5T1T3 S1	SOC	-	1
<i>Polites mardon</i> Mardon skipper (butterfly)	WC; CA, WA Jack, Klam	G2G3 S2	C	-	1
<i>Speyeria callippe</i> ssp. nov. Willamette callippe fritillary (butterfly)	WV Bent	G5TH SX	-	-	1-ex
<i>Speyeria coronis coronis</i> Coronis fritillary (butterfly)	KM, WC; CA Jack, Jose	G5T3T4 S1	-	-	2
<i>Speyeria zerene bremnerii</i> Valley silverspot butterfly	CR, WV; WA, BC Bent, Polk	G5T3T4 SH	-	-	2-ex

Scientific Name Common Name	Ecoregion; Adjacent States Oregon Counties	Heritage Rank	Federal Status	ODFW Status	ORNHIC List
<i>Speyeria zerene hippolyta</i> Oregon silverspot butterfly	CR; CA, WA Clat, Lane, Linc, Till, Yamh	G5T1 S1	LT	-	1
Order Hymenoptera					
<i>Bombus franklini</i> Franklin's bumblebee	KM; CA Doug, Jack	GNR S3?	SOC	-	3

APPENDIX G
MODIFIED PLANT COMMUNITY AND LISTED SPECIES
PHOTOGRAPHS

Modified Plant Community and Listed Species Photographs



Wetlands



Evergreen forest



Oak savanna



Oak woodland



Perennial forbs



Orchard



Developed



Nelson's checkermallow



Kincaid's lupine



Howell's montia

APPENDIX H
ENVIRONMENTAL ASSESSMENT



Environmental Assessment
for Implementation of a Revised
Integrated Natural Resources Management Plan,
Camp Adair, Oregon

May 2007

Prepared for
The Oregon Military Department
Oregon Army National Guard
1776 Militia Way SE
Salem, Oregon 97309-5047

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ENVIRONMENTAL ASSESSMENT ABSTRACT

Responsible Agency: The Oregon Military Department (OMD), Oregon
Army National Guard

Title: Environmental Assessment (EA) for the Implementation of the
Revised Integrated Natural Resources Management Plan (INRMP),
Camp Adair, OR

Report Designation: Environmental Assessment

Abstract: This EA analyzes the potential environmental impacts from the implementation of a revised INRMP for Camp Adair. The implementation of the revised INRMP at Camp Adair will successfully promote adaptive stewardship practices that protect and enhance natural resources for multiple use, sustainable yield, and biological integrity, while supporting the military mission.

Two alternatives are evaluated in this EA, including the No Action Alternative. An environmental analysis of the No Action alternative is required by CEQ regulations to serve as a benchmark against which the Proposed Action can be evaluated. The EA concludes that Alternative 1, implementing the proposed ecosystem-based INRMP, would meet the proposed action requirements. This alternative would not result in significant impacts to the physical, biological or socioeconomic environment.

Alternative 2 is the No Action Alternative, meaning that an updated INRMP would not be implemented at Camp Adair and existing management goals, objectives, and strategies would continue to be implemented. The use of adaptive management in preserving and enhancing natural resources is needed for an ecologically sound environment, and changes occur through time that must be addressed. This alternative would also not incur significant impacts to the physical, biological or socioeconomic environment; however, it does not update necessary changes needed for effective management of the natural resources at Camp Adair.

The INRMP will be reviewed for operation and effect every five years (i.e., 2011, 2016, etc.). The plan may be updated annually with minor changes, but revisions to the plan, consisting of major changes, will be made only if circumstances require it.

Additional Information: Contact the following person for additional information:

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EXECUTIVE SUMMARY

An INRMP “serves as a comprehensive plan to outline management of all natural resources on a particular training site over a five-year period to support and be consistent with the military mission while protecting and enhancing such resources in accordance with accepted stewardship principles” [reference “Memorandum, NGB-ARE, 15 June 2000, subject: All States (Log Number P00-0039) Integrated Natural Resources Management Plans]. In addition, under the Sikes Act [16 USC 670a(b)(1)(I)], as amended, an INRMP should ensure that “no net loss in the capability of military lands to support the military mission” of the training site occurs as a result of natural resources management provided in the plan.

In summary, this INRMP describes the baseline conditions of natural resources at Camp Adair and provides management programs and guidance. Preparation of this plan is required by Army Regulation (AR) 200-3, the Sikes Act, as amended (16 USC 670a *et seq.*), Department of Defense Instruction (DoDI) 4715.3, and other DoD regulations and guidance. Section 2-2(b) of AR 200-3 states that actions associated with implementation of an INRMP must be assessed in accordance with the National Environmental Policy Act (NEPA) for potential environmental effects caused by significant changes in the plan. In this case, analysis of the potential environmental effects of implementing the INRMP is undertaken by this EA.

This assessment presents resource areas requiring assessment pursuant to 32 CFR 651, *Environmental Analysis of Army Actions (AR 200-2)* and *Guidance on Preparing Environmental Documentation for Army National Guard Actions in Compliance with the National Environmental Policy Act of 1969*, (March 2002). The organization of this EA is as follows:

- Section 1.0 describes the purpose and need for the proposed action;
- Section 2.0 summarizes the alternatives considered;
- Section 3.0 describes the affected environment;
- Section 4.0 describes the potential environmental consequences of implementation of the alternatives;
- Section 5.0 describes potential cumulative effects from implementation of the alternatives;
- Section 6.0 discusses other considerations, including irreversible or irretrievable commitment of resources; unavoidable adverse effects; and relationship between short-term uses and long-term productivity;
- Section 7.0 discusses the conclusions of the EA;
- Section 8.0 presents the list of preparers of this EA; and
- Section 9.0 presents the references used for this EA.

Two alternatives are identified and evaluated: Alternative 1, implementation of the revised INRMP (referred to in this document as the 2007 INRMP); and Alternative 2, continue the implementation of the existing 2001 INRMP. Alternative natural resources management projects that were considered during the development of this INRMP were eliminated because they were not economically feasible, ecologically sound, or compatible with the requirements of the military mission. This INRMP provides descriptions of the various goals and objectives used to develop management measures/projects for the issues and concerns for each resource area. This NEPA review assesses known, potential, and reasonably foreseeable environmental consequences related to strategies and projects presented in this INRMP. Additional NEPA analysis could be required prior to the implementation of certain actions or projects, such as for prescribed burning or construction of maneuver trails. However, projects requiring additional analysis could be tiered from this EA.

No significant impacts would result from implementation of either Alternative 1, implementation of the updated INRMP, or Alternative 2, the no action alternative (the continuation of existing natural resources management under the 2001 INRMP).

ACRONYMS AND ABBREVIATIONS

AR	Army Regulation
AGI-ENV	OMD Environmental Branch
AGI-O	OMD Sustainment, Restoration and Modernization Branch
ASL	above sea level
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code Of Federal Regulation
CWA	Clean Water Act
dB	Decibel
dBA	"A-weighted" decibel scale
DNL	day-night average noise level
DoD	Department of Defense
DoDI	Department of Defense Instruction
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register
HSWA	Hazardous and Solid Waste Amendments
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
DNL	day-night average noise level
ODFW	Oregon Department of Fish and Wildlife
OMD	Oregon Military Department
ONHIC	Oregon Natural Heritage Information Center
ORARNG	Oregon Army National Guard
OSU	Oregon State University
PL	Public Law
PM	particulate matter
POL	petroleum, oils, and lubricants
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USNVCS	U.S. National Vegetation Classification System

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1.0 PURPOSE OF AND NEED FOR ACTION

The Sikes Act, as amended, states “the Secretary of each military department shall prepare and implement an integrated natural resources management plan (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” (16 USC 670a).

Camp Adair consists of approximately 527 acres of federally-owned land, managed by the US Army Corps of Engineers (USACE), and contains significant natural resources. The USACE has licensed Camp Adair to the OMD for use by the Oregon Army National Guard (ORARNG) for military training. With approval of the USACE, the OMD adopted and implemented an INRMP in 2001 for the years 2001 to 2006. In compliance with the requirements of the Sikes Act, the OMD is proposing to revise the INRMP for 2007 to 2011.

To address potential effects from implementing the updated INRMP, referenced throughout this document as the 2007 INRMP, the OMD has prepared this environmental assessment (EA). The EA has been prepared in accordance with Title 32, Part 651 of the Code of Federal Regulations (32 CFR 651) and *Guidance on Preparing Environmental Documentation for Army National Guard Actions in Compliance with the National Environmental Policy Act of 1969*, (March 2002).

The 32 CFR 651 regulations implement the National Environmental Policy Act (NEPA) for Army and Army National Guard proposed actions and supersede Army Regulation (AR) 200-2 *Environmental Effects of Army Actions*. This EA analyzes the potential effects that may result from implementation of the revised Camp Adair INRMP. Topics addressed are related to the effects of implementing the proposed plan on natural resources. The details are discussed in the following chapters and include: geology, topography, soils, water resources, vegetation, wetlands, wildlife, threatened/endangered and special status species; cultural resources; air quality; noise; public health and safety; socioeconomic resources, and environmental justice.

1.1 PURPOSE AND NEED FOR ACTION

In general, the purpose of the proposed action is to provide for the effective, long-term management of the installation’s natural resources while allowing military training and other installation activities to proceed. More specifically, the purposes of implementing an INRMP are to:

- Conserve and rehabilitate natural resources on military installations;

- Sustain multipurpose use of the resources, including hunting, fishing, trapping, and nonconsumptive uses; and
- Provide public access to military installations, subject to safety requirements and military security.

The need for the proposed action is to ensure natural resources are managed effectively at Camp Adair, as required by the Sikes Act, Army Regulation (AR) 200-3 *National Resources – Land, Forest, And Wildlife Management*, and other applicable natural resource regulations and guidance documents, while allowing the training mission(s) and other supporting activities to be accomplished in order to provide a fully trained and ready force.

Additionally, the proposed action is needed to fulfill the requirements of the Sikes Act, as amended. The INRMP provides for the coordinated management of the following resource issues: geology, topography, soils, water resources, vegetation, wetlands, wildlife, threatened/endangered and special status species; cultural resources; air quality; noise; public health and safety; socioeconomic resources, and environmental justice.

The INRMP identifies goals and management objectives/strategies to accomplish those goals for each resource issue, and identifies projects that, if implemented, would help accomplish the set goals.

1.2 PUBLIC INVOLVEMENT AND AGENCY COORDINATION

Public involvement and agency coordination were accomplished through a thorough scoping process at the initial stage of updating the INRMP. Copies can be found in Appendix A. In addition, the draft 2007 INRMP and the EA were made available for a 30-day public review period.

During the scoping process, the following agencies provided information and assistance:

Federal Agencies

The U.S. Fish and Wildlife Service (USFWS) has provided technical assistance on known and potentially occurring sensitive species and wildlife habitat management issues. They were provided a letter of coordination for initiating the INRMP process. This agency is the primary federal agency for issues regarding fish and wildlife management and is the regulatory authority for the Endangered Species Act of 1973, PL 93-205 (codified at 16 USC 1531–1534) and the Migratory Bird Treaty Act of 1918 (codified as amended at 16 USC 703–711).

The U.S. Army Corps of Engineers in Portland was also provided a letter of coordination regarding the INRMP process. The Corps manages the

full range of real estate services (appraisal, planning and control, acquisition, management, and disposal of land) for the military and civil works activities of the Army and Air Force, and for other federal agencies. The Corps manages the real property at Camp Adair.

Tribal Governments

The Confederated Tribes of Grande Ronde and the Confederated Tribes of Siletz were formally invited to participate in the planning process through written correspondence by the Adjutant General to their respective Tribal Chairs and resource management staff. In addition, a similar invitation was provided to the tribal staffs at one of the Cultural Resources Cluster Group meetings, sponsored by the Legislative Commission on Indian Services.

State Agencies

The Oregon Department of Fish and Wildlife (ODFW) is the primary state agency responsible for managing fish and wildlife. Cooperation between the OMD and ODFW generally involves compliance issues concerning the Endangered Species Act, the Migratory Bird Treaty Act, and other federal and state laws and regulations. The ODFW was sent a coordination letter notifying them of the OMD's intent to initiate the INRMP process.

Other state and local agencies receiving letters notifying them of OMD's intent to update the INRMP are listed below:

- Oregon Water Resources Department
- Oregon Department of Agriculture
- State Historic Preservation Office, Oregon Parks and Recreation Department
- Planning Manager, Oregon Parks and Recreation Department
- Benton Soil and Water Conservation District
- Oregon State University, Department of Botany and Plant Pathology
- Oregon Department of Forestry
- Oregon Department of State Lands (Field Operations)
- Oregon Department of State Lands (Policy & Planning)

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2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action and Alternatives and the Alternatives Eliminated from Detailed Study.

2.1 Description of the Proposed Action

Implementation of the 2007 revised INRMP is the proposed action analyzed in this environmental assessment. The proposed action is described in detail in Section 5 *Proposed Natural Resource Management Actions*. The goals of the INRMP are: to conserve Federally listed and candidate species, protect the historic orchard area, manage fires, prevent loss or degradation of wetlands, prevent soil erosion, prevent nonpoint source water pollution, eliminate exotic and invasive plant species, and to conserve native plant structural components and biodiversity.

2.2 DESCRIPTION OF THE ALTERNATIVES

Alternative 1, the preferred alternative, consists of implementing the proposed action as an ecosystem-based INRMP using adaptive management. Table 5.1-1, in Section 5 of the INRMP, presents the natural resources management goals, objectives, projects, and timelines that will be evaluated in this EA.

Alternative 2 is the No Action Alternative. This alternative would involve a continuation of current practices described in the 2001 Camp Adair INRMP and would not include implementation of updated management goals, objectives, and projects that would enhance the preservation and protection of natural resources at Camp Adair. An environmental analysis of the No Action alternative is required by CEQ regulations to serve as a benchmark against which the Proposed Action can be evaluated.

2.3 ALTERNATIVES ELIMINATED FROM DETAILED ANALYSIS

Some natural resources management goals, objectives, and projects considered during revision of the INRMP were eliminated because they were found not economically feasible, ecologically sound, or compatible with the requirements of the military mission. Some goals, objectives, and projects identified in the 2001 INRMP were eliminated for some of these reasons, and some were replaced with more feasible and ecologically sound projects. Section 6 of the revised INRMP identifies projects, including those that were implemented and eliminated. It also provides an explanation for the elimination.

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3.0 AFFECTED ENVIRONMENT

Existing environmental conditions at Camp Adair are described in greater detail in Section 3 *Existing Environmental Conditions*, of the 2007 INRMP.

3.1 Land Use

Camp Adair is zoned as Open Space by Benton County. The OMD State Agency Coordination Program, reviewed and approved by the Oregon Land Conservation and Development Commission in 1989, indicates that this zoning does not apply to Camp Adair. This revised INRMP is not proposing any change to the present land use and therefore, this resource was not analyzed for this EA.

3.2 Ecological Setting and Climate

Camp Adair is located within the Willamette Valley ecoregion. Climatic conditions closely resemble a Mediterranean climate. This INRMP is not proposing any change to the present ecological setting or climate therefore this resource was not analyzed for this EA.

3.3 Geology

Camp Adair's low lying relatively flat areas are composed of Pleistocene lacustrine and fluvial sediments, while the hills are composed of Miocene basalts and marine sandstones. INRMP is not proposing any change to the present geology therefore this resource was not analyzed for this EA.

3.4 Soils

Camp soils are either silt loams or silty clay loams. Section 4.1 analyzes the potential environmental consequences of the revised INRMP upon this resource.

3.5 Water

Aquifers are not well developed at Camp Adair. Only one unnamed ephemeral stream exists on Camp Adair. Section 4.2 analyzes the potential environmental consequences of the revised INRMP upon this resource.

3.6 Vegetation

The historic vegetation was prairie, oak openings, and riparian forest. This has been extensively modified by settlement and cultivation. Section 4.3 analyzes the potential environmental consequences of the revised INRMP upon this resource.

3.7 Wetlands

A wetland's delineation has identified 28.82 acres of wetlands on Camp Adair. Section 4.4 analyzes the potential environmental consequences of the revised INRMP upon this resource.

3.8 Wildlife

Surveys of the Camp have identified and documented the presence of 85 bird species, 34 mammal species, 12 amphibian and reptile species, 278 moth species, and 30 butterfly species. Section 4.5 analyzes the potential environmental consequences of the revised INRMP upon this resource.

3.9 Threatened, Endangered, and Special Status Species

Two federally-listed threatened species occur on Camp Adair, Kincaid's lupine, and Nelson's checkermallow. In addition, two State candidate species, Meadow checkermallow and Howell's montia, are present on Camp Adair. Section 4.6 analyzes the potential environmental consequences of the revised INRMP upon these species.

3.10 Cultural

Camp Adair has eight prehistoric archaeological sites and two prehistoric/historic dual component sites located in the northwest sector of the camp. Section 4.7 analyzes the potential environmental consequences of the revised INRMP upon these resources.

3.11 Air Quality

Camp Adair is located in a Clean Air Act (CAA) attainment area. Section 4.8 analyzes the potential environmental consequences of the revised INRMP upon this resource.

3.12 Noise

Camp Adair is subject to Benton County noise control Ordinance 203.11 §§ 1, 1980. Section 4.9 analyzes the potential environmental consequences of the revised INRMP upon this resource.

3.13 Public Health and Safety

The primary public risk seems to be the generation of wildfires due to training activities and buildup of fuel loads on the Camp. Section 4.10 analyzes the potential environmental consequences of the revised INRMP upon this resource.

3.14 Socioeconomic

The affected socioeconomic area for Camp Adair is Benton County. Section 4.11 analyzes the potential environmental consequences of the revised INRMP upon this resource.

3.15 Environmental Justice

Executive Order 12898 requires an analysis of potential disproportional impacts of activities upon minority and low-income populations. Executive Order 13045 requires an analysis of the environmental health and safety risks from activities that could disproportionately affect children. Section 4.12 analyzes the potential environmental consequences of the revised INRMP upon this resource.

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4.0 ENVIRONMENTAL CONSEQUENCES

This section describes the environmental consequences that may result from the implementation of Alternative 1, the 2007 revised INRMP, and Alternative 2 (no action), continuing to implement the existing 2001 INRMP. Both alternatives are based on adaptive management; however, Alternative 2 does not include the changes in natural resources management goals, objectives, and projects (updates beyond Year 2005) that are described in the 2007 revised INRMP.

4.1 SOIL RESOURCES

In general, potential adverse impacts to soil resources from the proposed action include erosion, loss of soil fertility and contamination. Potential benefits include avoiding erosion, maintaining soil fertility, and avoiding contamination. The soils at Camp Adair do not have significant potential for wind erosion, but can be susceptible to water erosion, particularly soils on steeper slopes. Roads and unvegetated, disturbed areas on slopes have the highest potential for erosion. Except for existing roads and maneuver trails, all of the camp's amenities have been developed on flat terrain.

The natural resource management strategies contained in both alternatives are intended to protect soil stability and fertility, as well as maintain the maximum long-term benefits from soils. Erosion would be stopped and repaired as quickly as possible under either alternative. Site-appropriate, native vegetation would be used in active revegetation efforts, if feasible. Revegetated areas would be monitored to make certain they become established and effective. Under either alternative, several management practices would be used to protect soils including:

- Not conducting activities that would significantly disturb soils in areas with high soil erosion potential
- Protecting bare ground in high erosion areas with amendments or vegetation as quickly as possible
- Hardening areas of recurring ground disturbance with gravel or similar surfaces to retain soils
- Limiting off-road equipment use to selected areas and times of the year
- Contacting the Benton County Soil and Water Conservation District and the U.S. Natural Resources Conservation Service, as needed, for assistance in designing and implementing soil erosion projects.

Therefore, both alternatives are expected to result in beneficial impacts on soil resources.

4.1.1 Alternative 1: Implementation of the 2007 revised INRMP

Alternative 1 would focus on acting to avoid soil erosion by addressing it during project and activity planning, then repairing damage, if it occurs, when projects and activities are conducted. Most projects proposed in the 2007 revised INRMP are expected to have little, if any, potential to cause erosion and result in no significant adverse effects on soil resources. The use of registered pesticides at Camp Adair, in accordance with their label directions and applicable state and federal requirements, is not expected to have a significant impact on soil or surface water resources.

4.1.2 Alternative 2: Continued implementation of the 2001 INRMP (No Action)

Under this alternative, existing management programs and projects would continue. Soils at Camp Adair would be maintained in their present condition. Alternative 2 is similar to Alternative 1 in that soil disturbances caused by activities would be promptly corrected.

4.2 WATER RESOURCES

Water resources include surface water and groundwater. Adverse impacts to water resources include detrimental changes in water quality, decreases in the quantity of water available for existing or potential beneficial uses, and increased potential for flooding. Adverse impacts are judged to be significant if they result in noncompliance with regulatory standards, plans, or policies. Otherwise, the significance is based on the degree of harm the impacts could cause to people or the environment. In general, any degradation of water quality that reduces the existing or potential beneficial uses of the water is considered significant. The significance of reducing the quantity of water available for beneficial uses depends on the size, timing, duration, and permanence of the reduction. The significance of changes in hydraulic conditions depends on the context in which the change occurs. For example, increased flooding potential is deemed significant if it increases the 100-year flood zone or if it results in increased potential for injury, loss of life, or damage to structures.

Most natural resources management activities proposed in either alternative have little potential to affect water resources. Under both alternatives:

- Pesticides would be used in accordance with EPA-approved label directions, OMD's Environmental Compliance Notebook (ORARNG PAM 200-1), and OMD's Integrated Pest Management Plan (ORARNGR 210-5, which is discussed in Section 4.10 of the INRMP);

- Activities would be restricted in wet areas and drainages; and
- Vehicles and excavation activities typically would not be allowed in drainages and wet areas.

4.2.1 Alternative 1: Implementation of the 2007 revised INRMP

Implementing Alternative 1 is not expected to result in significant effects, either adverse or beneficial, concerning potential flooding, general hydraulic conditions, overland flow patterns, or water quality.

4.2.2 Alternative 2: Continued implementation of the 2001 INRMP (No Action)

Under the No Action Alternative, the OMD would continue to implement existing conservation measures at Camp Adair to protect and conserve surface and groundwater resources. This alternative could benefit surface waters by converting some ash wetlands to wet prairie, and creating additional wet prairie areas, if these projects were implemented. However, since the existing INRMP was adopted, OMD further considered and has decided not to convert ash woodlands to wet prairie, since that action could result in "net loss" in the capability of Camp Adair to support military training.

4.3 VEGETATION

Impacts to vegetative communities and habitats can be adverse or beneficial. Adverse impacts to vegetation communities include introducing noxious weeds or exotic plant species that compete with or replace native species, reducing or eliminating native or rare plants or their habitat, and reducing vegetative types considered important for the military mission. Beneficial impacts include protecting and enhancing rare plant species, their habitats, and native vegetation communities. The significance of an impact is assessed based on the degree to which it affects the functions and values of the vegetation and habitat.

Implementation of either alternative is expected to benefit the native vegetation of the camp. Both alternatives aim to control or eliminate exotic and invasive species and to protect and enhance native plant species, including threatened and endangered species.

4.3.1 Alternative 1: Implementation of the 2007 revised INRMP

The goals and individual projects in Alternative 1 that could benefit vegetation are not as extensive as the management strategies presented in Alternative 2. However, many of the management strategies in the existing INRMP were not implemented during 2001-2006 and are not expected to be implemented in the future because they are not needed, are not feasible, or lack management support. Alternative 1 is expected to result in the greater

benefits to the native vegetation because more of the projects contained in the plan would be implemented.

4.3.2 Alternative 2: Continued implementation of the 2001 INRMP (No Action)

No significant changes to current conditions would be expected from continued implementation of the existing INRMP. The existing 2001 INRMP provides for more extensive conservation and rehabilitation of native vegetation than Alternative 1. However, many of the existing INRMP's management strategies have not been implemented and are not expected to be implemented in the future. Under the existing INRMP, locations of threatened Kincaid's lupine have been posted to prevent damage to the plants, spraying to control exotic and invasive species such as Meadow knapweed and Reed canary grass has been accomplished, and one prescribed burn was conducted.

4.4 WETLANDS

Adverse impacts to wetlands are those that result in the destruction or modification of wetlands that result in decreased functions and values. Impacts could result from activities that destroy or greatly alter the hydrology, soils, vegetation, or wildlife of wetlands. Some examples of adverse impacts include filling or excavating in wetlands, draining ditches through pumping or excavation, or otherwise removing plants and vegetation. Short-term adverse impacts, such as from burning or mowing vegetation, could become beneficial over the long term. Adverse impacts are judged to be significant if they result in noncompliance with existing regulatory standards, plans, or policies, such as Section 404 of the CWA or EO 11990. The significance of impacts to wetlands is assessed based on the degree to which they affect the functions and values of wetlands. Beneficial impacts include the conservation, rehabilitation, or enhancement of wetlands or anything that improves the functions and values of a wetland.

4.4.1 Alternative 1: Implementation of the 2007 revised INRMP

Alternative 1 is expected to have no significant adverse effects on wetlands. Wetlands would continue to be protected from damage. The placement of any fill in wetlands as part any proposed projects would be conducted in accordance with any required state and/or federal permits.

4.4.2 Alternative 2: Continued implementation of the 2001 INRMP (No Action)

The No Action Alternative also is expected to have no adverse impact on potential wetland resources. Continued implementation of the existing INRMP is expected to maintain wetland areas in their existing conditions. The existing 2001 INRMP proposed to establish buffers around wetland

areas, post signs around wetlands, and convert ash wetland areas to prairie wetlands. The OMD later determined that these proposed actions were unwanted or unnecessary because uses can be controlled by the Camp Adair Standard Operating Procedures, so they have not been implemented and are not expected to be implemented in the future.

4.5 WILDLIFE

Significant adverse impacts to wildlife are those that would:

- Result in substantial decreases in species numbers;
- Decrease or degrade habitats that serve as concentrated breeding or foraging areas or support substantial concentrations of one or more sensitive species; or
- Decrease or degrade habitats that are limited in availability.
- Beneficial impacts conserve or enhance wildlife communities and habitat.

Implementation of either alternative is expected to benefit wildlife, because both alternatives aim to protect and enhance wildlife habitats and are not expected to decrease or adversely alter habitats. Although the existing INRMP proposes to attempt to control exotic animal species, such projects have been judged by OMD not to be practicable.

4.6 THREATENED AND ENDANGERED SPECIES

Potential effects to federally- or state-listed threatened and endangered species or candidate species can be adverse or beneficial. Significant adverse impacts are those that result in substantial declines in species numbers or in substantial declines or degradation of habitat crucial to a species survival. Beneficial impacts include the conservation and enhancement of a species and its habitat.

Implementation of either alternative is expected to protect and enhance threatened, endangered, and candidate species to the same extent. At Camp Adair, all of the threatened endangered, and candidate species now known to exist on the installation are plants, so management efforts in both cases are directed towards avoiding damage to the plants and conserving and enhancing their habitats. Periodic surveys would be conducted to assess the condition and threats to known threatened, endangered, and candidate species. Periodic surveys also would be conducted to identify other threatened, endangered, and candidate plant and animal species that are not now known to reside on the installation, but which have a reasonable chance of being found there. If a new threatened, endangered, and candidate species is identified or discovered on Camp Adair, it would be conserved according to the applicable regulatory requirements.

The Oregon Endangered Species Act and Section 7 of the federal Endangered Species Act both require consultation with the appropriate state or federal agency for actions that may affect listed species. For the two plants listed at Camp Adair, the Oregon Department of Agriculture (ODA) is the appropriate state agency and the USFWS is the appropriate federal agency.

4.7 CULTURAL RESOURCES

Adverse impacts to cultural resources could result from implementing natural resource management actions that disturb the ground, modify or alter historic structures, cause visual intrusion on a historic setting, or result in the collection of artifacts without authorization. The significance of an impact is based on the degree to which an action would alter the depositional or architectural integrity of a given cultural resource. Beneficial impacts include protection of cultural resources.

Neither alternative proposes natural resource management actions that are expected to adversely affect known historic or archaeological resources on the camp. The historic orchard area, the one cultural resource that also is a natural resource feature, would be protected by either alternative. The OMD's ICRMP addresses the protection and management of cultural resources at Camp Adair. For example, the ICRMP prohibits ground-disturbing activities in known cultural resource locations or high probability areas.

There are no known Native American concerns regarding natural resources management on Camp Adair. The federally recognized tribes are afforded the open opportunity to consult and coordinate with the OMD so that tribal interests are given due consideration consistent with tribal sovereign authority. In accordance with the 2002 DoD Annotated Policy in Indian Tribes and Alaska Natives and during the revision of the INRMP, the OMD formally contacted the appropriate federally recognized tribes to solicit tribal concerns that may exist with natural resources management on Camp Adair. No formal responses from the tribes were received, but the OMD is committed to continued good faith consultation and coordination throughout all phases of decision making and implementing the INRMP.

4.8 AIR QUALITY

Adverse impacts to air quality are those that result in degradation of air quality, such as increased vehicle emissions or generation of airborne pollutants. The significance of impacts to air quality is assessed based on the degree to which they degrade air quality. Beneficial impacts include reducing windblown emissions such as dust.

Implementation of either alternative could have minor, temporary adverse impacts to air quality in the form of smoke from prescribed burns, and vehicle dust and exhaust from the use of existing roads and trails.

Prescribed burns are considered for use under either alternative. Any burns would be conducted according to a burn plan and coordinated with Benton County, the Oregon Department of Environmental Quality, the Oregon Department of Forestry, and other appropriate agencies. Air quality effects from a prescribed burn are expected to be temporary and would be mitigated as much as possible by planning the burn and conducting it in accordance with a burning plan in order to minimize the effects of smoke on nearby residents.

4.9 NOISE

Noise impacts include increases in sound levels, exceeding acceptable land use compatibility guidance, or changes in public acceptance (e.g., complaints about noise). The significance of noise level impacts is assessed based on the degree to which they increase existing noise levels or if impacts result in a substantial increase in noise levels as compared to federal, state, or local regulations.

Implementing natural resource management projects under either of the alternatives is not expected to increase the current noise levels at Camp Adair.

4.10 PUBLIC HEALTH AND SAFETY

Adverse impacts to public health and safety are those that result in decrease or loss of protection of military personnel and other camp users. The significance of impacts to public health and safety is assessed based on the degree to which impacts threaten public health and safety. Beneficial impacts to public health and safety include dust abatement and wildlife control.

No adverse effects to public health or safety are expected from the implementation of natural resource management projects under either alternative. Pesticides would continue to be applied to control and eliminate exotic and noxious plant species in accordance with EPA-approved label directions. Prescribed burns would be conducted only by the Oregon Department of Forestry, under suitable weather conditions, to minimize the potential risk to nearby landowners and residents.

4.11 SOCIOECONOMIC RESOURCES

Impacts to socioeconomic resources include changes in employment, local income, population, housing, or schools. The significance of impacts is

assessed based on the degree to which impacts change the existing conditions of employment, local income, population, housing, or schools.

EO 13045, entitled "Protection of Children from Environmental Health Risks and Safety Risks" (EO 13045, 62 FR 19885), states that each federal agency shall make it a high priority to identify and assess environmental health risks and safety risks that could disproportionately affect children and ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Environmental health risks and safety risks mean risks to health or to safety that are attributable to products or substances that the child is likely to come into contact with or to ingest.

The implementation of either alternative is not expected to significantly affect socioeconomic conditions. Any effects are expected to be beneficial. Under either alternative some natural resource management project work, such as pesticide applications and resource surveys, may be contracted. The use of contractors to conduct natural resources management related projects may have a slight beneficial effect on local employment and income.

4.12 ENVIRONMENTAL JUSTICE

Adverse impacts to environmental justice include disproportionate impacts to low income or minority populations.

On February 11, 1994, President Clinton issued EO 12898, entitled "Federal Actions to Address Environmental Justice in Minority and Low-income Populations." This order requires that "each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities, on minority populations and low-income populations" (EO 12898, 59 FR 7629 [Section 1-101]).

No disproportionate potential adverse effects to any low income or minority populations are expected from implementation of either alternative.

5.0 CUMULATIVE EFFECTS

The Council on Environmental Quality (CEQ) regulations implementing the procedural provisions of NEPA define cumulative effects as:

The impact on the environment (that) results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions (40 CFR § 1508.7 [1997]).

Cumulative effect analysis can be conducted in a variety of ways. In this document, it has been conducted by identifying public and private projects that are expected to be implemented during the same period as would the proposed action.

The Benton County Comprehensive Plan is the official policy guide for decisions about growth, development and conservation of natural resources in Benton County. It is based on the physical, economic and social characteristics of the county; the desires and needs of county citizens; state laws; and programs and policies of other local, state, and federal governmental agencies. Based on a cursory review of the Benton County Comprehensive Plan, it is possible that additional homes may be built on parcels near Camp Adair that could affect the military training site. No current actions or past projects have been identified that would be interdependent with the proposed action and result in adverse impacts.

The Polk County Comprehensive Plan provides goals and policies to serve as a guide for land use planning and development in Polk County. The Plan is reviewed, evaluated and updated as needed. This plan was briefly reviewed and there is nothing in the plan that would affect Camp Adair. No current actions or past projects have been identified that would be interdependent with the proposed action and result in adverse impacts.

Implementing the 2007 revised INRMP with other proposed management actions at Camp Adair is not expected to result in any significant adverse impacts to local natural or cultural resources, and there would not be incompatibility between military training activities and the proposed projects. Implementing the 2007 revised INRMP would not affect the amount of training at Camp Adair, so issues such as transportation would not be affected by the updated INRMP. The potential for beneficial impacts is substantially increased by implementing the updated INRMP. No details for substantially increasing the level of the military mission or

training schedule at Camp Adair have been proposed at this time; therefore, the contribution of such an action to cumulative conditions cannot be assessed.

6.0 OTHER CONSIDERATIONS

6.1 IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires an analysis of significant irreversible effects. Resources that are irreversibly or irretrievably committed to a project are those that are long term or permanent. This includes the use of nonrenewable resources, such as metal, wood, fuel, paper, and other natural or cultural resources. These resources are irretrievable in that they would be used for this project when they could have been used for other purposes. Another impact that falls under the category of the irreversible and irretrievable commitment of resources is the unavoidable destruction of natural resources that could limit the range of potential uses of that particular environment.

No irreversible or irretrievable impacts would be expected from implementing either of the alternatives. Under both alternatives, cultural resources and protected habitats (for example, wetlands and areas inhabited by threatened and endangered species) would not be adversely affected. Likewise, both alternatives would have a negligible to beneficial effect on net consumption of resources.

6.2 UNAVOIDABLE ADVERSE EFFECTS

NEPA requires a discussion of any adverse environmental effects that cannot be avoided. No mitigation measures are required to reduce potentially significant impacts. No significant adverse impacts have been identified from implementing either of the alternatives.

6.3 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

NEPA requires a discussion of the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity.

Both of the alternatives would have some short-term negative effects: air quality impacts due to prescribed burning and potential soil erosion.

Most negative effects to implementing Alternative 1 are minor and short term, with long-term benefits: soil/ground disturbance due to manual removal of exotic and invasive species; the manual removal of shade trees, mowing, and herbicide applications to control exotic and invasive species; creation of additional open areas by manual removal of trees, prescribed

burning, and improving selected existing roads and constructing new roads for firefighting access, training, and resource management purposes.

7.0 CONCLUSIONS

No significant adverse environmental impacts are expected to result from implementing Alternative 1, the 2007 revised INRMP, or Alternative 2, the No Action Alternative. Both alternatives are expected to benefit the natural resources of Camp Adair, with no significant adverse effects. Alternative 1 is expected to produce the greatest benefits, because it better identifies goals, objectives, and projects that are supported by OMD and capable of being implemented. Neither alternative would result in a net loss in the capability of lands to support the military mission of ORARNG. In addition, Alternative 1 would result in:

- Conservation and enhancement of natural resources managed by the ORARNG, where management actions support accomplishment of the military mission;
- Professional natural resources management, including protection, enhancement, and conservation of the natural resources;
- Implementation of land management practices that conserve soil and water resources, reduce reliance on chemical pesticides to control noxious weeds, abate nonpoint pollution, minimize vegetative loss, and prevent soil erosion;
- Identification of special status, threatened, or endangered species, emphasizing military mission requirements and interagency cooperation during consultation, species recovery planning, and management activities, in coordination with the USFWS and ODFW; and
- Implementation of the updated INRMP would enhance sustainability and support military training activities, and would not adversely impact the military mission.

OMD chooses to implement Alternative 1. Since no significant adverse environmental impacts are expected as a result of the proposed action a Finding of No Significant Impact will be prepared.

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