U. S. AIR FORCE INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN

Dobbins Air Reserve Base, Georgia

(See INRMP signature pages for plan approval date)

ABOUT THIS PLAN

This installation-specific Environmental Management Plan (EMP) is based on the U.S. Air Force's (AF) standardized Integrated Natural Resources Management Plan (INRMP) template. This INRMP has been developed in cooperation with applicable stakeholders, which may include Sikes Act cooperating agencies and/or local equivalents, to document how natural resources will be managed. Non-U.S. territories will comply with applicable Final Governing Standards (FGS). Where applicable, external resources, including Air Force Instructions (AFIs); AF Playbooks; federal, state, local, FGS, biological opinion and permit requirements, are referenced.

Certain sections of this INRMP begin with standardized, AF-wide "common text" language that address AF and Department of Defense (DoD) policy and federal requirements. This common text language is restricted from editing to ensure that it remains standard throughout all plans. Immediately following the AF-wide common text sections are installation sections. The installation sections contain installation-specific content to address local and/or installation-specific requirements. Installation sections are unrestricted and are maintained and updated by AF environmental Installation Support Teams (ISTs) and/or installation personnel.

NOTE: The terms 'Natural Resources Manager', 'NRM' and 'NRM/POC' are used throughout this document to refer to the installation person responsible for the natural resources program, regardless of whether this person meets the qualifications within the definition of a natural resources management professional in DODI 4715.03.

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DOCUMENT CONTROL

Record of Review – The INRMP is updated not less than annually, or as changes to natural resource management and conservation practices occur, including those driven by changes in applicable regulations. In accordance with (IAW) the Sikes Act and AFI 32-7064, *Natural Resources Management*, the INRMP is required to be reviewed for operation and effect not less than every five years. Annual reviews and updates are accomplished by the base Natural Resources Manager (NRM), and/or an Installation Support Team Natural Resources Media Manager. The installation shall establish and maintain regular communications with the appropriate federal and state agencies. At a minimum, the installation NRM (with assistance as appropriate from the NR Media Manager) conducts an annual review of the INRMP in coordination with internal stakeholders and local representatives of the United States Fish and Wildlife Service (USFWS), state fish and wildlife agency, and National Oceanic and Atmospheric Administration (NOAA) Fisheries, where applicable, and accomplishes pertinent updates. Installations will document the findings of the annual review in an Annual INRMP Review Summary. By signature to the Annual INRMP Review Summary, the collaborating agency representative asserts concurrence with the findings. Any agreed updates are then made to the document, at a minimum updating the work plans.

INRMP APPROVAL/SIGNATURE PAGES

Approving Officials:

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26 Mar 2018

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Date

INRMP SUMMARY OF CHANGES

This page summarizes changes and updates that apply to this Integrated Natural Resources Management Plan (INRMP) for Dobbins Air Reserve Base (ARB) in Georgia. These are changes that have been identified by Dobbins ARB or cooperating agencies staff, but not yet incorporated into the text of the INRMP. The final version of this plan was signed by the Wing Commander in February 2018. All changes to this document after this date are tracked and summarized below.

Date	Applicable Section(s)	Change

EXECUTIVE SUMMARY

This Integrated Natural Resources Management Plan (INRMP) has been developed for Dobbins Air Reserve Base (ARB) and the Air Force Reserve Command (AFRC) in accordance with Air Force Instruction (AFI) 32-7064, *Integrated Natural Resources Management;* Air Force Policy Directive (AFPD) 32-70, *Environmental Quality;* and the provisions of the Sikes Act, as amended (16 United States Code [U.S.C.] 670a *et seq.*). This updated INRMP provides Dobbins ARB with an updated description of the base and its surrounding environment and continues the existing plan for management designed to mitigate negative impacts and enhance positive effects on local and regional ecosystems. These recommendations have been balanced against the requirements of Dobbins ARB to accomplish its mission.

The INRMP was developed using an interdisciplinary approach, with guidance from a variety of federal, state, and local agencies and groups, including representatives from the US Fish and Wildlife Service (USFWS) and Georgia Department of Natural Resources (GADNR). The Sikes Act requires the preparation of an INRMP in cooperation with the USFWS and the GADNR and requires that the resulting INRMP reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources. Implementation of this updated INRMP will provide an adaptive, ecosystem-based conservation program that will support the Dobbins ARB mission, allow for appropriate natural resources management, and track outcomes of natural resources management. The goals included in this INRMP update include:

- Manage natural resources in a manner that is compatible with and supports the military mission while complying with applicable federal and state laws and USAF regulations and policies.
- Maintain fish and wildlife populations by providing healthy, diverse habitat types and corridors for wildlife movement between those habitats while minimizing potential impacts to the military mission.
- Manage threatened and endangered listed species using an ecosystem approach, while supporting the military mission.
- Manage Dobbins ARB to protect water quality and manage water resources, including wetlands, so they remain resilient and with no net loss of acreage or functions and values.
- Conduct grounds maintenance to minimize negative effects on natural resources, while supporting the mission.
- Manage forests to promote native species using cost effective and sustainable methods.
- Implement wildland fire program to benefit native species and reduce risks from wildfires.
- Minimize impacts of invasive and pest species using an integrated pest management approach.

The primary topics of concern involving natural resources constraints to planning and mission operations include:

- Any projects anticipated to impact wetlands and other waters of the US must acquire approval and the appropriate permits from the relevant federal and state agencies.
- Minimizing Bird/Wildlife Aircraft Strike Hazard (BASH) risk to aircraft and avoiding wildlife mortality where possible.

- Continuing forestry and wildland fire programs to maintain natural vegetation and minimize wildland fire risk.

1.0 OVERVIEW AND SCOPE

This INRMP was developed to provide for effective management and protection of natural resources. It summarizes the natural resources present on the installation and outlines strategies to adequately manage those resources. Natural resources are valuable assets of the United States Air Force. They provide the natural infrastructure needed for testing weapons and technology, as well as for training military personnel for deployment. Sound management of natural resources increases the effectiveness of Air Force adaptability in all environments. The Air Force has stewardship responsibility over the physical lands on which installations are located to ensure all natural resources are properly conserved, protected, and used in sustainable ways. The primary objective of the Air Force natural resources program is to sustain, restore and modernize natural infrastructure to ensure operational capability and no net loss in the capability of AF lands to support the military mission of the installation. The plan outlines and assigns responsibilities for the management of natural resources, discusses related concerns, and provides program management elements that will help to maintain or improve the natural resources within the context of the installation's mission. The INRMP is intended for use by all installation personnel. The Sikes Act is the legal driver for the INRMP.

1.1 Purpose and Scope

This INRMP is the primary guidance document and tool for managing natural resources by the 94th Airlift Wing (94 AW) as part of the Air Force Reserve Command (AFRC) at Dobbins Air Reserve Base (ARB). Dobbins ARB is composed of approximately 1,666 acres[1], with all parcels owned by the US government. The management of Dobbins ARB is conducted in a way that provides for sustainable, healthy ecosystems; complies with applicable environmental laws, regulations, real estate leases and licenses; and provides for no net loss in the capability of military installation lands to support the military mission of the installation.

The ultimate goal of this INRMP, as well as its subsequent updates or revisions, is to ensure long-term capability for the 94 AW and tenant entities, while managing for sustainable natural resources at Dobbins ARB. This INRMP integrates all aspects of natural resources management with the rest of the 94 AW's mission, and therefore becomes the primary tool for managing the ecosystem and habitat while ensuring the successful accomplishment of the military mission.

The first INRMP for Dobbins ARB was developed in 1996 as a result of the presence of a rare plant, an active forestry management program, and the use of prescribed fire**.** It was revised in 2001, 2007, and 2012. This 2017 INRMP update reorganizes the plan to comply with the latest US Air Force (USAF) INRMP template and requirements; however, there are no changes in management philosophy or programs. Some goals and objectives, as well as the projects and routine actions, have also been updated to reflect the latest DoD and USAF requirements, the activities of the last five years, and the result of annual reviews and the review for operation and effect in 2016.

[1] Real property documents indicate the total acreage is 1,666 acres. The current GIS data captures 1,663 acres. Where possible, totals are presented relative to 1,666 acres; however, some totals are based on GIS data and therefore only total 1,663 acres.

1.2 Management Philosophy

The INRMP serves as a key component of the Installation Development Plan (IDP), which is currently being updated. The IDP provides background and rationale for the policies and programming decisions related to land use, resource conservation, facilities and infrastructure development, and operations and maintenance to ensure that current requirements are met and that future growth can be accommodated. The Dobbins ARB comprehensive management planning process should incorporate the concerns presented in this INRMP so that installation growth/development activities can progress in a manner consistent with, and complementary to, the objectives of the USAF with respect to the protection of natural resources. In addition to providing a plan to sustain the long-term ecological integrity of installation natural resources, the Dobbins ARB natural resources program, as presented in this INRMP, ensures continued access to land, air and water resources adequate to conduct realistic military training and testing.

The INRMP supports the mission by identifying the natural resources present on the installation, developing management goals for these resources, and integrating supporting management objectives into the military requirements for mission operations/support and regulatory compliance in order to minimize natural resource constraints. This INRMP outlines the steps needed to fulfill compliance requirements related to natural resources management and fosters environmental stewardship. It is organized into the following principal sections:

- An overview of the current status and conditions of the natural resources;
- Identification of potential impacts to or from natural resources;
- The key natural resource management programs addressed;
- Management recommendations that incorporate the installation's goals and objectives for natural resource management programs; and
- Specific work plans (i.e., project lists) for effective implementation of the INRMP.

Management issues and concerns, as well as goals and objectives, were developed from analysis of all the gathered information, and were reviewed by Dobbins ARB personnel involved with or responsible for various aspects of natural resources management. The INRMP was developed using an interdisciplinary approach and is based on existing information of the physical and biotic environments, mission activities, and environmental management practices at Dobbins ARB. Information was obtained from a variety of documents, interviews with installation personnel, on-site observations, and communications with both internal and external stakeholders. Coordination and correspondence with these agencies is documented and satisfies a portion of the requirements of 32 Code of Federal Regulations (CFR) 989 – Environmental Impact Analysis Process (EIAP). Goals and objectives require monitoring on a continuous basis and management strategies should be updated whenever there are changes in mission requirements, adverse effects to or from natural resources, or changes in regulations governing management of natural resources.

An important component of the initial development (and all subsequent revisions and updates) is the INRMP Task Force. The Task Force includes key base personnel as well as individuals from various agencies. Representatives from the US Fish and Wildlife Service (USFWS) and the Georgia Department of Natural Resources (GADNR) are included on the Task Force.

1.3 Authority

The Sikes Act, 16 USC 670a, requires an INRMP be written and implemented for all DoD installations having significant natural resources. This plan has been developed cooperatively between the installation, the USFWS and GADNR, with additional input from the US Army Corps of Engineers (USACE) Savannah District Forester.

This INRMP is developed under, and proposes actions in accordance with, applicable DoD and USAF policies, directives, and instructions. AFI 32-7064, *Integrated Natural Resources Management*, provides the necessary direction and instructions for preparing an INRMP. Issues are addressed in this plan using guidance provided under legislation, Executive Orders (EOs), Directives, and Instructions including DoD Instruction 4715.03, *Natural Resources Conservation Program*; AFPD 32-70, *Environmental Quality*; AFI 32-7065, *Cultural Resources Management*; and AFI 32-7064. DoD Instruction 4715.03 and its associated manual provides direction for DoD installations to establish procedures for an integrated program for multiple-use management of natural resources. AFPD 32-70 discusses general environmental quality issues, including proper cleanup of polluted sites, compliance with applicable regulations, conservation of natural resources, and pollution prevention. AFI 32-7065 provides guidance on the preservation of cultural resources at USAF installations. The table titled 'Annotated Summary of Key Legislation Related to Design and Implementation of the INRMP' is included as **Appendix A** to summarize key legislation and guidance used to create and implement this INRMP.

Installation-specific policies, including state and local laws and regulations are summarized in the table below.

Installation-Specific Policies (including State and/or Local Laws and Regulations)	
Fishing on Dobbins ARB (Policy Memo, 2011)	Due to concerns about contamination, no fishing, swimming, or wading is allowed in either Big Lake or Little Lake or any of the spill ponds.
Georgia Wildflower Preservation Act of 1973 (O.C.G.A. 12-6-170) http://law.justia.com/codes/georgia/2010/title-12/chapter-6/e/12-6-170	Georgia law specifically states that rules and regulations related to the protection of state protected species shall not affect rights in private property. Prohibitions are limited to the capture, killing, or selling of protected species and the protection of the habitat of these species on public lands.
Georgia Endangered Wildlife Act of 1973 (O.C.G.A. 27-3-130) http://law.justia.com/codes/georgia/2010/title-27/chapter-3/article-5/27-3-130	This law provides for identification, inventory, and protection of animal species that are rare, unusual, or in danger of extinction on public lands in Georgia. The rules and regulations are established and administered by GADNR for this act.
Georgia Water Quality Control Act (O.C.G.A. 12-5-20) http://law.justia.com/codes/georgia/2010/title-12/chapter-5/article-2/12-5-20	GADNR has authority to ensure that water resources are used prudently, are maintained or restored to a reasonable degree of purity, and are maintained in adequate supply. The agency can revise rules and regulations pertaining to water quality and quantity, set permit conditions and effluent limitations, and set

	permissible limits of surface water usage for both consumptive and non-consumptive uses.
Mountain and River Corridor Protection Act (O.C.G.A. 12-2-8) http://law.justia.com/codes/georgia/2010/title-12/chapter-2/article-1/12-2-8	This act establishes minimum standards for land use to protect and preserve the state's natural resources, environment, and vital areas. This includes mountains, river corridors, watersheds, and wetlands. A natural vegetative buffer of 100 feet is to be maintained on both sides of rivers with annual flows in excess of 400 cubic feet per second.
Erosion and Sedimentation Act of 1975 (O.C.G.A. 12-7-1) http://law.justia.com/codes/georgia/2010/title-12/chapter-2/article-1/12-2-8	This law regulates land-disturbing activity, with a number of activities being exempted from regulation. It establishes rules for GADNR to implement Best Management Practices (BMPs) to mitigate stormwater pollution in areas experiencing land disturbance.
Control of Water Pollution and Surface-Water Use (O.C.G.A. 12-5-23.1) http://law.justia.com/codes/georgia/2010/title-12/chapter-5/article-2/12-5-23-1	This law establishes water quality standards for lakes; monitoring; studies and reports; development, approval, and publication of water quality standards
Georgia Burn Permit Law (**O.C.G.A. § 12-6-90**) http://law.justia.com/codes/georgia/2016/title-12/chapter-6/article-1/part-3/section-12-6-90/	This law allows the burning of any woods, lands, marshes, or any other flammable vegetation, whether in cultivated or uncultivated areas, if a permit from the forest ranger of the county where the burn will take place has been obtained. The permit will describe the location, date and time of the proposed burn. Exceptions are made for emergencies.
Georgia Prescribed Burning Act (**O.C.G.A. § 12-6-145**) http://law.justia.com/codes/georgia/2016/title-12/chapter-6/article-1/part-6/	This law outlines the requirements for prescribed burning and limitations on liability. It states that authorities for the prescribed burn will be properly trained and experience, will not be a nuisance, will be in accordance with permits, and described liability limits from fire or resulting smoke unless in the case of gross negligence. It also outlines the benefits of prescribed burning.

1.4 Integration with Other Plans

1.4.1 Dobbins ARB Environmental Plans

INRMP revisions and concurrence with the final plan must be coordinated through the installation chain of command and the following stakeholders:

- Wing Safety Office (94 AW/SE)
- Security Forces (94 SFS/S3A)

- Airfield Operations (94 OG/OGA)
- Civil Engineering (94 MSG/CE)

The NRM must ensure that the INRMP and other environmental plans, as well as long-range installation development plans and any other plans that may affect natural resources, are mutually supportive and not in conflict. As a result, information from an INRMP is incorporated into other plans to help identify management priorities and potential impacts to and from natural resources. The INRMP is integrated with the following environmental plans:

- Forest Management Plan – plan for management of forest resources, including thinning, harvesting, prescribed fire, and invasive plant management (USACE 2016, draft update)
- Wildland Fire Management Plan (WFMP, in development) – plan for management of wildland fire, including prescribed fires and wildfires, and associated responsibilities and training (in development)
- Bird/Aircraft Strike Hazard (BASH) Plan – plan for managing and reducing wildlife risk associated with aircrafts, including habitat management and grounds maintenance (94 AW 2014a).
- Integrated Pest Management Plan (IPMP) – plan for management of pest species to minimize impact to mission, natural resources and the environment (94 AW 2016).
- Integrated Cultural Resources Management Plan (ICRMP) – plan for management of cultural resources, including legal requirements, known cultural resources, processes and responsibilities (94 AW 2013, being updated).
- Storm Water Pollution Prevention Plan (SWPPP) – plan for prevention and management of stormwater, includes water quality sampling (94 AW 2017).

1.4.2 Other Dobbins ARB Plans

In addition to the environmental plans that intersect with natural resources management at Dobbins ARB, there are a number of plans that provide context, long-range planning, or identification of constraints relevant to natural resources planning on Dobbins ARB. These include the following:

- Installation Development Plan (IDP, being updated) – plan for long-term installation development (being updated)
- Air Installation Compatible Use Zone (AICUZ) Study – plan for evaluating aircraft noise and accident potential; aids in the development of local planning mechanisms to protect public health and safety and preserve operations at Dobbins ARB
- Joint Land Use Study (JLUS) Report – plan to guide community growth, sustaining the environmental and economic health of the region, and protecting public health, safety and welfare (Matrix Design Group 2015)

1.4.3 Georgia State Wildlife Action Plan

Georgia's State Wildlife Action Plan (SWAP) was updated in September 2015 (GADNR 2015). During the INRMP update process, review of the Georgia SWAP ensures that INRMP goals, objectives and strategies are consistent with Georgia's overall statewide and site specific plans. The GA SWAP is the

strategic vision of the integrated conservation efforts needed to sustain the broad array of wildlife in the state. The purpose of the Georgia SWAP is to outline objectives and partnerships for wildlife conservation in the state that facilitates the conservation of Georgia's animals, plants, and natural communities. Where data are currently lacking to provide a clear picture of conservation objectives, research priorities to provide needed data are indicated. Where the data are sufficient to provide direction for species and habitat protection, restoration, or management, these recommendations are stated (GADNR 2015). For a copy of the GA SWAP, go to http://www.georgiawildlife.com/conservation/wildlife-action-plan.

The GA SWAP contains the following goals, with italicized text indicating goals that overlap with this INRMP:

- *Increase public awareness of high priority species and habitats by developing educational messages and lesson plans for use in environmental education facilities, local schools, and other facilities.*
- *Facilitate restoration of important wildlife habitats through reintroduction of prescribed fire, hydrologic enhancements, and vegetation restoration.*
- Conduct statewide assessments of rare natural communities and habitats that support species of conservation concern and complete a statewide habitat mapping effort to inform future land conservation efforts.
- Improve efforts to protect vulnerable and ecologically important habitats such as isolated wetlands, headwater streams, and caves.
- *Combat the spread of invasive/noxious species in high priority natural habitats by identifying problem areas, providing technical and financial assistance, and working cooperatively on early detection and rapid response protocols.*
- *Minimize impacts from development and other activities on high-priority species and habitats by improving environmental review procedures and facilitating training for and compliance with best management practices.*
- Update the state protected species list and work with conservation partners to improve management of these species and their habitats.
- Conduct targeted field inventories of neglected taxonomic groups, including invertebrates and nonvascular plants.
- *Continue efforts to recover federally listed species through implementation of recovery plans, and restore populations of other high priority species.*
- *Work with other states and with the USFWS to assess species proposed for federal listing and engage in proactive programs to conserve these species so as to preclude the need for federal listing.*
- Establish additional funding mechanisms for land protection in order to support wildlife conservation, and increase availability and use of federal funds for land acquisition and management.
- Continue efforts to monitor land use changes statewide and in each ecoregion, and use predictive models to assess impacts to high priority species and habitats.
- *Monitor high priority species and habitats as well as the results of conservation actions and share monitoring results to inform adaptive management programs.*
- Enhance conservation efforts for high priority aquatic species and watersheds through protection of aquatic connectivity and stream flows, technical assistance to farmers and local governments, riparian forest restoration, targeted land protection strategies, outreach, and monitoring.

Conversion of upland forest into agriculture and continuous fire suppression have altered native vegetation types considerably over the last century. The Georgia SWAP describes climate change, wildlife diseases and energy development as emerging issues and proposes conservation actions to address them (GADNR 2015). The discussion of land use trends, high priority species and habitats, and conservation objectives in the Georgia SWAP is organized by ecological region. The primary threat to biodiversity and the conservation of species of greatest conservation need (SGCN) and their habitats within the Piedmont region, where Dobbins ARB is located, has been the destruction and fragmentation of habitat due to residential and commercial development, mostly concentrated along major highways (GADNR 2015).

GADNR identifies 16 high priority habitats in the Piedmont region. Of these 16 habitats, the following occur on Dobbins ARB:

- Beaver ponds and freshwater marshes
- Bottomland hardwood forests
- Mesic hardwood forests
- Oak-hickory-pine forest
- Streams
- Xeric pine woodlands

The high priority species (known as species of greatest conservation need, or SGCN, in other states) list for Georgia was developed based upon high priority plants and animals by ecoregion. The greatest numbers of high priority animal species can be found in the Southwestern Appalachians/Ridge & Valley ecoregions, followed by the Southeastern Plains, Southern Coastal Plain, Blue Ridge and Piedmont. For high priority plant species, the greatest numbers are found in the Southeastern Plains, followed by the Southern Coastal Plain, Piedmont, Blue Ridge, and Southwestern Appalachians/Ridge & Valley. The divergent plant and animal diversity is reflective of habitat threats and species distribution (GADNR 2015). Human population and land development are a threat to species, and in the Piedmont region from 2006-2011, developed areas increased by 3.2 percent and forests decreased by 5.4 percent (GADNR 2015).

There are 87 high priority animals (i.e. species of greatest conservation need) and 66 high priority plants within the Piedmont region (GADNR 2015). For a complete list of high priority species, refer to Appendix A in the Georgia SWAP. Species known to occur on Dobbins ARB are listed in **Appendix B**.

2.0 INSTALLATION PROFILE

Office of Primary Responsibility	94th Airlift Wing (94 AW), specifically the Base Environmental Flight (94 MSG/CEV) within the Base Civil Engineer's office (94 MSG/CE), has overall responsibility for implementing the Natural Resources Management program and is the lead organization for monitoring compliance with applicable federal, state and local regulations.
Natural Resources Manager/POC	William Powell (678) 655-3546 William.powell.28@us.af.mil
State and/or local regulatory POCs (For US-bases, include agency name for Sikes Act cooperating agencies)	Jim Bates, USFWS Anna Yellin, GADNR
Total acreage managed by installation	1,666 acres
Total acreage of wetlands	23 acres of wetlands, 12.5 acres of lake, 34,659 linear feet of streams
Total acreage of forested land	479 acres managed forest stands
Does installation have any Biological Opinions? (If yes, list title and date, and identify where they are maintained)	No.
NR Program Applicability (Place a checkmark next to each program that must be implemented at the installation. Document applicability and current management practices in Section 7.0)	☑ Invasive species ☑ Wetlands Protection Program ☑ Grounds Maintenance Contract/SOW ☑ Forest Management Program ☑ Wildland Fire Management Program ☐ Agricultural Outleasing Program ☑ Integrated Pest Management Program ☑ Bird/Wildlife Aircraft Strike Hazard (BASH) Program ☐ Coastal Zones/Marine Resources Management Program ☑ Cultural Resources Management Program

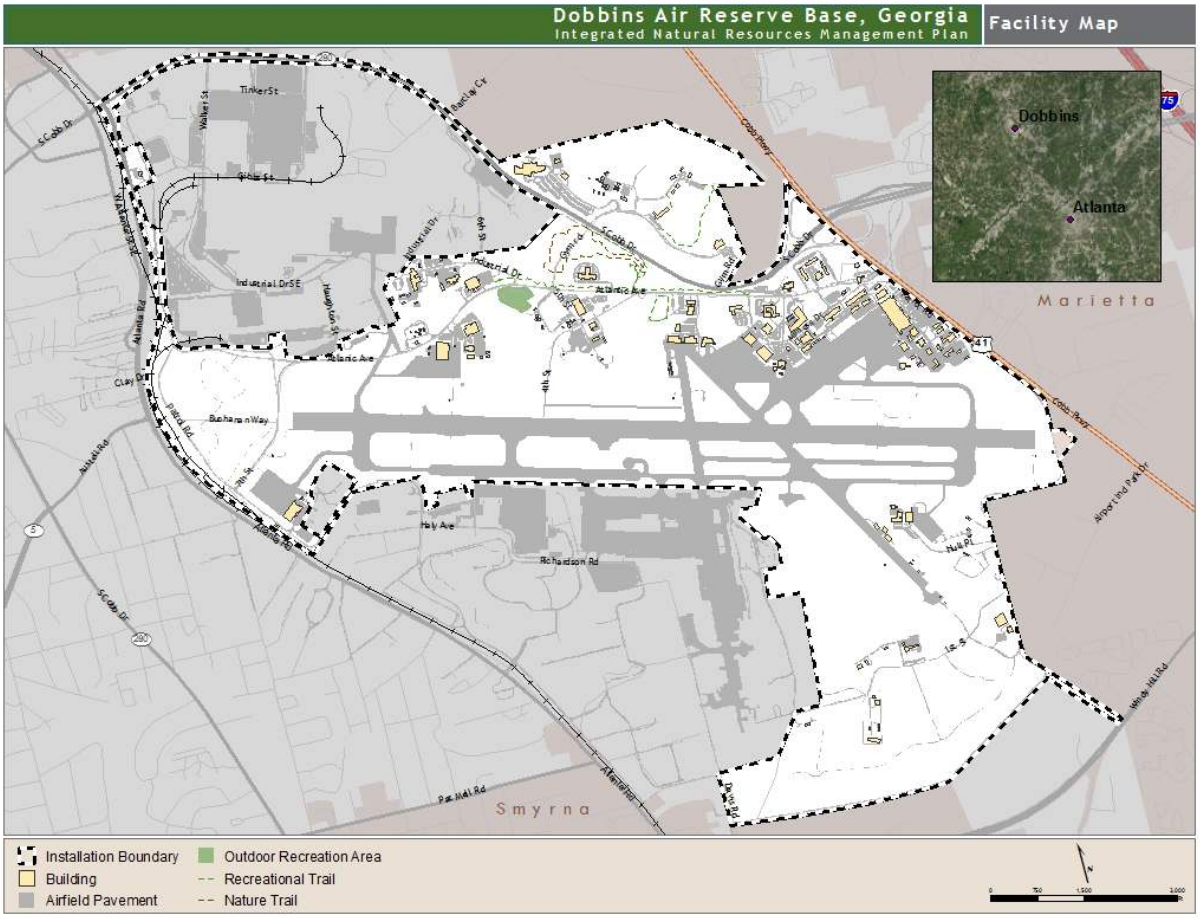
2.1 Installation Overview

2.1.1 Location and Area

Dobbins ARB is situated between the cities of Smyrna and Marietta in Cobb County, Georgia, about 15 miles northwest of the center of Atlanta (Figure 1). Dobbins ARB is situated on 1,666 acres and primarily lies within Cobb County. U.S. Highway 41 establishes the eastern-northeastern boundary, and Atlanta Road (GA SR 5) establishes the western boundary. South Cobb Drive (GA SR 280) separates a 134-acre portion from the Main Base. The North Base, occupied by the Navy/Marine Reserve Headquarters, Force Support Silver Flag (FSSF), Expeditionary Combat Support-Training and Certification Center (ECS-TCC), and the Fitness Center, is physically separated from the main

cantonment of Dobbins ARB. A North Base Overpass unifies the North and Main Base areas and is the only access point to the North Base area. The installation and its tenants are supported by a single 300-foot-wide by 10,000-foot-long concrete runway and several associated taxiways and aircraft parking aprons. A more detailed map of the facility is provided in **Map 1 in Appendix C**.

Figure 1. Map of Dobbins Air Force Reserve Base, Georgia.



Installation/GSU Location and Area Descriptions

Base/GSU Name	Main Use/Mission	Acreage	Addressed in INRMP?	Describe NR Implications
Main Base (Flightlight, Mission Support, Airfield)	Offices, Air Traffic Control Tower and Runway, Entry Points	**1,082***	Yes	Stormwater management issues, 2 lakes, forest stands, nature trail, rare plants
North Base (Joint Use District)	Navy/Marine Reserve Headquarters, FSSF,	**137**	Yes	Stormwater management isssues, forest stands

	ECS-TCC, Fitness Center			
South Base (Training District)	Dead Runway, Munitions Storage, Runway buffer	**404**	Yes	Forest stands, rare plants
Easements	Road right-of-way	**40**	Yes	None
[redacted]				

The Jonesville Cemetery is privately owned but entirely surrounded by Dobbins ARB. It is a 1-acre tract of land containing gravesites owned by the Mt. Sinai Baptist Church. It was named after the town it was formerly located in. The cemetery is fenced and occurs north of the flightline, immediately adjacent to the nature trail. Access to the cemetery is obtained by contacting Dobbins ARB security.

2.1.2 Installation History

Originally acquired by the US government in 1943, the site of Dobbins ARB was used as a location for assembling B-29 aircraft and was temporarily named Rickenbacker Field. In 1946, the 116th Fighter Group and the 128th Fighter Squadron of the Georgia National Guard were organized at the base. In 1948, the base was assigned the additional duty of training USAF reservists and was renamed Marietta Air Force Base; reserve training has been the dominant mission of the base since that time. In 1949, the 94th Bombardment Wing of AFRC was activated at the base and was equipped with Douglas B-26 bomber aircraft. This unit trained at the base until it was recalled during the Korean conflict (94 AW 2015a).

The base was renamed Dobbins Air Force Base in 1950 in honor of Captain Charles Dobbins of Marietta, Georgia, who was shot down and killed while returning from a combat mission over the Mediterranean Sea on 11 July 1943. A year later, the Lockheed Aircraft Corporation took over operation of the original B-29 aircraft assembly facility that has since manufactured C-5, C-141, and C-130 aircraft, the latter of which has brought significant worldwide attention to the installation (94 AW 2015a).

Runway and taxiway improvements were completed in 1957, which provided additional space for the Lockheed facility and the soon-to-be-commissioned Naval Air Reserve Unit. Naval Air Station (NAS) Atlanta was established at the base in 1959 in new facilities constructed directly across the flightline from the AFRC unit. The base changed missions and host units several times until 1972 when the 94th Bombardment Wing returned to Dobbins Air Force Base as the host unit. Dobbins Air Force Base was realigned and placed under the command of AFRC in June 1992 and the name changed to Dobbins Air Reserve Base. Redesignated the 94 AW in 1994, the 94 AW continues to be the host unit of Dobbins ARB (94 AW 2015a).

2.1.3 Military Missions

The mission of Dobbins ARB is to receive, train, and equip components of the Army, Navy, Air Force, and Marine Reserves, and the Army and Air National Guard. These units constantly prepare for active-duty mobilization in time of national emergency. As the host unit at Dobbins ARB, the 94th Airlift Wing has mission responsibilities for a variety of training functions, with a focus on C-130 aircrews. It also maintains combat-ready units to deploy on short notice to support global operations. Finally,

the wing provides for the maintenance and operations of the base assets, including the airfield, security, civil engineering, fire protection, and air traffic control.

The 94 AW maintains the facilities by providing civil engineering, security, and air operations support in close cooperation with the Army, the Georgia National Guard, and Marine Corps tenants. The 94 AW provides supports to three Air Force Reserve schools: the Transportation Proficiency Center; ECS-TCC; and 622nd Civil Engineer Group Force Support Silver Flag (FSSF).

Dobbins ARB is the home for Headquarters 22nd Air Force (22 AF), one of three numbered Air Forces in the AFRC. The 22 AF is responsible for recruiting and training reservists and for maintaining subordinate units at the highest level of combat readiness. A by-product of training is to coordinate daily support of the active duty USAF. The 22 AF's wartime mission is to provide combat-ready airlift and support units and to augment personnel requirements to Air Mobility Command in the United States.

The Lockheed Martin Aeronautical Systems Corporation is located on two sites at Air Force Plant No. 6, where they manufacture, repair, and service aircraft. While the sites are owned by the Air Force, the properties are under lease agreement to Lockheed Martin. The 94 AW is not responsible for maintenance of the property (94 AW 2015a).

Under the 2005 Base Realignment and Closure recommendations, NAS Atlanta was closed, and the aviation assets were transferred to the Georgia Army National Guard (GA ARNG). Currently, Dobbins ARB shares the runway with the GA ARNG and the Lockheed Martin Aeronautical Systems plant (94 AW 2015a).

There are a large number of tenants on Dobbins ARB, but most of them have little to no natural resources impacts. The following tenants have the potential to impact the natural resources on Dobbins ARB and/or benefit from their management.

Listing of Tenants and NR Responsibility

Tenant Organization	NR Responsibility
Georgia Army National Guard	Follow approval process for any ground disturbance but otherwise no responsibilities on Dobbins ARB. Own and manage an adjacent property.
622nd Regional Support Group	Follow approval process for any ground disturbance. Follow BMPs for facility use.
Expeditionary Combat Support Training Certification Center (ECS–TCC)	Follow approval process for any ground disturbance. Training activities cause some ground disturbance in known locations. Follow BMPs for facility use and training exercises.

2.1.4 Surrounding Communities

The area surrounding the base consists of residential housing, industrial areas, commercial and retail activities, a university, golf courses, and office parks. The area surrounding the base has experienced extensive development during the past several decades as Cobb County has undergone a transition from a

rural to a suburban/urban environment. The base is surrounded by Smyrna and Marietta, one of the fastest growing communities in the state. The population of Cobb County is estimated at 741,334, and the county spans an area of 340 square miles. The population density is 2,180 persons per square mile (US Census Bureau 2016).

Dobbins ARB is located in northwestern metropolitan Atlanta with the City of Marietta to the northwest of the base and the City of Smyrna to the south of the base. East Cobb, a suburban residential area of unincorporated Cobb County, is located to the east, while Kennesaw Mountain National Battlefield Park is located to the west. Marietta is comprised of approximately 22 square miles (over 35,000 acres) and is home about 60,000 residents (US Census Bureau 2016).

2.1.5 Local and Regional Natural Areas

The land immediately adjacent to Dobbins ARB is composed primarily of urban and suburban developed areas. The City of Marietta has a few small parks along the northern boundary of Dobbins ARB, including the Al Burruss Nature Park (46 acres) and Wildwood Park (28 acres). There are several more small parks within a five mile radius of the base, primarily to the north, but they are across large roadways and generally surrounded by development.

Adjacent to the southern boundary of the base are two golf courses that provide a buffer between the base and nearby development.

The Chattahoochee River National Recreation Area (NRA) is a large natural area 2.5 miles due east of the base and consists of a 48-mile length of the Chattahoochee River, as well as several thousand acres of adjacent forestland. The Chattahoochee River NRA is an important recreational resource for the city of Atlanta because it is used for rafting, kayaking, canoeing, fishing, hiking, and biking. Dobbins ARB can potentially impact this area because all surface water drainage from the base is received by Rottenwood and Poorhouse creeks, which flow into the Chattahoochee River approximately 3.5 miles southeast of the base.

Kennesaw Mountain National Battlefield is located less than 5 miles due west of Dobbins ARB and provides extensive hiking and important wildlife habitat in the region. Kennesaw Mountain is known for its variety of neotropical bird migrants during spring and fall migrations and was designated a globally Important Bird Area in 2000, the first such area in Georgia.

2.2 Physical Environment

2.2.1 Climate

2.2.1.1 General Climate

Dobbins ARB is in the southeastern United States, and its climate is characterized by long, warm, humid summers and short, mild winters. The climate is subject to wide variations in temperature and weather patterns due to both northern polar and eastern oceanic influences, as well as tropical weather from the south during the fall hurricane season. During most of the year, the prevailing winds come from a west northwesterly direction with an annual average wind speed of about 5 knots. In autumn, the prevailing winds are from an easterly direction with an average wind speed of 4 knots (94 AW 2015a).

July is the warmest month of the year with mean daily highs of 88 degrees Fahrenheit (°F) and mean daily lows of about 70 °F. The temperature exceeds 90 °F on average of 42 days per year. January is the coldest month of the year with mean daily highs and lows ranging from 52 °F to 34 °F, respectively. The temperature falls below 32 °F approximately 45 times per year (SERCC 2011).

Dobbins ARB receives an average of 50 inches of precipitation per year. Precipitation is fairly well distributed throughout the year, with monthly averages ranging from 5.4 inches in March to 2.9 inches in October. High humidity levels, often approaching 88 percent, are characteristic of the summer climate. During the winter, humidity levels drop to approximately 74 percent (SERCC 2011). **Table 1** provides a summary of temperature and precipitation data for Dobbins ARB.

Table 1. Climate Summary for Dobbins ARB from 1930 to 2010.

Month	Normal Temperature (°F)— Mean Daily			Normal Precipitation (Inches)—Mean Monthly
	Maximum	Minimum	Mean	
January	52.3	34.2	43.2	4.54
February	56.0	36.4	46.2	4.50
March	63.7	42.7	53.2	5.39
April	72.7	51.0	61.8	4.03
May	80.3	59.6	70.0	3.72
June	86.7	67.1	76.9	3.83
July	88.7	70.1	79.4	4.84
August	87.9	69.6	78.8	3.71
September	82.5	64.2	73.4	3.60
October	73.1	53.0	63.0	2.86
November	62.7	42.8	52.8	3.64
December	53.9	35.9	44.9	4.18

Source: SERCC 2011

2.2.1.2 Climate Change

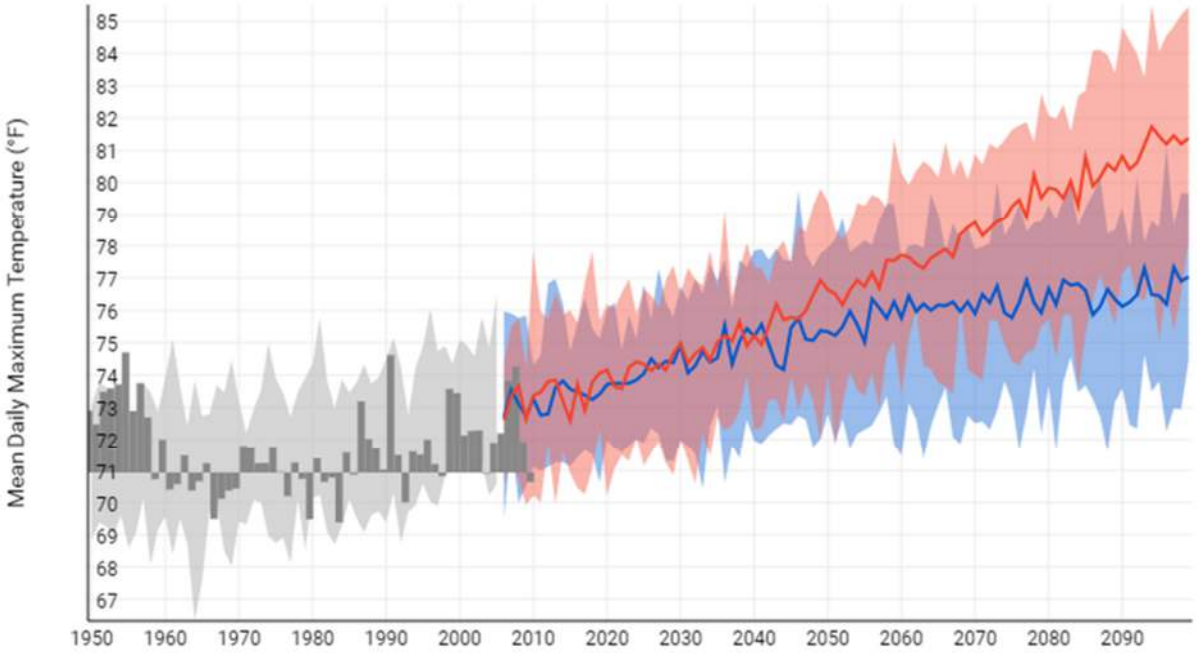
In order to assess the potential impacts from climate change on the natural resources at a given facility, the first step is to identify what the projected range of change might be in the future both in the mid- and long-term. The second step is to identify which species or ecological systems are most likely to be affected by the projected range of changes. Climate change vulnerability assessments are part of this process. Finally, the third step is to identify management activities and projects now and in the future that can respond to these challenges. Species or ecosystems likely to be affected at Dobbins ARB and appropriate management priorities, activities and projects for them are identified in the respective management sections in Section 7.

Using The Nature Conservancy's ClimateWizard, the ensemble average predicts a temperature increase in Georgia of 3.8 °F (range: 1.7 to 5.8°F) and 2 inch increase (range: -18 to 15 inches) in annual precipitation by 2050 under a moderate emissions scenario. This information is summarized on The Nature Conservancy's ClimateWizard site (http://www.climatewizard.org).

In addition to The Nature Conservancy's ClimateWizard, the US Climate Resilience Toolkit's Climate Explorer was used to determine likely future climate regimes under different emissions scenarios. The Climate Explorer has information for every county in the contiguous US and provides graphs, maps, and data of observed and projected temperature, precipitation, and related climate variables. Two projected conditions for climate are shown in the Climate Explorer – one in which humans make a moderate attempt to reduce global emissions of heat-trapping gases, and one for current emissions. The tool allows people to better understand and manage their climate-related risks and opportunities and assists them with making their communities and businesses more resilient to extreme events (NOAA 2016).

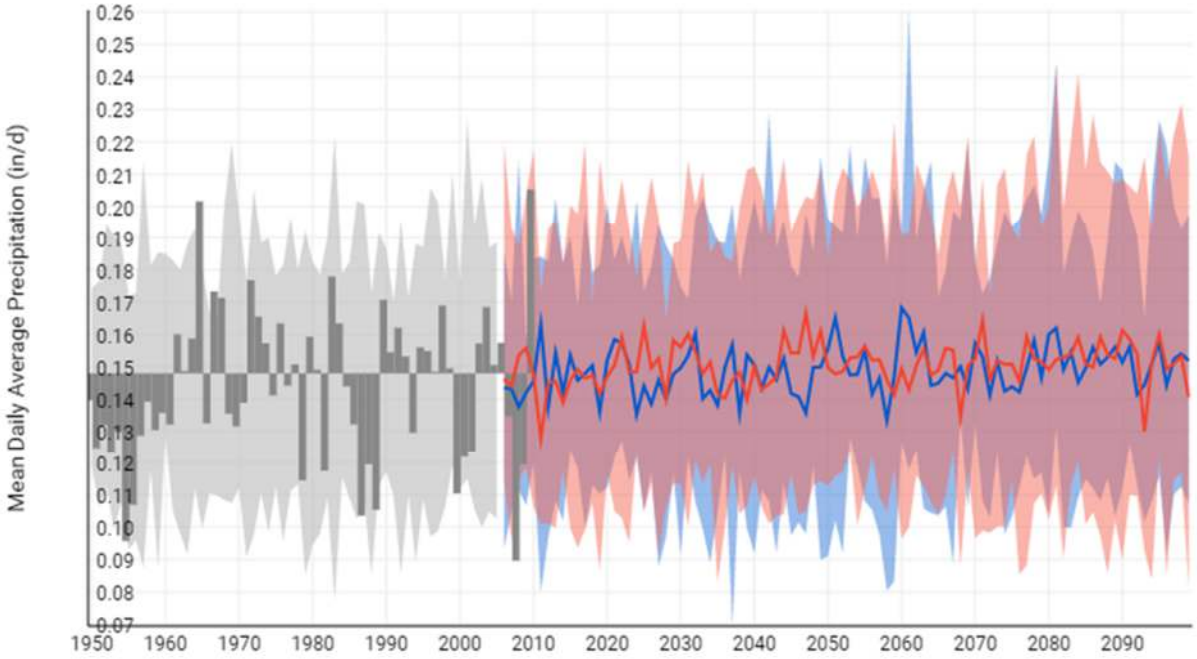
In general, climate is expected to grow considerably warmer in Georgia, with a moderate increase in precipitation (see **Figures 2 and 3**).

Figure 2. Historic and projected Mean Daily Maximum Temperature for Cobb County.



Note: Based on two scenarios - one for a moderate attempt to reduce global emissions of heat-trapping gases (blue line), and one for current emissions (red line) (NOAA 2016)

Figure 3. **Historic and projected Mean Daily Average Precipitation for Cobb County**.



Note: Based on two scenarios - one for a moderate attempt to reduce global emissions of heat-trapping gases (blue line), and one for current emissions (red line) (NOAA 2016)

2.2.1.2 Climate Change Assessment

The climate of Georgia has changed measurably over the last half century, with conditions being generally warmer and drier than during the 30-year period from 1971 to 2000. The third US National Climate Assessment (Carter et al. 2014) characterizes Georgia and the Southeast and Caribbean as warmed during the early part of last century, cooled for a few decades, and now warming again. Extreme hydroclimate events like flood and drought have also increased in frequency in the study region, particularly in metropolitan Atlanta region near Dobbins ARB (Binita et al. 2015). There is a clear warming trend in north Georgia and an overall trend toward more aggregate extreme events (e.g. flood, drought and heat waves).

Other impacts in this area due to climate change include the following (Carter et al. 2014):

- Significant increases in the number of hot days (95°F or above);
- Significant decreases in freezing events;
- Decreased water availability, compounded by population growth and land-use change;
- Sea level rise, likely to be associated with increased coastal flooding; and
- Crop yields likely declining and plant pests likely increasing with increasing temperatures.

2.2.2 Landforms

There are five physiographic regions in the state of Georgia, which gives rise to a large diversity of species and natural communities in the state. Elevation varies widely, from the lowest point at sea level near the Atlantic Ocean on the coast to the highest point on Brasstown Bald which is 4,783 feet above sea level. From the oldest to the youngest, Georgia's physiographic regions are the Piedmont, Blue Ridge, Valley and Ridge, Appalachian Plateau, and the Coastal Plain (Frazier 2016). Dobbins ARB is located in the oldest region – the Piedmont.

Dobbins ARB is situated within the Central Uplands of the Piedmont physiographic province, which stretches across the state of Georgia, separating the Ridge and Valley and Blue Ridge Provinces to the north from the Atlantic and Gulf Coastal Plains to the south. Throughout the Piedmont, the terrain has been subject to millions of years of erosion and is now typically rolling. However, there is also extensive dissection, especially near larger rivers. In particular, the Upper Piedmont, where Dobbins ARB is located, is hillier than the Lower Piedmont to the south.

The topography of the Dobbins ARB is characterized by rolling hills sloping throughout the base, with an overall gradual slope toward the southeast. The base is bounded to the north by Rottenwood Creek and to the south by Poorhouse Creek. Elevations on Dobbins ARB range from 960 to 1,100 feet above sea level. The most prominent natural feature in the vicinity is Kennesaw Mountain about 2 miles to the northwest, which has a summit elevation of more than 1,800 feet above sea level. The Chattahoochee River is to the south and east. **Map 2 in Appendix C** depicts the topography and elevations on Dobbins ARB.

2.2.3 Geology and Soils

Georgia’s geology was shaped by ancient seas, mountains created by colliding continents, and rifts caused by continents rifting apart (Frazier 2016). This has resulted in a variety of different geological terrain.

Geologically, the Piedmont is a region of moderate-to-high-grade metamorphic rocks and igneous rocks (e.g. granite). Isolated granitic outcrops also rise above the Piedmont landscape to give prominent features like Stone Mountain. One major feature cutting across the Piedmont is the Brevard Fault Zone. The Brevard Fault Zone runs southwest-northeast, passes through northwestern Atlanta, and the Chattahoochee River follows the Brevard Fault Zone (University of Georgia 2015).

Other valuable geologic resources in the Piedmont are world-famous bodies of finely textured gray granite. Georgia's granite has been used for building stone, headstones, statuary, and monuments around the world (Frazier 2016). Dobbins ARB has a few small outcroppings of granite.

Soils in the Piedmont Region are commonly red in color, resulting from the intense weathering of feldspar-rich igneous and metamorphic rocks. This intense weathering dissolves or alters nearly all minerals and leaves behind a residue of aluminum-bearing clays and iron-bearing iron oxides (University of Georgia 2015). The USDA Natural Resources Conservation Service (NRCS) mapped soils in the vicinity of Dobbins ARB (NRCS 2016). Surface deposits are predominantly composed of micaceous silts and micaceous sandy silts derived from the weathering of the underlying rock layer. **Table 2** presents the soil associations present on Dobbins ARB.

The two main soil associations at Dobbins ARB are the Madison-Gwinnett-Cecil and the Madison-Gwinnett-Pacolet Associations. They are both characterized by well-drained soils with a sandy loam and clay loam surface horizon and a clayey to loamy subsurface horizon. Another soil association found on base, Cartecay-Toccoa, is comprised of poorly and well-drained alluvial soils located in floodplains along streams and is subject to frequent flooding. These soils are acidic with a pH ranging from 4.5 to 5.0 (NRCS 2016). These soil associations are subdivided into 14 soil series and urban land, with 36 soil mapping units.

Because of previous cultivation and land development practices, many of the native soil profiles on Dobbins ARB have been disturbed and no longer exist. Much of the original surface topsoil has been eroded, with the clayey subsoils left exposed. Large portions of Dobbins ARB are designated as urban land (NRCS 2016), which includes areas covered by pavement and building footprints, as well as borrow areas. The remaining land areas consist primarily of sand and clay loams of the Appling-Cartecay-Toccoa, Appling-Hiawassee-Roanoke, and Chewacla-Toccoa-Wilkes associations (USDA 1973*;* NRCS 2016). **Map 3 in Appendix C** shows the locations of soils mapped on the base.

Soil erosion rates are generally lower in areas covered by vegetation. Erosion problems are more likely to occur on tilled firebreak areas, active construction areas, unimproved roads, near stream banks, and other barren areas. The soils on Dobbins ARB are susceptible to water erosion if not protected with vegetation or other cover. Most soils on the base are considered to be moderately erodible.

Table 2. Soil Map Types and Descriptions for Dobbins ARB

Map Unit Name	Site Cover		Slope (%)	Description
	Acres[a]	%		
Appling sandy and sandy clay loam	108	6	2-15	Very deep, well drained, moderately permeable soils on ridges and side slopes of the Piedmont uplands. Low shrink swell potential.
Cartecay	67	4	0-5	Somewhat poorly drained, moderately rapidly permeable soils that formed in thick loamy alluvial sediments. These soils are on nearly level flood plains in narrow valleys of streams in the Piedmont Plateau and adjoining areas where streams flow from the Piedmont. The Cartecay series has a low shrink swell potential.
Chewacla	7	< 1	0-2	Very deep, somewhat poorly drained, moderately permeable soils that formed in alluvium on flood plains of the Piedmont and Coastal Plain. Low shrink swell potential.
Cecil sandy loam	57	3	2-10	Very deep, well drained, moderately permeable soils on ridges and side slopes of the Piedmont uplands. They are deep to saprolite and very deep to bedrock. They formed in residuum weathered from felsic, igneous and high-grade metamorphic rocks of the Piedmont uplands. Low shrink swell potential.
Gwinnet clay loam	64	3	6-25	Deep, well drained, moderately permeable soils that formed in crystalline materials of the Piedmont. Gwinnett soils are on very gently sloping to very steep ridges. Low shrink swell potential.
Helena sandy loam	2	< 1	2-10	Very deep, moderately well drained, slowly permeable soils that formed in residuum weathered from a mixture of igneous and metamorphic rocks. These soils are on broad ridges and toeslopes of the Piedmont uplands. Low to high shrink swell potential
Louisburg sandy and stony sandy loam	11	< 1	10-45	Very deep, well drained, rapidly permeable soils that formed in material weathered from felsic igneous and metamorphic rock, primarily granite and granite gneiss. The Louisburg soils are on summits and side slopes of the Piedmont uplands. The Louisburg series has a low shrink swell potential.
Louisa gravely sandy loam	10	< 1	10-25	Shallow, somewhat excessively drained soils that formed over mica gneiss and schist bedrock. They occur on Piedmont uplands. Low shrink swell potential.
Madison clay and sandy loam	78	5	2-25	Well drained, moderately permeable soils that formed in residuum weathered from metamorphic or igneous rocks high in mica content. They are very deep to bedrock and moderately deep to saprolite. They are on gently sloping to steep uplands in the Piedmont. Low shrink swell potential.
Musella gravely soils	9	< 1	6-25	Shallow, well drained, dark red soils on Piedmont uplands. These soils formed in saprolite weathered from dark-colored rocks high in ferromagnesium minerals. Low shrink swell potential.

Map Unit Name	Site Cover		Slope (%)	Description
	Acres[α]	%		
Musella and Pacolet stony soils	3	< 1	10-45	Very deep, well drained, moderately permeable soils that formed in residuum weathered mostly from felsic igneous and metamorphic rocks of the Piedmont uplands. Low shrink swell potential.
Madison and Pacolet soils	202	12	10-25	Very deep, well drained, moderately permeable soils on uplands. Soils of this map unit are not consistently associated geographically, and an area can contain one or both of these soils. Low shrink swell potential.
Pacolet sandy and sandy clay loam	50	3	6-15	Very deep, well-drained soil on uplands with moderate permeability. Low shrink swell potential.
Toccoa sandy loam	10	< 1	0-4	Very deep, moderately well drained and well drained, moderately rapidly permeable soils that formed in alluvium. These soils are on flood plains. Low shrink swell potential
Wilkes stony sandy loam	4	< 1	10-40	Shallow, well drained soils with moderately slow to slow permeability. They formed in residuum weathered from intermediate and mafic crystalline rocks on uplands in the Piedmont. Low shrink swell potential
Water	10	< 1	--	Open water areas
Urban land and borrow pits	971	60	--	Nearly level to moderately steep developed areas altered or obscured by urban works and structures. Buildings and pavement cover more than 85 percent of surface.
Total	**1,663**			

Source: NRCS 2016
[α]Total acres for each area are based on GIS data, not real property documents. Acres are presented as identified in GIS.

2.2.4 Hydrology

Compared to other parts of the Piedmont, the area north of Atlanta has many more residual hills and ridges, narrower interfluves, and deeply dissected streams. The major river draining this portion of the state, the Chattahoochee, originates in the northern Blue Ridge Province and then follows a relatively straight southwesterly path across the Piedmont until it turns abruptly southward at the Alabama border. Cobb County straddles three watersheds - the Upper Chattahoochee Watershed (HUC 03130001), Middle Chattahoochee-Lake Harding Watershed (03130002), and Etowah Watershed (HUC 03150104) (USEPA 2016). Dobbins ARB is in the Upper Chattahoochee watershed (HUC 03130001). Groundwater in the Piedmont largely flows along faults and fractures and is normally abundant (University of Georgia 2016). Locally, a tributary of Rottenwood Creek had been impounded historically in at least one location to support the Marietta Water Works; the two ponds (Big Lake, Little Lake) on Dobbins ARB were associated with the water works. Surface waters on the Base include these two ponds, five spill retention ponds, three stormwater/sediment detention basins, Poorhouse Creek, and several unnamed tributaries to

Poorhouse or Rottenwood Creeks. **Map 4 in Appendix C** depicts the water resources and watersheds on Dobbins ARB.

There are two primary drainages on Dobbins ARB, both of which drain into Rottenwood Creek (HUC 031300011104). The larger drainage (usually referred to as Rottenwood Creek) starts west of the airfield runs under the airfield in the pipe and merges into the natural streams present in the main base, which includes both lakes. Another stream (usually referred to as Poorhouse Creek) drains the southern part of the base and merges with the other drainage east of Dobbins ARB, which then flows into the Chattahoochee River approximately 3.5 miles southeast of the base.

Big Lake has a surface area of about 10 acres, with wetlands along the shoreline, and is in the central portion of the base, north of the runway. Little Lake is about 2 acres, with small wetlands along the shoreline, and is situated along the northern boundary of the main cantonment area along State Highway 280.

Based on Federal Emergency Management Agency (FEMA) data, there are designated floodplains on Dobbins ARB (FEMA 2016). There are some small areas of floodplains in North Base and in the main base associated with Rottenwood Creek. The largest floodplain is associated with Poorhouse Creek in the southern part of the base, which is also the least developed. There are no structures (i.e., permanent buildings) in any of these floodplains and there are no plans for development of structures in the floodplains in the future. There are 28 perennial, intermittent, or ephemeral stream tributaries identified on Dobbins ARB (94 AW 2009). Perennial streams were determined based on guidelines provided in GADNR Field Guide for Determining the Presence of State Waters that Require a Buffer (GADNR 2006) and other applicable field indicators. These 28 reaches contain approximately 34,600 linear feet of streams, with approximately 11,500 linear feet draining to Rottenwood Creek, and 23,100 linear feet draining to, or including, Poorhouse Creek.

Twenty-two wetland polygons were delineated in 2009, with a total of approximately 14.5 acres of wetlands, excluding an additional 8.1 acres of open water in the two ponds (94 AW 2009). The majority of wetlands identified were classified as palustrine forested (13.2 acres) with only small wetlands classified as palustrine emergent or palustrine scrub shrub. The largest wetland complex (3.5 acres) identified occurs in association with Big Lake (94 AW 2009). There were also water features identified as open water (pond) and riverine (streams) (Cowardin et al. 1979).

Map 4 in Appendix C provides a map of all the water resources on Dobbins ARB.

The Dobbins ARB Storm Water Pollution Prevention Plan (SWPPP) includes an assessment of the installation’s potential to release contaminants into the drainage system and a series of procedures required to minimize it (94 AW 2017). One sediment detention basin is located in North Base and was originally constructed to treat the runoff from a facility for sediment. Two stormwater detention basins are associated with the runway and a firing range. Periodically, they are mechanically cleaned of sediment to increase detention time.

There are five spill ponds located around the Base. They serve to contain any large petroleum, oil, and lubricant (POL) spills that might occur on the flight line or aircraft parking apron (94 AW 2009). These spill ponds also serve secondarily as detention basins which reduce sediment leaving the base (94 AW

2017). Stormwater discharges associated with industrial activity at Dobbins ARB are currently authorized by the base's general storm water permit NPDES Permit GAR050000, which renewed effective on 1 June 2017 (94 AW 2017).

In addition to the basins and ponds, stormwater at the base is collected by a system of storm sewers and ditches and exits the boundaries of the base through outfalls. There are nine outfalls total. Outfalls 001, 003, 004, and 005 are located on the north side of the base and discharge into Rottenwood Creek. Outfall 002 discharges into a municipal storm sewer and is located on the east side of the base near the main entrance. Outfalls 006, 007, and 008 are on the south side of the Base and discharge into Poorhouse Creek. Outfall 009 is Poorhouse Creek itself (94 AW 2009). Various natural channels and open ditches are connected by pipes in various parts of the main base.

Two of Lockheed Martin's outfalls flow through Dobbins ARB; these outfalls are monitored by Lockheed Martin to ensure adherence to the National Pollutant Discharge Elimination System (NPDES) requirements.

2.3 Ecosystems and the Biotic Environment

2.3.1 Ecosystem Classification

Following the USEPA ecoregion hierarchy, Dobbins ARB is in the Piedmont Ecological Region (Level III), which covers 10,990,373 acres in central Georgia (GADNR 2005). The Level III Piedmont Region trends northeast-southwest in Georgia, and is considered a transition area between the mountainous area of the Appalachians and the relatively flat coastal plain. Dobbins ARB is in the Southern Inner Piedmont ecoregion (Level IV), which tends to have more precipitation, topography, and higher elevations than the Southern Outer Piedmont ecoregion. In broad terms, the Southern Inner Piedmont is considered to be mostly forested, with open areas being mostly in pasture. Forests are composed of oak-hickory-pine forest types (GADNR 2016) (GA Ecoregions). The dominant trees include oaks (*Quercus* spp.), hickories (*Carya* spp.), shortleaf pine (*Pinus echinata*), and loblolly pine (*Pinus taeda*) (Georgia Museum of Natural History 2008). Agricultural products originating in this region consist mostly of hay, cattle, and poultry, and there has been a very large increase in urban/developed land cover in the past two decades (GADNR 2016).

2.3.2 Vegetation

Dobbins ARB occupies 1,666 acres in an urban/suburban environment. Grounds that are not occupied by buildings, sidewalks, roads, or other impervious surfaces comprise 1,289 of the 1,666 acres. Of these 1,289 acres of grounds, approximately 60 percent have been developed and are considered to be either improved (areas requiring regular maintenance/mowing) or semi-improved (areas requiring occasional maintenance/mowing). The remainder of the grounds on the installation (520 acres) are unimproved. There are some forested areas around the current edge of the airfield that may be harvested and then maintained as grassland in the future in order to comply with airfield management requirements.

A majority of the unimproved acreage on the base consists of forests and commercial timber stands and, therefore, is managed through the forest management program (See **Section 2.3.2.2** for stand descriptions

and **Section 7.8** for a management summary). Forest management consists removing invasive plants, prescribed fires, and thinning stands of trees.

2.3.2.1 Historic Vegetative Cover

During the past 10,000 years, a modern but somewhat more xeric forest probably covered much of the southeastern United States (Wharton 1989). As the climate continued to warm, increased moisture augmented the northward advance of the oak-hickory forest (Delcourt 1979). By the mid-Holocene, the oak-hickory forest was gradually replaced by pine-dominated woodland (Wharton 1989). From 4,000 years ago to the present, the upland vegetation of the Piedmont was characterized by a thinning of the deciduous forests (Delcourt and Delcourt 1987). Hickory and gums were generally less important, with alder and ragweed increasing in representation in the palynological record (Delcourt 1979; Sheehan et al. 1985). The forest thinning perhaps suggests an increase in human-related land use (i.e., horticulture); however, human impacts on the landscape from large-scale agricultural activity would not have occurred until at least 1,000 years ago.

Examination of maps and records from the Contact Period onwards suggests that upland hardwood communities have exhibited the most change since European settlement (Nelson 1957; Trimble 1969). Information collected from original survey plats indicate that the dominant Piedmont vegetation during the late 1700s was an Oak-Pine-Hickory Forest (Plummer 1975; Braun 1950; Wharton 1989). As Native Americans and European settlers began to modify their environment, native species spread into new areas and immigrant species, introduced by migrating populations, spread with the development of agriculture (Brockington and Associates 2000).

During the nineteenth and early twentieth centuries, the natural vegetation communities of the Piedmont were destroyed by agriculture. Since that time, many areas have become covered in second growth forest, including oaks and hickories. Dobbins AFB and the nearby area contain a mosaic of microenvironments, reflecting encroaching urbanization. Much of the base itself has been developed, and the surrounding area is now experiencing the same urban growth witnessed throughout the Atlanta area.

2.3.2.2 Current Vegetative Cover

Approximately one-third of Dobbins ARB has impervious surfaces, while nearly half the base is landscaped or maintained grasslands. The grasslands are found primarily around the airfield. The landscaped areas are dominated by a variety of herbaceous and woody shrubs and trees, mostly planted during the 1980s, and including some invasive plants. Only 480 acres are forested with natural vegetation, although there are some non-native plants present. See **Map 6 in Appendix C** for overall land use on Dobbins ARB.

Vegetative Communities

The forest communities documented on Dobbins ARB are pine and pine-hardwood forests; oak-hickory forests, mixed hardwood forests, and Piedmont bottomland forest (AFCEE 2004; USACE 2016; Amec Foster Wheeler 2017). Most of the forested area is dominated by mixed stands of loblolly pine (*Pinus taeda*) and tulip poplar (*Liriodendron tulipifera*) in various stages of succession. In general, the pine and pine-hardwood forests make up most of the installation's forests. These are successional communities that

occur on frequently or recently disturbed sites. Due to past land use and forest management, these communities are the most abundant at Dobbins ARB and occur on 380 acres out of the 480 acres of forest, with hardwoods and riparian forests constituting the balance of the forest acreage.

Common associated species include hickory (*Carya* spp.), sweetgum (*Liquidambar styraciflua*), blackgum (*Nyssa sylvatica*), red maple (*Acer rubrum*), and winged elm (*Ulmus alata*). Areas that have been selectively harvested have a moderate to heavy shrub understory composed of numerous wild berry bushes and other vegetation suitable for food and cover. Large and small mammals, songbirds, and a variety of amphibians and reptiles have been found in these areas during surveys (Govus et al. 1994).

The following forest communities occur on base, based on field work completed as part of the INRMP update in May 2017, but building on work completed in 2004 (AFCEE 2004; Amec Foster Wheeler 2017). See **Map 6 in Appendix C** for vegetative communities on Dobbins ARB, while **Table 3** provides a summary of the different vegetative communities, followed by detailed descriptions.

Table 3. Vegetative Communities on Dobbins ARB (Spring 2017)

NVC Association	Acres
Loblolly Pine Planted Forest (CST007179 *Pinus taeda* Planted Forest)	110
Early- to Mid-Successional Loblolly Pine Forest (CEGL006011 *Pinus taeda / Liquidambar styraciflua - Acer rubrum var. rubrum / Vaccinium stamineum* Ruderal Forest)	55
Interior Southern Red Oak - White Oak Forest (CEGL007244 *Quercus falcata - Quercus alba - Carya alba / Oxydendrum arboreum / Vaccinium stamineum* Forest Association)	14
Piedmont Loblolly Pine - Oak Forest (CEGL004232 *Pinus taeda - Quercus (alba, falcata, stellata)* Piedmont Forest Association)	215
Piedmont Basic Mesic Mixed Hardwood Forest (CEGL008466 *Fagus grandifolia - Quercus rubra / Aesculus sylvatica / Actaea racemosa - Adiantum pedatum* Forest Association)	3
Box-elder Ruderal Floodplain Forest (CEGL005033 *Acer negundo* Ruderal Floodplain Forest)	83
Total (Unimproved Vegetation)	480

Source: Field work completed spring 2017 by Amec Foster Wheeler.

Pine Forest

In the Southern Inner Piedmont Ecological Region (Level IV) where Dobbins ARB occurs, pine stands typically form on abandoned agricultural fields and other sites where land-disturbing activities have occurred. These areas lack the natural species diversity found in other community types on the installation. In the absence of disturbance, the hardwood component of these stands would increase and eventually an oak-hickory or mesic mixed hardwood forest would dominate the site.

Areas of loblolly pine stands, both planted and naturally seeded, exist in many areas around the installation. These areas range in age from as young as approximately 7 years to as old as approximately 75 years in DS-14. Other hardwoods that occur are sweetgum (*Liquidambar styraciflua*), tulip poplar, and to a lesser extent various oaks such as southern red oak (*Quercus falcata*), northern red oak (*Q. rubra*), white oak (*Q. alba*), water oak (*Q. nigra*), and post oak (*Q. stellata*), depending on site condition. The understory varies from minimal to very dense vegetation and consists of a variety of early successional species. Commonly occurring species include dense thickets of sweetgum (from stump sprouts and seedlings), black cherry (*Prunus serotina*), Chinese privet (*Ligustrum sinense*), and vines. Vine species include Virginia creeper (*Parthenocissus quinquefolius*), muscadine grape (*Vitis rotundifolia*), greenbrier (*Smilax rotundifolia*), blackberry (*Rubus argutus*), Japanese honeysuckle (*Lonicera japonica*), and poison ivy (*Toxicodendron radicans*). The herbaceous layer in these communities is generally sparse because of the dense pine canopy and thick pine duff. Species observed included lespedeza (*Lespedeza cuneata*), pipsissewa (*Chimaphila umbellata*), broomsedge (*Andropogon virginicus*), dogfennel (*Eupatorium capillifolium*), and Christmas fern (*Polystichum acrostichoides*).

Some of the older pine stands are transitioning to an Early- to Mid-Successional Loblolly Pine Forest community type, specifically the *Pinus taeda* / *Liquidambar styraciflua - Acer rubrum var. rubrum* / *Vaccinium stamineum* Ruderal Forest (NVCS Association CEGL006011 description available at https://www1.usgs.gov/csas/nvcs/nvcsGetUnitDetails?elementGlobalId=686708). Pine areas (older trees) occupy approximately 55 acres on the installation. In addition, the younger pine regeneration areas occupy approximately 110 acres on the installation and are coded as Pine Plantations.

The mature open portions of the older stands provide appropriate habitat for pink lady's slipper orchid (*Cypripedium acaule*), a state protected species. Five populations, ranging in size from less than 10 to more than 2,000 individuals, are known to occur in this community type at Dobbins ARB (AFCEE 2004; Amec Foster Wheeler 2017). See **Section 2.3.4.3** for more on this species.

Piedmont Loblolly Pine - Oak Forest

The pine-hardwood communities are widespread on the installation and constitute the largest single community acreage, approximately 215 acres. These areas are generally transitional between the pine areas described above and the hardwood communities described below. As the pines age and are removed (either from timber activities or from damage/disease), they are gradually replaced with the oak-hickory or mesic mixed hardwood forest. This forest community would be generally identified as Piedmont Loblolly Pine - Oak Forest, specifically the *Pinus taeda - Quercus* (*alba, falcata, stellata*) Piedmont Forest (NVC Association CEGL004232, description available at https://www1.usgs.gov/csas/nvcs/nvcsGetUnitDetails?elementGlobalId=803040).

The overstory dominant species in these areas include mainly loblolly pine, with some shortleaf pine (*Pinus echinata*) and a variety of hardwoods, including tulip poplar, sweetgum, southern red oak, northern red oak, white oak, water oak, post oak, American beech (*Fagus grandifolia*), red maple (*Acer rubrum*), American elm (*Ulmus americana*), and hickories (*Carya* spp.). Subcanopy and shrub layer species included saplings of overstory species, black cherry, Chinese privet, pignut hickory (*Carya glabra*), mockernut hickory (*Carya tomentosa*), southern magnolia (*Magnolia grandiflora*), sourwood (*Oxydendrum arboreum*), black walnut (*Juglans nigra*), dogwood (*Cornus florida*), mimosa (*Albizia julibrissin*), persimmon (*Diospyros virginiana*), American hornbeam (*Carpinus caroliniana*), boxelder (*Acer negundo*), blackjack oak (*Quercus marilandica*), sassafras (*Sassafras albidum*), eastern redcedar (*Juniperus virginiana*), American holly (*Ilex opaca*), smooth sumac (*Rhus glabra*), devil's walkingstick (*Aralia spinosa*), sweetshrub (*Calycanthus floridus*), and willow oak (*Quercus phellos*). Herbaceous species observed included lespedeza, pipsissewa, broomsedge, dogfennel, Christmas fern, crippled cranefly (*Tipularia discolor*), wild ginger (*Hexastylis arifolia*), and meadow garlic (*Allium canadense*). Vine species observed included Virginia creeper, muscadine grape, greenbrier, blackberry, Japanese honeysuckle, poison ivy, saw greenbrier (*Smilax bona-nox*), crossvine (*Bignonia capreolata*), English ivy (*Hedera helix*), and wisteria (*Wisteria sinensis)*.

Piedmont Alluvial/Piedmont Bottomland Forests.

Some areas of Dobbins ARB can be classified as alluvial or bottomland forests. Included are the portions of DN 1, DN-4 and DN-11 along Rottenwood Creek and its tributaries, portions of DN-8 and DN-9 along Big Lake, and portions of DS-6, DS-9, DS-15, DS-16, and DS-17 along Poorhouse Creek and its

tributaries. Areas of Piedmont Alluvial/Piedmont Bottomland Forests total roughly 84.4 acres, but this acreage also includes some of the slope forests that are adjacent to the riparian corridor; these adjacent areas with similar species, specifically in DN-11 and DS-6, are combined with the riparian zones for ease of comparison. The canopy in this community is diverse and includes riparian species such as boxelder, sweetgum, red maple, sycamore (*Platanus occidentalis*), green ash (*Fraxinus pennsylvanica*), and river birch (*Betula nigra*) as well as mesic species such as tulip poplar and blackgum. Loblolly pines are also infrequently occurring in these areas. The understory and shrub layers are also rich and contain American hornbeam, privet, hazel alder (*Alnus serrulata*), swamp dogwood (*Cornus amomum*), black willow (*Salix nigra*), and slippery elm (*Ulmus rubra*). The herbaceous layer can be diverse and was frequently dominated by riparian/wetland species such as false nettle (*Bohmeria cylindica*), netted chain fern (*Woodwardia areolate*), jewelweed (*Impatiens capensis*), elderberry (*Sambucus canadensis*), and yellowroot (*Xanthorhiza simplicissima*).

The best fit for this community is the *Acer negundo* Ruderal Floodplain Forest (NVC Association CEGL005033, description available at https://www1.usgs.gov/csas/nvcs/nvcsGetUnitDetails?elementGlobalId=686021). Most of the examples at Dobbins ARB are disturbed or successional but their importance as riparian systems and their role in protecting water quality makes them noteworthy. They are also an additional important component of biodiversity (AFCEE 2004).

Interior Southern Red Oak/White Oak Forest.

This forest community is identified as *Quercus falcata-Quercus alba-Carya alba/Oxydendrum arboreum/Vaccinium stamineum* Forest (NVC Association CEGL007244 description available at https://www1.usgs.gov/csas/nvcs/nvcsGetUnitDetails?elementGlobalId=683609). Previously referred to as Dry Oak-Hickory/Dry-Mesic Oak-Hickory Forests, these hardwood dominated forests include a mix of dry oak species such as southern red oak, scarlet oak (*Q. coccinea*), and post oak along with more mesic species such as white oak, black oak (*Q. velutina*) and northern red oak. Hickories are often codominant, including mockernut hickory and pignut hickory. Loblolly or shortleaf pine makes up only a small component of the canopy. The subcanopy is moderately developed and is made up largely of transgressive canopy species but includes red maple, sourwood, black cherry, and dogwood, with infrequent sweetgum and tulip poplar. The shrub layer is sparse but can include persimmon, sweetshrub, privet, and sparkleberry (*Vaccinium arboreum*). The herbaceous layer is generally poorly developed and made up primarily of vines such as muscadine and Virginia creeper but can also include pipsissewa, crippled cranefly, Solomon's seal (*Polygonatum biflorum*), eastern needlegrass (*Piptochaetium avenaceum*), Catesby's trillium (*Trillium catesbei*), wild ginger, and partridgeberry (*Mitchella repens*). This community covers about 13 acres.

This community typically occurs on the summits of low rounded knobs in exposed environments, or gentle upper slopes on southern exposures. Portions of DS-15, DN-4, and DN-6 each have examples of this forest type. These communities are generally not particularly diverse but are significant at Dobbins ARB as they represent one of three remaining intact natural associations on site (AFCEE 2004).

Piedmont Basic Mesic-Mixed Hardwood Forest.

This forest community is identified as *Fagus grandifolia - Quercus rubra / Aesculus sylvatica / Actaea racemosa - Adiantum pedatum* Forest (NVC Association CEGL008466, description available at https://www1.usgs.gov/csas/nvcs/nvcsGetUnitDetails?elementGlobalId=685400). Previously referred to as Mesic Mixed Hardwood Forests, these forests are rich communities with high plant diversity and are generally the most intact and least disturbed community type at the installation. This community is relatively rare at Dobbins ARB. Portions of DS-6 and approximately 3 acres within DS-17 would be classified as this community type. This area has a high species diversity.

The canopy in this community is diverse and includes northern red oak, white oak, American beech (*Fagus grandifolia*), red hickory, mockernut hickory, willow oak (*Q. phellos*), yellow poplar, and red maple. The understory has flowering dogwood (*Cornus florida*), serviceberry (*Amelanchier arborea*), sourwood, American hornbeam (*Carpinus caroliniana*), sassafras (*Sassafras albidum*), and other species. The shrub layer is relatively sparse, though diverse, with sweetshrub, Piedmont azalea (*Rhododendron canescens*), hydrangea (*Hydrangea arborescens*), and strawberrybush (*Euonymus americana*) being the primary components.

The herb layer is typically diverse and includes Christmas fern, broad beech fern (*Phegopteris hexagonoptera*), false Solomon's seal (*Maianthemum racemosum*), black cohosh (*Cimicifuga racemosa*), wild geranium (*Geranium maculatum*), bloodroot (*Sanguinaria canadensis*), southern horsebalm (*Collinsonia serotina*), blue star (*Amsonia tabertaemontana*), and Catesby's trillium. Several of these species are indicative of the high base status of these soils and are a result of distinctive geology (AFCEE 2004).

This plant community is on mesic, sheltered bluffs adjacent small streams and occurs in few locations at Dobbins ARB within DS-6, and the far eastern corner of DS-17. This community is the most significant natural habitat remaining at Dobbins ARB and possesses the highest level of biodiversity. Efforts should be undertaken to preserve and protect these small examples of natural Piedmont hardwood forest (AFCEE 2004).

Forest Stands

For management purposes, the forested area at Dobbins ARB is divided into two forestry compartments: a northern compartment (DN) and southern compartment (DS) with the airfield serving as the dividing line. The forest compartments are further divided into forest stands based on forest stand characteristics and site management objectives. The northern compartment has 12 stands (DN-1 through DN-12) with a total of approximately 172 acres. The southern compartment has 17 stands (DS-1 through DS-17) with a total of approximately 308 acres (USACE 2016). **Map 7 in Appendix C** provides a map of the land management units associated with the base and **Table 4** provides a list of forest stand units on Dobbins ARB.

Table 4. Forest Stand Units on Dobbins ARB

Forest Stand	Acres	Habitat Quality
DN-1	46.6	Low - known forest pest is Chinese privet growing in the understory; located close to structures, private property, and public roadways

Forest Stand	Acres	Habitat Quality
DN-2	6.4	Low - fragmented into 3 areas with pine saplings; known forest pests are kudzu and Chinese privet
DN-3	2.3	Medium - 16-year-old naturally-regenerated pine stand
DN-4	12.5	Medium - oak and yellow poplar, with scattered shortleaf and loblolly pine; good condition except for storm damage; entering climax stage of a natural succession; known forest pests is kudzu
DN-5	11.5	High - loblolly pine, yellow poplar, and other soft hardwoods with mixed hard hardwood and shortleaf pine; good condition; known forest pests are two small kudzu patches
DN-6	14.7	High - colony of pink lady's slipper orchids present in the understory near nature trail.
DN-7	6.8	High - pine/hardwood stand; good health; known forest pest is kudzu
DN-8	21.2	High - loblolly pine, yellow poplar, mixed hardwoods, and shortleaf pine components; good health; known forest pest is kudzu
DN-9	4.3	Medium - loblolly pine and soft hardwoods with mixed hard hardwood and shortleaf pine; good health but overstocked and increasing risk of pine bark beetle infestation
DN-10	17.1	High - loblolly pine, yellow poplar, mixed hardwood, and shortleaf pine components; good health.
DN-11	15.3	Medium - primarily hardwood; good condition exception for storm-damaged trees; known forest pests are beavers and kudzu
DN-12	12.8	High - loblolly pine and yellow poplar with mixed hardwoods and shortleaf pine; proximity to major roads and structures; a population of pink lady's slipper orchid in this stand.
DS-1	7.2	Low - loblolly pine with some scattered soft hardwoods, including yellow poplar; good health; military trainers requested heavy basal area (80-100 square feet/acre) for noise abatement for main runway; known forest pest includes old kudzu infestation
DS-2	24.9	Low - loblolly pine, yellow poplar, and mixed hardwood and shortleaf pine; one small designated wetland area; steep slopes surrounded by development; pockets of dense pine pulpwood trees, potentially encouraging beetle activity; small arms fire from old range contributing metal contamination
DS-3	8.8	Low - stand harvested winter of 2010; known forest pests are kudzu and Chinese privet
DS-4	3.6	Medium - loblolly pine, yellow poplar, and other mixed hardwood and shortleaf pine; generally good health after thinning; forest pests include kudzu and Chinese privet
DS-5	13.9	Low - pine regenerated stand harvested in winter 2010; no known forest pests
DS-6	42.6	Low - hard and soft hardwoods, primarily oak and yellow poplar, with scattered loblolly pine; good health with exception of storm damage; persistence of this kudzu is expected due to stream; Chinese privet occupies almost entire understory
DS-7	11.7	Low - pine/hardwood stand harvested in winter 2010; known forest pest is kudzu
DS-8	21.4	Low - loblolly pine regeneration and soft hardwood components such as yellow poplar and sweet gum; upland portion harvested and planted in 2004; known forest pest is kudzu.
DS-9	13.6	Low – pine regenerating after harvested winter 2010; two new palustrine emergent wetlands delineated in 2009

Forest Stand	Acres	Habitat Quality
DS-10	8.8	Low - loblolly pine seedlings planted 2000; wisteria patch; bark beetle activity decimated the original stand
DS-11	37.5	Low – pine stand harvested winter 2010; known forest pest is kudzu
DS-12	12.5	Medium - mature loblolly pine and yellow poplar with mixed hardwood components; known forest pest is Chinese privet; old borrow area in middle of stand
DS-13	23.8	Low - harvested 1997; naturally reseeded and reharvested in 2003
DS-14	4.7	High – two separate stands of mature loblolly and shortleaf pines with mixed soft hardwoods; pink lady's slipper orchids in the understory; no known forest pests
DS-15	14.7	Medium - mixture loblolly pine, shortleaf pine, yellow poplar, and mixed hardwoods; generally good health with older pines in need of removal; wisteria and Chinese privet are known forest pests; pink lady's slipper orchids occur in this stand.
DS-16	40.7	Medium - stand health generally good; thinned in 1997; known forest pests are kudzu and Chinese privet
DS-17	17.5	Low - loblolly pine, yellow poplar and other soft hardwoods with mixed hard hardwood and shortleaf pine; in good health but overstocked conditions increasing risk of bark beetle infestation; considered inoperable by commercial methods for forest management; obstacle course for security police training located; known forest pest is Chinese privet

2.3.2.3 Turf and Landscaped Areas

Developed areas on the installation include lawns and landscaped plantings that require intensive maintenance and upkeep. Developed grounds in combination with impervious cover (i.e., buildings, roads, parking lots, runway, taxiways) make up the majority of the base at Dobbins ARB. These are distributed throughout the base, but are mostly north of the runway. Developed areas on Dobbins ARB are categorized as either improved or semi-improved grounds.

Improved grounds include ball fields, along roads, and landscaped areas around buildings, encompassing roughly 129 acres. Turf grass is the main type of grass found in the landscaped area around buildings throughout the installation and consists of common introduced species such as Bermuda grass (*Cynodon dactylon*), tall fescue (*Festuca arundinacea*), and rye grass (*Lolium perenne*). Improved grounds maintenance includes mowing, trimming, weeding, and annual plantings. In the past, numerous flowering trees have been planted along the main roads of Dobbins ARB, which has improved the appearance of the installation.

Semi-improved grounds are maintained periodically for operational or aesthetic reasons, and these grounds occupy approximately 478 acres. Semi-improved grounds are primarily located in the central portion of the base and consist of spill ponds, clear zones, recreational trails, picnic areas, and the grasslands around the airfield. Management of the grounds near the airfield is primarily to reduce BASH risk include mowing and trimming to maintain a uniform grass height between 7 and 14 inches. The grass is cut before it goes to seed and brush piles are removed as quickly as possible to discourage songbirds from occupying the airfield (94 AW 2014a).

See **Section 2.4.2** with more information about the improved and semi-improved areas on Dobbins ARB.

2.3.3 Fish and Wildlife

While there is wildlife habitat available on Dobbins ARB, it is relatively small in size and surrounded by urban development, which limits the type and density of wildlife able to inhabit the installation. The primarily wildlife habitat is in the forested areas and water resources. Sensitive vertebrate animals have not been documented on Dobbins ARB. The relatively small size of the base and its urban setting preclude any management activities for the consumptive use of wildlife resources.

Some fish and wildlife surveys have been conducted at Dobbins ARB, with the documented species lists included in **Appendix B**. In 1993, a Natural Heritage Inventory was conducted by The Nature Conservancy (TNC), primarily to determine if federally listed threatened or endangered species, candidate species for federal listing, state-listed threatened or endangered species, or special species of concern (or their habitat) was present on the base (AFCEE 2007b). In 2007, a survey was completed to update the TNC survey and verify if any of the twelve potential federal and state listed species or any species of special concern were present on Dobbins ARB (AFCEE 2007b). A fish survey was also conducted in 2007 on Big Lake and Little Lake (Shannon and Savercool 2007).

The quality of fish and wildlife habitat on the base is, in large part, dependent on the interactions with areas surrounding Dobbins ARB. Ensuring connectivity of Dobbins ARB habitats with the surrounding region is vital to the health of the fish and wildlife populations on the base. Birds are actively discouraged from the airfield in order to manage BASH risk (94 AW 2014a). Most of the mammals and native birds common to Cobb County are present at Dobbins ARB.

The most abundant native birds on Dobbins ARB include mourning dove (*Zenaida macroura*), cardinal (*Cardinalis cardinalis*), tufted titmouse (*Parus bicolor*), and eastern towhee (*Pipilo erythropthalmus*). Starlings (*Sturna vulgaris*), Canada geese (*Branta canadensis*), common grackles (*Quisculus quiscula*), and red-winged blackbirds (*Agelaius phoenicius*) are also common (Govus et al. 1994). Canada geese often nest on the lakes but are usually removed to prevent them from becoming a BASH problem. These lakes are not actively managed for wildlife; however, migratory waterfowl overwinter on the lakes (Govus et al. 1994). Attracting waterfowl would not be compatible with BASH goals. A variety of songbirds common to Cobb County are found in the various habitats of Dobbins ARB.

Mammalian species commonly found at Dobbins ARB include the white-tailed deer (*Odocoileus virginianus*), red fox (*Vulpes vulpes*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), gray squirrel (*Sciurus carolinensis*), eastern cottontail (*Sylvilagus floridanus*), and opossum (*Didelphis virginiana*) (Govus et al. 1994). Deer sightings have been reported at Dobbins ARB, as they are occasional visitors to the airfield, and vegetation is managed to discourage their presence. Beavers (*Castor canadensis*) inhabit the edges of Big Lake and are found at several retention ponds. Coyotes are common nocturnal visitors.

The box turtle (*Terrapene carolina*), common garter snake (*Thamnophis sirtalis*), and northern water snake (*Nerodia sipedon*) are characteristic reptile species at Dobbins ARB. Commonly observed amphibians include spring peeper *(Pseudacris crucifer*) and chorus frog (*Pseudacris triseriata*) (Grovus et al. 1994).

In the spring of 1981, GADNR Wildlife Resources Division stocked both Big Lake and Little Lake with bass, bluegill, and catfish. No other stocking has been done since that time, and a fishing prohibition was initiated at both lakes in the fall of 1983 based on contamination found in and around the lakes (see Appendix G for the no fishing policy). Prior to the elimination of fishing, numerous bass, bluegill, and catfish had been harvested from both lakes. In 1994, bass was the predominant fish caught in Little Lake (Govus et al. 1994). The most recent survey was conducted in 2007, and three species were identified (Shannon and Savercool 2007): Big Lake contains two fish species, largemouth bass (*Micropterus salmoides*) and eastern mosquitofish (*Gambusia affinis*). Big Lake was drained as a result of a malfunction of the water level control at the lake's dam in October 2005 and may have been part of the reason for the lack of species diversity in the lake at the time of this survey. In addition to these, juvenile bluegill (*Lepomis macrochirus*) were also identified in Little Lake.

2.3.4 Threatened and Endangered Species and Species of Concern

The Nature Conservancy conducted an inventory of all threatened and endangered animal and plant species occurring at Dobbins ARB in 1993 (Govus et al. 1994). This was updated with a survey of potential habitats for listed species on Dobbins ARB in 2007 (AFCEE 2007). No surveys have identified any federally or state-listed threatened, endangered, or candidate species at Dobbins ARB (Govus et al. 1994; AFCEE 2007). One state-protected plant species was documented during these surveys: pink lady's slipper orchid (*Cypripedium acaule*). **Table 5** summarizes the potential listed species.

Table 5. Federal and State-Listed Species Potentially Found on Dobbins ARB, Cobb County, GA

Species		Status [1]		Status on Dobbins ARB+
Common Name	Scientific Name	Federal	Georgia	
Fish				
Cherokee darter	*Etheostoma scotti*	T	T	Not endemic to this watershed
Highscale shiner	*Notropis hypsilepis*	-	R	Unlikely, due to urbanization and disturbance
Bluestripe shiner	*Cyprinella callitaenia*	-	R	Unlikely, due to small stream sizes
Invertebrates				
Chattahoochee crayfish	*Cambarus howardi*	-	T	Unlikely, due to urbanization, disturbance, and impoundments
Delicate spike	*Elliptio arctata*	-	E	Not endemic to this watershed
Gulf moccasinshell mussel	*Medionidus penicillatus*	-	E	No perennial river
Mammals				
Northern long-eared bat	*Myotis septentrionalis*	T	-	Survey needed
Tricolored bat	*Perimyotis subflavus*	-	-	Survey needed
Birds				
Henslow's sparrow	*Ammodramus henslowii*	-	T	Marginal habitat
Bald eagle	*Haliaeetus leucocephalus*	BGEPA	T	Marginal habitat
Plants				
Bay star-vine	*Schisandra glabra*	-	T	Unlikely
Little amphianthus	*Amphianthus pusillus*	T	-	Unlikely
Michaux's sumac (Dwarf sumac)	*Rhus michauxii*	E	E	Possible, likes disturbance
Georgia aster	*Symphyotrichum georgianum*	-	T	Unlikely, only where no mowing
Indian olive	*Nestronia umbellula*	-	R	Unlikely
White fringeless orchid (Monkeyface orchid)	*Platanthera integrilabia*	T	T	Unlikely
Sun-loving draba	*Draba aprica*	-	E	Unlikely
Pink lady's slipper orchids	*Cypripedium acaule*	-	U	Documented, survey updated 2017

Sources: USFWS 2016 and GADNR 2016
Notes:
[1] Status: E – listed as endangered by the USFWS and/or GADNR
T – listed as threatened by the USFWS and/or GADNR
R – listed as rare by GADNR
U – listed as unusual by GADNR
BGEPA – Protected under the Bald and Golden Eagle Protection Act

2.3.4.1 Potential Sensitive Wildlife

Previous surveys have identified marginal suitable habitat available for three sensitive animals (AFCEE 2007): bald eagle (*Haliaeetus leucocephalus*), Bewick's wren (*Thryomanes bewickii*), and eastern mud

salamander (*Pseudotriton montanus*), although Bewick's wren and the eastern mud salamander are not currently considered to have suitable habitat on Dobbins ARB. The bald eagle is not known to nest near Dobbins ARB but is transient through the area.

Aquatic Species

The Cherokee darter (*Etheostoma scotti*) is a fish species listed as threatened on the state and federal level and is found in the warm water creeks in the Etowah River watershed within the upper Coosa River system (GADNR 2017). The surface waters present on the base are not likely to support this species due to the fact that Dobbins ARB is in a different watershed.

Highscale shiner (*Notropis hypsilepis*) is a minnow found in tributary streams, often near confluences with large rivers. They have a limited range and occur primarily in the Chattahoochee and Flint River systems (GADNR 2017). This fish species is very unlikely to occur on Dobbins ARB due to its range and urbanization and disturbance at the base.

Bluestripe shiner (*Cyprinella callitaenia*) are found in mainstems of rivers and streams and are most often found in swift currents. Its range includes mainstem Apalachicola, Chattahoochee and Flint Rivers, and major tributaries (GADNR 2017). This fish species is unlikely to occur on Dobbins ARB due to the small stream sizes present on the base.

Chattahoochee crayfish (*Cambarus howardi*) is a state threatened species occurring clear, free-flowing waters. Its range is the Chattahoochee River system spanning several counties, including Cobb County. However, it is unlikely that this species occurs on Dobbins ARB due to urbanization, disturbance, and impoundments.

Delicate spike (*Elliptio arctata*) is a state-threatened mussel species that is restricted to the Flint River system in Georgia (GADNR 2017). This mussel species is unlikely to occur on Dobbins ARB because it is not endemic to the watershed.

Gulf moccasinshell (*Medionidus penicillatus*) is listed as endangered on the state and federal level. Habitat for this mussel species includes small streams to large rivers with moderate flow in the Chattahoochee and Flint River drainages (GADNR 2017). It is not likely to occur on Dobbins ARB.

Terrestrial Species

Northern long-eared bat (*Myotis septentrionalis*) is state and federally listed as threatened and has been documented in northwest Georgia (GADNR 2017). Though winter hibernation is not likely given the lack of mines or caves on base, this bat species is a potential inhabitant in the summer, when they roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags. They are also known to utilize barns and buildings as summer roosts. This species is not likely on Dobbins ARB since it is on the edge of its range, but surveys are needed for Dobbins ARB to determine if this species occurs on base.

Tricolored bat (*Perimyotis subflavus*) is neither state nor federally listed, but a petition to list the mammal as threatened is under federal review (USFWS 2018), and the species is known to occur in Cobb County (GA DNR 2018). Tricolored bats hibernate in caves, mines, and buildings with stable temperatures and

humidity. They are not likely to hibernate on base given the lack of caves and similar habitat. Tricolored bats have the potential to occur on base during the summer, where females roost in colonies in a wide variety of structures, including built structures, crevices, and trees (males normally roost singly). In instances where summer roosting occurs in trees, tricolored bats tend to roost in tree foliage rather than in tree crevices or bark. This species requires open woodlands and tends to forage over water sources. Dobbins ARB occurs within its range and contains suitable summer habitat, so surveys are needed to determine whether the tricolored bat occurs on base.

Henslow's sparrow (*Ammodramus henslowii*) is listed in the state of Georgia as rare and nests in tall, dense grasses and forbs with little or no woody vegetation. In winter, this bird uses open, boggy areas with dense herbaceous cover and little woody vegetation (GADNR 2017). There is marginal habitat for the Henslow's sparrow on Dobbins ARB, given that the area is highly urbanized and developed.

Bald eagle (*Haliaeetus leucocephalus*) is listed as threatened in the state of Georgia and is protected by the federal Bald and Golden Eagle Protection Act. Although they can be seen throughout the state, they nest along the coast and near major water sources in the southern and central parts of the state. These birds nest from October to April in sites that are near water and located in trees, cliffs, or poles (GADNR 2017). There is marginal habitat for the bald eagle on Dobbins ARB, given that the area is highly urbanized, but there are bodies of water on base that could be used by foraging birds.

2.3.4.2 Potential Sensitive Plants

Bay star-vine (*Schisandra glabra*) is a woody vine which climbs into the canopies of moist hardwood forests and is typically found near streams. It is listed as threatened in the state of Georgia. In order to avoid bay star-vine habitat, logging near streams and wetlands on base should be avoided. Japanese honeysuckle and English ivy are common competitors (GADNR 2017). It is unlikely that this plant could occur on Dobbins ARB due to a lack of suitable habitat.

Georgia aster (*Symphyotrichum georgianum*) is a perennial herb with bright purple flowers occurring in edges and openings in rocky, upland oak-hickory-pine forests. Georgia aster is listed as threatened in the state of Georgia. It may be found in forest right-of-ways or clearings. This species is only known from about 15 populations, about half of them occurring on public lands, and it is threatened by development, invasive plants, woody plant encroachment, and pine plantations (GADNR 2017). It is unlikely that Georgia aster occurs on Dobbins ARB, although there is a low likelihood in areas that meet habitat requirements and are not mown.

Indian olive (*Nestronia umbellula*) is a shrub which can form dense colonies in upland forests containing a mix of pine and hardwood trees and is listed as threatened in the state of Georgia. It is considered semi-parasitic due to the fact that it extracts most of its nutrients through a host plant, although it does also photosynthesize. Clearings in forests created by fire or thinning benefit Indian olive and the conversion of upland forests to pine plantations is a threat to this species (GADNR 2017). It is unlikely that this species would occur on Dobbins ARB given the number of surveys looking for rare plants and the lack of observations over a 25 year period.

Little amphianthus or pool sprite (*Amphianthus pusillus*) is a listed as threatened on the state and federal level. It is an herbaceous, aquatic, annual with floating leaves and occurs in unshaded and shallow pools

of water. Plants are only visible when flowering and fruiting (March – May). Threats to this species include development, trash-dumping, and off-road vehicle use (GADNR 2017). Potential vernal pools on granitic outcrops present on Dobbins ARB could be habitat for this species, although its presence is unlikely.

Michaux's sumac or dwarf sumac (*Rhus michauxii*) is a small shrub listed as endangered on both the state and federal level. It occurs in dry, open woodlands maintained either by fire or hand-cutting. Replacement of woodlands with pine plantations is a threat to Michaux's sumac. There are only two known populations of this plant in Georgia (GADNR 2017). Although habitat does occur on Dobbins ARB and the required disturbance occurs, the likelihood that it occurs at Dobbins ARB is low.

Sun-loving draba (*Draba aprica*) is an annual listed as endangered in the state of Georgia. It inhabits the edges of eastern red cedar (*Juniperus virginiana*) trees in granite outcrops (GADNR 2017). Given that there are only 10 populations in the state and there are only very small granite outcrops on Dobbins ARB, this plant is not likely to occur on base.

White fringeless orchid or monkeyface orchid (*Platanthera integrilabia*) is a perennial plant that occurs in bogs, seeps, and wetlands and is threatened in the state of Georgia and proposed threatened on a federal level. This plant is threatened by invasive species, pollution, and overgrowth of habitat (GADNR 2017). The wetlands present on Dobbins ARB could provide habitat for this species, although they are not likely to occur.

During the 1994 inventory, two plant species found on the GADNR list of species of concern at the time were documented: pink lady's slipper orchids (*Cypripedium acaule*) and broadleaf bunchflower (*Veratrum hybridum*) (Govus et al. 1994). The solitary broadleaf bunchflower was identified and transplanted to the Chattahoochee Nature Center off the installation. Broadleaf bunchflower is no longer considered a state rare plant species, and there is no special management required.

2.3.4.3 Pink Lady's Slipper Orchid

Pink lady's slipper orchid is a perennial occurring in upland pine and mixed-pine forests with acidic soil. It is listed as unusual in the state of Georgia. It is relatively abundant in almost all northern Georgian counties (GADNR 2017) and is known to occur in five populations on Dobbins ARB. Threats to this species include development, poaching, and invasive plants (especially Japanese honeysuckle).

The pink lady's slipper orchid is characterized as "unusual" by the GADNR and is protected by the State of Georgia Wildflower Protection Act of 1973. Dobbins ARB has a 50 foot buffer around the pink lady's slipper populations. At the time of the original inventory, there were six populations of more than 100 individuals (Govus et al. 1994). During the rare species survey in 2007, only three populations were documented (AFCEE 2007). A fourth population was identified by Dobbins ARB staff in 2010. There are currently three populations with more than 100 individuals each and two smaller populations (Amec Foster Wheeler 2017). **Table 6** shows the data from surveys for the population sizes in the various locations where pink lady's slipper has been documented on Dobbins ARB. **Map 9 in Appendix C** shows the locations of the current pink lady's slipper orchid populations.

Table 6. Individual Plants in Pink Lady's Slipper Orchid Populations on Dobbins ARB

Forest Stand	Population No.	May 1994	May 2000	October 2007	May 2017
DS-14 (west)	1	450+	700	Yes	200
DS-14 (east)	2	2000+	12,000	Yes	1500
DS-14 (north)	3	30	500		3
DS-7 (note: this population is outside current Dobbins ARB boundary)	4	500–1000	N/A	N/A	N/A
DN-12	5	3	No plants		No plants
DN-6 (near cemetery)	6	30–40	150	Yes	22
DS-15	7				174

Source: Govus et al.1994; AFCEE 2007; Amec Foster Wheeler 2016

Key: N/A - Not inventoried because of its location in a high security portion of Lockheed property.

A species summary and identification aid for the pink lady's slipper orchid can be found at *http://georgiawildlife.com/sites/default/files/uploads/wildlife/nongame/pdf/accounts/plants/cypripedium_acaule.pdf*..

2.3.5 Wetlands and Floodplains

See Section 2.2.4 above for a complete summary of water resources, including wetlands and floodplains, on Dobbins ARB.

2.3.6 Other Natural Resource Information

A number of non-native, invasive plant species occur on Dobbins ARB. The survey in 2004 documented a number of species in the forest stands (AFCEE 2004) and there has been nearly annual treatments to manage invasive plant species (see **Appendix G**).

Autumn olive (*Elaeagnus umbellata*) is a deciduous shrub that is commonly used in windbreaks, mine reclamation, and wildlife habitat. In Georgia, autumn olive is problematic in the northern portion of the state. This plant can form a dense shrub layer and may spread rapidly due to distribution of its seeds by birds, who readily consume the berries. It is commonly found in disturbed areas, such as fields and woodland edges (Georgia Forestry Commission [GFC] 2008). Autumn olive was eradicated at Dobbins ARB before 2005. It should be avoided in all future landscaping on the base.

Chinese privet (*Ligustrum sinense*) is an invasive perennial shrub that is considered a high priority species in Georgia. It thrives in disturbed areas and readily grows from seed, roots, or stumps. It can form dense stands in the undergrowth of forests and spread out into disturbed areas, such as roadways and fencerows (GADNR 2009). Chinese privet was the most widespread in 2004, occurring on most forest stands and along the forest edges. This species occurs in all habitat types, but is particularly problematic on lower slopes and riparian areas where it frequently forms dense thickets that preclude nearly all native plant plants in the understory.

Chinese wisteria (*Wisteria sinensis*) is an invasive, deciduous woody vine was utilized for landscaping. It alters forest structure by climbing trees and shrubs and killing them by girdling them (Georgia Invasive Species Task Force 2016). Wisteria occurred in only 30% of plots in 2004, but it can be extremely aggressive and covers the mature canopy trees. Wisteria also occurs along the edge of one stand, which contains the base's largest population of pink lady's slipper orchid; managing wisteria in areas with pink lady's slippers is a priority. Wisteria typically infests forest edges and disturbed areas, such as roadsides, ditches, and rights-of-way.

Cogon grass (*Imperata cylindrica*) is a highly aggressive species not yet reported in Cobb County. If discovered, this species should be immediately eradicated. Life history and eradication measures for this species can be found at *http://www.nps.gov/plants/alien/fact/imcy1.htm.*

English ivy (*Hedera helix*) is an evergreen, perennial climbing vine that attaches to surfaces through root-like structures that can grow on the ground as well as into ecosystem canopies. The ivy blocks sunlight and weighs down trees, causing them to decline and die, or increasing their risk for being blown over (Georgia Invasive Species Task Force 2016). English ivy was only documented in a few plots in 2004, but it occurs along the nature trail. This species was documented on three stands at Dobbins, and can also be extremely detrimental to native herbaceous species and overstory trees.

Japanese privet (*Ligustrum japonicum*) is an evergreen shrub that was commonly used in landscaping and hedgerows. It can form dense thickets in understories, shading out native species (Georgia Invasive Species Task Force 2016). While it is possible that Japanese privet could occur on Dobbins ARB, all privet identified to date has been Chinese privet.

Japanese honeysuckle (*Lonicera japonica*) is a woody perennial climbing vine, evergreen to semi-evergreen that is planted as an ornamental and for erosion control. Japanese honeysuckle can girdle trees it climbs and can shade out understory plants (Georgia Invasive Species Task Force 2016). Japanese honeysuckle was nearly as widespread as Chinese privet on Dobbins ARB in 2004. This nonnative vine invades natural areas along disturbed edges and forest access roads. It forms a dense blanket that excludes most shrubs and herbs and limits natural regeneration of trees.

Japanese stiltgrass (*Microstegium vimineum*) is a grass that readily invades disturbed areas, and its seeds are readily dispersed through hay, soil, animal fur, as well as in floodwaters. This is a highly competitive plant, and can crowd out native forest and wetland communities in 3-5 years, removing wildlife habitat in the process (GADNR 2009). Japanese stiltgrass was documented in only five plots in 2004. This grass can become a serious problem because of its ability to spread quickly and persist in the seedbed. Japanese stiltgrass forms dense blankets on forest roads, trails, and drainages.

Kudzu (*Pueraria montana* var. *lobata*) is a semi-woody vine found in a wide range of habitats and was planted widely for erosion control and forage, as well as being used as an ornamental plant. Kudzu forms dense mats of vegetation that can cover and kill large patches of native vegetation (GADNR 2009). There has been regular and effective control of kudzu on Dobbins ARB for more than 10 years. Any new occurrences are treated each year so the population is either small or non-existent each year.

Mimosa (*Albizia julibrissin*) is an umbrella-shaped tree with an open canopy, mimosa thrives in direct sunlight and is drought-tolerant. It is found in disturbed areas, but rarely in forested areas with limited light. Mimosa is typically planted as an ornamental tree (GADNR 2009).

Multiflora rose (*Rosa multiflora*) is a thorny shrub that was widely planted as fencing for livestock due to its thorny, thick branches. Fruits grow abundantly and are one vehicle for its spread, in addition to vegetative means. Multiflora rose grows very densely and can exclude wildlife and displace native vetetation, and although it does not grow readily in closed canopy forests, it can quickly invade disturbed areas (GFC 2008).

Princess tree (*Paulownia tomentosa*) is an invasive tree often mistaken for the native northern catalpa (*Catalpa speciosa*). It is an aggressive invader of forests and streambanks. (Georgia Invasive Species Task Force 2016).

Sericea lespedeza (*Lespedeza cuneata*) is a tall, semi-woody forb that can reach up to 6 feet in height and is an aggressive invader of open areas. It was planted for erosion control, mine reclamation, and wildlife habitat, and its seeds can remain viable for many years (Georgia Invasive Species Task Force 2016).

Tree of heaven (*Ailanthus altissima*) is a rapidly-growing tree that readily establishes in disturbed areas and was widely planted in cities due to its ability to thrive in poor growing conditions. It produces many seeds and sprouts from roots, and so can escape from urban areas quickly. Tree of heaven is mostly a problem in the northern portion of the state of Georgia.

In 2004, the most widespread and pervasive invasive plant species found on Dobbins ARB was privet (*Ligustrum sinensis* and *L. japonicum*), Japanese veg

suckle (*Lonicera japonica*), Chinese wisteria (*Wisteria sinensis*), mimosa (*Albizia julibrissin*), and Japanese stiltgrass (*Microstegium vimineum*) (AFCEE 2004). In 2004, Japanese privet was only identified on Dobbins ARB in 1 forest stand, out of 24 stands containing Chinese privet (AFCEE 2004). Thus, it is assumed that privet occurring at Dobbins ARB is Chinese privet. Before the implementation of a base-wide eradication program, kudzu (*Pueraria lobata*) was considered the priority invasive plant species on the base. Control efforts were extremely successful and little kudzu has been observed since 2004.

2.4 Mission Impacts on Natural Resources

2.4.1 Natural Resource Constraints to Mission and Mission Planning

The natural resources present on Dobbins ARB that have the potential to place a constraint on some activities (but not necessarily all activities) include wildlife that pose a BASH risk and the habitat near the airfield that supports them, waters of the US (including wetlands), floodplains, pink lady's slipper protected areas, and steep slopes. The constraints are depicted on **Map 10** in **Appendix C**.

Some of the natural resources topics of concern summarized before could have an adverse impact on the base's flying mission or future operations. The potential negative impacts could range from a delay in the construction of new buildings to a loss of life as a result of severely damaged aircraft.

2.4.2 Land Use

Improved grounds are developed areas of the installation's lawns and landscape plantings that require intensive maintenance and upkeep. Improved grounds at Dobbins ARB account for approximately 17 percent of the 1,289 acres not covered by impervious surfaces. There are improved grounds throughout the base, but they predominate north of the runway. Improved grounds include ball fields and landscaped areas around buildings.

Semi-improved grounds occupy approximately 43 percent of the 1,289 acres not covered by impervious surfaces. These are grounds where periodic grounds maintenance activities are performed for operational or aesthetic reasons. Semi-improved grounds are primarily located in the central portion of the base and consist of spill ponds, clear zones, jogging and hiking trails, and picnic areas.

Unimproved grounds occupy 31 percent of the base (40 percent of the area not covered by impervious surfaces) and consist of Big Lake, Little Lake, streambeds and banks, and forested areas. Forested areas, including commercial and urban forests, account for approximately 479.5 of the 520 acres of unimproved lands. The major forested areas at the base are located in the southern portion of the main cantonment area and throughout the north cantonment area. **Table 7** provides the acreage of grounds categories. See Section 2.3.2 for a description of the natural vegetation.

Table 7. Acreage of Grounds Categories on Dobbins ARB

Category	Acres
Improved	129
Semi-improved	518
Unimproved	480
Land Under Facilities/Impervious Cover	539
Total	1,666

Source: GIS data for Dobbins ARB, updated 2017.

The Big Lake Recreation Area occupies 40 acres. It has two tennis courts, a softball field, docks, volleyball net, playground, paddle boats, and a family campground, among other resources. The family campground, known as "Famcamp", is open year-round on a first come, first served basis. All 18 camping sites at Famcamp have water, electricity, a grill, and a picnic table. A dump station is also available.

There are more than 10 miles of recreational trails that start near the fitness center and passes through much of Main Base north of the airfield. Roads that may be used for hiking and walking encircle the entire perimeter of the base. There is also a quarter-mile running track located Northwest of the fitness center.

A 1-mile nature trail was completed in 2003, with picnic tables and interpretive signs and postings. However, the recent construction of a highway overpass connecting the southern and northern parts of the base bisects the nature trail into two separate units (AFCEE 2007). The nature trail passes near the cemetery and through the northern population of pink lady's slipper and interpretive signs are located in that area.

Outdoor recreational resources are classified to avoid overuse and damage to the resource. Class I, or General Outdoor Recreation Areas, are selected, developed, managed, and conserved to provide intensive recreation activities. The Class I areas are managed to maintain the highest user-day potential within the carrying capacity of the areas to minimize site deterioration. Class II, or Natural Environmental Areas, are selected, developed, and managed to preserve the natural resources of the area providing only dispersed recreation activities. Habitat improvements enhance the natural propagation of game and non-game species, thus increasing the capability for non-consumptive such as bird watching. Class I areas are a smaller percentage of Dobbins ARB's outdoor recreation facilities but are the most heavily used. **Table 8** summarizes the different recreation facilities.

Table 8. Outdoor Recreation Areas at Dobbins ARB

Recreation Feature	Acres	Capacity	Users
Class I – General			
Campsite (trailer)	13	18 sites	Retired and active reservists, regular military, DOD employees, and dependents
Picnic site (family or group)	1	75 people	
Paddle boats	4 (1 lake)	2 people	
Canoeing	10 (1 lake)	3 people	
Class II - Natural			
Forested areas*	170 acres		Retired and active reservists, regular military, DOD employees, and dependents
Nature trail	1 mile		
Recreation trails	> 6 miles		
*Note: The southern forested areas (approximately 300 acres) are off limits to all personnel unless authorized.			

2.4.3 Current Major Impacts

Current operations that have some potential to affect natural resources include: 1) operations involving aircraft, vehicles, and equipment that use hazardous and/or non-hazardous materials that could contaminate water resources; 2) development impacting water quality (via erosion and sedimentation) and aquatic resources; 3) noise impacts from aircraft on wildlife; and 4) airfield management with impacts from tree removal and other vegetation management as well as management of wildlife to reduce BASH risk. Operations and development which could impact water resources are at least partially, if not fully, mitigated and impacts are minimized by the SPCC Plan, spill ponds, and stormwater detention ponds.

2.4.4 Potential Future Impacts

Known future mission impacts at Dobbins ARB are generally continuations of current impacts as described above. Specifics are included in the IDP and while there may be some mission changes and new construction in the future, none currently identified are likely to impact natural resources (beyond existing impacts) or change natural resources management on base. Individual new construction is not included here as it is all currently planned within the existing developed area. Any major changes would be evaluated through a National Environmental Policy Act (NEPA) process and any subsequent impacts or requirements for natural resources would be incorporated into the INRMP as needed.

The only exception to this is a project in development to remove trees from within specific areas around the airfield. In some cases these removals will include removal of all trees and replacement with mowed turf. Once completed, it will reduce the total amount of forest on Dobbins ARB but will not change overall natural resources management or associated priorities.

2.4.5 Natural Resources Needed to Support the Military Mission

The natural resources necessary to support the military mission is vegetation appropriate for the airfield, limited wildlife habitat for high BASH risk species, vegetated buffers and stable soils to protect water quality, and vegetation of various types to support different training activities.

3.0 ENVIRONMENTAL MANAGEMENT SYSTEM

The AF environmental program adheres to the Environmental Management System (EMS) framework and it's Plan, Do, Check, Act cycle for ensuring mission success. Executive Order (EO) 13693, *Planning for Federal Sustainability in the Next Decade*, U.S. Department of Defense Instruction (DoDI) 4715.17, *Environmental Management Systems*, AFI 32-7001, *Environmental Management*, and international standard, ISO 14001:2004, provide guidance on how environmental programs should be established, implemented, and maintained to operate under the EMS framework.

The natural resources program employs EMS-based processes to achieve compliance with all legal obligations and current policy drivers, effectively managing associated risks, and instilling a culture of continuous improvement. The INRMP serves as an administrative operational control that defines compliance-related activities and processes.

4.0 GENERAL ROLES AND RESPONSIBILITIES

General roles and responsibilities that are necessary to implement and support the natural resources program are listed in the table below. Specific natural resources management-related roles and responsibilities are described in appropriate sections of this plan.

Office/Organization/Job Title (Listing is not in order of hierarchical responsibility)	**Installation Role/Responsibility Description**
Installation Commander	The Commander of the 94 AW serves as the Chairman of the Dobbins ARB ESOH Council. In this capacity, the 94 AW Commander (CC) will ensure the implementation of the INRMP to the fullest extent practicable based on funding and manpower availability. The final approval of the INRMP and any future changes rest with 94 AW/CC.
AFCEC Natural Resources Media Manager/Subject Matter Expert (SME)/ Subject Matter Specialist (SMS)	The office (AFCEC/CZTQ) is the natural resources Subject Matter Expert (SME) that serves as the natural resources program manager and provides technical assistance and guidance to AF on natural resources issues.
Installation Natural Resources Manager/POC	The 94 Environmental Flight has responsibility for ensuring that activities associated with the implementation of this Plan adhere to applicable federal, state, local, and USAF environmental

Office/Organization/Job Title (Listing is not in order of hierarchical responsibility)	**Installation Role/Responsibility Description**
	regulations and guidelines. The NRM will be responsible for the overall implementation of the INRMP. He/she will be assisted by key base personnel from the host unit (i.e., the 94 AW) and the major tenant organizations. The NRM will meet and coordinate frequently with of other established committees/working groups to ensure the implementation of the INRMP. The NRM, in conjunction with the Public Affairs Office (PA), is responsible for establishing and implementing a conservation education program. The NRM directs most of the ongoing natural resources management activities presented in this Plan. However, several management activities (e.g., BASH) fall under the responsibilities listed for other base organizations. The NRM will act as a technical point-of-contact for those natural resources-related activities for which the Natural Resources Manager is not directly responsible.
Installation Security Forces	Provides security on Dobbins ARB. Coordinates with local law enforcement for any natural resources law enforcement.
Installation Unit Environmental Coordinators (UECs); see AFI 32-7001 for role description	n/a
Installation Wildland Fire Program Manager	Air Force Wildland Fire Center (AFWFC) is responsible for providing oversight, technical direction and coordination of wildland fire management planning and implementation. Prescribed fire activities on Dobbins ARB are coordinated, conducted, and reported through Shaw Wildland Support Module (WSM), located at Shaw AFB.
Installation Pest Management Coordinator	The Installation Pest Management Coordinator oversees pest management activities, completes reporting, and ensures that all activities are in compliance with DoD and USAF regulations and state and federal laws.
Range Operating Agency	n/a
Conservation Law Enforcement Officer (CLEO)	n/a
Fire and Emergency Services (FES)	Lead entity for Dobbins ARB for wildfire responses and participates in prescribed fires. Coordinates with the Cobb County Fire Marshall, City of Marietta Fire Chief, and City of Smyrna Fire Chief in both situations.
NEPA/Environmental Impact Analysis Process (EIAP) Manager	Currently same POC as the Natural Resources Manager. The NEPA Manager ensures that an appropriate level of NEPA

Office/Organization/Job Title (Listing is not in order of hierarchical responsibility)	**Installation Role/Responsibility Description**
	analysis is completed for any actions that may impact the environment.
National Oceanic and Atmospheric Administration (NOAA)/ National Marine Fisheries Service (NMFS)	n/a
US Forest Service	n/a
US Fish and Wildlife Service	The USFWS may provide technical assistance to Dobbins ARB. USFWS is a cooperating agency and signatory on this INRMP. Depredation permits are also provided by USFWS for BASH-related management.
Base Civil Engineer	The 94 AW Civil Engineer (CE) plans, budgets, approves, and oversees all maintenance, environmental, and construction activities performed on the base. All projects or management activities proposed in this Plan should be approved by the base CE to ensure that (1) funding is available and (2) these projects are complementary to the base comprehensive planning process. This office also provides support for grounds maintenance and outdoor recreation facilities.
Airfield Manager	The Dobbins ARB Airfield Manager, or designated base representative, in conjunction with the 94 AW Flight Safety Officer (94 AW/SE), is responsible for implementing activities presented in this Plan that pertain to the BASH Reduction Program. In addition, the Airfield Manager is responsible for obtaining necessary bird/wildlife deterrent equipment (e.g., bird spikes, pyrotechnics), and ensuring that Dobbins ARB personnel are trained in their proper use. The Airfield Manager will obtain the required depredation permits and report to the USFWS or GADNR in the event an incidental take of a species protected under the Migratory Bird Treaty Act is required on the airfield.
Safety Officer	The Dobbins ARB Safety Officer is responsible for overseeing the BASH Program and coordinating with airfield management and the NRM.
Public Affairs	The Public Affairs office (94 AW/PA) is responsible for the coordination of access for public events at the base. The 94 AW/PA serves as the point-of-contact to interface between the Commander and civilian groups interested in using Dobbins ARB for environmental, educational, or other purposes.
Operations and Maintenance	The Operations and Maintenance Office (94 MSG/CER) is responsible for all grounds maintenance activities on the base.
Georgia Department of Natural Resources	GADNR may provide technical assistance to Dobbins ARB personnel. GADNR is a cooperating agency and signatory on this INRMP.

5.0 TRAINING

AF installation NRMs/POCs and other natural resources support personnel require specific education, training and work experience to adequately perform their jobs. Section 107 of the Sikes Act requires that professionally trained personnel perform the tasks necessary to update and carry out certain actions required within this INRMP. Specific training and certification may be necessary to maintain a level of competence in relevant areas as installation needs change, or to fulfill a permitting requirement.

Installation Supplement – Training

Natural resources management training is provided to ensure that base personnel, contractors, and visitors are aware of their role in the program and the importance of their participation to its success. Training records are maintained IAW the Recordkeeping and Reporting section of this plan. Below are key NR management-related training requirements and programs:

1. NRM should complete a DoD Natural Resources Compliance course.
2. NRM should consider obtaining Military Natural Resources Management Certification through the National Military Fish and Wildlife Association.
3. NRM should attend appropriate national, regional, and state conferences and training courses to maintain skills and remain up-to-date on policies and requirements.
4. NRM and any other personnel handling wildlife must maintain appropriate permits and training.
5. NRM and any other personnel participating in prescribed fires must maintain appropriate certifications and training (see WFMP).

6.0 RECORDKEEPING AND REPORTING

6.1 Recordkeeping

The installation maintains required records IAW Air Force Manual 33-363, *Management of Records*, and disposes of records IAW the Air Force Records Management System (AFRIMS) records disposition schedule (RDS). Numerous types of records must be maintained to support implementation of the natural resources program. Specific records are identified in applicable sections of this plan, in the Natural Resources Playbook and in referenced documents.

Installation Supplement – Recordkeeping

Not applicable.

6.2 Reporting

The installation NRM is responsible for responding to natural resources-related data calls and reporting requirements. The NRM and supporting AFCEC Media Manager and Subject Matter Specialists should refer to the Environmental Reporting Playbook for guidance on execution of data gathering, quality control/quality assurance, and report development.

Installation Supplement –Reporting

The current reporting requirements for natural resources at Dobbins ARB are driven by a variety of programs. The list includes:

- BASH Program: bird-wildlife strikes on aircraft, activities under the depredation permit
- Forestry: timber harvests and invasive plants treated (particularly reporting herbicide usage under the IPMP)
- INRMP Implementation: USAF reporting on INRMP implementation (annual reviews, projects completed, agency coordination)
- Prescribed fire: Fire Log, submitted up to AFWFC

7.0 NATURAL RESOURCES PROGRAM MANAGEMENT

This section describes the current status of the installation's natural resources management program and program areas of interest. Current management practices, including common day-to-day management practices and ongoing special initiatives, are described for each applicable program area used to manage existing resources. Program elements in this outline that do not exist on the installation are identified as not applicable and include a justification, as necessary.

Installation Supplement –Natural Resources Program Management

The guiding philosophy of this INRMP is to take an ecosystems approach to managing the natural resources present on Dobbins ARB. Ecosystem management is emphasized because it is recognized that the mission of the USAF is inextricably linked to local, regional, and global ecological integrity.

A number of processes within the 94 AW serve to support natural resources program management, from base-wide comprehensive planning to daily review of project requests to participate in design of new facilities. In addition, within the Environmental Office several other programs support natural resources management, such as stormwater management, pest management, and spill prevention. Coordination among the Safety Office, Airfield Management, and Environmental Office is a core requirement to ensure the many issues related to natural resources and airfield are handled with pilot safety, airfield conditions, and wildlife impacts in mind.

These daily and often routine practices form the core activities that implement this INRMP, while additional projects allow for improving habitat or other environmental features. To reflect thi,s the goals and objectives in Section 8 include a Program Management section focused on those items that have broad applicability across many areas and are often performed as part of daily duties. These routine actions are identified separately from projects in Section 8 and **Appendix A**.

7.1 Fish and Wildlife Management

Applicability Statement

This section applies to all AF installations that maintain an INRMP. The installation is required to implement this element.

Program Overview/Current Management Practices

Fish and wildlife present on Dobbins ARB are described above in **Section 2.3.3** and in the species lists in **Appendix B**. The primary wildlife habitat is the forested areas and water resources, while the majority of this urban facility is impervious cover and managed turf grasses. The lakes on site are not managed for recreational fisheries nor are they high quality habitat for native fishes. Wetlands, streams, and associated riparian areas on base are important wildlife habitat. It is policy on Dobbins ARB that all water resources are protected by a 50-foot buffer (see Sections 7.5 and 7.6). The limited habitats and acreage available for fish and wildlife management mean that maintaining connectivity with neighboring lands is necessary in order to maximize the range and health of wildlife occurring within Dobbins ARB boundaries.

Some limited non-consumptive fish and wildlife management opportunities exist outside of the mission-critical areas of the base. However, due to the small area and urban setting, consumptive use of wildlife resources at Dobbins ARB is not appropriate.

Due to concerns about water quality and contamination, fishing is prohibited at Dobbins ARB (see **Appendix G** for policy memo). The last fish stocking event occurred in 1981, when GADNR stocked bass, bluegill, and catfish in both Big and Little Lakes. A fishing prohibition was initiated at both lakes in the fall of 1983 based on contamination found in and around the lakes.

When injured wildlife are found on Dobbins ARB, the NRM coordinates with a local veterinarian and the injured wildlife specialists at the Chattahoochee Nature Center.

Historically, the deer population on Dobbins ARB has been very small. The last few years have seen an increase in the population, which raises concerns for plants likely to be eradicated by a high population of deer and for airfield management. The population increase has been limited to the areas north of the airfield and may be temporary. If it is not temporary, monitoring the population and implementing control measures may be warranted to minimize risks to native vegetation and airfield management.

Beaver have historically been located in both compartments and need to be trapped and removed when detected. Their damage is limited thus far; however, it could increase and quickly spread to other areas of the installation if left unchecked. Tree health in the area may be impacted from bark damage, felling and removal, or repeated flooding of bottomland areas.

Fish and wildlife management on Dobbins ARB is primarily habitat management and non-consumptive use of fish and wildlife resources (e.g., recreation, nature enjoyment, and birdwatching). Habitat management is described under Grounds Maintenance (**Section 7.7**) and Forest Management (**Section 7.8**). Outdoor recreation, including non-consumptive uses of fish and wildlife resources, is described in the next section. As a result of the airfield, many of the issues relating to wildlife management are related to managing and reducing BASH risk for the airfield users. BASH-related management is described in **Section 7.12**.

To support the goal and objectives for fish and wildlife management on Dobbins ARB (**Section 8**), the 94 AW implements the following policies, management strategies, and Best Management Practices (BMPs).

Policies:

1. Support non-consumptive use of fish and wildlife resources that do not interfere with the mission.
2. Support BASH program (**Section 7.12**) to minimize risks from wildlife.

3. Manage wildlife habitat to maintain connectivity with surrounding areas, while minimizing wildlife use of the airfield.

Management Strategies and BMPs:

1. Employ an adaptive management approach, using a process that includes inventory, monitoring, modeling, management, and assessment.
2. Use partnerships when appropriate and participate in regional wildlife management with other agencies.
3. Implement BMPs used for water resources protection (**Section 7.5**), forest management (**Section 7.8**), and grounds maintenance (**Section 7.7**) which benefit wildlife and their habitats.

7.2 Outdoor Recreation and Public Access to Natural Resources

Applicability Statement

This section applies to all AF installations that maintain an INRMP. The installation is required to implement this element.

Program Overview/Current Management Practices

Given the developed nature of the base and the large area devoted to the airfield, there are a number of non-consumptive outdoor recreation opportunities. There are three main recreational elements: 1) Big Lake Recreation Area (which includes Famcamp); 2) recreational trail; and 3) nature trail. In addition to these, roads that may be used for hiking, walking and jogging also occur throughout the base. The recreation trails, nature trail, lakes, and Famcamp are shown on **Map 1** in **Appendix C**. Further details are provided in **Section 2.4.2**.

The Big Lake Recreation Area is 40 acres, with many outdoor recreational facilities associated with the lake and the surrounding area. It includes family picnicking areas, playgrounds, an open pavilion, a multipurpose recreation building, tennis courts, a volleyball net, and a softball field. There are also two docks situated on the lake. The family campground, known as Famcamp, is open year-round and has 18 sites with electricity and other amenities. The recreational trail starts near the fitness center and is accessible throughout the central part of the base.

Fishing, swimming, and wading are not currently allowed in either of the lakes (see **Appendix F**). Risks to human health are primarily from contaminated sediment that then contaminates surface water, groundwater, and fish. Eventually these contaminants should be remediated through natural attenuation. Recreational off-road vehicle usage is not allowed on Dobbins ARB. There are no consumptive uses of natural resources on Dobbins ARB.

A watchable wildlife area is an accessible site where wildlife can be observed in natural habitats. Areas near windows, outdoor tables, and benches provide excellent opportunities for wildlife observation. Picnic tables are found at several areas near buildings at Dobbins ARB. Plantings of native flora to enhance habitat for the benefit of fauna and visitors to the area, such as butterfly gardens (see Grounds Management in Section 7.7) are also in place at some locations. In addition, areas also occur along trails

in the wooded areas of the installation to improve access to wildlife observation sites, notably a population of pink lady's slipper.

All active and retired military personnel and their dependents, including both reservists and regular military, have access to Dobbins ARB and its outdoor recreational facilities. Active DOD employees also have access to the facilities. Use of the existing facilities is cyclical. The majority of use occurs during lunch hours and on weekend training (Reserve/Guard service unit) periods. Facilities are heavily used by organized sports teams at these times. Heavy family use occurs during spring, summer, and fall periods. Public access is not allowed on Dobbins ARB with the exception of visitors requesting access to the Jonesville Cemetery (see Section 2.1.5 Local and Regional Natural Areas).

Other than Famcamp rules (relating to registration and site use), there are no published rules in place for outdoor recreational facilities, which can be used at any time by persons on the installation. Access to the base is limited to the hours of 0700 to 1600 h Monday through Friday for visiting public. However, the base is open 24 hours a day, 7 days a week to retired and active military personnel and their dependents.

The nature trail is an important feature of the base and is one of the few places where users can access natural forests and see the pink lady's slipper orchid (see **Section 7.4**). It serves as showplace for visitors and is used for environmental education. The original nature trail was impacted by the construction of the overpass connecting the central and northern portions of the base, as well as by a new sewer line. The trail was reconnected in 2007. Currently the nature trail is undergoing an upgrade with the clearing of debris and new mulch bed being applied to sections starting in 2017 and continuing through 2020.

The current facilities were part of the installation when the base was realigned and placed under the command of the AFRC in June 1992. These "inherited" facilities are maintained and upgraded. Reserve installations are restricted from constructing most morale, welfare, and recreation-type facilities (e.g., ballfields, recreation centers) unless they fulfill a military need.

The objectives associated with outdoor recreation are included with grounds maintenance in **Section 8**. To support the goal and objectives for outdoor recreation on Dobbins ARB, the 94 AW implements the following policies, management strategies, and BMPs.

Policies:

1. Provide quality outdoor recreation experiences while sustaining ecosystem integrity.
2. Ensure that outdoor recreation activities are not in conflict with mission priorities.

Management Strategies and BMPs:

1. Maintain existing outdoor recreation facilities while minimizing risk to users.
2. Use outdoor recreation facilities as opportunities for environmental education.
3. Maintain recreational and nature trails to ensure they are accessible to users and provide opportunities for outdoor recreation.

7.3 Conservation Law Enforcement

Applicability Statement

This section applies to all AF installations that maintain an INRMP. The installation is required to implement this element.

Program Overview/Current Management Practices

There is no conservation law enforcement at Dobbins ARB. The installation security forces address violations on Dobbins ARB, working with other local law enforcement authorities as necessary.

7.4 Management of Threatened and Endangered Species, Species of Concern and Habitats

Applicability Statement

This section applies to AF installations that have threatened and endangered species on AF property. Although no federally or state-listed threatened, endangered, or candidate species have been documented on Dobbins ARB, this section is applicable to this installation. There is one state-listed sensitive plant species documented on the base (pink lady's slipper).

Program Overview/Current Management Practices

This section presents information about the management of sensitive species that are located within, or have some potential to occur at, Dobbins ARB, along with requirements and strategies for management. It is possible that other species may be documented in the future as additional surveys and natural resources management are conducted and as regional conditions change. **Section 2.3.4** discusses threatened and endangered species at Dobbins ARB with **Table 5** summarizing potential listed species and their likelihood at Dobbins ARB. **Appendix B** provides the list of known species on Dobbins ARB. The first inventory of threatened and endangered species at Dobbins ARB was conducted in 1993 by The Nature Conservancy (Govus et al. 1994) and an updated survey of potential habitats for listed species on Dobbins ARB was conducted in 2007 (AFCEE 2007). Neither of these surveys identified any federally or state-listed threatened, endangered, or candidate species occurring on base. Two state-listed rare plants were documented in the 1993 survey. However, one was the bunchflower, which is no longer listed by the state and has no management requirements, and the other was the pink lady's slipper orchid, which is a state-listed plant categorized as unusual.

There is no critical habitat on Dobbins ARB for federally or state listed species.

Federally Listed Species

Of the listed species known or likely to occur in Cobb County, only a few have any potential to occur on Dobbins ARB due to lack of habitat. The three federally listed species with some potential to occur include the northern long-eared bat, bald eagles, and Michaux's sumac. Tricolored bats are being considered for federal listing and also have potential to occur. Management strategies for these four species are listed below, if they ever documented on Dobbins ARB.

Northern long-eared bat: No bat surveys have been completed yet on Dobbins ARB but this federally threatened species has a range that overlaps with Cobb County. There have been captures of northern long-eared bat (NLEB) in counties north and east of Cobb County and Cobb County has been identified as an area with high potential for summer colonies (GADNR 2015). Summer habitat requirements are present on Dobbins ARB. If this bat species is present on Dobbins ARB, it likely uses habitat for foraging

and possibly also for summer roosting. Summer roosts are found in cavity trees, dead snags, and mature trees with loose bark. The following management strategies for NLEB are recommended, and many of them overlap with Forest Management (**Section 7.8**).

- Maintain living and dead trees in forested areas, particularly those with loose bark. Protect snags greater than 5 inches in diameter in early to medium stages of decay, where they do not pose a safety hazard.
- Maintain forests with a diverse range of tree sizes and age classes and protect riparian corridors.
- Reduce the use of pesticides in potential bat foraging areas.
- Maintain vegetation along and reduce bank erosion to surface water features, which serve as critical foraging areas.
- Avoid tree removal between 1 April and 31 October when bats may be present.

Tricolored bat: No bat surveys have been completed yet on Dobbins ARB but this species is documented in Cobb County. There have been observations of tricolored bats in Cobb County and surrounding counties in northeastern Georgia within the last five years (GADNR 2018). If this bat species occurs on Dobbins ARB, it would most likely use habitat for summer roosting and foraging. Summer roosts are usually in dead tree foliage, although these bats are known to use live tree foliage and tree cavities. In addition, Dobbins ARB is not far from known winter hibernacula. The following management strategies for tricolored bats are recommended and many of them overlap with those with NLEB above and with Forest Management (**Section 7.8**).

- Maintain living and dead trees in forested areas, particularly oaks, which tend to hold their dead leaves longer than other species.
- Identify and protect hibernacula and maternity roosts.
- Maintain forests with a diverse range of tree sizes and age classes and protect riparian corridors, especially open water areas.
- Reduce the use of pesticides in potential bat foraging areas.
- Maintain vegetation along and reduce bank erosion to surface water features, which serve as critical foraging areas.
- Avoid tree removal between 1 April and 31 October when bats may be present.

Bald eagle: Bald eagles have not been documented on Dobbins ARB but are protected under the Bald and Golden Eagle Protection Act, which has take prohibitions similar to the Endangered Species Act, and by Georgia law. Bald eagles are known to nest in Cobb County and individuals may use the installation in a transient manner or for foraging. The following management strategies for bald eagles are recommended.

- Encounters with bald eagles should be avoided, both within the vicinity of a nest and as part of BASH risk reduction activities.
- Modifications to aerial structures and electrical transmission lines should incorporate proven design techniques that discourage bald eagle use and eliminate or reduce bald eagle hazards.
- Limit use of pesticides as described in the IPMP in order to limit indirect impacts to eagles.
- Limit activity near active nests.

Michaux's sumac: Michaux's sumac, federally and state endangered, has not been documented on Dobbins ARB and is extremely rare, but it is a plant with the potential to occur given its current and historical range and conditions present at Dobbins ARB. Populations of Michaux's sumac have been found in nearby Fulton County. Disturbance that results in open areas is necessary for this species; fire suppression and competition and/or shading by woody species are thought to have led to its decline (USFWS 2014). The type of disturbance on Dobbins ARB and the prescribed fire program in forested areas are favorable conditions for Michaux's sumac. The following management strategies are recommended.

- Continue implementing a prescribed burning program and control invasive species that shade forested areas, such as climbing vines.
- Logging activities should occur after surveys for this plant have been completed, as timber operations can crush plants and compact the soil.
- Utility rights-of-way should be surveyed for this plant, as this is a preferred habitat. Prudent use of herbicides and mowing timed to avoid critical growth periods should be implemented.
- Conservation of undeveloped habitat is a key strategy.

State Listed Species

There is one state listed species with marginal habitat on Dobbins ARB – Henslow's sparrow. Pink lady's slipper orchid, state classified as unusual, is the only species that has been confirmed as occurring on base. Management strategies for Henslow's sparrow and pink lady's slipper orchid are listed below.

Henslow's sparrow: Henslow's sparrow has not been surveyed on Dobbins ARB, but recent records (1996-2006) have shown that it was recorded in winter counts in Cobb County (Cooper 2012). The following management strategies are recommended (Schneider 2010).

- Regularly thin and burn pine forests with suitable soil conditions.
- Manage any utility right-of-ways to encourage a dense grassy ground layer suitable for wintering birds.
- Restore natural sites, such as pitcher plant bogs and wet savannas, whenever possible.

Pink lady's slipper orchid: The pink lady's slipper orchid has been documented on Dobbins ARB since a survey in 1993, although there have been some shifts in population locations. Current management for the pink lady's slipper orchid includes habitat enhancement and environmental education. These tasks are achieved through ongoing invasive plant species control efforts, prescribed burns in forested areas, and the installation and upkeep of a nature trail which intersects with a population of pink lady's slipper orchids. The current populations can be seen in **Map 9** in **Appendix C** and a summary of the history of the species on Dobbins ARB is presented in **Section 2.3.4**. Management recommendations include the following (Chafin 2010).

- Current populations are designated as Special Natural Areas with 50-foot buffers.
- Conduct any surveys taking place for this plant before the fruiting season is over in July, and preferably during flowering (April–June).
- It is not currently clear what, if any, benefit results from prescribed fire. Monitor results at other locations and/or undertake a research burn to determine how species responds.

- Protect known sites from clearcutting and development.
- Eradicate exotic pest plants such as Japanese honeysuckle.

Both thinning and prescribed burning are recommended as management practices to manage this particular species of plant (USACE 2016). A healthy canopy of either pine or pine/hardwood mixed overstory is critical to support the continued presence of this species. Therefore, any efforts such as thinning by removal of unhealthy or overstocked trees, would be considered beneficial to maintaining this plant. Thinning should be conducted during the winter season, when the plant is dormant beneath the litter layer or by using careful harvesting methods such as cut-to-length systems which utilize a forwarder to drive the stems off site, rather than introducing skidding which could potentially cause significant lateral soil movement. Prescribed burning should be conducted in the dormant season to reduce fuel layers that may inhibit growth and reproduction of the plant.

The primary goal for management of threatened and endangered species is to use a regional approach and minimize impacts to the military mission. In addition to the species-specific recommendations above, to support the goal and objectives for threatened and endangered species on Dobbins ARB (**Section 8**), the 94 AW implements the general policies, management strategies, and BMPs.

Policies:

1. Limit incompatible activities in known locations of listed plants, including a 50-foot buffer.
2. If any listed wildlife occur, limit incompatible activities in core habitat (i.e., nesting areas, roost trees).
3. If a new listed species is documented on Dobbins ARB, consult with appropriate agency to determine management and permitting requirements.

Management Strategies and BMPs:

1. Collaborate with agencies and non-profits to survey and identify appropriate management for threatened and endangered species.
2. Annually review updated lists of potential threatened, endangered, or protected species.
3. Survey regularly for potential listed species as conditions change both on base and in the surrounding region.
4. If a newly listed species is not included in the INRMP but has potential to occur on Dobbins ARB, identify management recommendations and plan for a survey as part of the INRMP annual review process.

7.5 Water Resource Protection

Applicability Statement

This section applies to AF installations that have water resources. This section is applicable to this installation.

Program Overview/Current Management Practices

Water resources are described in **Section 2.2.4** and depicted in **Map 4** in **Appendix C**. All water resources were evaluated in 2009 and a jurisdictional determination was received from the USACE in April 2015.

The Stormwater Pollution Prevention Plan (SWPPP) is the primary guide for protection of water quality on Dobbins ARB, and this INRMP supports and furthers implementation of the SWPPP. Since Dobbins ARB is located in an urban area and is relatively well-developed, many of the issues relating to water resources protection are impacted by impervious cover and mowed turf (**Section 7.7**, Grounds Maintenance). The presence and protection of a 50-foot buffer around all water resources significantly reduces impacts to all water resources. There are, however, some small areas where there is no buffer along the water resources (with mowed turf right to the edge). These are areas historically managed this way and a buffer has not been retroactively implemented.

No functions and values assessment was completed in 2009, although water resources provide a number of functions and values, including water quality improvement, stormwater management, flood mitigation, and wildlife habitat. Collecting functions and values data can help identify ways to improve streams and wetlands and also to track changes in their status over time. There are a variety of methods that can be used, but most USACE Districts have developed rapid assessment models for wetlands and streams. Unfortunately, the Savannah District has not done this yet, so the most appropriate methods available currently are the North Carolina Wetland Assessment Model (NC WAM) and the North Carolina Stream Assessment Model (NC SAM). The NC WAM and NC SAM manuals and data forms are available at https://ribits.usace.army.mil/ by selecting the Wilmington District and Assessment Tools.

The goal of the SWPPP is to prevent pollutants (e.g., fuels, solvents, sediments) from entering the watershed, thus protecting surface waters and groundwater. Specific watershed protection measures used by the base include spill clean-up equipment at industrial locations; implementation of Erosion, Sedimentation, and Pollution Control Plans; integrated pest management; and reduction of fertilizer applications. The SWPPP requires regular monitoring of water quality on Dobbins ARB, particularly where it leaves the base, and this data can be used to inform priorities relating to natural resources management as well.

As described in **Section 2.2.1**, climate change is likely to increase precipitation and temperature in northern Georgia, with a higher likelihood of extreme aggregate events such as flooding and drought. There has been a clear warming trend in Georgia, which is expected to continue, and a moderate increase in precipitation. Water resources are likely to be impacted, but it is impossible to determine at this time how they will be precisely impacted. However, climate projections for the region under different scenarios indicate that with a growing population in the Atlanta metropolitan region and changes in land use, the increased temperatures and moderately increased precipitation scenarios would put an additional strain on water resources in the area.

Due to the slopes and high percentage of developed areas and mowed turf, one of the primary concerns is the deposition of sediment in the base's waterways. There have been a number of projects to replace or upgrade stream crossings with better designed culverts and to retrofit spill ponds. Collectively, these projects are improving stream condition and stability.

Another important element for maintaining water quality is to ensure that bare areas are revegetated quickly. There is a turf grass seeding specification for improved areas with turf grass. The GA Department of Transportation (DOT) has a grass seeding specification that includes information for using native grasses and forbs. The complete specification is located at http://www.dot.ga.gov/PartnerSmart/Business/Source/special_provisions/shelf/sp700.pdf. NRCS provides a good summary of available seeding techniques and appropriate seeding rates available at https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_021520.pdf.

To support the goal and objectives for water resource protection on Dobbins ARB (**Section 8**), the 94 AW implements the following policies, management strategies, and BMPs.

Policies:

1. Maintain 50-foot buffers around all water resources.
2. Implement green infrastructure strategies in compliance with Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act.
3. Adhere to BMPs during construction and operational activities as described in applicable manuals, plans, and permits.

Management Strategies and BMPs:

1. Plan development to avoid impacts to water resources to the maximum extent possible and mitigate unavoidable impacts.
2. Minimize nonpoint source pollution of both surface and groundwater in the watershed through the implementation of BMPs and the upkeep and maintenance of existing BMPs.
3. Prevent or minimize erosion to the maximum extent possible, using BMPs and native plant preservation and establishment.
4. Promptly revegetate exposed areas following any construction or operations disturbance, or provide appropriate sediment control.
5. Monitor revegetation efforts until well established and work with project proponent to correct any failures.
6. Design new stream crossings and replacement stream crossings for at least the 100-year flood, including bedload and debris.
7. Design stream crossings to minimize disruption of natural hydrologic flow paths, including limiting diversions of streamflow out of the channel.
8. Use the Georgia “Green Book” for BMPs unless another regional source is more appropriate. Use the GFC Forestry BMPs for forestry-related activities.
9. Incorporate BMPs during preliminary engineering, design, and construction of facilities involving ground disturbance.
10. Inspect all post-construction BMPs on a quarterly basis to ensure compliance.
11. Keep impervious surfaces away from steep slopes, away from natural drainages, and out of floodplains.
12. Minimize the use of pesticides and herbicides.

7.6 Wetland Protection

Applicability Statement

This section applies to AF installations that have existing wetlands on AF property. This section is applicable to this installation.

Program Overview/Current Management Practices

There are 22 wetlands scattered throughout the facility, two in association with the two lakes. Wetlands are described in **Section 2.2.4** and are depicted in **Map 4 in Appendix C**. They were evaluated in 2009 and a jurisdictional determination was received from the USACE in April 2015.

The policies, management strategies, and BMPs for water resources protection also apply to wetland protection. The 94 AW implements the following additional policies, management strategies, and BMPs specific to wetlands, in combination with those already identified above in **Section 7.5**.

Policies:

1. Development is prohibited in or within 50 feet of wetlands.
2. No net loss of wetland acreage, function, or values.

BMPs and Management Strategies:

1. If wetland encroachments are unavoidable, natural flow patterns should be maintained as part of the design.
2. Consult current wetland maps during environmental review of proposed projects and identify potential impacts and potential mitigations early in the process.
3. Evaluate changes in wetland acreage, functions and values regularly.
4. Ensure that all requirements of the Clean Water Act, EO 11990 and Air Force Instruction 32-7064 are complied with prior to any disturbance or modification of a wetland.

7.7 Grounds Maintenance

Applicability Statement

This section applies to AF installations that perform ground maintenance activities that could impact natural resources. This section is applicable to this installation.

Program Overview/Current Management Practices

Improved grounds that require extensive maintenance comprise 129 acres (8 % of the base), while semi-improved grounds (primarily the airfield) require occasional maintenance and comprise 518 acres (31 % of the base of Dobbins ARB. An additional 539 acres are impervious surfaces. **Section 2.3.2** (Vegetation) and **Section 2.4.2** (Land Use) describe the grounds on Dobbins and **Maps 5 and 6** in **Appendix C** depict maintenance regimes and vegetative communities.

Improved grounds are developed areas of the installation's lawns and landscape plantings that require intensive maintenance and upkeep. There are improved grounds throughout the base, but they predominate north of the runway. Improved grounds include ball fields and landscaped areas around buildings. Most improved grounds are north of the runway. Improved grounds maintenance includes mowing, trimming, weeding, and annual plantings occurring in ball fields, along roads, and in landscaped

areas around buildings. Turf grass is the main type of grass found in the landscaped area and includes non-native species such as Bermuda grass, tall fescue, and rye grass.

Semi-improved grounds are only maintained occasionally for operational reasons with mowing or trimming of vegetation. The vegetation can be similar to the non-native turf grass in improved areas or may contain some native plants. Semi-improved grounds are primarily located in the central portion of the base and consist of primarily the airfield but also spill ponds, clear zones, recreational trails, and picnic areas.

Unimproved grounds occupy 480 acres (31 % of the base) and are primarily the forest stands (described in Vegetation – **Section 2.3.2**), as well as some parts of the shorelines around Big Lake and Little Lake. The major forested areas at the base are located in the south and north parts of the base, with small fragments occurring in the central part. Unimproved forests are managed under Forest Management as described in **Section 7.8**.

There is an urban forest that exists in and along the edges of the improved grounds. (Note: Semi-improved grounds generally have no trees due to their operational functions.) These are managed as part of landscaping. If any tree health issues arise, the Environmental Office either consults with the USACE foresters or the Georgia Forestry Commission (GFC), which has an office near Dobbins ARB. When new trees are planted, they are being selected to improve tree diversity and to provide fruits and berries.

As older landscaped areas are renovated and new landscaping installed, following the principles of beneficial landscaping can reduce energy and water use, provide water quality and wildlife benefits, and improve aesthetics. A good summary of the steps and elements of environmentally friendly landscaping in Georgia has been developed by the University of Georgia and is available at http://extension.uga.edu/publications/detail.cfm?number=C967. The principles start with site analysis and plant selection and then move into planting and maintenance. In addition, there are a number of BMPs appropriate for landscape maintenance in Georgia, such as this list from the University of Georgia http://extension.uga.edu/publications/detail.cfm?number=C873.

While improved areas generally do not provide much wildlife habitat, the use of native plants and the selection of landscaping plants to support pollinators can provide aesthetic and environmental benefits. Some useful links for identifying pollinator friendly plants in Georgia include:

- Xerces Society: http://www.xerces.org/pollinators-southeast-region/
- University of Georgia: http://extension.uga.edu/publications/detail.cfm?number=B1456 and https://ugaurbanag.com/gardens/pollinators/pollinator-plants/

In addition to using landscaping plants that benefit pollinators, it is important to avoid invasive, non-native plants that can spread into natural areas. Any plants listed in **Section 2.3.6** will not be planted in landscaped areas at Dobbins ARB. Any plants listed as invasive by the Georgia Exotic Pest Plant Council (EPPC) will also be avoided. Whenever possible, alternatives to other non-native plants will be used. Some resources for identifying alternative landscaping plants include:

- Georgia Exotic Plant Pest Council: http://www.gaeppc.org/alternatives/
- University of Georgia: http://extension.uga.edu/publications/detail.cfm?number=B625

In addition to these landscaping practices, the use of green infrastructure or low impact development techniques can reduce negative impacts to water quality. These practices often include the use of native plants and provide some wildlife habitat as well. See **Section 7.5** above for more on managing water quality on Dobbins ARB.

To support the goal and objectives for grounds maintenance on Dobbins ARB (**Section 8**), the 94 AW implements the following policies, management strategies, and BMPs.

Policies:

1. Maximize regionally native plants and avoid invasive, non-native plants in landscaping and during revegetation.
2. Implement beneficial landscaping practices and design.
3. Reduce chemical usage and maintenance inputs in terms of energy, water, maintenance, equipment, and chemicals.
4. Coordinate among Grounds Maintenance, Airfield Operations, Base Civil Engineer, and Environmental Office to ensure agreement on short-term and long-term grounds maintenance goals.

Management Strategies and BMPs:

1. Select native plants appropriate for the site and increase tree diversity and health. When possible, provide wildlife habitat.
2. Follow BMPs for landscape maintenance and design, such as those identified by the University of Georgia Extension Services (referenced above).
3. Follow any revegetation specifications and BMPs identified for any construction or specific-areas.
4. Maintain grass height at optimal height (typically 6-12 inches – see BASH Plan) to minimize BASH risk, while minimizing maintenance requirements. Implement other grounds maintenance measures as identified in the BASH Plan (and see **Section 7.12** in this plan).
5. Follow the Integrated Pest Management Plan (**Tab 6**) for chemical usage, managing landscape pests, and controlling invasive plants (and see **Section 7.11** in this plan).

7.8 Forest Management

Applicability Statement

This section applies to AF installations that maintain forested land on AF property. This section is applicable to this installation.

Program Overview/Current Management Practices

Forest stands on Dobbins ARB include most of the natural vegetation present on base, provide the majority of wildlife habitat, and contain the pink's lady slipper, the only state or federally protected species documented on base. Managing the forest stands is a core component of natural resources management on Dobbins ARB. Forest stands are described in **Section 2.3.2** and depicted in **Map 7** in **Appendix C**. A history of stand management (i.e. timber harvests, prescribed fires, and invasive plant management) is provided in **Appendix H**. Guidance for managing the forests on Dobbins ARB is taken

from the Forest Management Plan (FMP), which can be found in **Tab 1**. The current FMP summarizes the management strategies that will provide for the continued multiple use and sustained yield management of the forest resources on Dobbins ARB for the five (5) year period beginning October 1, 2016 and ending September 30, 2021. However, it is similar to previous FMPs developed and implemented for Dobbins ARB.

The main goal of forest management on Dobbins ARB is managing for productive pine and mixed pine/hardwood forest stands that regenerate naturally. Activities to achieve this goal include reducing or eliminating invasive plant species, managing forest pests, and utilizing prescribed fire and hand-thinning stands to maintain a healthy forest. Economically profitable timber is removed from the forest stands on a stand-by-stand basis, although the aim is not to create forest plantations, but rather to maintain a diverse mix of species and stand ages in support of a healthy and diverse ecosystem. Seven forest stands (DS-8A, DS-6B, DS-17A, DN-3, DS-2A, DN-11, and DS-14) were ranked as having a high level of biodiversity and natural integrity (AFCEE 2004). In addition, DN-4 and a portion of DN-12 (from behind the Physical Fitness Center heading west to Little Lake) contains impressively large white oak and yellow poplar as well as other hardwood species and scattered large loblolly and shortleaf pines (USACE 2016).

The primary ways forests are managed on Dobbins ARB is through thinning and harvest of trees and through prescribed fire. Recent forestry activity includes a small harvest in 1998, thinning in 2000, and a larger harvest in 2010. A summary of harvest history by forest stand is provided in **Appendix H**. No prescribed fires have been conducted since 2008, although they were undertaken regularly before 2008. Prescribed fires will begin again once the IWFMP is approved; see Section 7.9 for more on wildland fire and prescribed fire at Dobbins ARB.

Georgia's Best Management Practices for Forestry – also known as the "Blue Book" – emphasizes the protection of the state's water resources when conducting forest management by implementing BMPs to control and minimize soil erosion and stream sedimentation by protecting the physical, chemical, and biological integrity of the state's waters (GFC 2009). Relevant BMPs from the Blue Book include those pertaining to Streamside Management Zones (SMZs), which are reflected in the 50-foot buffer zones near water resources on Dobbins ARB. Additional BMPs include roads (location, construction, stream crossings, maintenance, and retirement), timber harvesting, site preparation and reforestation, and management and protection. The Blue Book is available at http://www.gfc.state.ga.us/resources/publications/BMPManualGA0609.pdf.

Bark beetle infestations in the past were caused by southern pine beetle (*Dendroctonus frontalis*) and ips engraver beetles (*Ips* spp.). These forest pests occurred in both loblolly and shortleaf pines and have historically been limited in scale, normally infesting only damaged, weakened, or diseased trees (USACE 2016). The few larger outbreaks occurred in overstocked and unmanaged stands and thinning is the best way to reduce susceptibility to bark beetles. If any forest pests are identified, the NRM will work with either USACE or GFC foresters to assist with identification and determining appropriate management action. Any direct pest management (as opposed to tree management) will comply with IPMP requirements.

The following management strategies, BMPs, and policies are intended to manage the forest stands for maximum benefit to native plants and animals, while also supporting the mission on Dobbins ARB. To

support the goal and objectives for forest management on Dobbins ARB (**Section 8**), the 94 AW implements the following policies, management strategies, and BMPs.

Policies:

1. Protect intact, large blocks of forest without compromising the mission.
2. Use prescribed fire and implement the WFMP to support forest management (**Section 7.9**).
3. Any forestry activities (i.e., harvesting, thinning, access roads, herbicide application, etc.) within buffers around water resources will implement extra precautions.

Management Strategies and BMPs:

1. Mechanical site preparation should be limited to drum chopping only.
2. All forestry operations will follow all GFC BMPs to minimize negative impacts.
3. Review management of forest stands annually and ensure management targets are being achieved. Following review, identify management targets for upcoming year.
4. Continue mechanical and chemical treatment of invasive plant species (**Section 7.11**) through annual contracts with USACE foresters.
5. Leave dead trees and snags in forest stands, unless they pose a safety hazard, and allow natural succession to occur.
6. Forest stands, riparian corridors, and unique areas shall continue to be managed appropriately forming a mosaic of different stand types and age classes.
7. Due to the potential for northern long-eared bats and tricolored bats, any tree management that occurs between 1 April and 1 November requires consultation with the USFWS until new guidelines are developed or it is confirmed the species is not on Dobbins ARB (**Section 7.4**).

7.9 Wildland Fire Management

Applicability Statement

This section applies to AF installations with unimproved lands that present a wildfire hazard and/or installations that utilize prescribed burns as a land management tool. This section is applicable to this installation.

Program Overview/Current Management Practices

Prescribed fire and managing fuels is a central part of forest management, which is described above in **Section 7.8**. The Forest Management Plan (FMP) can be found in **Tab 1** and describes targets for individual stands. The Wildland Fire Management Plan (WFMP) can be found in **Tab 2** and describes the details of how wildland fire is managed and conducted on Dobbins ARB. **Map 8** in **Appendix C** depicts the history of prescribed fire on Dobbins ARB. **Appendix G** contains a forest management history for Dobbins ARB, including prescribed fires. There are 480 acres in the forest stands on Dobbins ARB, roughly 29% of the installation as a whole, and which constitutes the burnable acres. Additional areas are included from a wildfire suppression perspective, but generally the forest stands are the areas of concern for wildland fire management.

Dobbins ARB has infrastructure on the installation that could be at risk from wildfire. The area surrounding the base consists of residential housing, industrial areas, commercial and retail activities, a university, golf courses, and office parks. As a result, Dobbins ARB is entirely considered wildland urban interface (from WFMP). The main sources of fuel that could carry a wildfire are in the forest stands which generally have maintained firebreaks and relatively easy access for firefighting crews. There is a regional wildfire risk assessment for Cobb County, which partially includes Dobbins ARB, and is available at https://www.southernwildfirerisk.com/.

The WFMP provides a plan for the wildland fire program at Dobbins ARB, including policies, processes, responsibilities, and requirements. It also includes management of wildfires, prescribed fires, prevention and mitigation, and monitoring and evaluation. This includes describing the various levels and types of training required for different roles associated with wildland fire at Dobbins ARB. There are no National Wildfire Coordinating Group (NWCG) qualified wildland firefighters on Dobbins ARB at this time. Air Force policy requires a qualified NWCG Burn Boss Type 2 (RXB2) must be present and on site for any prescribed fires. Burn units (or fire management units) are the same as the forest management stands depicted in **Figures 7 and 8** in **Appendix C**.

The Air Force Wildland Fire Center (AFWFC) is responsible for providing oversight, technical direction and coordination of wildland fire management planning and implementation for Air Force. Prescribed fire activities on Dobbins ARB are coordinated, conducted, and reported through Shaw Wildland Support Module (WSM), located at Shaw AFB. Historically, prescribed fire and wildfire responses were undertaken by Dobbins ARB personnel. The 94 AW and AFRC may develop Memoranda of Understanding (MOUs) in the future with Georgia Forestry Commission or GADNR to further support wildfire responses and prescribed fires on Dobbins ARB.

Dobbins ARB is fortunate that there are many already-existing firebreaks, including roads, streams, runways, trails, and constructed firebreaks, that provide for small fire management units, based on the forest stands in the FMP. They provide the ability to implement small prescribed fires, even with restrictions from the urban setting. Since Dobbins ARB is surrounded by development, smoke management is an important component of wildland fire management and planning. Primary impacts from smoke due to wildfires or prescribed fires would be to runway traffic and adjacent state, county, and federal travel routes where visibility is critical. Smoke impacts are mitigated by the ability to burn one small unit after another, thereby limiting smoke generation. On days when ozone air standards are exceeded, prescribed fires are not permitted. Due to the location of the installation, both public notification and complete smoke abatement by nightfall are essential for a successful burn program. Specific contacts should be made to highly smoke-sensitive facilities.

There have been no wildfires in more than 12 years on Dobbins ARB. Prescribed fires were a regular management tool from 2002 until 2008, when the process to develop the WFMP began. Historic fire return intervals in this region of the country were typically 3-10 years, depending on forest type. Pine stands should generally have a 3-5 fire return interval, while hardwood stands should generally have a longer fire return interval on Dobbins ARB. When possible, the use of a growing season prescribed fire can also improve native plant diversity and better control hardwood intrusion into pine stands. **Table 9** summarizes the prescribed fire history and potential future prescribed fires. **Appendix H** provides additional details on the fire history and harvest history for each forest stand.

Table 9. Prescribed Fire History and Projections on Dobbins ARB

Burn Unit (Forest Stand)	Year Burned	Fire Management
DN-1		Prescribed fire not viable
DN-2	Future	Prescribed fire in future, not until at least 2027
DN-3	Future	Prescribed fire in future, not until at least 2027
DN-4		Protect from fire
DN-5		Prescribed fire not viable
DN-6		Would benefit from fire but difficult to execute
DN-7		No prescribed fire recommended
DN-8	Future	Would benefit from fire
DN-9	Future	Would benefit from fire
DN-10		Prescribed fire not viable
DN-11		Protect from fire
DN-12		Would benefit from fire but difficult to execute
DS-1		Prescribed fire not viable
DS-2		Too steep for prescribed fire
DS-3	2006, 2007, 2008, Future	Continue prescribed fires
DS-4	2004, 2006, 2007, 2008, Future	Continue prescribed fires
DS-5	2004, 2006, 2007, 2008, Future	Continue prescribed fires
DS-6		Protect from fire
DS-7	2007, 2008, Future	Continue prescribed fires
DS-8		Prescribed fire recommended
DS-9	2006, 2007, 2008, Future	Northeast portion burned; Continue prescribed fires
DS-10	2021	Planned prescribed fire
DS-11	2004, 2006, 2007, 2008, Future	Continue prescribed fires
DS-12	2005, 2006, 2007, 2008, Future	Continue prescribed fires
DS-13	2021	Planned prescribed fire
DS-14		PLS present, protect from fire, unless research burn
DS-15		Protect from fire
DS-16	Future	Prescribed fire in future, no date specified
DS-17	Future	Prescribed fire recommended, but avoid obstacle course

Source: FMP and Dobbins ARB NRM. See Appendix H for additional details.

The presence of a variety of invasive plant species in forest stands at Dobbins ARB (see **Section 7.11.2**) means that limiting their spread must be considered in all prescribed fire plans. Whenever possible, chemical and/or mechanical treatments of invasive plants are deliberately connected with prescribed fires to provide maximum control of the invasive plants.

The Environmental Office will contact Public Affairs at least five days before any planned prescribed fire. Public Affairs will be responsible for contacting local media outlets with a written message explaining the day, time and reason for the burn three days before the planned burn activity. The Environmental Office and/or Fire and Emergency Services will coordinate with the AFWFC, Cobb County Fire Marshall, City of Marietta Fire Chief and City of Smyrna Fire Chief as soon as the planned burn activity is approved by the Base Civil Engineer. At the same time, all fire department municipalities will coordinate with the Dobbins FES prior to conducting controlled burns for situational awareness. All notifications will be documented with an email confirmation from the contacted media and governments. For more on this process, refer to the WFMPan.

Wildland fire management is not only about benefiting the forests on Dobbins ARB but also about reducing threats from wildfire. To support the goal and objectives for wildland fire management on Dobbins ARB (**Section 8**), the 94 AW implements the following policies, management strategies, and BMPs. Additional objectives for wildland fire are included in Forest Management and Integrated Pest Management.

Policies:

1. Follow policies, requirements, processes, and responsibilities laid out in WFMP.
2. Use prescribed fire as a tool to benefit natural vegetation, reduce maintenance requirements, and reduce wildfire risk.
3. Support the role of wildland fire as an essential ecological process.
4. Minimize smoke impacts on neighboring lands and facilities.

Management Strategies and BMPs:

1. Ensure adequate training and appropriate certifications for all firefighters and prescribed fire personnel, as described in the WFMP.
2. Ensure all prescribed fire personnel focus on safety during any wildland fire operation.
3. Maintain installation warning system with procedures to alert and/or inform appropriate personnel, tenants, and contractors of a scheduled prescribed fire or wildland fire on Dobbins ARB.
4. Provide adequate smoke management during wildland fires to minimize potential public safety issues. Follow Georgia smoke management guidelines and standards (especially during seasonal ozone considerations). Smoke will be managed by observing BMPs for fire weather, smoke management, and coordinating with neighboring residents and agencies.
5. Report all fire management activities (fuels management, prescribed fire, and wildfire suppression) to the AFWFC.
6. Reduce risk factors for wildfires in high priority areas (i.e., mission critical areas, sensitive resources) by using a combination of prescribed fires, thinning, and other practices that reduce fuel load.

7. Minimize potential for a catastrophic wildfire by prioritizing prescribed fire treatments in units with the following characteristics: high fuel loads, mission critical area for USAF operations, and support high priority species.
8. Follow the firebreak BMPs in the Georgia BMP Manual for Forestry (Section 5.5.1, BMPs for Firebreaks) (GFC 2009). Use natural and manmade breaks as much as possible and create new firebreaks only as required for safe fire suppression operations or to meet smoke management guidelines.
9. Use interagency agreements and Memoranda of Agreements (MOAs) for interagency wildland fire support.
10. Coordinate prescribed fires with any required pre-fire treatment for invasive plants or timber management.
11. Conduct periodic Prescribed Fire Working Group meetings to coordinate key stakeholders for wildland fire at Dobbins ARB.
12. If a wildfire occurs, evaluate whether it can be controlled and used to achieve a management target.
13. Prevent the spread of invasive species by ensuring all equipment is clean before and after use.

7.10 Agricultural Outleasing

Applicability Statement

This section applies to AF installations that lease eligible AF land for agricultural purposes. This section is not applicable to this installation.

Program Overview/Current Management Practices

Not applicable.

7.11 Integrated Pest Management Program

Applicability Statement

This section applies to AF installations that perform pest management activities in support of natural resources management, e.g. invasive species, forest pests, etc. This section is applicable to this installation.

Program Overview/Current Management Practices

Pest management at Dobbins ARB includes both traditional pest management and invasive plant and animal management. The species lists in **Appendix B** identify any invasive plant or animal species documented on Dobbins ARB.

7.11.1 Integrated Pest Management

Dobbins ARB has an active integrated pest management (IPM) program, which is described in the Integrated Pest Management Plan in **Tab 6**. Integrated pest management involves four primary control strategies: mechanical and physical control (physical removal or exclusion of pests), cultural control

(altering the environment to make it less suitable or attractive to the pest), biological control (use of other organisms that control the pest), and chemical control (use of pesticides and herbicides). AFI 32-1053, *Pest Management Program*, defines the USAF policies for effective pest management programs and establishes responsibilities and procedures for pest management at USAF bases. IPMP is designed to prevent pests and disease vectors from adversely impacting Dobbins ARB military operations and missions, while using environmentally sound techniques to safely and effectively control them.

Pest management objectives at Dobbins ARB include the protection of real estate, control of potential disease vectors or animals of other medical importance, control of undesirable or nuisance plants and animals (including insects), and prevention of damage to natural resources. In addition, the presence of several zoonotics (e.g., Lyme disease, west nile virus, zika virus, and encephalitis) on the base and the potential threat to human health and safety (e.g., transmission of disease) cannot be underestimated.

Insect and rodent infestations have been the primary pest concerns at Dobbins and, based on historical data, ants are the predominant pest problem, followed by rats, mice, and cockroaches. There are also pests that occur in the natural resources setting, including forest pests. Control initiatives include species-specific actions as well as general preventative and good housekeeping measures, including removing standing water, sealing cracks and crevices, and keeping living and cooking spaces clean and garbage and food stuffs sealed.

Invasive and exotic plants are another concern on Dobbins ARB. These aggressive species typically occur on disturbed sites where past or current land uses have resulted in disturbed soils and loss of native vegetative cover.

7.11.2 Invasive Species Management

Invasive species may include plants, insects, or animals. An invasive species is defined as “an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” An alien (or non-native) species is defined as a “species including its seeds, eggs, spores, or other biological material capable of propagating that species that is not native to that ecosystem” (EO 13112). Many exotic species have the ability to spread rapidly through ecosystems since natural predators are often not present. Such species often retard natural succession and reforestation and generally cause a reduction of biological diversity in natural ecosystems. The GADNR, Georgia Invasive Species Task Force, and the EPPC have identified invasive species in Georgia (GADNR 2009; Georgia Invasive Species Task Force 2016). The EPPC has further categorized invasive plants into four categories, based on the significance of problems caused by the species. Plant and animal species documented on Dobbins ARB that are considered invasive are identified in **Appendix B**.

The base has recently partnered with the Cooperative Invasive Species Management Area (CISMA). The National Fish and Wildlife Foundation, in partnership with the USFWS, Bureau of Land Management (BLM), the USDA Forest Service (USFS), the USDA Animal and Plant Health Inspection Service (APHIS), the DoD Legacy Resource Management Program, and the NRCS, annually solicits proposals from nonprofit organizations and government agencies interested in managing invasive and noxious plant species. Details are available at http://www.nfwf.org/programs/pti.cfm.

Management of invasive plant species has been a core part of the natural resources program at Dobbins ARB since the original INRMP was established in 1996. Dobbins ARB has been treating nonnative and invasive species regularly since 1997 (USACE 2016). A total of 24 acres remain in the kudzu eradication program and roughly 20 to 40 acres of privet and wisteria are being treated annually (USACE 2016). See the FMP in **Tab 1** for details on nonnative, invasive, and pest species that occur in the forest stands.

The thirteen invasive plant species documented on Dobbins ARB are described in **Section 2.3.6**. Of these, 12 were identified as Category 1 and one as Category 2 (or watch list). In addition, none are identified as federal or state noxious weeds. Noxious weeds are also not identified in the IPMP. **Table 10** lists the invasive plants identified as priorities for management and whether they have already been targeted for treatment in the past. **Appendix H** provides a summary of treatment history by species and area.

Table 10. Summary of Nonnative and Invasive Species on Dobbins ARB

Invasive Plant Species		Priority	Current Status
Common Name	**Scientific Name**		
Tree of heaven	*Ailanthus altissima*	Low	
Mimosa	*Albizia julibrissin*	Medium	
Autumn olive	*Elaeagnus umbellata*	High	Eradicated
English ivy	*Hedera helix*	Medium	
Cogon grass	*Imperata cylindrica*	High	Not present
Sericea lespedeza	*Lespedeza cuneata*	Medium	
Japanese privet	*Ligustrum japonicum*	High	May not be present
Chinese privet	*Ligustrum sinensis*	High	Widespread
Japanese honeysuckle	*Lonicera japonica*	High	Widespread
Japanese stiltgrass	*Microstegium vimineum*	High	
Princess tree	*Paulownia tomentosa*	Low	
Kudzu	*Pueraria lobata*	High	Mostly eradicated
Multiflora rose	*Rosa multiflora*	Medium	
Chinese wisteria	*Wisteria sinensis*	High	DS-10, DS-15
Bamboo	*Phyllostachys aurea?*	High	Mostly eradicated

Until the recent implementation of a base-wide eradication program, kudzu was considered the priority invasive plant species at Dobbins ARB. Kudzu control efforts have been successful, and this plant was not widely observed since 2004 (AFCEE 2004; USACE 2016; Amec Foster Wheeler 2017). Continued monitoring and treatment has been implemented for the long-term control of this species, particularly along the shared Lockheed Martin border and Route 280, where it is still uncontrolled. Autumn olive was also targeted for treatment and has now been eradicated from Dobbins ARB. Several additional species have been targeted for treatment as well, with Chinese privet the most persistent and difficult to control.

Cogon grass (*Imperata cylindrica*) is a highly aggressive species not yet reported in Cobb County (94 AW 2016) and should be eradicated immediately if discovered at Dobbins ARB.

Due to the widespread occurrence, either on-base or off-base, of many of these exotic, invasive plant species, total eradication would be extremely difficult on Dobbins ARB. Therefore, invasive plant management at Dobbins ARB focuses on control efforts to eliminate invasive plants occurring in ecologically significant areas and preventing their spread to new areas. Most of this management is completed by the USACE as part of the forestry management program.

To support the goal and objectives for integrated pest management plan on Dobbins ARB (Section 8), the 94 AW implements the following policies, management strategies, and BMPs.

Policies:

1. Minimize impacts of invasive and pest species using an integrated pest management approach.
2. Control invasive non-native species in select areas, particularly those with high biological sensitivity.

Management Strategies and BMPs:

1. Coordinate with Installation Pest Management Coordinator and Grounds Maintenance to share any information relevant to invasive species management and BMPs to reduce spread.
2. Monitor pest populations and effectiveness of controls applied no less than every 5 years.
3. Update the invasive species list for Dobbins ARB on an annual basis.
4. For landscaping, use plants that are native to the local region as much as possible or those that are not known to be invasive.
5. During grounds maintenance activities, identify areas where invasive species occur and develop specific management actions to target the populations of these species.
6. Prevent the spread of invasive species by ensuring all equipment (e.g., vehicles and clothing) is clean before and after use.
7. Ensure prescribed fire planning accounts for effects on invasive plants and complements other treatments.

7.12 Bird/Wildlife Aircraft Strike Hazard (BASH)

Applicability Statement

This section applies to AF installations that maintain a BASH program to prevent and reduce wildlife-related hazards to aircraft operations. This section is applicable to this installation.

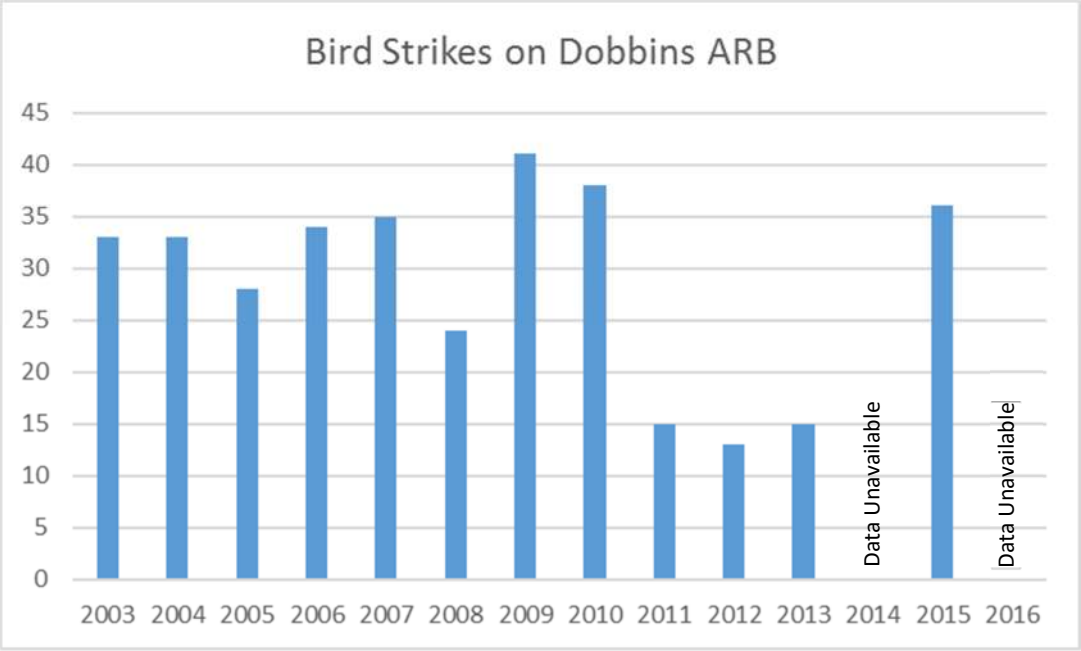
Program Overview/Current Management Practices

The Dobbins ARB BASH Plan (94 AW 2014a, included in **Tab 3**) describes the BASH risk reduction program at Dobbins ARB and defines responsibilities for the management and removal of all wildlife that present a BASH risk. Minimizing BASH risk and the associated wildlife mortality requires an interdisciplinary approach and this is reflected in the fact that Safety, Environmental, and Airfield Management are all important players in implementing the BASH Plan. Within natural resources, BASH risk management intersects with fish and wildlife management, water resources management, and grounds maintenance. More details about the processes, reporting, and recommendations are presented in

the BASH Plan (**Tab 3)**. All natural resource management must be accomplished without increasing BASH risk.

Bird strike data from the airfield at Dobbins ARB can be seen in **Figure 4** and in **Appendix B**. There are an average of 10 strikes per year associated with the Dobbins ARB airfield, ranging from 4 to 15 strikes per year (data from BASH program). The vast majority of the strikes involved passerine bird species, along with some shorebirds, raptors and bats. Individual strikes are rarely identified to species, but commonly-reported species include meadowlark, red-tailed hawks, warblers, sparrows, and killdeer.

Figure 4. **Bird strikes related to the airfield on Dobbins ARB in Cobb County, GA based on available data.**



The airfield is largely cleared but there are some very small wetlands on the very ends of the runway. There are some forested areas along the current edges of the cleared area that are within the boundary that is typically cleared around an airfield. These areas are slowly being cleared to meet compliance with airfield management regulations. The forested areas and the two lakes on Dobbins ARB provide wildlife habitat. Big Lake is large enough that geese and other waterfowl use this lake for foraging and a noticeable number of birds are often present at the lake. Big Lake is just north of the airfield and careful management is required to minimize BASH risk from this pond, the fringe wetlands, and associated riparian corridors. Little Lake has a much lower capacity for waterfowl and is farther from the airfield and unlikely to contribute to BASH risk substantially.

There are particular groups of wildlife that are known to pose a BASH risk on Dobbins ARB. The groups and their general management recommendations include the following (from BASH Plan):

- *Waterfowl (Ducks, Geese, Swans, Killdeer, Plovers).* A distinction must be made between resident and migrating populations.

  - Resident waterfowl are attracted to an area to breed or feed. Ponds, lakes, wetlands, and ditches may attract these birds, particularly if these areas contain emergent or submerged vegetation for feeding, nesting, or shelter. Steepening ditch and pond banks and removing vegetation may assist in reducing waterfowl numbers.
  - Migrating waterfowl are particularly dangerous to flight safety due to their large numbers and generally higher altitude. A known migratory route for waterfowl occurs just east of Dobbins ARB.
  - Canada geese are a significant management issue at Dobbins ARB. Under most circumstances, the geese are captured live and relocated to other parts of the state. Dobbins ARB has a depredation permit from the USFWS to be used when geese pose a problem that cannot be solved with non-lethal methods.
- *Raptors (Hawks, Falcons, Kites).* These birds can be particularly hazardous to aircraft because of their size and widespread distribution over bases and low-level areas. The removal of dead animals on the airfield, rodent control on airfields, and removal of dead trees and other perching sites on the airfield can control these birds. Red-tailed hawks are a common species involved in bird strikes at Dobbins ARB.
- *Gulls.* These birds represent the most significant hazard to aircraft worldwide. However, there are not many gulls at Dobbins ARB. Grass heights should be maintained between 7 and 14 inches to discourage their presence.
- *Pigeons and Doves.* Proper grass-height management, irrigation, and mowing before grass goes to seed will limit the number of pigeons and doves on the field.
- *Starlings.* These birds can be particularly hazardous because they frequently occur in huge flocks, sometimes in the millions. Blackbirds and starlings are attracted to flat, open areas to feed, rest, or stage/pre-roost. Maintain grass height between 7 and 14 inches to best reduce airfield blackbird and starling numbers. Eliminate roost sites near the flight line.
- *Other Small-Bodied Birds.* These bird species (especially songbirds) are commonly involved in BASH incidents on Dobbins ARB. They are small-bodied and not typically a hazard on an airfield, unless they occur in a large flock. Proper grass height management is the best means of control for these birds. If a species is a problem, identifying and removing roosting sites may be effective at reducing numbers on the airfield.
- *Bats.* These mammals may be present during their foraging activities or for summer roosting in forested areas. Bat strikes tend to peak during the spring and fall when movement between summer and winter roosting sites occurs. Data have shown that the majority of bat strikes occur from August through October) and between 10pm and 9am. Bats are small-bodied and are not expected in large groups as they will be present for foraging or summer roosting activities.
- *Coyotes and Deer.* These large mammals are attracted to airfields by rodents, rabbits, broadleaf plants, and other food sources. Coyotes are considered non-native in Georgia. Sporadic removal of coyotes on Dobbins ARB occurs to manage population size.

Several different approaches for reducing BASH risk are used on Dobbins ARB including specific grounds maintenance protocols on the airfield, habitat management off the airfield, nonlethal dispersal methods (i.e., noise, visual deterrents) for individual animals, and lethal methods (i.e., depredation, take) for individual animals that pose a BASH risk. The primary means of BASH risk reduction is through discouraging birds near the airfield on Dobbins ARB by modifying habitat consistent with runway lateral and approach zone management criteria per UFC3-260-01. Habitat management includes:

- Maintaining uniform grass height between 7 – 14 inches on the airfield;

- Controlling broad leaved weeds;
- Planting areas of bare ground with grass;
- Minimizing habitat edges, or transitions, on the airfield;
- Removing dead vegetation and animals;
- Controlling pests, particularly those that attract predators/raptors;
- Maintaining drainage ditches and eliminate standing water;
- Maintaining fencing;
- Using appropriate vegetation for erosion control;
- Eliminating roosting areas; and
- Bird-proofing buildings and other structures.

Wildlife management and control measures include a number of dispersal and deterrence methods available on an as-needed basis. Active harassment activities include a combination of "frightening devices" which are used whenever birds are present on the airfield or in the surrounding area. Frightening devices can range from physical barriers to preferred areas to broadcasting sounds of predators.

After exhausting other deterrence methods to reduce bird and wildlife strike damage, individual birds and other wildlife may still pose a risk and may need to be removed from the airfield and surrounding area. In this case, depredation procedures will be followed as described in the BASH Plan (94 AW 2014a). The species covered by the depredation permit include Canada geese and any unlisted (i.e., not endangered or threatened) migratory birds (94 AW 2014a). Almost all individuals removed have been Canada geese.

Depredation permits have been obtained yearly at Dobbins ARB, issued by USFWS with input from USDA. On average, 16 Canada geese per year are managed through depredation permits at Dobbins ARB. The highest number managed in one year was 50 geese. Since 2005, the population seems to have declined and stabilized, with only 8 and 5 geese managed in 2014 and 2015, respectively. It should be noted that Canada geese have not been documented in actual strikes. This indicates the success of the BASH program at minimizing the risk from one of the highest potential risk species present on Dobbins ARB. Typical management actions to control Canada geese on Dobbins ARB include an annual roundup in association with USDA, harassment, shooting, habitat alteration, and egg/nest destruction.

Coyotes have been removed (killed or relocated) every few years from the Dobbins ARB airfield to keep the population size small. The most recent removal occurred in November 2016, with 22 coyotes removed. Some coyotes help reduce the small mammal populations that attract raptors, which are a high BASH risk at Dobbins ARB. So while a small coyote population can help reduce overall BASH risk, once their population becomes too large they start to pose a BASH risk on the airfield. No permit is required to remove coyotes as they are not a game species and are considered invasive in Georgia.

Deer are also occasionally observed on the airfield but generally occur in small numbers at Dobbins ARB. If the deer population increases, they could pose a greater BASH risk and require more focused management. A permit from GADNR is obtained annually to allow for management of deer, if necessary.

The BASH risk management objectives and actions are included under the Fish and Wildlife goal in **Section 8**. To support this objective, the 94 AW implements the following policies, management strategies, and BMPs.

Policies:

1. Implement BASH Plan based on site-specific recommendations.
2. Use non-lethal methods first to reduce BASH risk, reserving lethal methods as a last resort, following all requirements in permits.
3. Manage habitat to discourage wildlife in areas that increase BASH risk and wildlife mortality.

Management Strategies and BMPs:

1. Use bird avoidance model (BAM) data from http://www.usahas.com/bam when planning routes.
2. Monitor high BASH risk wildlife regularly and update risk assessment by species and habitat as needed.
3. Report every strike and continue compiling an annual summary of strikes.
4. Mow the entire airfield and adjacent open areas on a periodic basis to maintain grass height between 7 and 14 inches at all times. Keep broad-leaf weeds to a minimum on the airfield. (see Grounds Maintenance, **Section 7.7**).
5. Replant bare areas quickly to reduce attractiveness to wildlife. Avoid planting vegetation that produces forage (i.e., berries, seeds, fruits) or that provide dense cover for wildlife in areas near the airfield.
6. Remove dead vegetation and animals from the airfield.
7. Ensure dispersal techniques are on hand during mowing operations on the airfield, as they can attract birds.

7.13 Coastal Zone and Marine Resources Management

Applicability Statement

This section applies to AF installations that are located along coasts and/or within coastal management zones. This section is not applicable to this installation.

Program Overview/Current Management Practices

Not applicable.

7.14 Cultural Resources Protection

Applicability Statement

This section applies to AF installations that have cultural resources that may be impacted by natural resource management activities. This section is applicable to this installation.

Program Overview/Current Management Practices

Dobbins ARB has had a working Integrated Cultural Resources Management Plan (ICRMP) (see **Tab 5**) since 1996, although there are a limited number of cultural resources present on Dobbins ARB. This is primarily due to the fact that a large percentage of Dobbins ARB has been disturbed, between farmlands prior to 1943 when the military established the installation and development associated with the military since that time.

No NRHP-eligible archeological sites have been recorded within Dobbins ARB, based on the results of archival research and previous archeological surveys. The inventory of unpaved acreage at Dobbins ARB has been considered complete by USAF and the Georgia SHPO since 1996. Prior to 2007, three archeological sites had been recorded within the boundaries of Dobbins ARB. All of these sites have been determined not eligible for listing in the NRHP. A survey in 2007 following the isolated find of a projectile point agreed with the earlier determination. Unknown sites may exist on Dobbins ARB, however, so all future ground disturbing activities planned for the installation should be reviewed by the CRM as described in the ICRMP, to verify the area has been previously disturbed. If previous disturbance cannot be readily verified, the CRM may need to program an archeological survey of the area prior to proposed construction.

There is an historic cemetery located within the Dobbins ARB, but it is on land privately owned by the Mount Siani Baptist Church in Atlanta. The Jonesville Cemetery, located near the nature trail, is approximately 1 acre in size. It is accessible to the public only through arrangements with Dobbins ARB security.

Of the aboveground structures, only one structure is listed on the NRHP - the Bankston Rock House (Building 510, constructed 1938-1939). The ongoing use and management of the building is conducted under a Programmatic Agreement between the USAF, the GADNR Historic Preservation Division which serves as the Georgia State Historic Preservation Office (SHPO), and the Advisory Council on Historic Preservation.

Given the extremely low number of cultural resources at Dobbins ARB, most projects will not need coordination under Section 106. Other than ground disturbing activities, few natural resources management actions would have any potential to affect cultural resources. The ICRMP provides a full summary of cultural resources, surveys completed, and required processes for cultural resources protection. For relevant goals and objectives, refer to the ICRMP (**Tab 5**).

7.15 Public Outreach

Applicability Statement

This section applies to all AF installations that maintain an INRMP. The installation is required to implement this element.

Program Overview/Current Management Practices

Public outreach can occur through a variety of venues. Given the limited access to Dobbins ARB, public outreach is limited to users and tenants of Dobbins ARB. The nature trail and interpretive signs provide information about the natural and cultural resources on Dobbins ARB. Collaborations with local garden clubs, regional wildlife groups, and other groups are also a form of public outreach.

The objectives for public outreach are included within the Program Management goal (**Section 8**).

7.16 Geographic Information Systems (GIS)

Applicability Statement

This section applies to all AF installations that maintain an INRMP, since all geospatial information must be maintained within the AF GeoBase system. The installation is required to implement this element.

Program Overview/Current Management Practices

There is a broad range of GIS data available for Dobbins ARB, which is routinely used during environmental reviews and to store information related to natural resources. A set of maps based on the GIS data is included in **Appendix C**. **Table 11** provides a summary of available GIS data relevant to natural resources management and whether the data is in need of updating. As noted in the table, there are several items that should be updated to improve accuracy. The objectives for the GIS program is included within Program Management goal (**Section 8**).

Table 11. Summary of GIS Data Available for Dobbins ARB

GIS Data	Source	Needs updating?
Boundary and parcels	USAF	Yes, GIS data only documents 1,663 acres while the facility is 1,666 acres. Cemetery needs to be excluded from boundary.
Buildings, Parking Lots, Roads (Impervious Cover)	USAF	Yes, roads data is inconsistent and in several locations; should be consolidated and attributed.
Fences & Gates	USAF	No
Airfield	USAF	No
Elevation	USAF	No
Trails	USAF	Yes, trails data is scattered and should be consolidated and attributed
Soils	NRCS	No
Grounds Maintenance (Improved, Semi-improved, Unimproved)	USAF	Yes to reflect changes in buildings and vegetation
Open water	USAF	Yes, two lakes need to be separated from other water features
Spill ponds and stormwater detention ponds	USAF	Yes, all features need to be consolidated in stormwater data and attributed correctly
Wetlands	USAF	Yes, multiple GIS data files need to be consolidated and verified based on 2009 data
Streams	USAF	Yes, CIP data needs to be updated with latest September 2016 data for natural streams. Open ditches need to be clearly identified and consolidated.
Watersheds	NHD and USAF	No, NHD has larger watersheds, USAF has stormwater watersheds
Floodplains	FEMA	No
Vegetation	Amec Foster Wheeler	Updated in 2017
Forest Stands/Burn Units	USACE Forest Plan	Yes, needs to be added to USAF dataset
Pink lady's slipper	Amec Foster Wheeler	Updated in 2017

8.0 MANAGEMENT GOALS AND OBJECTIVES

The installation establishes long term, expansive goals and supporting objectives to manage and protect natural resources while supporting the military mission. Goals express a vision for a desired condition for the installation's natural resources and are the primary focal points for INRMP implementation. Objectives indicate a management initiative or strategy for specific long or medium range outcomes and are supported by projects. Projects are specific actions that can be accomplished within a single year. Also, in cases where off-installation land uses may jeopardize AF missions, this section may list specific goals and objectives aimed at eliminating, reducing or mitigating the effects of encroachment on military missions. These natural resources management goals for the future have been formulated by the preparers of the INRMP from an assessment of the natural resources, current condition of those resources, mission requirements, and management issues previously identified. Below are the integrated goals for the entire natural resources program.

The installation goals and objectives are displayed in the 'Installation Supplement' section below in a format that facilitates an integrated approach to natural resource management. By using this approach, measurable objectives can be used to assess the attainment of goals. Individual work tasks support INRMP objectives. The projects are key elements of the annual work plans and are programmed into the conservation budget, as applicable.

Installation Supplement – Management Goals and Objectives

GOAL PROGRAM MANAGEMENT (PM): MANAGE NATURAL RESOURCES IN A MANNER THAT IS COMPATIBLE WITH AND SUPPORTS THE MILITARY MISSION WHILE COMPLYING WITH APPLICABLE FEDERAL AND STATE LAWS AND USAF REGULATIONS AND POLICIES.

- OBJECTIVE PM1: Implement INRMP to enhance the land and military mission and result in no net loss of land availability.
    - ROUTINE PM1.1: Annually review and update the INRMP, incorporating management changes as necessary per adaptive management and any new information, in cooperation with USFWS and GADNR.
    - ROUTINE PM1.2: Maintain correspondence with USFWS and GADNR regarding updates to federal and state threatened, endangered, and species of concern lists.
    - ROUTINE PM1.3: Annually submit funding requests.
    - ROUTINE PM1.4: Respond to data requests/calls regarding projects and implementation.
    - ROUTINE PM1.5: Coordinate and integrate INRMP with other plans for Dobbins ARB.
    - ROUTINE PM1.6: Continue base-wide meeting of decision makers (i.e., the ESOH Council) to identify operational needs relative to natural resources management.
    - ROUTINE PM1.7: Coordinate periodic meetings with the ESOH Committee to monitor progress in reaching INRMP goals and objectives, and discuss potential operational changes that could impact those goals and objectives.
    - ROUTINE PM1.8: Review of activities in known or potential jurisdictional waters of the US (including wetlands) and in floodplains is completed by 94 MSG/CEV.

    - ROUTINE PM1.9: Monitor waters of the US and floodplains to assess impacts as needed.
- OBJECTIVE PM2: Maintain appropriate state and federal permits related to natural resources management.
    - ROUTINE PM2.1: Maintain Depredation at Airports Permit under the MBTA.
    - ROUTINE PM2.2: Complete Airport Resident Goose Depredation Order reporting.
    - PROJECT PM2.3: Assess BASH-related populations annually and apply for depredation permit for appropriate species.
    - ROUTINE PM2.4: Obtain USACE Section 404 permits for activities that impact waters of the US.
- OBJECTIVE PM3: Use adaptive, ecosystem management as the primary natural resources management paradigm.
    - ROUTINE PM3.1: Monitor populations (e.g., rare species, target wildlife species) or areas where management has been undertaken to ensure the management target is achieved. Modify management plan as needed.
- OBJECTIVE PM4: Continue internal environmental awareness activities to minimize impacts to natural resources from 94 AW and tenants.
    - ROUTINE PM4.1: Maintain internal awareness materials and update as needed.
    - PROJECT PM4.2: Develop new educational materials relating to natural resources management, sensitive resources, and operational policies as needed.
- OBJECTIVE PM5: Continue public outreach in coordination with other regional entities as appropriate.
    - ROUTINE PM5.1: Use programs, events, and news releases to publicize natural resources management on Dobbins ARB.
    - PROJECT PM5.2: Develop environmental education programs and/or sponsor events in cooperation with local educational institutions, conservation organizations, and public service agencies.
- OBJECTIVE PM6: Continue to cooperate with other agencies and local landowners on regional land and natural resources management efforts.
    - ROUTINE PM6.1: Coordinate with agencies (i.e., federal, state, local, or non-profit) and other groups engaged in natural resources management.
    - ROUTINE PM6.2: Minimize threats to the mission and natural resources on Dobbins ARB from off-base land use by cooperating with landowners and other agencies to facilitate compatible land uses.
- OBJECTIVE PM7: Maintain and improve Geographic Information System (GIS) data and availability of use for natural resources management.
    - ROUTINE PM7.1: Continually identify and develop digital information that will assist with natural resources management decisions and environmental impact analysis.
    - ROUTINE PM7.2: Ensure that all management activities are documented in GIS with sufficient metadata about date, management accomplished, lead organization, etc.

- PROJECT PM7.3: Georectify existing historical aerial imagery (or obtain existing ones) to use in assessing impacts and for planning management.

GOAL FISH AND WILDLIFE (FW): MAINTAIN FISH AND WILDLIFE POPULATIONS BY PROVIDING HEALTHY, DIVERSE HABITAT TYPES AND CORRIDORS FOR WILDLIFE MOVEMENT BETWEEN THOSE HABITATS WHILE MINIMIZING POTENTIAL IMPACTS TO THE MILITARY MISSION.

- OBJECTIVE FW1: Improve understanding and effective management of wildlife populations on Dobbins ARB.
  - PROJECT FW1.1: Conduct bird and mammal survey to develop a list of documented species by 2020, to support both the INRMP and the BASH Plan.
  - PROJECT FW1.2: Conduct bird and mammal survey every 5 years, analyzing population abundance of species requiring management.
  - PROJECT FW1.3: Conduct a bat survey by 2018, updating every 3-5 years depending on results from initial bat survey.
  - PROJECT FW1.4: Conduct a fish, reptile, and amphibian survey by 2022. Update every 10-15 years, assuming no rare species or BASH risk species documented.
  - PROJECT FW1.5: Conduct regular (preferably annual) surveys for coyotes and deer using an established route to assist with decisions relating to population control and BASH risk assessment.
  - PROJECT FW1.6: Work with BASH experts to understand which wildlife pose a BASH risk and where and how to minimize that risk, thereby reducing wildlife mortality as well as risk to aircraft and pilots.
- OBJECTIVE FW2: Reduce BASH-related mortality and risks using appropriate management of wildlife and vegetation on and around the airfield.
  - ROUTINE FW2.1: Implement BASH Plan, including planning, coordination, permitting, and reporting requirements.
  - ROUTINE FW2.2: Mow the airfield and clear zones to maintain grass heights between 7 and 14 inches, while maximizing native grasses and minimizing broad-leaved weeds.
  - ROUTINE FW2.3: Continue to maintain infield areas without woody vegetation and without standing water to minimize wildlife habitat.
  - ROUTINE FW2.4: Maintain required permits and complete required reporting (see Objective PM2).
  - PROJECT FW2.5: Update BASH Plan to include site-specific recommendations and evaluates existing wildlife for BASH risk.
  - PROJECT FW2.6: After site-specific assessment, update BASH potentials and high risk wildlife evaluation every five years.
  - PROJECT FW2.7: In forested areas adjacent to the airfield, thin understory to reduce wildlife habitat that could increase BASH risk.
- OBJECTIVE FW3: Ensure other management activities do not cause impacts to nesting migratory birds or listed species.

    - ROUTINE FW3.1: Do not remove trees and limit disturbance (i.e., tree trimming, mowing) in all trees and native grasslands during breeding season (April – August) to prevent inadvertent disturbance of breeding birds or tree roosting bats.
- OBJECTIVE FW4: Enhance wildlife habitat, without increasing BASH risk.
    - ROUTINE FW4.1: Limit mowing in natural areas.
    - ROUTINE FW4.2: Ensure that prescribed fires and timber harvests support wildlife habitat targets for each forest stand.
    - ROUTINE FW4.3: Follow all measures for water resources protection as those features and their buffers are essential wildlife habitat (see Objective WA1).
    - PROJECT FW4.4: For areas requiring revegetation outside of developed areas and that do not require turf grass, use GA DOT grass seeding specifications (or similar specifications) using native plants (see Objective WA3).

GOAL THREATENED AND ENDANGERED (TE): MANAGE THREATENED AND ENDANGERED LISTED SPECIES USING AN ECOSYSTEM APPROACH, WHILE SUPPORTING THE MILITARY MISSION.

- OBJECTIVE TE1: Monitor for the presence of federally and state-listed species.
    - ROUTINE TE1.1: Review annually available information and new listings for potential federally or state listed threatened and endangered species and state species of special concern.
    - ROUTINE TE1.2: During any biological surveys, ensure field crews are aware of any known or potential T&E species and documents any sightings or not yet documented potential habitat.
    - PROJECT TE1.3: Conduct survey for potential T&E species and their potential habitat every 5 years.
    - PROJECT TE1.4: Complete bat survey to determine if any potential T&E bat species are present on Dobbins ARB.
- OBJECTIVE TE2: Maintain and improve pink lady's slipper orchid populations and habitat.
    - ROUTINE TE2.1: Maintain known pink lady's slipper populations as restricted areas with a 50 foot buffer around boundaries.
    - PROJECT TE2.2: Monitor and remove invasive plants, particularly non-native ones, that could adversely affect the orchid population.
    - PROJECT TE2.3: Conduct dormant season burn in one of the smaller populations as a pilot study. Monitor response to determine whether prescribed burns benefit the species.

GOAL WATER (WA): MANAGE DOBBINS ARB TO PROTECT WATER QUALITY AND MANAGE WATER RESOURCES, INCLUDING WETLANDS, SO THEY REMAIN RESILIENT AND WITH NO NET LOSS OF ACREAGE OR FUNCTIONS AND VALUES.

- OBJECTIVE WA1: Minimize impacts to water resources, including wetlands and buffers, and comply with all laws and regulations pertaining to wetlands, streams, floodplains and regulated water bodies.
    - ROUTINE WA1.1: Update the water resources map after any permitted base projects impact or change water resources boundaries.

  - ROUTINE WA1.2: If jurisdictional waters encroachments are found to be necessary, obtain appropriate permits and certification from the USACE, State of Georgia and Cobb County (Local Issuing Authority) (see Objective PM2).
  - ROUTINE WA1.3: Regularly (at least annually) inspect buffers, wetlands, other water resources, and riparian corridors for evidence of land-disturbing activities.
  - PROJECT WA1.4: Update waters resources delineations in 2020, including an assessment of functions and values of wetlands.
  - PROJECT WA1.5: Restore stream banks currently mowed to the edge with native plants to provide buffer.
- OBJECTIVE WA2: Implement the SWPPP and SPCC PLAN to maintain and improve water quality by reducing pollutants in stormwater discharges.
  - ROUTINE WA2.1: Minimize pollution into surface and ground waters through the implementation of BMPs.
  - PROJECT WA2.2: Monitor water quality upstream and downstream of the base as part of SWPPP implementation (at least annually). Evaluate results for effects on water resources or aquatic species, and adjust management accordingly.
- OBJECTIVE WA3: Manage construction, roads, slopes, and soils to minimize erosion and sediment loss.
  - ROUTINE WA3.1: Minimize impacts from stream crossings by following regional BMPs available for culvert design and culvert maintenance.
  - ROUTINE WA3.2: Manage the repair of existing roads and firebreaks to minimize the potential for erosion and sedimentation, following the Georgia BMP Forestry Manual.
  - ROUTINE WA3.3: Monitor erosion prone areas (at least annually) and coordinate with appropriate entity to correct any erosion documented.
  - PROJECT WA3.4: Identify, inventory, and map areas at high risk for erosion in order of priority.
  - PROJECT WA3.5: Promptly revegetate exposed areas, regardless of cause. Revegetation plan should be based on surrounding vegetation, soil type, and intended use.
  - PROJECT WA3.6: Use a seed mix for revegetating unmowed areas, based on the GA DOT grass seeding specification (or similar).
  - PROJECT WA3.7: Working with engineering staff, design and implement repairs to identified problem areas (e.g., stream crossings, roads on slopes).
  - PROJECT WA3.8: As part of bringing the airfield to USAF requirements, manage the removal and trimming of trees within the primary and transitional surfaces of the airfield to minimize unnecessary impacts to water resources and wildlife. Revegetate with native grasses, use erosion control and slope stabilization, and undertake appropriate permitting. Long term management may require occasional prescribed fires or mowing (no shorter than one foot) to prevent tree regrowth.

GOAL GROUNDS (GR): CONDUCT GROUNDS MAINTENANCE TO MINIMIZE NEGATIVE EFFECTS ON NATURAL RESOURCES, WHILE SUPPORTING THE MISSION.

- OBJECTIVE GR1: Minimize maintenance requirements without increasing BASH risk. Reduce chemical usage, and maintenance inputs in terms of energy, water, manpower, equipment, and chemicals.
    - ROUTINE GR1.1: Coordinate among internal stakeholders to identify ways to reduce maintenance needs, minimize BASH risk, and provide environmental benefit.
    - ROUTINE GR1.2: Follow beneficial landscaping practices (site analysis, careful plant selection, appropriate mulching and trimming, etc.) to reduce maintenance, reduce water use, and increase health of plants.
    - ROUTINE GR1.3: Follow BMPs for landscape maintenance as summarized at http://extension.uga.edu/publications/detail.cfm?number=C873.
- OBJECTIVE GR2: Maximize native plants and avoid invasive, non-native plants in landscaping and revegetation. (Also see Objective IN2)
    - ROUTINE GR2.1: Update list of invasive plants prohibited from landscaping, based on the GEPPC List of Non-native Invasive Plants in Georgia and species causing problems on Dobbins ARB.
    - ROUTINE GR2.2: Ensure that new or renovated landscaping uses plants that are regionally native and provide a wildlife benefit, when possible.
    - PROJECT GR2.3: Re-establish native vegetation following site disturbance. Use appropriate seeding specification (see Objective WA3).
    - PROJECT GR2.4: Re-establish native vegetation buffers along streams that are currently mowed to the stream edge.
- OBJECTIVE GR3: Provide quality outdoor recreation experiences while minimizing negative environmental impacts and supporting mission.
    - ROUTINE GR3.1: Request funding annually for maintenance of the nature trail.
    - PROJECT GR3.2: Design and install interpretive signs on recreational trails (including the nature trail).
    - PROJECT GR3.3: Prepare a pamphlet describing features of the nature trail for distribution to visitors at an information kiosk at the trailhead (see Objective PM4).
    - PROJECT GR3.4: Reconnect nature trail and ensure all trails connect together.
- OBJECTIVE GR4: Maintain buffers to protect sensitive resources (see Objective TE2 and WA1)
- OBJECTIVE GR5: Maintain grounds to minimize BASH risk (see Objective FW2).

GOAL FORESTRY (FO): MANAGE FORESTS TO PROMOTE NATIVE SPECIES USING COST EFFECTIVE AND SUSTAINABLE METHODS.

- OBJECTIVE FO1: Improve understanding of vegetation and plant species and facilitate adaptive management.
    - ROUTINE FO1.1: Monitor changes in vegetation following prescribed fire, invasive plant removals, and forestry operations. Modify management targets as needed (see Objective PM3).
    - ROUTINE FO1.2: Coordinate with USACE or Georgia Forestry Commission to evaluate any signs of forest pests and determine action needed. If appropriate, participate in regional initiatives to monitor forest pests.
    - PROJECT FO1.3: Update timber inventory every 5 years, starting in 2017.

    - PROJECT FO1.4: Update baseline vegetative communities and plant survey every 10 years, starting in 2027.
- OBJECTIVE FO2: Maintain forests to provide wildlife habitat and sustain native species using sustainable forestry practices and limiting additional fragmentation.
    - ROUTINE FO2.1: Maintain buffers, particularly riparian corridors, around water resources as part of forest management (see Objective WA1).
    - ROUTINE FO2.2: Follow GFC forestry BMPs to minimize negative environmental impacts.
    - ROUTINE FO2.3: Follow any guidelines or restrictions associated with listed species during forestry operations.
    - PROJECT FO2.3: Update Forest Management Plan every 5 years, starting in 2021.
    - PROJECT FO2.4: Annually complete invasive plant removals in forest stands (also see Objective TE2).
    - PROJECT FO2.5: Use prescribed fire to manage timber and improve forest health (also see Objective TE2). Prescribed fire for forest management may occur annually, but usually less frequently. Next planned prescribed fire is for stands DS-12 and DS-13 in 2021.
    - PROJECT FO2.6: Manage timber stands using thinning (annually or less often), based on stand conditions, to encourage growth of tree saplings.
    - PROJECT FO2.7: Identify and remove potential safety hazards from trees (i.e., snags, weak branches, etc.) that exist in the delineated timber stands.

GOAL FIRE (FI): IMPLEMENT WILDLAND FIRE PROGRAM TO BENEFIT NATIVE SPECIES AND REDUCE RISKS FROM WILDFIRES.

- OBJECTIVE FI1: Minimize risks associated with prescribed fires and wildfires.
    - ROUTINE FI1.1: Implement WFMP, including all training, processes, and reporting requirements. Update as needed.
    - ROUTINE FI1.2: The Dobbins ARB Prescribed Fire Working Group will, as needed, coordinate and disseminate fire information, facilitate prescribed fire planning and approval, and resolve conflicts.
    - ROUTINE FI1.3: Dobbins ARB and/or Shaw WSM will maintain Fire Log, including fire date, fire intensity, location on base, and number of acres burned. Fire reports will be submitted to AFWFC within 10 days of occurring.
    - ROUTINE FI1.4: Minimize smoke impacts on neighbors and maintain GIS data of sensitive receptors.
    - ROUTINE FI1.5: Negotiate with objectors to establish a feasible set of conditions under which prescribed fires can be conducted without complaints.
    - ROUTINE FI1.6: When feasible, participate in opportunities to educate internal stakeholders and the public on the benefits of prescribed fire (See Objective PM5).
    - ROUTINE FI1.7: Manage perimeter roadways and forest access roads as effective firebreaks.
    - ROUTINE FI1.8: Ensure all equipment is clean before and after use to prevent spread of invasive species and tree diseases (see Objective IN1).

  - ROUTINE FI1.9: Monitor vegetation after each fire and document whether management target was achieved. Modify future fires accordingly (see Objective PM3).
  - PROJECT FI1.10: Establish/maintain MOAs and interagency agreements with surrounding jurisdictions for mutual assistance during wildfires and prescribed fires.
  - PROJECT FI1.11: Maintain existing firebreaks (through grounds maintenance or forest management).
  - PROJECT FI1.12: Reduce fuel loads with prescribed fires (approximately 100 acres per year, see the WFMP).
- OBJECTIVE FI2: Maximize benefits from prescribed fires and accidental wildfire starts (also see Objective FO2).
  - ROUTINE FI2.1: Coordinate potential prescribed fires at least six months ahead of time to ensure that any pre-fire preparations are identified (i.e., invasive plant treatments, mechanical thinning, firebreaks, etc.) (see Objectives FO2 and IN2).
  - ROUTINE FI2.2: When wildfires occur, evaluate whether the wildfire can be managed to achieve a management target as a controlled burn.

GOAL INVASIVES (IN): MINIMIZE IMPACTS OF INVASIVE AND PEST SPECIES USING AN INTEGRATED PEST MANAGEMENT APPROACH.

- OBJECTIVE IN1: Implement the IPMP.
  - ROUTINE IN1.1: Complete annual reporting requirements. This includes herbicide applications for invasive plant control.
  - ROUTINE IN1.2: Ensure all Installation Pest Management Coordinators are trained and certified for the techniques used.
- OBJECTIVE IN2: Manage terrestrial invasive species by maintaining existing native vegetation, monitoring invasive species density and spread, and implementing control efforts when needed.
  - ROUTINE IN2.1: Pursue opportunities for cost sharing or grants for invasive plant management, when they are available.
  - PROJECT IN2.2: Develop and implement annual work plan to control for invasive species (primarily for invasive plant control in forest stands via contract with USACE, typically about 40 acres per year).
  - PROJECT IN2.3: Monitor results of control efforts, primarily by analyzing changes in populations and density of invasive plants (see Objective PM3).

9.0 INRMP IMPLEMENTATION, UPDATE, AND REVISION PROCESS

9.1 Natural Resources Management Staffing and Implementation

To ensure that this INRMP properly addresses all aspects of the natural and cultural resources present on the base and proposes actions that are in accordance with USAF goals and objectives, this Plan and all its components are subject to approval by the Dobbins ARB Wing Commander. Similarly, all changes to be incorporated into this Plan must be approved by the Dobbins ARB Wing Commander. This INRMP must also be approved by the USFWS and the GADNR. The Base Environmental Flight (94 MSG/CEV) within the Base Civil Engineer's office (94 MSG/CE) has overall responsibility for implementing the

Natural Resources Management program and is the lead organization for INRMP implementation and annual reviews. See Section 4.0 for a list of all parties involved with implementing at least some part of the INRMP at Dobbins ARB.

Currently, there is a NRM within 94 MSG/CEV but additional staffing support is needed to accomplish INRMP implementation. Currently, support from IST and the Wildland Fire Center augment the NRM, as well as the regular contract with USACE to provide forestry and invasive plant control services. Additional assistance can be provided through a variety of mechanisms when needed.

9.2 Monitoring INRMP Implementation

The USAF uses the Defense Environmental Programs Annual Report to Congress (DEPARC) to monitor INRMP compliance. Established to fulfill an annual requirement to report the status of DoD's Environmental Quality program to Congress, DEPARC collects information on enforcement actions, inspections and other performance measures for high-level reports and quarterly reviews. DEPARC also helps the USAF track fulfillment of DoD Measures of Merit requirements, including the Conservation Metrics for Preparing and Implementing INRMPs.

9.3 Annual INRMP Review and Update Requirements

The INRMP requires annual review, in accordance with the Sikes Act, DoDI 4715.03, *Natural Resources Conservation Program,* and AFI 32-7064, to ensure the achievement of mission goals, verify the implementation of projects, and establish any necessary new management requirements. This process involves installation natural resources personnel and external agencies working in coordination to review the INRMP. If the natural resources management on Dobbins ARB changes significantly, a major revision to the INRMP may be required. The need to accomplish a major revision is normally determined during a review with USFWS and GADNR.

Annual reviews can be as simple as an email or letter summary of the work accomplished in the past year, work proposed for the next year, and any notable changes relevant to the INRMP. Alternatively, the annual review can be a full review for operation effect (which will occur no less often than every five years) with full meeting with agency representatives and key internal stakeholders. Review periods will be based on the fiscal year (1 October – 30 September).

The NRM/POC documents the findings of the annual review (either simplified or full review for operation and effect) in an Annual INRMP Review Summary and obtains concurrence from the coordinating agencies on review findings. By signing an Annual INRMP Review Summary, the collaborating agency representatives assert concurrence with the findings. If any agency declines to participate in an annual review or if it is a simplified annual review, the NRM submits the Annual INRMP Review Summary document to the agency via official correspondence and request return correspondence with comments/concurrence. The annual review summary template is provided in **Appendix E** and will be updated each year.

If a full review is undertaken, representatives from USFWS, GADNR and the NRM/IST conduct an Annual INRMP Review Meeting. During this meeting the NRM/IST updates the external stakeholders on any changes to the installation, the mission, or the known natural resources. The NRM/IST also provides

a summary evaluating implementation progress and projected actions for future work plans. Collectively, the attendees will discuss any necessary changes to management methods or priorities. The attendees will then make a determination on whether an update or revision is required. The results from the review for operation and effect/annual review in 2016 are included in **Appendix E**.

10.0 ANNUAL WORK PLANS

The INRMP Annual Work Plans are included in this section. These projects are listed by fiscal year, including the current year and four succeeding years. For each project and activity, a specific timeframe for implementation is provided (as applicable), as well as the appropriate funding source, and priority for implementation. The work plans provide all the necessary information for building a budget within the AF framework. Priorities are defined as follows:

1. High: The INRMP signatories assert that if the project is not funded the INRMP is not being implemented and the Air Force is non-compliant with the Sikes Act; or that it is specifically tied to an INRMP goal and objective and is part of a "Benefit of the Species" determination necessary for ESA Sec 4(a)(3)(B)(i) critical habitat exemption.
2. Medium: Project supports a specific INRMP goal and objective, and is deemed by INRMP signatories to be important for preventing non-compliance with a specific requirement within a natural resources law or by EO 13112 on Invasive Species. However, the INRMP signatories would not contend that the INRMP is not be implemented if not accomplished within programmed year due to other priorities.
3. Low: Project supports a specific INRMP goal and objective, enhances conservation resources or the integrity of the installation mission, and/or support long-term compliance with specific requirements within natural resources law; but is not directly tied to specific compliance within the proposed year of execution.

Annual work plans (also called INRMP Implementation Tables) are included in **Appendix D**. They are separated into those items that are routine actions and those that are projects.

11.0 REFERENCES

11.1 Standard References *(Applicable to all AF installations)*

1. AFI 32-7064, *Integrated Natural Resources Management*
2. Sikes Act
3. eDASH Natural Resources Program Page
4. Natural Resources Playbook – a Internal AF reference available at https://cs1.eis.af.mil/sites/ceportal/CEPlaybooks/NRM2/Pages/

11.2 Installation References

94 AW. 2009. Wetland Delineation and Stream Evaluation Report, Dobbins Air Reserve Base, Georgia. 94th Airlift Wing, Dobbins Air Reserve Base, Cobb County, Georgia.

94 AW. 2014a. Dobbins Air Reserve Base Bird/Wildlife Aircraft Strike Hazard (BASH) Plan 91-202. 94th Airlift Wing, Dobbins Air Reserve Base, Cobb County, Georgia.

94 AW. 2014b. Facilities Operations Capability and Utilization Survey (FOCUS). 94th Airlift Wing, Dobbins Air Reserve Base, Cobb County, Georgia.

94 AW. 2015. Installation Development Plan. 94th Airlift Wing, Dobbins Air Reserve Base, Cobb County, Georgia.

94 AW. 2016. Integrated Pest Management Plan. Environmental Office, 94th Airlift Wing, Dobbins Air Reserve Base, Cobb County, Georgia.

94 AW. 2017. Storm Water Pollution Prevention Plan for Municipal and Industrial Activities. Dobbins Air Reserve Base, Georgia.

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12.0 ACRONYMS

12.1 Standard Acronyms *(Applicable to all AF installations)*

- eDASH Acronym Library
- Natural Resources Playbook – Acronym Section
- U.S. EPA Terms & Acronyms

12.2 Installation Acronyms

• 94 AW	94th Airlift Wing
• AFRC	Air Force Reserve Command
• AFWFC	Air Force Wildland Fire Center
• ARB	Air Reserve Base
• BASH	Bird/Wildlife Aircraft Strike
• CRM	Cultural Resources Manager
• EPPC	Exotic Pest Plant Council
• ECS-TCC	Expeditionary Combat Support-Training and Certification Center
• FES	Fire and Emergency Services
• FEMA	Federal Emergency Management Agency
• FMP	Forest Management Plan
• FSSF	Force Support Silver Flag
• GA ANG	Georgia Air National Guard
• GA ARNG	Georgia Army National Guard
• GADNR	Georgia Department of Natural Resources
• GFC	Georgia Forestry Commission
• GAR	Georgia Army Reserve
• GIS	Geographic Information System
• IDP	Installation Development Plan
• MOA	Memorandum of Agreement
• NC SAM	North Carolina Stream Assessment Model
• NC WAM	North Carolina Wetland Assessment Model

- NHD National Hydrography Dataset
- NLEB Northern Long-Eared Bat
- NRCS Natural Resources Conservation Service
- NRHP National Register of Historic Places
- NWCG National Wildfire Coordinating Group
- USACE United States Army Corps of Engineers
- USFS United States Forest Service

Reminder: See Standard Acronym lists in Section 12.1 for most acronyms.

13.0 DEFINITIONS

13.1 Standard Definitions *(Applicable to all AF installations)*

- Natural Resources Playbook – Definitions Section

13.2 Installation Definitions

- None

14.0 APPENDICES

Appendix A. Annotated Summary of Key Legislation Related to Design and Implementation of the INRMP

Federal Public Laws and Executive Orders	
National Defense Authorization Act of 1989, Public Law (P.L.) 101-189; Volunteer Partnership Cost-Share Program	Amends two Acts and establishes volunteer and partnership programs for natural and cultural resources management on DoD lands.
Defense Appropriations Act of 1991, P.L. 101-511; Legacy Resource Management Program	Establishes the "Legacy Resource Management Program" for natural and cultural resources. Program emphasis is on inventory and stewardship responsibilities of biological, geophysical, cultural, and historic resources on DoD lands, including restoration of degraded or altered habitats.
EO 11514, Protection and Enhancement of Environmental Quality	Federal agencies shall initiate measures needed to direct their policies, plans, and programs to meet national environmental goals. They shall monitor, evaluate, and control agency activities to protect and enhance the quality of the environment.
EO 11593, Protection and Enhancement of the Cultural Environment	All Federal agencies are required to locate, identify, and record all cultural resources. Cultural resources include sites of archaeological, historical, or architectural significance.
EO 11987, Exotic Organisms	Agencies shall restrict the introduction of exotic species into the natural ecosystems on lands and waters which they administer.
EO 11988, Floodplain Management	Provides direction regarding actions of Federal agencies in floodplains, and requires permits from state, territory and Federal review agencies for any construction within a 100-year floodplain and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for acquiring, managing and disposing of Federal lands and facilities.
EO 11989, Off-Road vehicles on Public Lands	Installations permitting off-road vehicles to designate and mark specific areas/trails to minimize damage and conflicts, publish information including maps, and monitor the effects of their use. Installations may close areas if adverse effects on natural, cultural, or historic resources are observed.
EO 11990, Protection of Wetlands	Requires Federal agencies to avoid undertaking or providing assistance for new construction in wetlands unless there is no practicable alternative, and all practicable measures to minimize harm to wetlands have been implemented and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; and (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not

Federal Public Laws and Executive Orders	
	limited to water and related land resources planning, regulating, and licensing activities.
EO 12088, Federal Compliance With Pollution Control Standards	This EO delegates responsibility to the head of each executive agency for ensuring all necessary actions are taken for the prevention, control, and abatement of environmental pollution. This order gives the U.S. Environmental Protection Agency (US EPA) authority to conduct reviews and inspections to monitor Federal facility compliance with pollution control standards.
EO 12898, Environmental Justice	This EO requires certain federal agencies, including the DoD, to the greatest extent practicable permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse health or environmental effects on minority and low-income populations.
EO 13112, Exotic and Invasive Species	To prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.
EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	The U.S. Fish and Wildlife Service (USFWS) has the responsibility to administer, oversee, and enforce the conservation provisions of the Migratory Bird Treaty Act, which includes responsibility for population management (e.g., monitoring), habitat protection (e.g., acquisition, enhancement, and modification), international coordination, and regulations development and enforcement.
United States Code	
Animal Damage Control Act (7 U.S.C. § 426-426b, 47 Stat. 1468)	Provides authority to the Secretary of Agriculture for investigation and control of mammalian predators, rodents, and birds. DoD installations may enter into cooperative agreements to conduct animal control projects.
Bald and Golden Eagle Protection Act of 1940, as amended; 16 U.S.C. 668-668c	This law provides for the protection of the bald eagle (the national emblem) and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto and strengthened other enforcement measures. Rewards are provided for information leading to arrest and conviction for violation of the Act.
Clean Air Act, (42 U.S.C. § 7401– 7671q, July 14, 1955, as amended)	This Act, as amended, is known as the Clean Air Act of 1970. The amendments made in 1970 established the core of the clean air program. The primary objective is to establish Federal standards for air pollutants. It is designed to improve air quality in areas of the country which do not meet Federal standards and to prevent significant deterioration in areas where air quality exceeds those standards.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (Superfund) (26	Authorizes and administers a program to assess damage, respond to releases of hazardous substances, fund cleanup, establish clean-up standards, assign liability, and other efforts to address environmental contaminants. Installation Restoration Program guides cleanups at DoD installations.

Federal Public Laws and Executive Orders	
U.S.C. § 4611–4682, P.L. 96-510, 94 Stat. 2797), as amended	
Endangered Species Act (ESA) of 1973, as amended; P.L. 93-205, 16 U.S.C. § 1531 et seq.	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no Federal action is allowed to jeopardize the continued existence of an endangered or threatened species. The ESA requires consultation with the USFWS and the NOAA Fisheries (National Marine Fisheries Service) and the preparation of a biological evaluation or a biological assessment may be required when such species are present in an area affected by government activities.
Federal Aid in Wildlife Restoration Act of 1937 (16 U.S.C. § 669–669i; 50 Stat. 917) (Pittman-Robertson Act)	Provides Federal aid to states and territories for management and restoration of wildlife. Fund derives from sports tax on arms and ammunition. Projects include acquisition of wildlife habitat, wildlife research surveys, development of access facilities, and hunter education.
Federal Environmental Pesticide Act of 1972	Requires installations to ensure pesticides are used only in accordance with their label registrations and restricted-use pesticides are applied only by certified applicators.
Federal Land Use Policy and Management Act, 43 U.S.C. § 1701–1782	Requires management of public lands to protect the quality of scientific, scenic, historical, ecological, environmental, and archaeological resources and values; as well as to preserve and protect certain lands in their natural condition for fish and wildlife habitat. This Act also requires consideration of commodity production such as timbering.
Federal Noxious Weed Act of 1974, 7 U.S.C. § 2801–2814	The Act provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health.
Federal Water Pollution Control Act (Clean Water Act [CWA]), 33 U.S.C. §1251–1387	The CWA is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Primary authority for the implementation and enforcement rests with the US EPA.
Fish and Wildlife Conservation Act (16 U.S.C. § 2901–2911; 94 Stat. 1322, PL 96-366)	Installations encouraged to use their authority to conserve and promote conservation of nongame fish and wildlife in their habitats.
Fish and Wildlife Coordination Act (16 U.S.C. § 661 et seq.)	Directs installations to consult with the USFWS, or state or territorial agencies to ascertain means to protect fish and wildlife resources related to actions resulting in the control or structural modification of any natural stream or body of water. Includes provisions for mitigation and reporting.
Lacey Act of 1900 (16 U.S.C. § 701, 702, 32 Stat. 187, 32 Stat. 285)	Prohibits the importation of wild animals or birds or parts thereof, taken, possessed, or exported in violation of the laws of the country or

Federal Public Laws and Executive Orders	
	territory of origin. Provides enforcement and penalties for violation of wildlife related Acts or regulations.
Leases: Non-excess Property of Military Departments, 10 U.S.C. § 2667, as amended	Authorizes DoD to lease to commercial enterprises Federal land not currently needed for public use. Covers agricultural outleasing program.
Migratory Bird Treaty Act 16 U.S.C. § 703–712	The Act implements various treaties for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful without a valid permit.
National Environmental Policy Act of 1969 (NEPA), as amended; P.L. 91-190, 42 U.S.C. § 4321 et seq.	Requires Federal agencies to utilize a systematic approach when assessing environmental impacts of government activities. Establishes the use of environmental impact statements. NEPA proposes an interdisciplinary approach in a decision-making process designed to identify unacceptable or unnecessary impacts on the environment. The Council of Environmental Quality (CEQ) created Regulations for Implementing the National Environmental Policy Act [40 Code of Federal Regulations (CFR) Parts 1500– 1508], which provide regulations applicable to and binding on all Federal agencies for implementing the procedural provisions of NEPA, as amended.
National Historic Preservation Act, 16 U.S.C. § 470 et seq.	Requires Federal agencies to take account of the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NRHP). Provides for the nomination, identification (through listing on the NRHP), and protection of historical and cultural properties of significance.
National Trails Systems Act (16 U.S.C. § 1241–1249)	Provides for the establishment of recreation and scenic trails.
National Wildlife Refuge Acts	Provides for establishment of National Wildlife Refuges through purchase, land transfer, donation, cooperative agreements, and other means.
National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. § 668dd–668ee)	Provides guidelines and instructions for the administration of Wildlife Refuges and other conservation areas.
Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. § 3001–13; 104 Stat. 3042), as amended	Established requirements for the treatment of Native American human remains and sacred or cultural objects found on Federal lands. Includes requirements on inventory, and notification.
Rivers and Harbors Act of 1899 (33 U.S.C. § 401 et seq.)	Makes it unlawful for the USAF to conduct any work or activity in navigable waters of the United States without a Federal Permit. Installations should coordinate with the U.S. Army Corps of Engineers (USACE) to obtain permits for the discharge of refuse affecting navigable waters under National Pollutant Discharge Elimination

Federal Public Laws and Executive Orders	
	System (NPDES) and should coordinate with the USFWS to review effects on fish and wildlife of work and activities to be undertaken as permitted by the USACE.
Sale of certain interests in land, 10 U.S.C. § 2665	Authorizes sale of forest products and reimbursement of the costs of management of forest resources.
Soil and Water Conservation Act (16 U.S.C. § 2001, P.L. 95-193)	Installations shall coordinate with the Secretary of Agriculture to appraise, on a continual basis, soil/water-related resources. Installations will develop and update a program for furthering the conservation, protection, and enhancement of these resources consistent with other Federal and local programs.
Sikes Act (16 U.S.C. § 670a–670l, 74 Stat. 1052), as amended	Provides for the cooperation of DoD, the Departments of the Interior (USFWS), and the State Fish and Game Department in planning, developing, and maintaining fish and wildlife resources on a military installation. Requires development of an Integrated Natural Resources Management Plan and public access to natural resources, and allows collection of nominal hunting and fishing fees. NOTE: AFI 32-7064 sec 3.9. Staffing. As defined in DoDI 4715.03, use professionally trained natural resources management personnel with a degree in the natural sciences to develop and implement the installation INRMP. (T-0). 3.9.1. Outsourcing Natural Resources Management. As stipulated in the Sikes Act, 16 U.S.C. § 670 et. seq., the Office of Management and Budget Circular No. A-76, Performance of Commercial Activities, August 4, 1983 (Revised May 29, 2003) does not apply to the development, implementation and enforcement of INRMPs. Activities that require the exercise of discretion in making decisions regarding the management and disposition of government owned natural resources are inherently governmental. When it is not practicable to utilize DoD personnel to perform inherently governmental natural resources management duties, obtain these services from federal agencies having responsibilities for the conservation and management of natural resources.
DoD Policy, Directives, and Instructions	
DoD Instruction 4150.07 DoD Pest Management Program dated 29 May 2008	Implements policy, assigns responsibilities, and prescribes procedures for the DoD Integrated Pest Management Program.
DoD Instruction 4715.1, Environmental Security	Establishes policy for protecting, preserving, and (when required) restoring and enhancing the quality of the environment. This instruction also ensures environmental factors are integrated into DoD decision-making processes that could impact the environment, and are given appropriate consideration along with other relevant factors.
DoD Instruction (DODI) 4715.03, Natural Resources Conservation Program	Implements policy, assigns responsibility, and prescribes procedures under DoDI 4715.1 for the integrated management of natural and cultural resources on property under DoD control.

Federal Public Laws and Executive Orders	
OSD Policy Memorandum – 17 May 2005 – Implementation of Sikes Act Improvement Amendments: Supplemental Guidance Concerning Leased Lands	Provides supplemental guidance for implementing the requirements of the Sikes Act in a consistent manner throughout DoD. The guidance covers lands occupied by tenants or lessees or being used by others pursuant to a permit, license, right of way, or any other form of permission. INRMPs must address the resource management on all lands for which the subject installation has real property accountability, including leased lands. Installation commanders may require tenants to accept responsibility for performing appropriate natural resource management actions as a condition of their occupancy or use, but this does not preclude the requirement to address the natural resource management needs of these lands in the installation INRMP.
OSD Policy Memorandum – 1 November 2004 – Implementation of Sikes Act Improvement Act Amendments: Supplemental Guidance Concerning INRMP Reviews	Emphasizes implementing and improving the overall INRMP coordination process. Provides policy on scope of INRMP review, and public comment on INRMP review.
OSD Policy Memorandum – 10 October 2002 – Implementation of Sikes Act Improvement Act: Updated Guidance	Provides guidance for implementing the requirements of the Sikes Act in a consistent manner throughout DoD and replaces the 21 September 1998 guidance Implementation of the Sikes Act Improvement Amendments. Emphasizes implementing and improving the overall INRMP coordination process and focuses on coordinating with stakeholders, reporting requirements and metrics, budgeting for INRMP projects, using the INRMP as a substitute for critical habitat designation, supporting military training and testing needs, and facilitating the INRMP review process.
USAF Instructions and Directives	
32 CFR Part 989, as amended, and AFI 32-7061, Environmental Impact Analysis Process	Provides guidance and responsibilities in the EIAP for implementing INRMPs. Implementation of an INRMP constitutes a major federal action and therefore is subject to evaluation through an Environmental Assessment or an Environmental Impact Statement.
AFI 32-7062, Air Force Comprehensive Planning	Provides guidance and responsibilities related to the USAF comprehensive planning process on all USAF-controlled lands.
AFI 32-7064, Integrated Natural Resources Management	Implements AFPD 32-70, Environmental Quality; DODI 4715.03, Natural Resources Conservation Program; and DODI 7310.5, Accounting for Sale of Forest Products. It explains how to manage natural resources on USAF property in compliance with Federal, state, territorial, and local standards.
AFI 32-7065, Cultural Resources Management	This instruction implements AFPD 32-70 and DoDI 4710.1, Archaeological and Historic Resources Management. It explains how to manage cultural resources on USAF property in compliance with Federal, state, territorial, and local standards.

Federal Public Laws and Executive Orders	
AFPD 32-70, Environmental Quality	Outlines the USAF mission to achieve and maintain environmental quality on all USAF lands by cleaning up environmental damage resulting from past activities, meeting all environmental standards applicable to present operations, planning its future activities to minimize environmental impacts, managing responsibly the irreplaceable natural and cultural resources it holds in public trust and eliminating pollution from its activities wherever possible. AFPD 32-70 also establishes policies to carry out these objectives.
Policy Memo for Implementation of Sikes Act Improvement Amendments, HQ USAF Environmental Office (USAF/ILEV) on January 29, 1999	Outlines the USAF interpretation and explanation of the Sikes Act and Improvement Act of 1997.

Appendix B. Species Documented at Dobbins Air Reserve Base

Table B-1. Bird Species Documented on Dobbins Air Reserve Base

Scientific Name	Common Name	Notes
Accipiter striatus	Sharp-shinned hawk	Protected under MBTA
Agelaius phoeniceus	Red-winged blackbird	Protected under MBTA
Aix sponsa	Wood duck	Protected under MBTA
Ammodramus savannarum	Grasshopper sparrow	High Priority Species; Protected under MBTA
Anas platyrhynchos	Mallard	
Ardea alba	Great egret	Protected under MBTA
Ardea herodias	Great blue heron	Protected under MBTA
Baeolophus bicolor	Tufted titmouse	Protected under MBTA
Bombycilla cedrorum	Cedar waxwing	Protected under MBTA
Branta canadensis	Canada goose	Protected under MBTA, BASH Risk
Bubo virginianus	Great-horned owl	Protected under MBTA
Buteo jamaicensis	Red-tailed hawk	Protected under MBTA
Buteo lineatus	Red-shouldered hawk	Protected under MBTA
Buteo platypterus	Broad-winged hawk	Protected under MBTA
Butorides virescens	Green heron	Protected under MBTA
Cardinalis cardinalis	Northern cardinal	Protected under MBTA
Carpodacus mexicanus	House finch	Protected under MBTA
Carpodacus purpureus	Purple finch	Protected under MBTA
Cathartes aura	Turkey vulture	Protected under MBTA
Certhia americana	Brown creeper	Protected under MBTA
Charadrius vociferus	Killdeer	Protected under MBTA
Chordeiles minor	Common nighthawk	Protected under MBTA
Colaptes auratus	Northern flicker	Protected under MBTA
Colinus virginianus	Northern bobwhite	
Columba livia	Rock pigeon	Invasive
Contopus virens	Eastern wood-pewee	Protected under MBTA
Corvus brachyrhynchos	American crow	Protected under MBTA
Cyanocitta cristata	Blue jay	Protected under MBTA
Dendroica coronata	Yellow-rumped warbler	Protected under MBTA
Dendroica palmarum	Palm warbler	Protected under MBTA

Scientific Name	Common Name	Notes
Dendroica pinus	Pine warbler	Protected under MBTA
Empidonax virescens	Acadian flycatcher	Protected under MBTA
Falco sparverius	American kestrel	Protected under MBTA
Hirundo rustica	Barn swallow	Protected under MBTA
Junco hyemalis	Dark-eyed junco	Protected under MBTA
Larus argentatus	Herring gull	Protected under MBTA
Megaceryle alcyon	Belted kingfisher	Protected under MBTA
Megascops asio	Eastern screech owl	Protected under MBTA
Melanerpes erythrocephalus	Red-headed woodpecker	Protected under MBTA
Meleagris gallopavo	Wild turkey	
Melospiza melodia	Song sparrow	Protected under MBTA
Mimus polyglottos	Northern mockingbird	Protected under MBTA
Molothrus ater	Brown-headed cowbird	Protected under MBTA
Passer domesticus	House sparrow	Invasive
Passerculus sandwichensis	Savannah sparrow	Protected under MBTA
Picoides pubescens	Downy woodpecker	Protected under MBTA
Picoides villosus	Hairy woodpecker	Protected under MBTA
Pipilo erythrophthalmus	Eastern towhee	Protected under MBTA
Podilymbes podiceps	Pied-billed grebe	Protected under MBTA
Poecile carolinensis	Carolina chickadee	Protected under MBTA
Polioptila caerulea	Blue-gray gnatcatcher	Protected under MBTA
Progne subis	Purple martin	Protected under MBTA
Quasicalus quiscula	Common grackle	Protected under MBTA
Regulus calendula	Ruby-crowned kinglet	Protected under MBTA
Sayornis phoebe	Eastern phoebe	Protected under MBTA
Scolopax minor	American woodcock	Protected under MBTA
Spinus tristis	American goldfinch	Protected under MBTA
Sturnella magna	Eastern meadowlark	Protected under MBTA
Sturnus vulgaris	European starling	Invasive
Thryothorus ludovicianus	Carolina wren	Protected under MBTA
Toxostoma rufum	Brown thrasher	Protected under MBTA
Turdus migratorius	American robin	Protected under MBTA
Vireo flavifrons	Yellow-throated vireo	Protected under MBTA

Scientific Name	Common Name	Notes
Zenaida macroura	Mourning dove	Protected under MBTA
Zonotrichia albicollis	White-throated sparrow	Protected under MBTA
Zonotrichia leucophrys	White-crowned sparrow	Protected under MBTA

Source: Govus et al. 1994; 94 AW 2014a (BASH Plan); GADNR 2015; MBTA protected species list from USFWS 2013; Invasive status based on GADNR 2009 and Georgia Invasive Species Task Force 2016
High Priority Species status based on Georgia State Wildlife Action Plan

Table B-2. Mammal Species Documented on Dobbins Air Reserve Base

Scientific Name	Common Name	Notes
Blarina brevicauda	Short-tailed shrew	
Canis latrans	Coyote	Invasive
Castor canadensis	Beaver	
Didelphis virginiana	Opossum	
Eptesicus fuscus	Big brown bat	
Lasiurus borealis	Eastern red bat	
Lynx rufus	Bobcat	
Glaucomys volans	Southern flying squirrel	
Marmota monax	Woodchuck	
Mephitis mephitis	Striped skunk	
Microtus californicus	Meadow vole	
Mus musculus	House mouse	Non-native
Odocoileus virginianus	White-tailed deer	
Ondatra zibethicus	Muskrat	
Peromyscus leucopus	White-footed mouse	
Procyon lotor	Raccoon	
Sciurus carolinensis	Gray squirrel	
Sigmodon hispidus	Cotton rat	
Sylvilagus floridanus	Eastern cottontail	
Tamias striatus	Eastern chipmunk	
Vulpes vulpes	Red fox	

Source: Govus et al. 1994
Invasive status based on GADNR 2009 and Georgia Invasive Species Task Force 2016

Table B-4. Reptile Species Documented on Dobbins Air Reserve Base

Scientific Name	Common Name	Notes
Anolis carolinesis	Green anole	
Chrysemys scripta	Yellow-bellied turtle	
Chrysemys picta picta	Eastern painted turtle	
Coluber constrictor	Black racer	
Elaphe obsoleta	Black rat snake	
Eumeces fasciatus	Five-lined skink	
Lampropeltis getulus	King snake	
Sceloporus undulatus	Fence lizard	
Terrapene carolina	Eastern box turtle	
Thamnophis sirtalis	Common garter snake	

Source: Govus et al. 1994
Invasive status based on GADNR 2009 and Georgia Invasive Species Task Force 2016

Table B-5. Amphibian Species Documented on Dobbins Air Reserve Base

Scientific Name	Common Name	Notes
Ambystoma opacum	Marbled salamander	
Bufo woodhousei	Woodhouse's toad	
Desmognathus fuscus	Dusky salamander	
Eurycea bislineata	Two-lined salamander	
Gastrophryne carolinensis	Eastern narrowmouth toad	
Plethodon glutinosus	Slimy salamander	
Pseudacris crucifer crucifer	Spring peeper	
Pseudacris triseriata	Chorus frog	
Rana catesbeiana	Bullfrog	

Source: Govus et al. 1994

Table B-6. Fish Species Documented on Dobbins Air Reserve Base

Scientific Name	Common Name	Notes
Gambusia holbrooki	Eastern mosquitofish	
Ictalurus punctatus	Channel catfish	
Lepomis macrochirus	Bluegill	
Micropterus salmoides	Largemouth Bass	

Source: Shannon and Savercool 2007

Table B-7. Plant Species Documented on Dobbins Air Reserve Base

Scientific Name	Common Name	Notes	EPPC Category[a]
Acer barbatum	southern sugar maple		
Acer negundo	boxelder		
Acer rubrum	red maple		
Ageratina altissima	white snakeroot		
Ageratum houstonianum	ageratum		
Ailanthus altissima	tree of heaven	Invasive	1
Albizia julibrissin	mimosa, silktree	Invasive	1
Allium canadense	meadow garlic		
Alnus serrulata	hazel alder		
Ambrosia artemisiifolia	annual ragweed		
Ambrosia trifida	giant ragweed		
Amelanchier arborea	common serviceberry		
Amianthium muscitoxicum	fly poison		
Amsonia tabernaemontana	eastern bluestar		
Andropogon virginicus	broomsedge bluestem		
Anemone quinquefolia	nightcaps		
Angelica atropurpurea	purplestem angelica		
Antennaria species	pussytoes		
Apios americana	groundnut		
Apocynum cannabinum	Indianhemp		
Aralia spinosa	devil's walkingstick		
Arnoglossum atriplicifolium	pale Indian plantain		
Aristolochia serpentaria	Virginia snakeroot		
Aronia arbutifolia	red chokeberry		
Asclepias tuberosa	butterfly milkweed		
Asimina parviflora	smallflower pawpaw		
Asimina triloba	pawpaw		
Asplenium platyneuron	ebony spleenwort		
Athyrium filix-femina	common ladyfern		
Aureolaria virginica	downy yellow false foxglove		

Scientific Name	Common Name	Notes	EPPC Category[a]
Aureolaria flava	smooth yellow false foxglove		
Aureolaria laevigata	entireleaf yellow false foxglove		
Baccharis halimifolia	eastern baccharis		
Betula nigra	river birch		
Bidens frondosa	devil's beggartick		
Bidens aristosa	bearded beggartick		
Bignonia capreolata	crossvine		
Boehmeria cylindrica	smallspike false nettle		
Botrichium biternatum	grape fern		
Botrychium virginianum	rattlesnake fern		
Calycanthus floridus	eastern sweetshrub		
Campsis radicans	trumpet creeper		
Cardamine angustata	slender toothwort		
Carex blanda	eastern woodland sedge		
Carex crinita	fringed sedge		
Carex debilis	white edge sedge		
Carex lurida	shallow sedge		
Carex nigromarginata	black edge sedge		
Carex rosea	rosy sedge		
Carpinus caroliniana	American hornbeam		
Carya glabra	pignut hickory		
Carya ovalis	red hickory		
Carya pallida	sand hickory		
Carya tomentosa	mockernut hickory		
Ceanothus americanus	New Jersey tea		
Centrosema species	butterfly pea		
Cephalanthus oxidentalis	common buttonbush		
Cercis canadensis	eastern redbud		
Chamaecrista fasciculata	sleepingplant		
Chamaelirium luteum	fairywand		
Chimaphila maculata	striped prince's pine		
Chrysogonum virginianum	green and gold		
Chrysopsis mariana	Maryland goldenstar		

Scientific Name	Common Name	Notes	EPPC Category[a]
Cimicifuga racemosa	black bugbane		
Clematis terniflora	sweet autumn virginsbower	Invasive	3
Clematis virginiana	devil's darning needles		
Collinsonia canadensis	richweed		
Collinsonia serotina	Blue Ridge horsebalm		
Coreopsis auriculata	lobed tickseed		
Coreopsis major	greater tickseed		
Cornus amomum	silky dogwood		
Cornus florida	flowering dogwood		
Cornus foemina	stiff dogwood		
Corylus americana	American hazelnut		
Cypripedium acaule	pink lady’s-slipper	Unusual[b]	
Daucus carota	Queen Anne's lace	Invasive	3
Decumaria barbara	woodvamp		
Desmodium nudiflorum	nakedflower ticktrefoil		
Desmodium rotundifolium	prostrate ticktrefoil		
Dichanthelium boscii	Bosc's panicgrass		
Dichanthelium clandestinum	deertongue		
Diodia virginiana	Virginia buttonweed		
Dioscorea oppositifolia	Chinese yam	Non-native	
Dioscorea quaternata	fourleaf yam		
Diospyros virginiana	common persimmon		
Echinochloa crus-galli	barnyard grass	Non-native	
Eclipta prostrata	false daisy		
Elaeagnus umbellata	autumn olive	Invasive	1
Elephantopus carolinianus	Carolina elephantsfoot		
Elephantopus tomentosus	devil's grandmother		
Erechtites hieraciifolia	American burnweed		
Erigeron philadelphicus	Philadelphia fleabane		
Euonymus americana	strawberry bush		
Eupatorium capillifolium	dogfennel		
Eupatorium fistulosum	trumpetweed		

Scientific Name	Common Name	Notes	EPPC Category[a]
Eupatorium glaucescens	waxy thoroughwort		
Eupatorium pilosum	rough boneset		
Eupatorium purpureum	sweetscented joepyeweed		
Eupatorium rotundifolium	roundleaf thoroughwort		
Eupatorium serotinum	lateflowering thoroughwort		
Euphorbia corollata	flowering spurge		
Euphorbia pubentissima	false flowering spurge		
Eurybia divaricate	white wood aster		
Fagus grandifolia	American beech		
Fraxinus americana	white ash		
Fraxinus pennsylvanica	green ash		
Gelsemium sempervirens	evening trumpetflower		
Gentiana villosa	striped gentian		
Geranium maculatum	spotted geranium		
Gamochaeta purpurea	spoonleaf purple everlasting		
Goodyera pubescens	downy rattlesnake plantain		
Hedera helix	English ivy	Invasive	1
Helianthus angustifolia	swamp sunflower		
Helianthus hirsutus	hairy sunflower		
Helianthus microcephalus	small woodland sunflower		
Helianthus resinosus	resindot sunflower		
Helenium autumnale	common sneezeweed		
Heterotheca subaxillaris	camphorweed		
Hexastylis arifolia	little brown jug		
Hieracium species	hawkweed		
Houstonia purpurea	Venus’ pride		
Hydrangea arborescens	wild hydrangea		
Hypericum hypericoides	St. Andrew's cross		
Hypericum punctatum	spotted St. Johnswort		
Hypericum gentianoides	orangegrass		
Ilex ambigua	Carolina holly		
Ilex decidua	possumhaw		

Scientific Name	Common Name	Notes	EPPC Category[a]
Ilex montana	mountain holly		
Ilex opaca	American holly		
Impatiens capensis	jewelweed		
Ipomoea hederacea	ivy leaf morning-glory		
Ipomoea lacunosa	whitestar		
Ipomoea pandurata	man of the earth		
Iris cristata	dwarf crested iris		
Itea virginica	Virginia sweetspire		
Juncus effusus	common rush		
Juncus validus	roundhead rush		
Juniperus virginiana	eastern red cedar		
Kalmia latifolia	mountain laurel		
Lactuca canadensis	Canada lettuce		
Lechea racemulosa	Illinois pinweed		
Leucothoe fontanesiana	highland doghobble		
Lespedeza cuneata	Chinese lespedeza	Invasive	1
Liatris spicata	dense blazing star		
Ligusticum canadense	Canadian licorice-root		
Ligustrum japonicum	Japanese privet	Invasive	2
Ligustrum sinense	Chinese privet	Invasive	1
Lilium superbum	turk's-cap lily		
Lindera benzoin	northern spicebush		
Linum medium	stiff yellow flax		
Liquidambar styraciflua	sweetgum		
Liriodendron tulipifera	tuliptree		
Lobelia inflata	Indian-tobacco		
Lonicera japonica	Japanese honeysuckle	Invasive	1
Lycopodium digitatum	fan clubmoss		
Lysimachia ciliata	fringed loosestrife		
Lysimachia quadrifolia	whorled yellow loosestrife		
Madia sativa	coast tarweed		
Magnolia grandiflora	southern magnolia		

Scientific Name	Common Name	Notes	EPPC Category[a]
Maianthemum racemosum	feathery false lily of the valley		
Malaxis unifolia	green adder's-mouth orchid		
Melica mutica	twoflower melicgrass		
Microstegium vimineum	Japanese stiltgrass	Invasive	1
Mikania scandens	climbing hempvine		
Mimosa microphylla	littleleaf sensitive-briar		
Mimulus ringens	Allegheny monkeyflower		
Mitchella repens	Partridgeberry		
Morus alba	white mulberry	Invasive	3
Morus rubra	red mulberry		
Mosia dianthera	miniature beefsteak plant	Invasive	3
Nuttallanthus canadensis	Canadian toadflax		
Nyssa sylvatica	blackgum		
Oenothera biennis	common evening primrose		
Onoclea sensibilis	sensitive fern		
Orbexilum pedunculatum	Samson snakeroot		
Osmunda cinnamomea	cinnamon fern		
Osmunda regalis	royal fern		
Oxalis violacea	violet woodsorrel		
Oxydendrum arboreum	sourwood		
Packera aurea	golden ragwort		
Panicum anceps	beaked panicgrass		
Parthenocissus quinquefolia	Virginia creeper		
Passiflora lutea	yellow passionflower		
Paulownia tomentosa	princesstree	Invasive	1
Peltandra virginica	green arrow arum		
Phegopteris hexagonoptera	broad beechfern		
Photinia pyrifolia	red chokeberry		
Phryma leptostachya	American lopseed		
Phytolacca americana	American pokeweed		
Pilea pumila	Canadian clearweed		
Pinus echinata	shortleaf pine		

Scientific Name	Common Name	Notes	EPPC Category[a]
Pinus taeda	loblolly pine		
Pinus virginiana	Virginia pine		
Piptochaetium avenaceum	blackseed speargrass		
Platanthera ciliaris	yellow fringed orchid		
Platanus occidentalis	American sycamore		
Pluchea camphorata	camphor pluchea		
Polygala polygama	racemed milkwort		
Polygonatum biflorum	smooth Solomon's seal		
Polygonum persicaria	spotted ladysthumb	Non-native	
Polygonum sagittatum	arrowleaf tearthumb		
Polystichum acrostichoides	Christmas fern		
Potentilla simplex	common cinquefoil		
Prenanthes alba	white rattlesnakeroot		
Prenanthes altissima	tall rattlesnakeroot		
Prunella vulgaris	common selfheal		
Prunus serotina	black cherry		
Pteridium aquilinum	western brackenfern		
Pueraria montana var. lobata	kudzu	Invasive	1
Pycnanthemum incanum	hoary mountainmint		
Quercus alba	white oak		
Quercus coccinea	scarlet oak		
Quercus falcata	southern red oak		
Quercus marilandica	blackjack oak		
Quercus michauxii	swamp chestnut oak		
Quercus nigra	water oak		
Quercus phellos	willow oak		
Quercus rubra	northern red oak		
Quercus stellata	post oak		
Quercus velutina	black oak		
Rhexia mariana	Maryland meadowbeauty		
Rhododendron canescens	mountain azalea		
Rhododendron periclymenoides	pink azelea		

Scientific Name	Common Name	Notes	EPPC Category[a]
Rhus copallinum	winged sumac		
Rhus glabra	smooth sumac		
Rosa multiflora	multiflora rose	Invasive	1
Rubus argutus	sawtooth blackberry		
Rubus flagellaris	northern dewberry		
Rudbeckia hirta	blackeyed susan		
Ruellia caroliniensis	Carolina wild petunia		
Saccharum alopecuroides	silver plumegrass		
Sagittaria latifolia	broadleaf arrowhead		
Salix nigra	black willow		
Salvia lyrata	lyreleaf sage		
Sambucus nigra subsp. *canadensis*	American black elderberry		
Sanguinaria canadensis	bloodroot		
Sanicula marilandica	Maryland sanicle		
Sanicula odorata	clustered blacksnakeroot		
Sassafras albidum	sassafras		
Senna obtusifolia	java-bean		
Scirpus cyperinus	woolgrass		
Scleria triglomerata	whip nutrush		
Silene stellata	widowsfrill		
Silphium compositum	kidneyleaf rosinweed		
Sisyrinchium angustifolium	narrowleaf blue-eyed grass		
Smallanthus uvedalius	hairy leafcup		
Smilax bona-nox	saw greenbrier		
Smilax glauca	cat greenbrier		
Smilax herbacea	smooth carrionflower		
Smilax hugeri	Huger's carrionflower		
Smilax rotundifolia	roundleaf greenbrier		
Solanum ptycanthum	West Indian nightshade		
Solidago arguta	Atlantic goldenrod		
Solidago caesia	wreath goldenrod		

Scientific Name	Common Name	Notes	EPPC Category[a]
Solidago canadensis	Canada goldenrod		
Solidago nemoralis	gray goldenrod		
Solidago odora	anisescented goldenrod		
Stellaria pubera	star chickweed		
Stenanthium gramineum	eastern featherbells		
Styrax americanus	American snowbell		
Symphyotrichum patens	late purple aster		
Symphyotrichum puniceum	purplestem aster		
Symphyotrichum lowrieanum	Lowrie's blue wood aster		
Symphyotrichum pilosum	hairy white old field aster		
Thalictrum thalictroides	rue anemone		
Thelypteris noveboracensis	New York fern		
Tipularia discolor	crippled cranefly		
Toxicodendron radicans	eastern poison ivy		
Trichostema dichotomum	forked bluecurls		
Trillium catesbaei	bashful wakerobin		
Trillium cuneatum	little sweet Betsy		
Typha latifolia	broadleaf cattail		
Ulmus alata	winged elm		
Ulmus rubra	slippery elm		
Uvularia sessilifolia	sessileleaf bellwort		
Vaccinium arboreum	farkleberry		
Vaccinium corymbosum	highbush blueberry		
Vaccinium elliottii	Elliott's blueberry		
Vaccinium stamineum	deerberry		
Valerianella radiata	beaked cornsalad		
Veratrum hybridum	slender bunchflower		
Verbena urticifolia	white vervain		
Vernonia noveboracensis	New York ironweed		
Viburnum acerifolium	mapleleaf viburnum		
Viburnum nudum	possumhaw		
Viburnum prunifolium	blackhaw		

Scientific Name	Common Name	Notes	EPPC Category[a]
Viburnum rufidulum	rusty blackhaw		
Viola hirsutula	southern woodland violet		
Viola palmata	early blue violet		
Viola tripartita	threepart violet		
Vitis aestivalis	summer grape		
Vitis riparia	riverbank grape		
Vitis rotundifolia	muscadine grape		
Wisteria frutescens	American wisteria		
Wisteria sinensis	Chinese wisteria	Invasive	1
Woodwardia areolata	netted chainfern		
Xanthorhiza simplicissima	yellowroot		
Youngia japonica	oriental false hawksbeard		
Yucca filamentosa	Adam's needle		

Source: AFCEE 2004; Govus et al. 1994; GADNR 2006, 2009; Georgia Invasive Species Task Force 2016

[a] Invasive status based on GADNR 2009 and Georgia Invasive Species Task Force 2016
The invasive plant list is separated into four Exotic Pest Plant Council (EPPC) categories.

- Category 1 - Exotic plant that is a serious problem in Georgia natural areas by extensively invading native plant communities and displacing native species.
- Category 1 Alert - Exotic plant that is a not yet a serious problem in Georgia natural areas, but that has significant potential to become a serious problem.
- Category 2 - Exotic plant that is a moderate problem in Georgia natural areas through invading native plant communities and displacing native species, but to a lesser degree than category 1 species.
- Category 3 - Exotic plant that is a minor problem in Georgia natural areas, or is not yet known to be a problem in Georgia but is known to be a problem in adjacent states.
- Category 4 - Exotic plant that is naturalized in Georgia but generally does not pose a problem in Georgia natural areas or a potentially invasive plant in need of additional information to determine its true status.

[b] Source: GADNR 2006

Appendix C. Maps of Dobbins Air Reserve Base

Map 1: Facility Map

Map 2: Elevation and Topography

Map 3: Soils

Map 4: Water Resources

Map 5: Land Use

Map 6: Vegetative Communities

Map 7: Forest Stands

Map 8: Prescribed Fire History

Map 9: Pink Lady's Slipper Populations

Map 10: Combined Constraints

Provided in pdf version

Appendix D. INRMP Implementation Tables (Work Plans)

Table D-1. Routine Activities for Dobbins ARB INRMP Implementation

Table D-2. Proposed Projects for Dobbins ARB INRMP Implementation

Provided as Excel file, included in pdf version

Priority/Funding Class

- Level 0 – Recurring conservation requirements that maintain compliance with federal laws and regulations; funding likely
- Level 1 – Non-recurring conservation requirements that fix noncompliance; funding possible
- Level 2 – Non-recurring conservation requirement that prevent noncompliance; generally not funded
- Level 3 – Non-recurring conservation requirement that enhance the environment; generally not funded

It is important to note, that on a yearly basis, only Level 0 and 1 are generally considered for funding; Level 1s are less likely to get funded than Level 0s, which have a high likelihood of being funded

Objectives Abbreviations

PM=Program Management

FW=Fish and Wildlife Management

TE=Rare Species Management

WA=Water Resources Management

GR=Grounds Maintenance

FO=Forest Management

FI=Wildland Fire Management

IN=Invasive Species Management

Appendix E. Annual Reviews and Agency Coordination

Annual Review Templates

- Review Letter
- Annual Report with Signature Page

Review for Operation and Effect (2016) (This portion included in pdf version)

- Agenda, Attendees, Minutes, Summary of INRMP Implementation 2013-2017

Agency Correspondence

- Letters to USFWS and GADNR for INRMP Review
- Letters from USFWS and GADNR regarding their review

DEPARTMENT OF THE AIR FORCE

AIR FORCE RESERVE COMMAND

Dear *XXXX*:

In accordance with Sikes Act Improvement Act (16 USC § 670A as amended 2011) and Air Force guidance (AFI32-7064) requirements, we annually review our Integrated Natural Resources Management Plan (INRMP) with the cooperation of the U.S. Fish and Wildlife Service (Service), the California Department of Fish and Wildlife (State), and, where applicable, the National Oceanographic Atmospheric Administration National Marine Fisheries Service (NMFS).

I would like to submit the enclosed documents for your review at this time. I request your feedback on the effectiveness of the INRMP and invite you to meet with my staff to discuss these materials. Please contact ***XXXX*** at ***XXX-XXX-XXXX*** to schedule a meeting. If you are not available to meet with our natural resources staff, please review this letter and the enclosures.

Under the aforementioned guidance, an INRMP annual review shall verify the following:

1) We currently have/do not have sufficient professionally trained natural resources management staff available to implement the INRMP as summarized in the enclosed *Annual INRMP Report*.

2) We have/have not identified significant changes to the installation's mission requirements or its natural resources. We have/have not completed only minor updates and changes described in the enclosed *Summary of Changes*.

3) Projects identified in the INRMP have/have not been budgeted for and implementation is/is not on schedule as summarized in the enclosed *Work Plan Implementation Table*.

4) All required Federal, State and Installation coordination has occurred.

5) Progress toward meeting agreed upon goals for natural resources management is documented in the enclosed *Annual INRMP Report and Work Plan Implementation Table*.

I ask for your concurrence, by signature to the *Annual INRMP Report*, and any written questions, comments or concerns you may have related to the implementation of the ***Installation***

INRMP for calendar year 20***XX***. If you are currently unable to review this 20XX Annual INRMP Report package or meet with my staff, I ask that you sign and date the statement at the bottom of this letter and return to us via email or mail at: xxxxxx.

Sincerely,

{Base Environmental Office/Appropriate Authority}

Enclosure(s):

1. Annual INRMP Report (concurrence signature requested)
2. Summary of Changes
3. Work Plan Implementation Table

☐ ***We are unable to review the Annual INRMP Summary at this time, but we intend to do so before*** _____
Date

_____ _____
Signature ***Date***

SUBJECT: 2017 ANNUAL DOBBINS ARB INRMP REPORT

Topic 1: Sufficient numbers of qualified natural resources management personnel and resources are available to oversee implementation of projects and activities identified in the *INRMP Work Plan* (enclosure).
Implementation Status: Green

The *Work Plan Implementation Table* (enclosure) outlines the activities required to achieve the goals and objectives of natural resource management on the installation. It also indicates by what means this activity was achieved, a.k.a with resources (funding) or installation natural resource professionals. The *Work Plan*, therefore, details the workload of qualified personnel and the level of funding required to implement the INRMP. In 2013, the number of qualified personnel required was one. Natural Resource Manager, Mr. Joe Duwap fulfilled this requirement. In 2013, a sufficient level of funding was available to complete projects proposed for completion in 2013. Project implementation is identified in the *Work Plan*. *{Explain here any discrepancies between what was proposed for completion and what was actually completed, which is summarized in the Work Plan Implementation Table.}*

{Installation should create a Work Plan Implementation Table and ensure that INRMP goals, objectives, and projects sufficiently outline the duties of the natural resources management personnel on the installation. The Work Plan should then be able to outline how many management personnel are needed to complete these activities on an annual basis, thereby verifying this requirement. See example Work Plan Implementation table provided by IST. Base should complete the Accomplishments column to indicate which projects were actually completed as proposed. Table will help explain missed projects by showing that they are planned for out years or completed previously out of cycle (and should reduce the need for lengthy written explanations here). This section can be used to explain other reasons a project wasn't implemented, for instance why a project was no longer needed, weather, lack of $ or staff, etc.}.

Topic 2: Significant changes to the installation's mission requirements or its natural resources have not been identified, therefore, the current INRMP and enclosed *2013 Summary of Changes* are still current as to operation and effect per the Sikes Act.
Implementation Status: Green

The *2013 Summary of Changes* document (enclosed) tracks all minor updates made to the INRMP in 2013. No changes in the installation mission have occurred over the previous year that adversely impact natural resource management requirements to a degree that requires a revision to the current plan.

Topic 3: Projects identified in the INRMP have been budgeted for and implementation is on schedule as summarized in the attached *Work Plan Implementation Table* (enclosed).

Implementation Status: Yellow

The *Work Plan* lists the current year and four future fiscal years and indicates by which means the project will be accomplished (funding or personnel). The *Work Plan* also indicates whether the project has been programmed and is thus on schedule. The programmed project number is followed by a funding score (4-24), which indicates the funding priority of the project against all other environmental requirements. The funding line cut off for 2013 was a score of 12 thus projects scored at 12 or above are reasonably likely to get funded in the future. Budget cuts and sequester actions could raise this funding line in the future, thus actual funding is always unknown and subject to congressional decisions.

Topic 4 - Coordination with the USFWS and GADNR has occurred.
Implementation Status: Green

Agency personnel and base natural resource personnel met on xxxxxxx to review implementation of the INRMP, review the Annual INRMP Review documentation, and to concur that the INRMP is still current as to operation and effect

Topic 5: Progress towards meeting the agreed upon goals and objectives for natural resources management was completed in 2017.
Implementation Status: Green.

{Installations can either produce a written summary of actions here for projects they wish to highlight, or the IST suggests that installations simply refer back to the Work Plan Implementation Table which will indicate which projects have been accomplished. During the meeting, each project can be discussed with agency personnel in detail and agency questions can be answered}.

SUMMARY RATING FOR INSTALLATION INRMP IMPLEMENTATION AND COMPLIANCE: GREEN

The overall rating for the implementation of the Installation AFB INRMP is green as all five above topics were met successfully during 2017.

INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN
DOBBINS AIR RESERVE BASE
COBB COUNTY, GEORGIA

ANNUAL REVIEW SIGNATURE PAGE

This page is used to certify the annual review and coordination of the Integrated Natural Resources Management Plan (INRMP) for Dobbins Air Reserve Base in Cobb County, Georgia. With the signature below, the certifying officials acknowledge that the annual review of the INRMP and coordination with cooperating agencies (US Fish and Wildlife Service and Georgia Department of Natural Resources) has occurred for the specified year.

Year: _____

_____

NAME
Chief, Conservation Section
94 MSG/CEV
Dobbins ARB

_____

NAME
Assistant Field Supervisor
U.S. Fish and Wildlife Service
Ecological Services Office

_____

NAME
Georgia Department of Natural Resources

_____

NAME
Installation Commander (or designated authority)

Appendix F. Natural Resources Permits for Dobbins Air Reserve Base

Depredation Permit (2017)

Deer Management Permit (2016)

Section 404 Permits/Jurisdictional Determinations (2015)

(These are included in the pdf version)

Appendix G. Installation Policies related to the INRMP at Dobbins ARB

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESERVE COMMAND

10 August 2011

MEMORANDUM FOR 94 AW/CC

FROM: 94 MSG/CE
884 Industrial Drive
Dobbins ARB GA 30069-4210

SUBJECT: Fishing on Dobbins ARB

1. Dobbins Air Reserve Base (DARB) has several potential fishery resources, with the two largest being Big Lake and Little Lake.

2. These two lakes areas have had a history of contaminants from various sources. Big Lake and Little Lake are currently IRP sites and contain contaminants identified within the sediments and benthic layers. Signs are posted restricting any fishing, wading or swimming.

3. The Spill Containment Ponds (Spill Ponds 3-7) were designed and constructed by the USACE in the mid to late 1970's. They are designed to contain any large petroleum, oil, and lubricant (POL) spills that might occur on the flight line or aircraft parking apron and to meet the requirements of the Dobbins ARB Oil Spill Prevention Control and Counter Measure Plan (SPCC) and EPA regulations on Oil Pollution Prevention, Title 40, Code of Federal Regulations, Part 112. The INRMP also identifies the Spill Ponds for this purpose. Fishing, wading or swimming is not allowed at these ponds.

4. Based upon these facts it is in the best interest of Dobbins ARB to allow no fishing on the base and therefore no recreational fishing is planned at Dobbins ARB.

5. If you have any questions, please contact Mr. Mark D. Floyd, 94 MSG/CEV, 678.655.3549 or mark.floyd@us.af.mil.

KENNETH W. WILLIAMS
Base Civil Engineer

Appendix H. Forest Management History at Dobbins Air Reserve Base

Table H-1. Prescribed Fire History and Projections on Dobbins ARB

Burn Unit (Forest Stand)	Year Burned	Fire Management
DN-1		Prescribed fire not viable
DN-2	Future	Prescribed fire in future, not until at least 2027
DN-3	Future	Prescribed fire in future, not until at least 2027
DN-4		Protect from fire
DN-5		Prescribed fire not viable
DN-6		Would benefit from fire but difficult to execute
DN-7		No prescribed fire recommended
DN-8	Future	Would benefit from fire
DN-9	Future	Would benefit from fire
DN-10		Prescribed fire not viable
DN-11		Protect from fire
DN-12		Would benefit from fire but difficult to execute
DS-1		Prescribed fire not viable
DS-2		Too steep for prescribed fire
DS-3	2006, 2007, 2008, Future	Continue prescribed fires
DS-4	2004, 2006, 2007, 2008, Future	Continue prescribed fires
DS-5	2004, 2006, 2007, 2008, Future	Continue prescribed fires
DS-6		Protect from fire
DS-7	2007, 2008, Future	Continue prescribed fires
DS-8		Prescribed fire recommended
DS-9	2006, 2007, 2008, Future	Northeast portion burned; Continue prescribed fires
DS-10	2021	Planned prescribed fire
DS-11	2004, 2006, 2007, 2008, Future	Continue prescribed fires
DS-12	2005, 2006, 2007, 2008, Future	Continue prescribed fires
DS-13	2021	Planned prescribed fire
DS-14		PLS present, protect from fire
DS-15		Protect from fire
DS-16	Future	Prescribed fire in future, no date specified
DS-17	Future	Prescribed fire recommended, but avoid obstacle course

Source: FMP and Dobbins ARB NRM.

Burn Unit (Forest Stand)	Year Burned	Fire Management

Table H-2. Forest Harvest and Thinning History on Dobbins ARB

Forest Stand	Year	Forestry Activity
DN-1	2000	Thinned
DN-2	2000	Harvested
DN-3		No thinning or harvest
DN-4	2000	Thinned
DN-5	2000	Thinned
DN-6	2000	Thinned
DN-7	2000	Thinned
DN-8	2000	Thinned
DN-9		Would benefit from selective thinning
DN-10	2000	Thinned
DN-11		No thinning or harvest
DN-12		No thinning or harvest
DS-1	2000	Thinned
DS-2		Too steep for regular harvest
DS-3	2010	Harvested
DS-4	2010	Harvested (Thinned 1997)
DS-5	2010	Harvested (thinning in future)
DS-6		Never harvested
DS-7	2010	Harvested (thinning in future)
DS-8	2002	Harvested (thinning in future)
DS-9	2010	Harvested (thinning in future)
DS-10	1997	Harvested
DS-11	2010	Partial thin, partial harvest (thinning in future)
DS-12	1997	Harvested
DS-13	1997	Harvested (partial harvest in 2003)
DS-14	1997	Harvested (PLS present, no harvest planned)
DS-15	2010	Partial harvest. If future harvest, only pine trees and leave hardwoods
DS-16	1997	Harvest
DS-17		Select harvest of hazard trees and thinning only

Source: FMP and Dobbins ARB NRM.

Table H-3. Invasive Plant Control History on Dobbins ARB

Year	Acres Treated						Feet Treated	Notes
	Kudzu	Privet	Wisteria	English Ivy	Mimosa	Nature Trail	Forest Roads	
2005	24.7	20	2			0.96	9,250	3 "spots" of Kudzu also treated
2006	24.7	30	3			0.66	2600	6 "spots" of Kudzu also treated; 1 "spot" of English Ivy treated
2007	28	30	5			0.94	"existing forest roads"	6 "spots" of Kudzu also treated; 1 "spot" of English Ivy treated
2008	28	20	10			0.94	550	8 "spots" of Kudzu also treated; 1 "spot" of English Ivy treated
2009	combined 50 acres					0.94	300	1 "spot" of English Ivy treated
2010	combined 40 acres					0.94	"existing forest roads"	1 "spot" of English Ivy treated; "Pine Release" on 71 acres
2011								
2012	see note	41; see note	see note	1	see note	1	n/a	Combined Wisteria, Privet, Kudzu, and Mimosa on 40 acres
2013	see note	66; see note	see note	0.5; also 65 trees	see note	1	n/a	Combined Wisteria, Privet, Kudzu, and Mimosa on 40 acres
2014								
2015	see note	46.5; see note	see note	see note	see note	1	10 acres in right-of-way	Wisteria, Privet, Kudzu, Mimosa, and English ivy (as deemed necessary) on 40 acres
2016	see note	20; see note	see note	see note	see note	see note	5 acres in right-of-way	Wisteria, Privet, Kudzu, Mimosa, and English ivy (as deemed necessary) on 40 acres; 1 mile of nature trail cleared of vegetation

Source: FMP, Annual Contracts with USACE, and Dobbins ARB NRM.

Appendix I. Sources for Best Management Practices for Stream Crossings

Georgia Forestry Commission. 2009. Georgia's Best Management Practices for Forestry – Section 3 includes stream crossings. Available at http://www.gfc.state.ga.us/resources/publications/BMPManualGA0609.pdf

Atlanta Regional Commission. 2016. Georgia Stormwater Management Manual. Volume 2, Section 5.3 discusses culvert design and Section 5.4 discusses open channel design. Available at http://atlantaregional.org/georgia-stormwater-management-manual/

US Fish and Wildlife Service. 2012. Georgia's Stream Crossing Handbook. Available at https://www.fws.gov/southeast/pdf/georgia-stream-crossing-handbook.pdf

US Fish and Wildlife Service. Stream Crossing Initiative: Making Stream Crossings Fish Passable. Available at https://www.fws.gov/athens/stream_crossing/images/fact_sheet.pdf

Natural Resources Conservation Service. 2006. NRCS Conservation Practice Standard: Stream Crossing. Available at https://efotg.sc.egov.usda.gov/references/public/GA/ga578.pdf

Appendix J. Finding of No Significant Impact from 2012 INRMPs

This INRMP is an update and continuation of the last INRMP for Dobbins ARB, which was completed in 2012. As such, the Finding of No Significant Impact and NEPA analysis associated with the 2012 INRMP is still valid for this updated INRMP.

15.0 ASSOCIATED PLANS

Tab 1 – Forest Management Plan (FMP), updated 2017

Tab 2 – Wildland Fire Management Plan (WFMP), update in progress

Tab 3 – Bird/Wildlife Aircraft Strike Hazard (BASH) Plan, updated 2015

Tab 4 – Stormwater Pollution Prevention Plan (SWPPP), updated 2017

Tab 5 – Integrated Cultural Resources Management Plan (ICRMP), update in progress

Tab 6 – Integrated Pest Management Plan (IPMP), updated 2016