Winter 2012

Natural Selections

Department of Defense Natural Resources Program

IN THE NEWS:
DoD Support for National Public Lands Day

Armed with Science, a science and technology blog that features cutting-edge research and development at the Department of Defense, covered DoD's support for National Public Lands Day (NPLD) in an 11-part series facilitated by Mr. Peter Boice, DoD Deputy Director, Natural Resources and Director, Legacy Program. NPLD is the nation's largest single-day volunteer event for public lands.

The series highlighted a subset of the 41 NPLD projects in 23 states funded by DoD's Legacy Program, including:

- Trash pickup at the Tennessee Army National Guard Volunteer Training Site in Catoosa County, Georgia
- Support for the burrowing owl population at Umatilla Chemical Depot
- Creating a memorial garden/pollinator habitat at Aberdeen Proving Ground
- Enhancing and caring for the Halealoha Haleamau Burial Platform at Joint Base Pearl Harbor-Hickam
- Repairing a boardwalk trail and controlling invasive Sphagnum Moss at the Ka'ala/Schofield Barracks West Range
- Wetland/riparian restoration at Malmstrom Air Force Base

To learn more about these efforts, visit http://science.dodlive.mil and enter "DoD 2011 NPLD Project" in the Search box.

SPOTLIGHT

Volunteers at the Heart of Eglin's Environmental Outreach

By Erica Laine, Volunteer Coordinator, Eglin Air Force Base

Through its Natural Resources Management Section (also known as 'Jackson Guard') Volunteer Resources Program, Eglin Air Force Base (AFB) recruits more than 300 volunteers to tackle dozens of stewardship projects logging more than 7,000 hours of volunteer time each year. The dovetailing of volunteerism and environmental outreach enables Eglin to promote its stewardship to the local community, while simultaneously educating the community on how they can help with stewardship.

Established in 1999, the goals of the Volunteer Resources Program and its coordinator were to expand capabilities, provide an effective conduit for community education, and strengthen community relationships by involving volunteers in the management of natural resources on Eglin. Not only were these goals met, but the program has exceeded its expectations for success and volunteers have been pivotal to the base's environmental outreach and education ever since. *continued on page 10*

INSIDE THIS ISSUE

NATURALLY SPEAKING

From the Desk of L. Peter Boice, DoD Deputy Director, Natural Resources and Director, Legacy Program

More Challenges, More Oversight, Fewer Resources

I devoted the last Naturally Speaking to "The Need for Enhanced Program Oversight." This issue's column updates my earlier comments on budgets, metrics, and management reviews and addresses two key on-the-ground challenges—candidate species and climate change impacts—that we must successfully address to help enable our continued access to military training and testing areas and our protection of irreplaceable habitats and species.

Budget

Defense Secretary Leon Panetta proposed budget cuts on January 26 that would slash the size of the U.S. military by eliminating nearly 100,000 ground troops, retiring old ships, and trimming air squadrons. In a preview to a formal budget announcement on February 13, Secretary Panetta said he would ask for a $525 billion budget for fiscal year 2013, a $6 billion cut from fiscal year 2012, the first time since 9-11 that the Pentagon has asked for less than in the previous year.

As we know all too well, the DoD Components have been taking actions over the past year in anticipation of reduced budgets. Significant staff cuts and realignments are affecting most installations and offices, including our installation and command-level natural resources managers. Yet, the breadth and importance of our core natural resources functions continues to grow.

What can be done in the face of diminishing resources? As I suggested last issue, one core action that we must all focus on—be it at a one-deep installation or at Headquarters—is to continue to inform our senior leaders as to what DoD is buying with its natural resources conservation compliance dollars. I provided eight broad suggestions and included a request that you add specific examples of how your installation natural resources program achieves those and other objectives. Thus far, however, we've only received one response. To that respondent, thank you. To other readers, please take the time to send us more.

In addition, here are four types of information that my leadership needs:

- Avoided critical habitat designation on (# acres) on (# installations). (Add details of tie to military mission.)
- Removed (# acres) of invasive (what species?) on (installation/region), allowing unimpeded training by (# troops/installation/units).
- Removed feral hogs from (# acres), maintaining training for (activity) and protecting (what?).
- Rehabilitated (# acres) of testing and training lands that increased the number of training acres available or resulted in no net loss to mission capabilities. (Provide details; e.g., prescribed burning.)

To defend our essential NR Program resources, we need to put forth the most complete and compelling story possible. Please send examples to DoDNRConservation@BAH.com by **March 31, 2012**.

Metrics and Management Reviews

OSD conducted Environmental Management Reviews (EMRs) with the DoD Components in mid-February. Now that we have three years' worth of data for the seven Natural Resources Focus Areas, for the first time we have been able to evaluate these data to identify key trends and determine what the metrics are telling us.

Our preliminary analyses suggest that the trends for most Focus Areas are positive for all Components. Further, most of our installation INRMPs are effectively supporting military operations; however, a small number are not (rated 'red') and about 18% (rated 'yellow') could improve their mission support. Two other Focus Areas with significant numbers of 'red' and 'yellow' rankings that we will be tracking closely are Listed Species and Critical Habitat, and INRMP Project Implementation.

One key point should be kept in mind. A rating of 'red' or 'yellow' should not be regarded as a black mark, but rather as a key indicator that an installation may require additional resources or have other needs so that it can fully support critical mission and natural resources requirements.

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Candidate Species

Many of you are familiar with the September 10, 2011, Multi-District Litigation court settlement between the U.S. Fish and Wildlife Service (USFWS) and the Center for Biological Diversity and Wild Earth Guardians. The settlement in part requires the USFWS to evaluate 251 candidate species by 2017 for potential addition to the Endangered Species list.

The DoD Components have identified 60 of these species on or adjacent to DoD lands, including nine with the potential to impact military activities if listed. Determining the magnitude of these potential future listings is drawing substantial attention from senior DoD environmental and mission readiness leaders. We are working with both the USFWS and the Military Services to identify ways to enhance information flow and assess alternative means to protect both species and the military mission.

Climate Change Impacts

The effects of climate change have significant potential to impact mission testing and training. Possible impacts to natural resources include sea level rise, spread of invasive species, increased wildfires, drought in the Southwest, flooding and/or drought in the Southeast, increased stream and lake temperatures, coral bleaching, increased storm frequency and intensity, increased erosion, and changes in species distributions. The bottom line is that all of these impacts can degrade habitats and training lands and increase species listings, especially for those species already at risk, which could lead to increased training and testing restrictions.

Consequently, I have just recommended to my leadership that a key Natural Resources objective be "to minimize potential climate change impacts to military operations." Still under development, the key performance measures would be to identify potential climate change impacts to DoD's natural resources that threaten mission activities as well as strategies to minimize and/or mitigate compliance and mission relevant climate change impacts.

Summary

These and other key Natural Resources issues continue to evolve. For the very latest, I urge you to attend the upcoming National Military Fish & Wildlife Association's annual training workshop. My OSD Policy Session will be held the morning of March 13.

See you at the...

2012 NMFWA Annual Training Workshop

March 12-16, Atlanta, Georgia

The 2012 National Military Fish & Wildlife Association (NMFWA) Annual Training Workshop will provide a unique opportunity for DoD managers to meet with their counterparts from the U.S. Fish and Wildlife Service, State fish and wildlife agencies, and other organizations to discuss challenges and solutions to managing natural resources on military lands. For details, visit www.nmfwa.net/index.php/conference.

Agenda Highlights

Technical Sessions

- BASH
- Mitigation Banking
- Invasive Species Management
- DoD Fire Programs
- Conservation of Reptiles and Amphibians
- Outdoor Recreation

Working Groups

- BASH
- DoD Partners in Flight
- Bats
- Climate Change
- Outdoor Recreation
- Herpetology
- Invasive Species
- Law Enforcement
- Pollinators

DoD Policy Session–Focus on TER-S

Special Workshops

- Climate Smart Adaptation
- DoD PARC Implementation

Military Service Breakout Sessions

Field Trip to Fort Benning

Not Such an Unlikely Alliance

By MajGen Mike Lehnert, U.S. Marine Corps, Retired

To the uninitiated, an alliance between the Department of Defense and environmentalists would seem an unlikely partnership. What mutual interests could "tree huggers" and "warriors" have? In point of fact, they have more than mutual interests; they have a critical symbiotic relationship. Both communities share a fierce love of our country, but they are also burdened by their stereotypes of each other and because they often don't understand one another, they sometimes fail to capitalize on those areas where mutual cooperation isn't just possible, it is vital.

DoD's installations were set aside for the purpose of ensuring that our military could maintain its combat effectiveness and be ready to respond to world crisis for generations to come. Most of these bases were developed during the early portions of World War II, and their size was based on the weapons systems and doctrine of the era. As military capabilities increased, their effective size became smaller. At the same time, public sector encroachment began threatening the ability of our military to train. Remote bases were no longer remote. Commercial and private development went right up to the fence-line of our installations and sometimes reduced the size of the properties themselves. The unique habitats outside the bases disappeared, and the endangered species moved to the only places where survival was still possible—the places set aside for our warfighters to train.

At many bases, encroachment increased to the point that realistic training was nearly impossible to achieve. Environmentalists and environmental protections became a convenient red herring to obscure the real problem. As commercial development destroyed the habitats of one endangered and threatened species after another, often the only remaining place left was the military installations controlled by DoD. Our endangered species had "voted," and in the ultimate irony, remaining populations of our most endangered species were often found primarily on the property controlled by our warriors. Without conscious intent, our endangered species had also sought protection from those who are charged with the defense of our citizens and our national interests abroad.

By and large, the Department of Defense has taken its environmental stewardship responsibilities seriously. Oversight and management are generally superior to that found on private lands, and the endangered species have responded in kind, many of which under DoD management are experiencing rebounding populations because of responsible stewardship of the habitat. Good stewardship begins with good data, and often the best information on the health of endangered species populations and the habitats they need to recover is in the hands of the Department of Defense. DoD has shared that data, and each Service has success stories of cooperation with environmental and academic groups to recover endangered and threatened species. Sadly, that story is often not well understood or known by the public at large. It is an opportunity missed.

Both environmentalists and our military share a common goal of large open spaces, natural habitats managed in accordance with the laws of our land. Unfettered private commercial development of property up to the fence-line on DoD installations (with the associated operational restrictions) leaves both endangered species and military readiness at risk. The time has come to recognize that without mutual cooperation species protection and military readiness are both endangered.

Over the past decade, visionary leaders in both the military and environmental communities have begun to recognize our mutual interests. For example, in the first part of this new decade, the Marine Corps sponsored visits by senior environmental leaders from the Sierra Club, the Endangered Species Coalition, the Endangered Habitats League, and The Nature Conservancy. The rules for these visits were simple: look at anything you want, talk to anyone you want, form your own opinion. The results were remarkable. The environmental community came away with an appreciation of DoD's level of commitment to environmental stewardship, and both sides began to recognize that their areas of common purpose far outweighed their differences. Other Military Services adopted similar outreach programs.

The Endangered Species Act, signed into law by President Nixon, was one of the landmark pieces of legislation of the last century. Called the "Magna Carta of the environmental movement," it enjoyed bi-partisan support and represented a moral commitment we made to the generations that would follow to protect endangered species and America's natural heritage. This legislation represented something uniquely American in our recognition that we hold our land and our wildlife in stewardship to our children and those who will follow us. For a brief moment in time, we became a model for the rest of the world and despite the shadow of the Cold War, Vietnam, and social unrest in this country, we recognized that courage and vision could preserve all that was best in this nation for the future.

The Endangered Species Act still remains a vital safety net for animals, plants, birds, and fish. In May 2006, the U.S. Senate created Endangered Species Day. Passed by unanimous resolution, it is now celebrated throughout the United States at more than 100 venues and growing. Here is another opportunity for the Department of Defense to demonstrate and publicize its commitment to environmental stewardship. Most well run military installations have robust community outreach programs and good relations with local environmental groups. Endangered Species Day represents a singular opportunity to inform the communities outside military installations that DoD takes its environmental stewardship responsibilities seriously.

Among our American institutions, our military brings its enormous respect and credibility to the issue and raises awareness of the importance of species and the need for stewardship amongst the

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Video Raises Military Personnel Awareness of Illegal Wildlife Trade While Serving Abroad

By Heidi Kretser, Livelihoods and Conservation Coordinator, Wildlife Conservation Society

Photo courtesy of WCS

The extensive international commitment of the U.S. Armed Forces has resulted in the long-term presence of U.S. military personnel in numerous countries, some of high biodiversity and ecological importance. Military personnel and affiliates stationed overseas often purchase items at on-base military bazaars as souvenirs for friends and family. Among the local items offered for sale are wildlife products such as fur coats, skins, horns, and similar items. Many of the wildlife products available on bases in places like Afghanistan and Iraq are from locally or globally threatened or endangered species such as snow leopard, Eurasian wolf, and Asiatic black bear.

Demand for wildlife and wildlife products poses one of the greatest threats to populations of wild animals throughout the world by fueling unsustainable harvest and threatening already endangered species with local and regional extinction. Purchase and transport of many wildlife products violates national and international laws and conventions, including the U.S. Endangered Species Act, the Lacey Act, the Convention on International Trade in Endangered Species (CITES), as well as the Uniform Code of Military Justice.

Since 2007, when staff of the U.S. based conservation organization the Wildlife Conservation Society (WCS) first noticed illegal items for sale on military bases near Kabul, Afghanistan, WCS and the U.S. Military have implemented a comprehensive approach for targeted education and outreach to military police and deploying military personnel. In Afghanistan, WCS staff regularly provide training to military police responsible for customs clearance and monitoring items sold by vendors at the on-base bazaars; they also confiscate any prohibited items. In the United States, WCS staff, with funding from DoD's Legacy Resource Management Program, have developed and distributed a variety of training materials to military personnel deploying to Iraq and Afghanistan.

The partnership recently unveiled a new video—*Caught in the Crosshairs: Combating the Illegal Wildlife Trade in Iraq and Afghanistan*—aimed at informing U.S. military personnel about the consequences of buying illegal wildlife products when deployed or stationed overseas. Given the widespread availability of online technology at remote military installations, a downloadable video format allows for military personnel to have greater access to necessary training. The video, narrated by actor/director and United Nations Goodwill Ambassador for Biodiversity Edward Norton, also alerts the viewer to other dangers of purchasing and transporting illegal wildlife products. These include threats associated with zoonotic disease (pathogens that occur in wildlife that are potentially transmissible to people), the depletion of scarce or culturally significant natural resources, and the inadvertent support of organized crime. You can watch the video online at www.wcswildlifetrade.org/military.

The comprehensive approach to training by WCS and the U.S. Military has already produced some successes. The numbers of items confiscated from soldiers and from vendors in Afghanistan has declined, suggesting that the wildlife items available and purchased are similarly declining. Raising soldiers' awareness about wildlife protection laws and the ways they can recognize potentially illegal items in the market is critical for ultimately limiting and preventing trade in protected species from occurring. Reducing military demand for wildlife products helps curb local poaching and conserves populations of native wildlife in the countries in which the U.S. Military serves.

Not Such an Unlikely Alliance *Continued*

public at large. By example, our successful military stewardship shows that "it can be done" in a way that is practical and economic. Our Department of Defense can motivate the public to "get on board" and exercise the necessary stewardship on private and non-military public lands so that encroachment on DoD lands is not worsened. Working together, we can reinforce our symbiotic relationship and encourage better communication, better cooperation, and greater understanding that each American shares a responsibility for environmental stewardship. And hosting an Endangered Species Day celebration on DoD lands is one positive way to build that type of relationship with the public and key stakeholder groups.

A Department of Defense wide celebration of Endangered Species Day would remind all Americans that a country worth defending is a country worth preserving.

Legacy-Sponsored Workshops Tackle Pressing NRM Issues

By Jane Mallory, Natural Resources Specialist, Legacy Resource Management Program

DoD natural resources managers have their hands full, managing diverse natural habitats, conserving sensitive species, and ensuring the persistence of healthy natural landscapes, all while maintaining the military readiness mission by keeping training and operating lands available for use. It's a daunting task, and DoD natural resources managers need the most up-to-date information and management techniques to meet this challenge. One way the DoD Legacy Resource Management Program has helped is by offering workshops that address specific topics of concern to DoD personnel. Highlighted here are just a few examples of the most recent successful workshops.

Saving Our Bats: The Battle Against White Nose Syndrome

White Nose Syndrome (WNS) is a disease with an extremely high mortality rate that in the last few years has swept through eastern cave and mine-dwelling bat populations, leaving many populations decimated. If left unchecked and unmanaged, this disease is predicted to spread across the country with potentially devastating effects. WNS could also deplete bat populations to such a degree as to warrant Endangered Species Act listings of bat species such as the Eastern small-footed and the Northern myotis species. Potential mission impacts for many installations include a dramatic increase in resource (manpower and dollars) allocation to bat population management and additional constraints on land use, training, and operations. While researchers continue to work on the cause and possible solutions to WNS, the Legacy Program has been proactive in getting the most up-to-date information and management strategies out to installation personnel through WNS workshops. Funded by Legacy and developed and conducted by Bat Conservation International (BCI), 3-day WNS workshops were offered to installation personnel and their partners, the first in November 2010 in Nashville, Tennessee, and the second in August 2011 in Tucson, Arizona. Through interactive dialogue, classroom discussions, presentations, and distributed materials, approximately 100 attendees and webcast viewers were provided guidance to help them prepare for the possible expansion of WNS. Materials resulting from the workshops include BCI and U.S. Fish and Wildlife Service WNS Frequently Asked Questions, WNS literature, bat literature reprints, maps of WNS spread across the eastern United States, Federal planning documents, protocols, State WNS response plans, presentations, expert contact information, and webinar and field trip recordings. All workshop materials and recordings are available at www.denix.osd.mil/nr/. For more information on what DoD is doing to protect bats, refer to the January 2011 issue of Natural Selections at https://www.dodlegacy.org/Legacy/News/NaturalSelections_January2011.pdf.

Conserving Our Rare Plants

Of all the listed and at-risk species occurring on DoD installations, the most numerous species are plants. Of the 426 federally protected species on DoD lands or in DoD waters, 200 (approximately 47%) are plant species. Of the 519 species at risk (SAR) on DoD lands, 308 (approximately 60%) are plants. To help DoD natural resources managers conserve their rare plant species, the Legacy Program funded two offerings of the Intensive Plant Conservation Training Workshop. Because the majority of sensitive plant species on DoD lands occur on the Pacific Islands and the west coast, workshops were held in Honolulu, Hawaii, in 2008, and Berkeley, California, in 2009. These 6-day information-packed courses were developed and coordinated by the Center for Plant Conservation (CPC), which drew expertise from its network of 37 participating botanical institutions across the country. Course instructors included nine Ph.D. faculty members who lectured on the following topics: The State of Conservation Biology; Concepts of Rarity & Imperiled Plants; Importance of Systematics: Species Concepts & Hybridization; Conservation Genetics; Population Evaluation: Demography Population Viability Analysis; Recovery Criteria: Biological & Functional Aspects of Recovery; Plant Protection and Legislation; Measuring Success & Planning to Measure Success; Tools and Partnerships; Restoration and Management – Ex Situ; Examining Community Structure & Species Signatures; Evaluating Threats and Threat Reduction; Fragmentation & Preserve Design; Restoration and Management – In Situ; and Surveying for Rare Plants: Inventory & Monitoring. More than 80 attendees from DoD and partner agencies gained information and skills essential to successful plant conservation from the workshop lectures, exercises, and materials.

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Legacy-Sponsored Workshops Tackle Pressing NRM Issues *Continued*

Battling Our Non-Native Invasive Species

One of the biggest challenges facing DoD natural resources managers is how to reduce the impact and prevent the spread of non-native invasive species. Thousands of invasives infest DoD's natural landscapes causing damage and loss of native species and costing millions of dollars in management and eradication efforts. Because of the enormity of the problem and the regional nature of many of these invasives, a series of DoD-focused workshops was funded by the Legacy Program to provide DoD personnel with the most up-to-date information and management techniques specific to their problem species. Two 5-day workshops were offered in 2009: a Southwest-focused workshop developed and coordinated by the Center for Invasive Plant Management (CIPM) and held at the BLM National Training Center in Phoenix, Arizona, and a Southeast-focused workshop, developed and coordinated by Invasive Plant Control, Inc. (IPC) and held in Chapel Hill, North Carolina. As a result of these two workshops, 85 participants (DoD personnel, representatives from government agencies and tribes, and non-profit groups) acquired management strategies and tools for prevention, early detection-rapid response, control, and habitat restoration. Based on the success of these workshops, a third offering focused on the species and issues of the Northwest will be held May 21-25, 2012, in Portland, Oregon. Developed and coordinated by CIPM and IPC, this workshop will provide participants with knowledge and resources that will enable them to improve land and water stewardship by building partnerships and effectively addressing invasive species problems in their particular sites and situations. For more information about this workshop, visit www.weedcenter.org/dod2012/index.html or contact Emily Rindos, Center for Invasive Plant Management, at emily.rindos@montana.edu or (406) 994-7862.

ESTCP Funding Available for Environmental Technology Demonstrations

DoD's Environmental Security Technology Certification Program (ESTCP) is seeking to fund innovative environmental technology demonstrations in the Resource Conservation and Climate Change program area.

ESTCP's goal is to promote the transfer of innovative environmental technologies through demonstrations that collect the data needed for regulatory and DoD end-user acceptance. Projects conduct formal demonstrations at DoD facilities and sites in operational settings to document and validate improved performance and cost savings.

DoD organizations may submit pre-proposals for demonstrations of innovative tools, technologies, and methodologies that advance DoD's management of its natural and cultural resources (Resource Conservation). The Broad Agency Announcement for private sector organizations and Non-DoD Federal Call for Proposals seek pre-proposals for environmental technologies in the following Resource Conservation topic area only:

- Watershed Management Models/Tools for DoD Installation Applications

Pre-proposals from all sectors are due by **March 15, 2012**. Detailed instructions for proposers are available at www.serdp-estcp.org/Funding-Opportunities/ESTCP-Solicitations.

DoD Natural Resources Training Course Offerings

By Kristin Altieri, Booz Allen Hamilton

The DoD Natural Resources (NR) Program began developing training courses in 2008, with what was initially a 2.5-day course providing Military Service and other federal agency personnel an overview and examination of the Sikes Act, its requirements, and the interagency coordination with the U.S. Fish and Wildlife Service and state fish and wildlife agencies. Subsequently, a 1-day Sikes Act 101 course and a more advanced 1-day Sikes Act Implementation course were developed to accommodate the varying levels of experience and expertise among participants. At the request of the Military Services, a third course was added: a 1-day Endangered Species Act (ESA) Implementation course, which examines the ESA and its implementation requirements from a uniquely DoD perspective.

These courses have helped ensure that natural resources compliance and conservation are implemented appropriately and in-line with the Secretary of Defense's priorities. Participant feedback indicates that the courses provide personnel in the field with concrete, on-the-ground tools and knowledge. This knowledge is taken back to installations and applied when developing Integrated Natural Resources Management Plans (INRMPs), Biological Opinions, and Environmental Assessments, as well as when complying with the ESA.

Beginning in FY 2012, DoD will no longer sponsor courses due to budget cuts; however, the DoD NR Program is offering cost-share opportunities for these courses to the Military Services. Benefits of sharing course implementation costs include taking advantage of course materials DoD has already paid to develop; allowing the Military Services to tailor courses to specific audiences and regions; and increasing the accuracy and applicability of course information. Standard operating procedures and outlined requirements for developing online training also are available.

For additional information, e-mail DoDNRConservation@bah.com.

Sikes Act 101

This course is introductory in nature and highlights the importance of INRMP cooperation from the developmental through the review stage, serving as a meeting ground for the tripartite partners. By the conclusion of the course, participants should have a better understanding of the Sikes Act, INRMPs, the DoD NR Program, and the tripartite Memorandum of Understanding, including roles and responsibilities. To date, approximately 100 personnel have taken these Sikes Act 101 courses:

- Army Sustainable Range Program Workshop – Indianapolis, IN (July 2009)
- Sustaining Military Readiness Conference – Phoenix, AZ (August 2009)
- Naval Facilities (NAVFAC) Southwest Division – San Diego, CA (October 2010)

Sikes Act Implementation

For experienced DoD natural resources managers who are charged with overseeing and implementing INRMPs at the installation level, the Sikes Act Implementation course clarifies the difference between reviews and revisions, addresses how to monitor and track projects successfully, and offers lessons learned from case study examples. By the conclusion of the course, participants should have a better understanding of INRMP preparation, including structure, content, and planning sources; how to update and revise an INRMP; the difference between an annual review and a 5-year review; the difference between a review and a revision; specific resources to include; and how to successfully monitor and track projects. To date, nearly 100 personnel have taken these Sikes Act Implementation courses:

- National Military Fish & Wildlife Association Annual Meeting – Milwaukee, WI (March 2010)
- Army National Guard Environmental Workshop – Laramie, WY (August 2010)
- NAVFAC Southwest Division – San Diego, CA (October 2010)

ESA Implementation

Intended for experienced DoD natural resources managers, this advanced ESA course clarifies the species listing and delisting process, includes topics such as critical habitat exemptions and exclusions, explains Section 7 consultations, describes how to implement the ESA when implementing an INRMP, and offers lessons learned through case study examples. The course is designed to be fully interactive and features instructors experienced in DoD/Military Service natural resources issues as well as laws and regulations. To date, more than 130 DoD personnel have taken these ESA Implementation courses:

- NAVFAC Southwest Division – San Diego, CA (January 2011)
- National Military Fish & Wildlife Association Annual Meeting – Kansas City, MO (March 2011)
- Sustaining Military Readiness Conference - Nashville, TN (July 2011)

The DoD NR Program, in cooperation with the Navy, recently developed and successfully piloted a Navy-specific offering of the ESA Implementation course. Using a cost-sharing approach, Navy matched DoD NR Program funds to cover course-related expenses for five Navy-specific course offerings. To date, there have been two cost-share ESA course offerings with nearly 50 attendees:

- NAVFAC Pacific Division – Naval Base Hawaii (June 2011)
- NAVFAC Marianas Division – Naval Base Guam (June 2011)

Become a Member! TWS Military Lands Working Group

By Rhys Evans and Robbie Knight, Interim Co-Chairs, MLWG

You may have seen the following text published in a recent issue of The Wildlife Society's (TWS) member magazine, *The Wildlife Professional*.

"The Department of Defense manages nearly 30 million acres of land, in nearly all 50 states, U.S. Territories and several foreign lands. Our biodiversity is astounding, at least in part because our ecosystems range from tundra to tropics, rainforest to desert, and grassland plains to rugged mountains. To meet the requirements of the Sikes Act, we manage our lands and resources in support of military readiness and "no net loss" of training opportunities; but at the same time, we host more threatened and endangered species than any other Federal department. We face challenges common to any land manager, such as endangered/threatened species management, invasive species and wildfires; less common concerns such as airport pest abatement and Bird/Wildlife Aircraft Strike Hazard (BASH); and unique issues like unexploded ordnance. The TWS Military Lands Working Group is intended to provide opportunities for members to exchange information, meet professionals dealing with similar situations, and promote awareness of natural resource conservation requirements on these unique lands."

A preliminary informal meeting of the TWS Military Lands Working Group (MLWG) was held in 2010 in Snowbird, Utah. After having our charter accepted by the TWS Council in March, we held our first official meeting at the 2011 annual TWS meeting in Kona, Hawai'i. Our goals, which are highlighted above, aim to facilitate communication among members, but perhaps with an emphasis on "biology."

Over the next three years, we need to reach 50 paid members (we're at about 30 now); membership in the MLWG is only $5 annually, but you also must be a dues-paying member of TWS. MLWG membership is open to any TWS member with an interest in facilitating communication with persons working on natural resources and wildlife management on military lands. To join, there's a simple "box check" on the TWS membership renewal form, or if you've already renewed, you can do a separate form just for the working group membership.

A key benefit of a formal working group through TWS is that we will have the opportunity to sponsor topical symposia at national and regional meetings. We did this for the 2009 meeting in Monterey (sponsored by the Biodiversity Working Group), and we are planning to submit a symposium for Portland, Oregon (October 2012). The MLWG is also working with the "Early Career Professional Working Group" to co-sponsor a panel discussion on Federal career opportunities in wildlife management, including the Student Career Experience Program (SCEP), Student Temporary Employment Program (STEP), internships, and volunteerism. If anyone would like to help with these initiatives, please contact Rhys Evans at rhys.evans@nmfwa.org.

DID YOU KNOW?

DoD has embraced social media!

Social media–or the web-based and mobile technologies used to turn communication into interactive dialogue–has exploded over the past decade. Its effects and impacts are still being shaped. Types of social media include collaborative projects, blogs, content communities, and social networking web sites. Each focuses on identity, conversations, presence, relationships, reputation, and groups in some manner. The foundation of social media, however, is the dispersal and sharing of information.

Some examples of social media include applications like Facebook, Twitter, and Wikipedia, as well as technologies like podcasts, photo-sharing web sites, and geolocation web sites. These technologies target and benefit nearly every kind of audience because of their reach (global), accessibility (generally available to the public for free or little cost), usability (do not require specialized skills), and immediacy (virtually instantaneous). Specific groups can include students, researchers, job hunters, businesses, non-profit organizations, political groups, media outlets, and increasingly government entities.

DoD's Social Media Operations team, part of the Defense Media Activity, facilitates DoD's participation in online and social media communications. The team serves as an incubator for new communication tools that provide information in a way that is transparent and enables audience participation.

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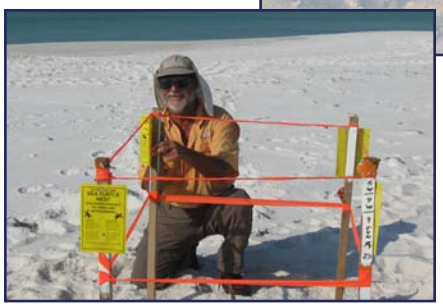
https://twitter.com/#!/DoDNatRes

SPOTLIGHT *Continued*

The first project that fused education, outreach, and volunteers was the sea turtle monitoring program, which consisted of several volunteers and a few Jackson Guard employees. Today, nearly 40 volunteers take on the responsibility of daily sea turtle nest monitoring on 17 miles of beach from May through October. Volunteers are trained in the safe use of ATVs, sea turtle identification, and monitoring protocols.



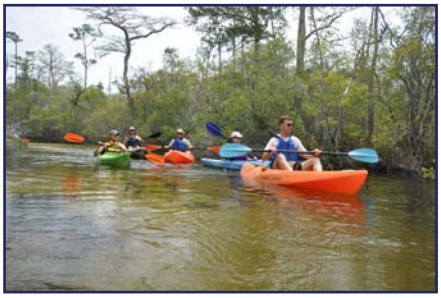
Other projects that have emerged include Santa Rosa beach mouse surveys, Okaloosa darter habitat restoration, and burrowing owl surveys–all of which are supplemented by volunteers each year. Without the volunteer program, many of these projects would not be possible due to limited funding and personnel. Moreover, the community sees firsthand Eglin's commitment to the stewardship of its natural resources.

Eglin's Volunteer Coordinator has worked with numerous local schools on the Project Wild curriculum and even engaged in "Train the Teacher" workshops to help promote environmental education in the local community. Through a partnership with the University of West Florida, students volunteer at Jackson Guard while receiving class credit for their volunteer time. This partnership allows the students to receive experience in field work and Eglin benefits from a volunteer labor force.

Volunteers also work to expand outreach efforts by increasing awareness about Eglin's land management practices. The base has an extensive wildland fire management program that regularly burns in excess of 90,000 acres annually. Volunteers from local fire departments often help in this critical management activity, which in turn helps educate the public about ecosystem management through the use of prescribed fire. An additional benefit is reduced wildfires in the urban interface.

Many neighborhoods are built along the border of the Eglin reservation, which is home to the Florida black bear. The black bear easily becomes a nuisance putting the bear's life in danger and possibly humans. Residents in the bear prone areas are given Bear Awareness packets and Jackson Guard personnel host work days to "bear proof" trash cans and to educate residents on how to avoid inadvertently attracting bears to their yards.

Additionally, the Volunteer Coordinator is instrumental in planning Eglin's annual Earth Day celebrations. Eglin hosts weeklong Earth Day events with all of the projects geared toward natural resource conservation and awareness. Volunteers and Eglin personnel work together each year to clean up illegal dumping sites on the reservation. Refrigerators, televisions, and tires are properly disposed of as well as paint cans and chemicals. Scrap metals are recycled. Another Earth Day project is the Children's Day at the base school. Recycling, energy conservation, cultural and natural resources, and wildlife safety are just a few of the topics covered at the hands-on booths. Eglin also offers multiple kayak "ecotours" during the weeklong Earth Day event. Kayakers are guided down a stream on the Eglin reservation. While floating the stream, the guide points out rare and intriguing plants, insects, animals, and ecosystem features. Wildlife and venomous snake encounters are guaranteed throughout the trip, and awareness regarding snakes remains a lasting thought in the kayakers mind. The kayak ecotours allow people to participate in an activity that they may have thought out of reach on their own.



Beyond Eglin, Jackson Guard's Volunteer Resources Program has been instrumental in the set up and success of new volunteer programs at Edwards AFB, California, and Arnold AFB, Tennessee. Both programs have embraced Eglin's philosophy of outreach and education through volunteerism, which expands the base's capabilities while strengthening its relationship with the surrounding community.

UPCOMING EVENTS

Conferences, Workshops, and Training

2012 National Military Fish & Wildlife Association Meeting

March 12-16, Atlanta, Georgia

This annual meeting enables DoD personnel specializing in fish and wildlife management to meet and discuss challenges and solutions to managing these resources. It also affords an opportunity for DoD natural resources managers to meet with counterparts from the U.S. Fish and Wildlife Service and State fish and wildlife agencies who work on Sikes Act issues and many other areas of common concern. For more information, visit www.nmfwa.net/index.php/conference.

Biodiversity Without Boundaries 2012: The NatureServe Conservation & Natural Heritage Conference

April 22-26, Portland, Oregon

This conservation and natural heritage conference highlights the crucial role that biodiversity science plays in our global society. Join conservation leaders, thinkers, and practitioners to exchange knowledge, discuss issues, share innovations, and network. Biodiversity Without Boundaries attendees range from scientists, natural resource managers, and environmental consultants to planners, environmental advocates, and corporate and public policy-makers. The unifying goal of this diverse audience is to tackle urgent and emerging international conservation needs through science, collaboration, and leadership. Visit http://connect.natureserve.org/BWB2012 for more information.

Strategic Management of Invasive Species in the Northwest United States

A Free Workshop for DoD Natural Resource Personnel

May 21-25, 2012, Portland, Oregon

This workshop will provide a comprehensive overview of invasive species issues and management strategies for natural resource personnel at DoD installations across the northwestern United States. It will provide participants with knowledge and resources that will enable them to improve land and water stewardship by building partnerships and effectively addressing invasive species problems in their particular sites and situations. For more information, visit www.weedcenter.org/dod2012/index.html.

2012 North American Invasive Plant Ecology and Management Short Course

June 26-28, 2012, North Platte, Nebraska

This short course will provide three days of intense instruction for those interested in the basics of invasive plant ecology and management. Through presentations, hands-on workshops, site visits, and instructor-led discussion sessions, participants will learn the basic principles of invasive plant ecology and the latest techniques for managing infested areas. New for 2012 is a water use session specifically on invasive plant species. CEU and graduate student credit will be available. For more information, visit http://ipscourse.unl.edu.

97th Annual Ecological Society of America Meeting

Life on Earth: Preserving, Utilizing, and Sustaining our Ecosystems

August 5-10, 2012, Portland, Oregon

To preserve biological diversity (ecosystems, species, and genes), there must be a focus on informed, sustainable utilization at the landscape scale. This conference will explore the three aspects that define biodiversity and the role of humans in species population declines and extinctions, leading to massive alterations to natural ecosystems. At no other time in human history has it become more important than the present to better understand and sustain the ecosystems in which we live. Visit www.esa.org/portland for more information.

SERDP DOD • EPA • DOE | ESTCP

New to the SERDP and ESTCP Web Site: Resource Conservation Tools and Training

Models, software, guidance documents, and databases developed under the Resource Conservation and Climate Change program area are now available under the Tools and Training tab of the SERDP and ESTCP web site! These tools will help promote the implementation of innovative science, technologies, and methods across DoD. Topics include:

- Ecosystem-Based Management – Focus is on managing ecological systems via a process that considers the environment as a complex system functioning as a whole and not a collection of parts.
- Watershed Management – Focus is on management of the abiotic and biotic aspects of land and water resources within a watershed context.
- Species Management – Addresses threatened, endangered, and at-risk species management as well as invasive species management.
- Cultural Resources Management – Focus is on detection, identification, and impact assessment of archaeological resources and historic structures.
- Air Quality Management – Addresses fire and fugitive dust air emissions.

Ecological forestry and climate change tools also will be available in the future. To check out these tools, visit www.serdp-estcp.org/Tools-and-Training/Resource-Conservation-and-Climate-Change.

NEW! NATURAL RESOURCES DOCUMENTS

Reports, Fact Sheets, Spreadsheets, Presentations

Highlighted here are recently uploaded documents on the Legacy Tracker or on the DENIX site. For Legacy-related products, visit https://www.dodlegacy.org/Legacy/intro/ProductsList_NU.aspx. All Legacy products and many more are available at www.denix.osd.mil/nr. Bird-related products are also posted on the DoD Partners in Flight site at www.DoDPIF.org.

Threatened, Endangered, and At-Risk Species Management

Species at Risk on Department of Defense Lands: Updated Analysis, Report, and Maps (Legacy 10-247)

Note: These appendices are hosted on the DENIX secure side.

Appendix 5.3: Information pertaining to species at risk occurring on DoD installations, including their conservation status, biology, habitat, and installations where they are found.

Appendix 5.4: Summary of DoD installations with species at risk, including the number of species at risk found on installations and installation size (square miles).

Appendix 5.5: List of DoD installations with species at risk, including comprehensive information about the species at risk that occur on them.

Appendix 5.6: DoD installations in the USGS Data Set "Federal Land Features of the United States" without species at risk.

Assessing the Value of Department of Defense Lands in Alaska to a Declining Species, the Rusty Blackbird (Legacy 10-337) – Final Report

This project examined the ecology of Rusty Blackbirds (*Euphagus carolinus*) nesting on military lands in Alaska. The goal was to contribute to a range-wide understanding of the species' resource requirements and to help identify the factors contributing to its chronic and range-wide decline. The study was designed to assess the value of military lands in Alaska to this species within a range-wide perspective and was therefore closely coordinated with other studies throughout the species' global range, which includes Alaska, Canada, and the continental United States.

Propagation and Culture of Species at Risk Atlantic Pigtoe (Legacy 10-450) – Fact Sheet

Freshwater mussels have become the nation's most endangered group of animals. The Atlantic Pigtoe is currently in precipitous decline. One of the few remaining stable populations occurs in the Nottoway River on Fort Pickett Maneuver Training Center in Virginia. This project seeks to support existing populations and proactively avoid federal listing and subsequent encroachment of the training mission, while simultaneously building a working relationship with partners that will allow this same technique to be applied on additional DoD lands with mussel species at risk.

Natural Resources Conservation Coral Reef Initiative Database (Legacy 10-306) – Technical Note and Fact Sheet

Up to 75% of the world's coral reefs are threatened as a result of continued pressure from local and global stressors. As data on the conservation status of marine species are updated, the number of these species occurring in coral reef habitats has increased dramatically. To make these data easily accessible, the Coral Reef Initiative Database has been updated, expanded, and reorganized.

Deployment of Acoustical Alert Devices on Select DoD Vessels to Mitigate the Risk of Vessel Collisions with Marine Mammals (Legacy 08-414) – Final Report and Fact Sheet

The West Indian manatee is an endangered marine mammal that inhabits the waterways of DoD installations in southeast Georgia and peninsular Florida. This project conducted behavioral hearing and acoustic propagation studies that revealed manatees cannot adequately detect and locate the dominant lower frequency sounds of approaching vessels and slower speeds can increase the risks of collisions. These discoveries led to the development and successful field testing of an acoustic warning device designed to provide wild manatees with the sensory awareness to avoid collisions.

Ongoing Maintenance and Monitoring of Established American Chestnut (*Castanea dentata*) Test Orchards on Two TNARNG Installations (Legacy 10-401) – Final Report

American chestnut was one of the dominant trees on an estimated 9 million acres of eastern U.S. forests until the Asian chestnut blight nearly extirpated the species in the early 20th century. A few relicts survive in the wild, and the American Chestnut Foundation (TACF) has used them in a long-term program to cross American chestnut survivors and Chinese chestnut, which is naturally resistant to the blight. The Tennessee Army National Guard developed a cooperative agreement with TACF in 2008 to place seedling orchards on unused training land at VTS-Catoosa and VTS-Milan. Under Legacy Project #08-401, two sites were prepared, fenced, and planted with a selection of backcross hybrids, as well as pure Chinese and pure American chestnuts. This report details the process and results of planting and raising these orchards.

Fish and Wildlife Management - Birds

Migratory Linkages of Burrowing Owls on DoD Installations and Adjacent Lands (Legacy 09-243) – Final Report and Fact Sheet

Burrowing owl (BUOW) (*Athene cunicularia*) populations have declined throughout the western United States and Canada, and they have been extirpated from the periphery of their breeding range. Despite these declines, BUOWs appear to be increasing in other areas. This project seeks an explanation for this paradox. That is, breeding populations might be redistributing themselves rather than declining. The report details the findings of the 5-year effort to provide a landscape-scale view of movements among BUOW populations. This information will help identify the management role of DoD for conserving this species and potentially help prevent further listing efforts for a species that is still rather common on DoD installations.

DoD Partners in Flight Program Management and Technical Support (Legacy 09 & 10-1717) – Annual Report and Fact Sheet (2009); Fact Sheet (2010)

The DoD Partners in Flight Program represents DoD in bird conservation initiatives and facilitates the exchange of information regarding bird conservation and management within the DoD natural resources community. This project provides for a full-time coordinator, information and outreach materials, and support for vital regional and national conservation projects.

Fish and Wildlife Management – Bats

The Bat Grid Inventory and Monitoring Project: A Regional Approach to Inventorying and Monitoring Bat Populations (Legacy 09 & 10-390) – Final Report and Fact Sheet – 09-390; Fact Sheet – 10-390

The objectives of this project are to (1) develop better methods for collecting acoustic, morphologic, and genetic data so that bat species can be more effectively identified and their presence and distribution better understood, (2) contribute to baseline inventory and long-term monitoring of bat species presence and develop responsive conservation efforts for this taxon in the Pacific Northwest, (3) incorporate DoD lands in the Pacific Northwest into

The Bat Grid Project, and (4) develop a model for bat inventory and monitoring that can be applied regionally or nationally.

Workshop on Bat Ecology, White-Nose Syndrome (WNS) Status, and Implications on DoD Mission (Legacy 10-445)

This project was designed to share critical updates and foster cooperative strategies for dealing with white-nose syndrome, a potentially catastrophic disease. A 3-day workshop targeting DoD installations and their partners was conducted in November 2010 at Fort Campbell, Kentucky. The workshop consisted of both classroom and field discussions.

Fact Sheet

Agenda

U.S. Fish and Wildlife Service National and Regional Contacts

U.S. Forest Service WNS Contacts

U.S. Fish and Wildlife Service WNS FAQ

Bat Conservation International - Map of DoD Installation WNS Risk

Relative WNS Risk Map - Continental US

Bat Conservation International WNS FAQ

WNS Workshop DVD - Bat Literature Reprints

WNS Workshop DVD - Federal Planning Documents

WNS Workshop DVD - Presentations

WNS Workshop DVD - Protocols and Information

WNS Workshop DVD - State WNS Plans

WNS Workshop DVD - WNS Literature Reprints

WNS Workshop DVD - Field Trip Photos

Bellamy Cave Field Trip Video

WNS Decontamination Demonstration, 2010 USFWS Protocol Video

Invasive Species Management

The Noxious and Nuisance Plant Management Information System (PMIS) (Legacy 08 & 09-229) – Database, Setup Package, and Fact Sheet

This dynamic database contains the most current aquatic and terrestrial invasive plant information—species descriptions, range, habitat and growth characteristics—and details mechanical and chemical control methods for 174 species. The database includes numerous photos of each species and video clips for 80 species. It is now accessible on smart phones and tablets.

Effects of Invasives on the Distribution of Keystone Desert Plants on Military Lands (Legacy 08-411) – Article

This article for *Biodiversity and Conservation* describes the effects of a nonnative, invasive lovegrass on *Agave palmeri* distribution, abundance, and insect pollinator communities.

Utilizing Cooperative Invasive Species Management Areas to Effectively Reduce Re-Infestation of Invaders on Six Military Bases and Adjacent Lands in Florida (Legacy 10-437) – Final Report

Since 2009, The Nature Conservancy (TNC) and Eglin AFB with funding from the Legacy Program has worked with military bases in Florida to establish and/or strengthen six Cooperative Invasive Species Management Areas (CISMAs). These CISMAs help to reduce re-infestation from invasive species at Eglin AFB, Tyndall AFB, Camp Blanding ANG, Cape Canaveral AFS/Patrick AFB, Avon Park AFR, and NAS Key West. This report details the development of the CISMAs, their accomplishments, project monitoring, and strategic plans. A Strategic Plan Template is included.

Strategic Plan – ARSA CISMA

In 2003, the Apalachicola Regional Stewardship Alliance (ARSA) CISMA was founded by stakeholders in the Apalachicola River Region, Florida. With support from Legacy, in June 2011, TNC updated and expanded the strategic plan to include Tyndall AFB. This plan offers information to implement a cooperative approach to invasive management, prioritize highly valued sites, and reduce threats on a landscape scale. Included is a detailed species-specific Invasive Species Management Plan applicable to Tyndall AFB.

Pest Management

Natural Resources Conservation and Mission Sustainability through Rat Removal on Wake Island and Applicability to other DoD Islands (Legacy 09-438) – Final Report and Fact Sheet

Introduced rats are known to dramatically affect island biodiversity. On Wake Island, a U.S. Air Force installation in the tropical Pacific, rats predate seabirds and may have extirpated several seabird species from the island. Rats may impact a range of other biota and ecological processes. The Wake Island eradication provides an opportunity to document ecological changes by monitoring various taxa before and after the operation. This report contains a Work Plan, Monitoring Protocol, and Sampling Designs for monitoring seabirds, shorebirds, sea turtles, vegetation, arthropods, and rodents on Wake Island. The protocols and results, if replicated post eradication, can provide documentation of ecological changes on Wake Island resulting from rat removal. These changes can then be used to generate predictions about ecological responses to potential rat eradications on other tropical islands.

Department of Defense Island Restoration Opportunities in the Tropical Indo-Pacific through Removal of Introduced Rats (Legacy 09-438) – Final Report

This document includes a compilation of islands in the tropical and sub-tropical Indian and Pacific (Indo-Pacific) Oceans in which DoD owns or leases or has management stake in at least a portion of the land area. Also included in this compilation are some non-DoD islands in the same region that have been or may be proposed as mitigation sites for DoD activities on adjacent islands. The islands analyzed are those for which rat removal, or in the case of already rat free islands, maintenance in a rat-free state, may be a feasible action to benefit the island's native biodiversity and military mission.

BASH

Assessing BASH Risk Potential of Migrating and Breeding Ospreys in the Mid-Atlantic Chesapeake Bay Region (Legacy 08-292) – Fact Sheet

To assess bird aircraft strike hazard (BASH) risk potential of ospreys in the mid-Atlantic region of the Chesapeake Bay and along the eastern seaboard, this project determined migratory patterns in relation to flight operations, airfield occurrence in relation to breeding territories, and fidelity towards breeding territory, nest, and mate in relation to management practices.

NEW! NATURAL RESOURCES DOCUMENTS *Continued*

Ecosystem Management

Inventory and Prioritization of Impaired Sites in the Yellow River Watershed (Legacy 09-432) – Fact Sheet

This project identified areas contributing to habitat degradation and impairment in the Yellow River Basin as an initial step toward conserving and restoring natural function and biodiversity throughout the system.

Note: The following documents were recently re-posted.

Ecosystem Management Initiative Mojave Desert (Legacy 94-778) – Final Report

The objectives of this initiative were to enhance biodiversity in the Mojave Desert region and provide for the recovery of the threatened desert tortoise and 22 other federal or state listed threatened or endangered species, as well as 111 other sensitive wildlife species.

Mojave Desert Ecosystem Program (Legacy 96-159) – Technical Report and Final Report

This program was a DoD effort to meld together a shared scientific database that could be used to affect dynamic sustainable land management decisions. It is not itself a management process, but a tool to enable more accurate modeling of environmental factors that will facilitate data-driven management.

Integrated Gulf Coastal Plain Ecosystem Partnership

(Legacy 99-1804) – Final Report

(Legacy 00-136) – Final Report and Management Plan

(Legacy 02-136) – Management Plan, Guidance Update, and Stakeholder Analysis Exercise

This partnership provides TNC and DoD the opportunity to integrate plans, share data, standardize projects, and consolidate effort towards mission fulfillment. It establishes a lasting framework for the conservation and stewardship of biological diversity ecoregionally by working with DoD facilities and other Federal, state, and local partners, as well as corporate and private landowners and stakeholders.

Great Basin Conservation Initiative

(Legacy 00-102) – Final Report; Mount Grant – Final Report; Blowing Sand Mountains – Final Report

(Legacy 01-102) – Final Report; Handbook and Appendices; Mount Grant – Final Report and Excel Workbook; Blowing Sand Mountains - Excel Workbook

This collaborative effort between DoD and TNC addresses conservation planning, strategy development, and implementation on priority areas in the 72 million acre Great Basin ecoregion.

A Biodiversity and Conservation Assessment of the Edwards Plateau Ecoregion (Legacy 00-114) – Final Report

For this assessment of the Edwards Plateau Ecoregion in central Texas, the goal was to capture representative examples of a subset of species, communities, and ecosystems, with the underlying assumption that doing so would also capture examples of the associated biodiversity.

Department of Defense Ecosystem Management Policy Evaluation (Legacy 00-125) – Final Report

This study provided insights into the level of ecosystem management implemented across the Military Services. The objectives included (1) performing a gap analysis of the Military Services' conservation policy, regulations, and guidance to determine if they carry through the requirements set out by DoDI 4715.3; (2) developing a protocol to evaluate ecosystem management implementation; and (3) applying the protocol through case study.

Cook Inlet Basin Ecoregional Assessment (Legacy 00-135) – Final Report, Handbook-Vol. I & II, Atlas, and Map Book

This project assessed biodiversity and identified areas of biological significance in the Cook Inlet Basin ecoregion of Alaska.

Sonoran Desert Ecosystem Initiative: Shared Management Framework, Goals, Standards, & Responsibilities

(Legacy 02-1703) – Support Tools and Resource Guides for Invasives (English and Spanish) and Pollinators (English and Spanish)

(Legacy 03-1703) – Final Report and Lessons Learned

(Legacy 04-1703) – Assessments and Plant Booklet

This initiative focused on conservation opportunities within the 55 million acre Sonoran Desert Ecoregion. The project included multi-partner collaboration and activities in three main program areas: site-based conservation planning using a biodiversity management framework, ecosystem monitoring and coordinated management, and invasive plant management.

Gulf Coastal Plain Ecosystem Partnership (GCPEP) (Legacy 04-182) – Final Report (2003-2004) and Final Report (2006)

The mission of this partnership is to conserve a set of places that will ensure the long-term survival of all native life and natural communities—not just those that are threatened. These places are called conservation areas, and this partnership seeks to protect networks of conservation areas across the GCPEP landscape using TNC's collaborative, science-based approach to conservation.

Central Shortgrass Prairie Ecoregional Assessment and Partnership Initiative

(Legacy 04-214) – Final Report and Conservation Plan

(Legacy 06-214) – Strategic Plan and Final Report

(Legacy 08-214) – Final Report

The Central Shortgrass Prairie ecoregion lies in the western portion of the Great Plains of North America, along the eastern edge of the Rocky Mountains. The ecoregional assessment improves understanding of what must be maintained and conserved if the representative natural diversity of the ecoregion (species, natural communities, and ecosystems) is to survive in the future, including how much of each species (number of individuals or populations) and habitat (acres) is needed as well as where the most efficient and effective places are to focus limited resources.

Implementation of the Ecoregional Conservation Plan for the Upper West Gulf Coastal Plain (Legacy 05-272) – Final Report

This project conducted conservation area assessments or action plans and conservation forestry workshops for landowners at three sites: Pine Bluff Arsenal, Red River Army Depot and Fort Polk. The objective was to complement the Army Compatible Use Buffer program by assessing the sites for ecological attributes and delivering possible strategies to protect those attributes to nearby landowners, foresters, and loggers through the workshops.

Panhandle Longleaf Pine Large-Scale Conservation Area & Gulf Coastal Plain Ecosystem Partnership Conservation Action Plan (Legacy 06-280) – Summary Report

TNC designated a 2 million acre area in the western Panhandle as the Panhandle Longleaf Pine Large-scale Conservation Area (PLLPLCA). This area will help abate the threat of invasives and non-native species and will pursue ecotourism and sustainable forestry opportunities.

LINKS OF INTEREST

DoD Natural Resources Conservation Program - www.DoDNaturalResources.net. DoD's NR Program provides policy, guidance, and oversight for management of natural resources on all land, air, and water resources owned or operated by DoD.

DoD Legacy Resource Management Program - https://www.dodlegacy.org. This DoD program provides funding to natural and cultural resources projects that have regional, national, and/or multi-Service benefits. The Legacy Tracker lets you download fact sheets and reports for completed Legacy-funded projects.

DoD Partners in Flight - www.dodpif.org. The DoD PIF Program supports and enhances the military mission while it works to develop cooperative projects to ensure a focused and coordinated approach for the conservation of resident and migratory birds and their habitats.

Biodiversity Handbook - www.dodbiodiversity.org. On this web site you will find a thorough introduction to biodiversity and how it applies to the military mission; the scientific, legal, policy, and natural resources management contexts for biodiversity conservation on DoD lands; and practical advice from DoD natural resources managers through 17 case studies. A Commander's Guide to conserving biodiversity on military lands is also available.

DoD Invasive Species Outreach Toolkit - www.DoDinvasives.org. The Toolkit is an education and outreach tool to help DoD land managers communicate about invasive species. It contains modifiable outreach materials such as posters, brochures, reference cards, and a PowerPoint presentation. A list of resources to help identify information and funding sources is also included.

DoD Pollinator Workshop - www.DoDpollinators.org. This web site provides an overview of pollinators and the reasons they are important to DoD. It highlights the 2009 NMFWA workshop on pollinators and has many useful resources, including fact sheets and technical reports, pocket guides to identifying pollinators, and links to other web sites on pollinators.

DENIX - www.denix.osd.mil/nr/. DENIX is an electronic environmental bulletin board that provides access to environmental information, such as Executive Orders, policies, guidance, INRMPs, fact sheets, and reports.

DISDI Portal - https://rsgis.crrel.usace.army.mil/disdicac (DoD only, CAC required). The DISDI Portal offers high-level geospatial data on DoD's installations, providing strategic maps of installations and information on how to access more detailed data. IVT data forms the foundation for the DISDI Portal, which is accessible to DoD staff with a common access card.

Strategic Environmental Research and Development Program and Environmental Security Technology Certification Program - www.serdp-estcp.org. SERDP and ESTCP are DoD's environmental research programs, harnessing the latest science and technology to improve environmental performance, reduce costs, and enhance and sustain mission capabilities. They are independent programs managed from a joint office to coordinate the full spectrum of efforts, from basic and applied research to field demonstration and validation.

Readiness and Environmental Protection Initiative - www.repi.mil. Under this initiative, DoD partners with conservation organizations and state and local governments to preserve buffer land and habitat around military installations and ranges as a key tool for combating encroachment. By promoting innovative land conservation solutions, REPI supports effective and realistic military training and testing now and into the future.

Cooperative Ecosystem Studies Unit Network - www.cesu.psu.edu. This network of 17 cooperative units provides research, technical assistance, and training to federal resource and environmental managers. DoD is a member of 14 units of the CESUs National Network.

Bat Conservation International - www.batcon.org. BCI is devoted to conservation, education, and research to protect bats and their ecosystems around the world.

Partners in Amphibian and Reptile Conservation - www.parcplace.org. PARC is a partnership of individuals and entities dedicated to the conservation of amphibians and reptiles and their habitats as integral parts of our ecosystem and culture through proactive and coordinated public/private partnerships.

Armed Forces Pest Management Board - www.afpmb.org. The AFPMB recommends policy, provides guidance, and coordinates the exchange of information on pest management throughout DoD. The AFPMB's mission is to ensure that environmentally sound and effective programs are present to prevent pests and disease vectors from adversely affecting DoD operations.

DOD NATURAL RESOURCES PROGRAM

Enabling the Mission, Defending the Resources

www.dodnaturalresources.net

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