

Natural Selections

Spring 2013

Department of Defense Natural Resources Program



IN THE NEWS

DoD Releases Roadmap for Climate Change Adaptation

For the first time as part of its annual Strategic Sustainability Performance Plan (SSPP), the Department of Defense has released a [Climate Change Adaptation Roadmap](#) (CCAR) that details the Department's plan for managing the effects of climate change on its operations and infrastructure in the short and long term.

The CCAR outlines four broad goals:

- Define a coordinating body to address climate change
- Utilize a robust decision making approach based on the best available science
- Integrate climate change considerations into existing processes
- Collaborate with Federal agencies and other key partners on challenges of climate change

The Roadmap also provides an analysis of climate change risks and opportunities, outlining climate change phenomena and the resultant potential mission vulnerabilities, and identifies ongoing work throughout the Department to better understand and address climate change risks and opportunities.

SPOTLIGHT

Planning for a Changing World

By Robin O'Malley, Policy and Partnership Coordinator, USGS National Climate Change and Wildlife Science Center

How will climate change affect desert tortoises? How will it affect storm surges in Alaska or on the East Coast? What about migratory songbird arrival dates? Which invasive plants will thrive under a changed climate?

Answers to these and other climate change questions may well influence the decisions of military and other land managers. A more



rapidly changing climate is already evident in variations in rainfall and temperature across the globe, extended drought, rising sea levels and decreasing sea ice, and changes to species ranges and distribution. Consequently, today's natural resource planners—both civilian and military—not only have to address declining and invasive species, land and water allocations, and numerous other issues, but they must now also consider if and how climate change will affect their natural resource goals and how to respond if so. Since some of the biological and ecological consequences of these climatic changes will persist for centuries, planning is essential.

The challenge of planning for a fast-changing natural world led the Interior Department to establish a new suite of

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NATURALLY SPEAKING

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

Special thanks to Alison Dalsimer for writing this issue's column.



Partnering for Success

Partnerships are an important tool for all who work on natural resource conservation issues, including the Department of Defense (DoD). In this issue, you will find a number of articles highlighting a variety of partnerships that promote collaboration, leverage resources, and achieve goals across geopolitical boundaries. At the OSD level, we too are engaging in partnership activities and facilitating partnership opportunities.

DoD Initiatives and Programs

For natural resources activities, there are several DoD programs that promote partnerships, including:

- Readiness and Environmental Protection Initiative (**REPI**), which works to alleviate encroachment pressures by working with conservation organizations, state and local, and private landowners to protect lands around installations. Two of its primary tools are the Southeast Regional Partnership for Planning and Sustainability (**SERPPAS**) and Western Regional Partnership (**WRP**).
- The Legacy Resource Management Program (**Legacy**), Strategic Environmental Research and Development

Program (**SERDP**), and Environmental Security Technology Certification Program (**ESTCP**) that provide funding awarded on a competitive basis for management, research, and demonstration efforts, respectively.

- Resource-based initiatives like DoD Partners in Flight (**PIF**) and DoD Partners in Amphibian and Reptile Conservation (**PARC**) that work on local, regional, national, and international scales to conserve species and the habitats those species depend on for food and shelter.

Sikes Tripartite MOU

At the headquarter's level, DoD is in the process of updating the Memorandum of Understanding (MOU) among DoD, the U.S. Fish and Wildlife Service (USFWS), and Association of Fish and Wildlife Agencies (AFWA), as you'll read more about in this issue. This MOU has been and will continue to be a central tool in preparing, reviewing, and implementing integrated natural resource management plans (INRMPs) on military installations through a collaborative process among the tripartite partners. With the MOU update, an opportunity exists to integrate more fully the conservation priorities identified in the State Wildlife Action Plans, which are in the process of undergoing their own revision.

Cooperative Ecosystem Studies Units (CESUs)

The **CESU Network** is a national consortium that includes more than 300 partners, including 13 federal agencies, in 17 CESUs representing biogeographic regions across all 50 states and the U.S. territories. Working through the CESUs allows installations to secure expertise from other agencies and universities within a given network at a fixed overhead rate of 17.5 percent, which is significantly lower than standard university overhead rates (usually 35 to 55 percent). DoD is currently a member of 15 CESU units, the newest of which is the Pacific Northwest. Refer to the article on p. 5 to learn more about how the Center for Environmental Management of Military Lands uses CESUs to execute projects.

Landscape Conservation Cooperatives (LCCs)

Organized by the USFWS, **LCCs** are a network of public-private partnerships that provide shared science to ensure the sustainability of America's land, water, wildlife, and cultural resources. Twenty-two LCCs are in place at the regional level. Each region's LCC serves as an applied conservation science partnership focused on a defined geographic area that informs on-the-ground strategic conservation efforts at landscape scales. LCC partners include the Department of the Interior and other federal agencies, states, tribes, non-governmental organizations, universities, and others. Mr. S.T. McNeil and Dr. Rafe Sagarin of the University of Arizona provide a perspective on opportunities for DoD to leverage LCCs and the U.S. Geological Survey (USGS) Climate Science Centers on p. 4.

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Climate Science Centers (CSCs)

The USGS-operated National Climate Change and Wildlife Science Center and its eight regional CSCs deliver basic climate change impact science to the LCCs. These CSCs provide scientific information as well as tools and techniques that resource managers can apply to anticipate, monitor, and adapt to climate and ecologically-driven responses at regional-to-local scales. Extensive work is under way (see <https://nccwsc.usgs.gov/project-pages/4f4e476ae4b07f02db47e13b>). For more information on the CSCs, refer to this issue’s cover article “Planning for a Changing World.”

So, get out there and find good partners! Together, we can do more and we can do better...

The State of Conservation Partnerships with DoD and the Association

By Priya Nanjappa, Association of Fish and Wildlife Agencies

One of the roles of the Association of Fish and Wildlife Agencies (Association)—a coordinating entity among all state and territorial fish and wildlife agencies—is to facilitate collaboration in activities with and among federal partners, including (but not limited to) the U.S. Fish and Wildlife Service (USFWS) and Department of Defense (DoD). The Association recognizes that the intent of the Sikes Act of 1960 (16 USC 670a-670o, 74 Stat. 1052, as amended) is to address wildlife conservation and public access on military installations and that partnering with DoD on these shared goals is important to its implementation. With the 1997 and 2012 amendments of the Sikes Act requiring installations, including those that are state-owned, to develop and implement an Integrated Natural Resource Management Plan (INRMP) in cooperation with the state fish and wildlife agencies, it was important to establish a formal framework for this collaboration. In 2006, a “Tripartite” (three-party) Memorandum of Understanding (MOU) among DoD, USFWS, and the Association was established and signed. This MOU expired in 2011, and the three parties are using its planned reestablishment as an opportunity to address any important updates and changing needs among the parties. The MOU furthers the cooperative relationship among the parties in preparing, reviewing, revising, updating, and implementing INRMPs for military installations. The latest iteration of the MOU is in the final review stages and is planned to be reestablished before the end of 2013.

eight Climate Science Centers (CSCs, www.doi.gov/csc/index.cfm) around the United States to work with resource managers to answer the kinds of questions posed above. CSCs are a unique, science-based, decision-focused set of institutions, charged with providing answers to key regional needs and to assist managers in navigating a changing future.



Each CSC houses both university and federal scientists, and the research they undertake is targeted directly at questions posed by regional managers. Each is charged with identifying and delivering the best available science on how climate will affect fish, wildlife, their habitats, and a full range of other natural and cultural resources. And to ensure that their work is on target, each CSC is guided by a stakeholder advisory committee representing federal, state, and tribal interests, including regional science providers such as the U.S. Forest Service or the National Oceanic and Atmospheric Administration. While there are currently no military representatives on CSC committees (although the U.S. Army Corps of Engineers is involved in several), the Department is open to exploring this possibility.

CSCs are pioneering a new approach to providing science to support management and decision making. This approach focuses on the decisions that need to be made and the specific information needed to make smart choices, rather than assuming that researchers will produce information needed by managers and other decision makers. And, while each CSC is strongly influenced by the research needs of local and regional managers, the eight Centers are working across regional lines to deal with large-scale issues such as drought in the southern part of the United States and sea-level rise and related challenges on the East and Gulf coasts. The CSC’s parent organization, the USGS National Climate Change and Wildlife Science Center (NCCWSC, <http://nccwsc.usgs.gov>) will manage national-level issues. NCCWSC scientists just completed a major national assessment of the effects of climate change on biodiversity, ecosystems, and ecosystem services, as part of the U.S. National Climate Assessment (<http://ncadac.globalchange.gov>); an upcoming issue of the journal *Frontiers in Ecology and Environment* will also highlight the key findings from this effort.

Helping DoD Assess and Adapt to Climate Change

By ST McNeil and Rafe Sagarin, Institute of the Environment, University of Arizona



From the National Oceanic and Atmospheric Administration (NOAA) to NASA, the Department of the Interior (DoI) to the Department of Defense (DoD), climate science and tools are being integrated today into local, state, and national policies across the nation. Executive Order 13514 (October 5, 2009) required climate considerations in strategy and operations of all government agencies.

For its part, DoD acted quickly, perhaps heeding General Patton's advice: "A good solution applied with vigor now is better than a perfect solution applied ten minutes later."

"Climate change is a national security issue," said former Army chief of staff General Gordon Sullivan. "We found that climate instability will lead to instability in geopolitics and impact American military operations around the world."

Building on work predating Executive Order 13514, including the Army's "bootprint" efficiency tool and the Navy's two taskforces on climate change and energy, the Pentagon began to address the issue of adapting to climate change more comprehensively.

Deploying resources through the Strategic Environmental Research and Development Program (a joint DoD, Department of Energy, and U.S. Environmental Protection Agency program), five projects have been funded to develop climate change science and tools that will empower installation leaders across the armed forces. Our University of Arizona (UA)-based project, which draws on expertise in natural resource management, the built environment, hydrology, ecology, climatology, and organizational adaptation, has started to assess the needs of four partnering installations representing the Army, Air Force, Marine Corps, and Navy.

We are greatly aided by utilizing the lessons in cooperative "co-production" of knowledge about climate change adaptation developed from two other UA partnerships with federal agencies. The Climate Assessment for the Southwest (CLIMAS)—a Regional Integrated Sciences and Assessment program administered by NOAA—and the Southwest Climate Science Center (SW-CSC)—one of the eight regional climate science centers created by the DoI in 2010—link UA's climate science with regional management and policy.

The central task for the SW-CSC lies in bringing science to managers and management to scientists, said Alison Meadow, SW-CSC's program manager. "We can do the science, but what is the worth of all that if it can't be made useful and usable?" Applicable research is prioritized in their project funding decisions, and communication lines link SW-CSC, DoI, USGS, and others through operations-level Landscape Conservation Cooperatives (LCCs) and strategy-level Stakeholder Advisory Committees. The cooperative approach paid off. While the process is still evolving after 18 months, Meadow said "a real dialogue between these two groups" promises to yield niche tools for managers and could provide a blueprint for the UA DoD project.

CLIMAS has developed "use-inspired" research over the past 14 years with Southwest tribes, municipalities, and federal agencies like the Bureau of Land Management on water scarcity and climate variability, for example. A productive track record has meant that CLIMAS fluidly responds to a variety of stakeholder needs, said staff social scientist Gigi Owen. When managers know the science, and scientists know management needs, the cooperative approach yields robust and resilient tools and research. "That's part of CLIMAS' strength: building on trust in who we are and the info we give out," Owen said. "All of that comes from a strong foundation that took us a long time to build."

The Southwest's intensified suite of climate change impacts requires new kinds of networks and partnerships. Host to large land areas for installations and a climate amenable to year-round land, air, and naval exercises, the region is critical for DoD's mission. But the Southwest also faces a wide range of likely interacting threats from climate change—including even hotter weather, increased severity of droughts and floods, radically altered fire regimes, and shifts in species' ranges that may affect DoD's stewardship obligations—making it vitally important for managers to prepare today for a changing operational environment.

The cooperative approach to integrating climate information into adaptation strategies should prove useful for the installations in the Southwest, where we will work, and beyond. With a high density and area of federally controlled land, military installations and ranges, and an international border, the lessons learned in the region could be adapted and redeployed in a variety of contexts, foreign and domestic.

CSU, the CESU, and the DoD

By Robert Brozka, Associate Director, Center for Environmental Management of Military Lands, Colorado State University

It sounds like more government alphabet soup, but in this case, soup is good food—for the Department of Defense (DoD) and Colorado State University (CSU). The University, through its Center for Environmental Management of Military Lands (CEMML), has been successful in exploiting the advantages of Cooperative Ecosystem Studies Units (CESUs) to assist DoD in its dual missions of training soldiers and airmen and conserving the resources on its lands.

CSU is a member of three of the seventeen units in the CESU network—the Colorado Plateau, Rocky Mountain, and Great Plains units. DoD is also a member of these same three units, which makes it easy to establish individual cooperative agreements for work on any installation across the country.

CEMML currently has more than 30 active CESU projects on Army and Air Force installations stretching from Hawaii to Florida and from California to Virginia. The Center is executing a variety of projects in the broad realm of natural and cultural resource management. The installations benefit by being able to tap the 28 years of experience CEMML has in military land management and CSU's global reputation as a leader in environmental sciences, at a cost lower than almost any contract alternative. Following are a few examples of ongoing projects:

Historic Building Inventory and National Register of Historic Properties (NRHP) Evaluation for Joint Base Charleston, South Carolina – An architectural inventory and National Register significance evaluation of historic buildings and structures. Final products will be a relational database of historic architecture on the base, NRHP significance determinations for these buildings, and a Historic Context document for these architectural resources.

Management of Sensitive and Endangered Species at Fort Polk, Louisiana – Four wildlife biologists staffed at Fort Polk assist the installation in the implementation of the endangered species management component of the Integrated Natural Resource Management Plan. Listed species and those of concern include the red-cockaded woodpecker, the Louisiana pine snake, Henslow's sparrow, and American kestrel.



CEMML biologist Chris Melder with an alligator snapping turtle.

Watershed Management at Fort McCoy, Wisconsin – Fisheries biologists with the Center conduct stream and lake health studies, monitor water quality, and manage the extensive fisheries.

Cultural Resources Program Support to Fort Bragg, North Carolina – CEMML provides technical support to the Fort Bragg Cultural Resources Management Program in the areas of archaeological site management and evaluation, historic building management and evaluation, Native American consultation, and cultural resources GIS database management and cartographic production. A measure of the Program's success was the installation winning the 2012 Army Environmental Award for Best Cultural Resources Program–Installation.

Surveys for Prairie Bush-Clover, Blanding's Turtle, Western Slender Glass Lizard, and Wood Turtle at Volk Field CRTC and Hardwood Range, Wisconsin – Botanists and wildlife biologists from the center conducted surveys for these rare species and assessed the suitability of habitat for each of them.

The Wildlife Society – Military Lands Working Group Update

By Rhys Evans

We're official! Our first step was getting our foot in the door. The next major goal was enticing 50 members to sign up for the Military Lands Working Group (MLWG). Now, we need to keep those members interested enough to contribute the \$5 fee each year. So, for those of you who have become members (thanks!), and those of you who might (you must also be a member of The Wildlife Society [TWS] at the "national" level), here's what we've been doing:

- Sponsored a Symposium, "Monitoring and Managing Wildlife Populations on Military Lands," at the TWS annual meeting. We had ten speakers and several hundred people in the audience at various times.
- Co-sponsored a Panel Discussion, "Entry-Level Federal Career Opportunities," with speakers representing the USFWS, Student Conservation Association, Peace Corps, and CEMML. We've proposed to do this again in Milwaukee (October 2013).
- Held a Working Group "organizational" meeting, at which ideas for 2013 were discussed, probably including a repeat of the "Early Career" panel. We're also hoping to co-sponsor a session with the "Human Dimensions Working Group."

We need to conduct formal elections of officers, thus nominations are welcome! That most definitely includes potential "self-nominations." If you're a current member of TWS and a current member of "MLWG," great, and thanks! If you're a member of one, but not the other, please consider joining.

State Wildlife Action Plans—A Natural Resource for Managing Natural Resources on Military Installations

By Mary Pfaffko, Teaming With Wildlife Coordinator, Association of Fish and Wildlife Agencies

State Wildlife Action Plans (SWAPs) were completed by all U.S. state and territorial fish and wildlife agencies in 2005. Taken in total, the SWAPs represent the first-ever national action agenda for preventing wildlife from becoming endangered. They list the at-risk species, priority habitats, threats, and actions needed to conserve wildlife species before they become too rare or costly to restore.

The SWAPs were developed in partnership with federal agencies including the Department of Defense (DoD), state and local agencies, nongovernmental conservation organizations, scientists, recreationalists, and the general public. Many federal land management agencies look to the SWAPs for guidance in identifying their conservation priorities. They are not just state agency plans; they are a blueprint for conservation for the entire state, inclusive of military installations. As such, SWAPs are a resource for military installations to leverage in managing their natural resources.

In 2006, a Memorandum of Understanding (MOU) established a cooperative relationship among DoD, the U.S. Fish and Wildlife Service (USFWS), and the state fish and wildlife agencies (as represented by the Association of Fish and Wildlife Agencies) in preparing, reviewing, and implementing Integrated Natural Resource Management Plans (INRMPs) on military installations. Upon its expiration in 2011, the parties began to discuss updates and additions to better address their changing needs (see Box on p. 3).

Now is an ideal time to revisit the goal of this MOU for two reasons: (1) SWAPs are a strong foundation for this partnership, and (2) SWAPs are currently being updated. The SWAP revision process offers an opportunity to reengage these agencies and

local installations to coordinate their conservation priorities based on new conditions. All SWAPs are required to undergo revision at a minimum of every 10 years, with the first deadline on October 1, 2015. A handful of states have already completed their revision, including Arizona, Florida, Kentucky, Nebraska, Nevada, and Wyoming, though some of those may still be awaiting final approval from the USFWS. To obtain specific information on each state's revision schedule, all SWAPs and state agency contact information can be found on the Teaming With Wildlife web site (<http://teaming.com/state-wildlife-action-plans-swaps>).

The Association and DoD are actively reengaging their partnership. Examples of coordination efforts currently in development include:

- Coordinating revision timelines of INRMPs and SWAPs to help foster better engagement of these plans through external review.
- Providing guidance via webinars on coordinating natural resource information among SWAPs and INRMPs.
- Sharing models of successful state-DoD partnerships in various outlets, including conferences, publications, and webinars.
- Developing possible pilot projects to identify and/or implement shared goals or priorities among SWAPs and INRMPs in a given state.

Please contact me at mpfaffko@fishwildlife.org if your installation or fish and wildlife agency would be interested in participating in a pilot project.



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 support the sustainability of installations and training and testing areas (Resource Conservation). Areas of interest include Natural Resources and Air Quality. 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:

- Regionally Based Airfield Natural Resources Management Technologies/Methodologies to Reduce Bird/Wildlife Air Strike Hazard (BASH) Threats

Pre-proposals from all sectors are due by **March 14, 2013**. Detailed instructions for proposers are available at www.serdp-estcp.org/Funding-Opportunities/ESTCP-Solicitations.

Enabling the Mission, Defending the Resources

Natural Selections

Prescribed Fire Strategy for the Southeast, The Work of Many Partners

By Rebecca Shanks, U.S. Army Regional Environmental and Energy Office – Southern (REEO-S)

Through the Southeast Regional Partnership for Planning and Sustainability (SERPPAS), representatives from the Department of Defense (DoD), Environmental Protection Agency (EPA), U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), state agencies, non-governmental organizations, and academic institutions have collaborated to develop a



comprehensive, regional strategy for prescribed burning. The [Prescribed Fire Strategy](#) (PFS) focuses on achieving the goals of the Range-Wide Longleaf Conservation Plan (RWLCP) for longleaf pine, which encompasses all six SERPPAS states plus Louisiana, Texas, and Virginia and calls for increasing longleaf from 3.4 million acres to 8 million acres by 2025, while supporting continued longleaf conservation by public land managers.

Applying appropriate fire regimes in longleaf forests is essential to achieving the goals of the RWLCP, which will benefit wildlife habitat for at-risk and endangered species, reduce risk of catastrophic wildfire, and enhance air quality. Prescribed fire provides a cost-effective approach to decreasing fuel loads that can cause dangerous wildfire conditions, thus increasing protection to people, homes, and the forest. In addition, burning speeds the return of valuable nutrients to the soil through decay and can help control insects and diseases. These prescribed fire benefits lead to benefits for the USFS (higher quality forests), USFWS (habitat), and DoD (realistic training and enhanced habitat for critical species like the red-cockaded woodpecker and gopher tortoise, opening lands for training).

Minimizing local smoke impacts on air quality and public health and safety by maximizing coordination between air and fire communities results in better overall smoke management; SERPPAS has historically worked to improve coordination among state and federal agencies. EPA's main role in the SERPPAS longleaf pine restoration effort has been to help coordinate and provide expertise on smoke management and air quality activities. EPA's work led to the development of smoke management recommendations and a prescribed fire tracking document. EPA also finalized revised national [Particulate Matter National Ambient Air Quality Standards](#) in December 2012. Currently, EPA is in the process of revising and updating 1998 Interim Policy to be consistent with the requirements of the 2007 Exceptional Events Rule; address changes to Clean Air Act standards and rules (revised PM_{2.5} and ozone standards and General Conformity Regulations); and address Smoke Management Programs and Basic Smoke Management Practices. To disseminate this knowledge, EPA created and printed 25,000 copies of the Prescribed Fire



In 2005, state environmental and natural resource officials from across the Southeast partnered with DoD and other federal agencies to form the Southeast Regional Partnership for Planning and Sustainability (SERPPAS). The region covered by SERPPAS includes North Carolina, South Carolina, Georgia, Alabama, Florida, and Mississippi. The partnership works to prevent encroachment around military lands, encourage compatible resource-use decisions, and improve coordination among regions, states, communities, and military services.

Smoke Management Pocket guide, a condensed version of the recommendations in the smoke management and prescribed fire tracking document. The guides were distributed to prescribed burners through the National Coalition of Prescribed Fire Councils, The Longleaf Alliance, and Southeast State Fire Chiefs.

Well-supported, collaborative implementation of the Prescribed Fire Strategy will advance the application of prescribed fire, facilitating longleaf pine restoration and providing benefits to numerous partners. Attainment of mutual benefits as a result of strategy implementation resonates well with the SERPPAS mission to seize opportunities and solve problems in a manner that provides mutual and multiple benefits to partners, sustains the individual and collective mission of partner organizations, and secures the future for all the partners, region, and nation. This effort fits nicely with concurrent efforts of America's Longleaf Restoration Initiative; Longleaf Stewardship Fund; National Cohesive Wildland Fire Strategy, SE Regional Assessment; and National Prescribed Fire Use Survey. Taking advantage of these opportunities for connections will help SERPPAS efficiently and effectively reach its goals.

PFS coordination is being led by North Carolina State University with support from DoD and includes developing an action plan with key stakeholders, tracking goal accomplishments, and coordinating periodic meetings with stakeholders to ensure short- and long-term goals related to the PFS are realized. The work group has established the following two-year priority action items for prescribed fire: smoke management/air quality, liability, resources, and training. Next year, the work group will have developed curriculum on prescribed fire, delivered training modules to landowners and practitioners, and provided outreach seminars for key decision makers to increase the acceptance and use of fire on the ground. Dr. Laurie Gharis, SERPPAS Prescribed Fire Work Group Coordinator, noted that work group members continue to participate in meetings and provide support for implementation. With the broad representation and experience of the work group, Dr. Gharis sees great potential for successfully implementing the Strategy. For further information, contact Dr. Gharis at lwilson@ncsu.edu.

STEPPINGSTONES CORNER

View from the Eyrie: Avian Resources and Tools for DoD

By Chris Eberly, DoD PIF Coordinator

The Department of Defense (DoD) Partners in Flight (PIF) program is always looking for resources and tools that will help DoD natural resource managers and biologists perform their jobs more efficiently and effectively. Our web site, www.dodpif.org, houses this information. I invite you to explore the web site, even if you have done so before, as new information is continually added. If you know about a resource, tool, or other item that is beneficial to migratory bird conservation on DoD lands that is not yet on the web site, please contact us. This web site is for your benefit, so help us make it so.

A few of the key sections of the web site for resources and tools include:

- **Publications**
- **Plans & Projects**
- **Resources & Materials**

Another section documents an incredible success story—the Kirtland's Warbler

Information Inventory Archive (Legacy Resource Management Program project #10-119). The Kirtland's Warbler Recovery Team was one of the first recovery teams and included the three managing agencies (Michigan Department of Natural Resources, U.S. Forest Service and U.S. Fish and Wildlife Service [USFWS]) involved in the recovery activities for the species. The work of the team over the last 25 years successfully brought an endangered species back from the brink of extinction despite impossible odds. The partnerships, techniques, and process have been documented as a model for future successes. As an accompaniment to a forthcoming Monograph detailing the history and process of the recovery effort, this inventory of information contains nearly 1,400 items, including articles, book chapters, cooperative agreements, correspondence, interviews, meeting minutes, maps, outreach, photos, policy, press releases, recovery and habitat management plans, reports, papers, sighting and banding records, theses, and dissertations.

We also have a section on the DoD PIF web site devoted to bird conservation successes on installations. If you have such a story, we will post it here and advertise additions as they are received and posted. The DoD PIF email listserve serves as a notification and distribution vehicle for breaking news and information. To sign up, visit www.dodpif.org, fill in the requested information in the lower left of any page (first and last name, e-mail address, and the displayed security code), then click on the orange "Sign Up Today" arrow.



An excellent resource for bird conservation projects and partnerships is the Migratory Bird Joint Ventures (JVs). In the 1970s and early 1980s, the loss of wetland habitat seriously threatened waterfowl populations in North America. By 1985, waterfowl populations had plummeted to record lows. In 1986, the United States and Canada created the North American Waterfowl Management Plan to encourage governments, private organizations, and individuals to work together through regional JVs to preserve and enhance waterfowl habitat. By 1994, 14 JVs had appeared on the landscape, from the Atlantic to the Pacific, from the prairie potholes of the Dakotas to the rolling grasslands and playa lakes of the southern Great Plains. The year 1994 also marked Mexico's signing of the Plan, completing the continental partnership for waterfowl conservation. Today, 18 JVs conserve bird habitat in the United States for all birds; these include two U.S.–Mexico and one U.S.–Canada bi-national JVs. Over the past 25 years, JVs have involved thousands of partners to restore, protect, and improve 18.5 million acres of habitat for migratory birds, amphibians, fish, mammals, and plants. And JVs have become an international model for diverse partners working together to help conserve birds and habitat. Visit www.nabci-us.org/jvmap.html for a map of all North America JVs, with links to each JV. View a breathtaking five-minute video celebrating 25 years of the Migratory Bird Joint Ventures, produced by the Cornell Lab of Ornithology, with an introduction by U.S. Secretary of the Interior Ken Salazar at <http://tinyurl.com/JV-Cornell>.

As all of you are (hopefully) aware, the 1997 amendments to the Sikes Act require DoD to develop and implement an Integrated Natural Resource Management Plan (INRMP) for each installation with significant natural resources in cooperation with the FWS and the State fish and wildlife agency. But did you know that in order to receive funds through the Wildlife Conservation and Restoration Program and the State Wildlife Grants Program, Congress charged each state and territory with developing a wildlife action plan? These plans assess the health of each state's wildlife and habitats, identify the problems they face, and outline the actions that are needed to conserve them over the long term. State wildlife agencies worked together through the Association of Fish and Wildlife Agencies (AFWA) and USFWS to develop the action plans. What better way to maximize efficiency (and reduce redundancy) than to partner with your state wildlife agency? For more on these state plans, refer to the AFWA article on p. 6 of this newsletter or visit www.wildlifeactionplan.org.

WHAT'S HOPPIN' IN DOD PARC?

2013 Initiatives Under Way - Lecture Series, Species List Updates, and Disease Surveys

By Robert Lovich and Chris Petersen, Naval Facilities Engineering Command



Photo by Jarrod Derr



Photo by Chris Petersen



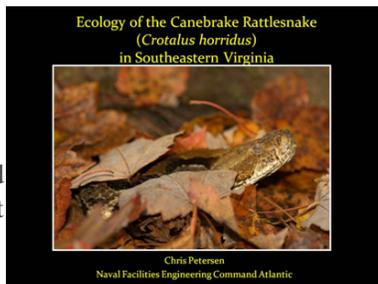
Photo by Seth Berry



Photo by Chris Petersen

Lecture Series

In January 2013, Department of Defense (DoD) Partners in Amphibian and Reptile Conservation (PARC) began a monthly Web-based lecture series that members are able to join by using Defense Connect Online (DCO). Lectures are conducted by DoD and contractor biologists and herpetologists. The first lecture was conducted by DoD PARC co-program manager Chris Petersen, who discussed his research on the Canebrake rattlesnake in Virginia. The goal of the lecture series is to help members stay connected and keep up with the most recent scientific herpetological studies and news.



Species Lists

DoD PARC members have been updating amphibian and reptile species lists for the approximately 80 Navy installations that have Integrated Natural Resource Management Plans (INRMPs). To date, Navy installations within the NAVFAC Field Engineering Command Washington, Mid-Atlantic, Mid-West, and Northwest areas of responsibility have been updated. We anticipate that all species lists will be completed by Summer 2013 and compiled into an Access database.

Disease Surveys

In 2013, a 'citizen science' approach will be used to survey for the occurrence of the chytrid fungus *Batrachochytrium dendrobatidis* (Bd) on resident amphibians across the DoD landscape. With support from the DoD Legacy Resource Management Program, the cost of all materials and analysis of the samples will be at no cost to bases. This study will be one of the single largest sampling events for amphibian disease (Bd) in a single season ever accomplished. To date, approximately 70 military installations have volunteered to participate in the study. Field supplies kits to conduct Bd sampling are being shipped to military natural resource managers.



For more information on these initiatives, visit our web site www.dodnaturalresources.net/PARC-Resources.html or contact us directly at robert.lovich@navy.mil or chris.petersen@navy.mil.



DID YOU KNOW?

Risk-Based Global Sea Level Rise Scenarios Now Identified

Written by contributors from 10 federal and academic science institutions including DoD, the NOAA report [Global Sea Level Rise Scenarios for the United States National Climate Assessment](#) lays out four risk-based scenarios describing potential future conditions out to the year 2100. These scenarios can be used to analyze vulnerabilities and impacts from sea level rise and take action to minimize them.

The report concludes that a more than 90 percent chance exists that global mean sea level will rise between 0.2 and 2.0 meters by 2100. Over the course of the next century, this will have significant impacts on natural and built infrastructure occurring along coastlines in the United States including coastal infrastructure critical to the Department of Defense and military readiness.

Leveraging the four scenarios, which vary based on different degrees of ocean warming and ice sheet loss, planners, policy makers, and coastal managers can assess coastal impacts and vulnerabilities within a risk management framework using agreed upon estimates of global mean sea level rise.

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

Desert Tortoise Head Start Project, Edwards Air Force Base, California – [Final Report](#) (Legacy 05-255)

This project installed predator-resistant portable enclosures on base at key locations where desert tortoise (*Gopherus agassizii*) populations had severely declined. These enclosures were used to protect small-sized tortoises until they became large enough to preclude many of their natural predators.

Conserve Gray Bat to Achieve Recovery: Gray Bat (*Myotis grisecens*) 5-Year Status Review, Army Response to Federal Register Announcement – [Report](#) (Legacy 06-297)

In response to the USFWS Federal Register Announcement, this report details the extent of gray bat populations, habitat, and conservation measures at Army installations throughout the species range. The report covers additional survey and conservation efforts accomplished by the Legacy project.

Fish and Wildlife Management – Birds

Migratory Bird Monitoring Using Automated Acoustic Technologies – [Final Report](#) (Legacy 10-245)

This report details the final year of monitoring avian species using acoustic technologies, which provide an effective means to detect species of concern and generate baseline data necessary for producing inventories on DoD installations in an efficient and cost-effective manner. The report provides best management practices and recommendations for applying the technology.

Invasive Species Management

Sustainable Cooperative Invasive Species Management Areas (CISMAs) for Effective Management on Military Bases and Adjacent Lands across Florida – [Final Report](#), [Technical Note](#), and [Transition Plan](#) (Legacy 11-437)

This pilot project, which began in 2009 and ended in 2012, addressed the threat of invasive non-native species within Florida military installation boundaries, watersheds, and on adjacent lands. In three years, this project evolved from creating, to expanding, to sustaining CISMAs, which proved to be an efficient and effective way to combat the threat of invasive non-native plant and animal species. These documents detail lessons learned, tools and resources developed, and strategies used in this project that resulted in a highly successful CISMA.

UPCOMING EVENTS

Conferences, Workshops, and Training

National Invasive Species Awareness Week

March 3-8, Washington, D.C.

A week of activities, briefings, workshops, and events are planned for state, federal, and local and tribal officials to meet with NGOs, industry, and stakeholder groups to examine laws, policies, and creative approaches to prevent and reduce invasive species threats to our health, economy, environment, and natural resources, including special places. For more information, visit www.nisaw.org.

2013 National Military Fish and Wildlife Association Meeting

March 24-29, Arlington, Virginia

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 resource 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. Visit www.nmfwf.net for details.

Biodiversity Without Boundaries 2013: The NatureServe Conservation & Natural Heritage Conference

April 14-18, Baltimore, Maryland

This conservation and natural heritage conference presents a range of topics affecting biodiversity, from the most pressing issues in the conservation community to the latest in scientific tools and methods. Biodiversity Without Boundaries attendees range from scientists, natural resource managers, and environmental consultants to planners, environmental advocates, and corporate and public policy-makers. For more information, visit <https://connect.natureserve.org/BWB2013>.

2013 North American Invasive Plant Ecology and Management Short Course

June 25-27, 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 2013 is a special session on biocontrol. CEU and graduate student credit will be available. For more information or to register, visit <http://ipscourse.unl.edu>.

Also, be sure to check out the invasive plant webinar series for upcoming offerings and links to resources from past webinars.

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 NMFVA 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.

USFWS Refuge Vulnerability Assessment and Alternatives Guides - <https://connect.natureserve.org/publications/rvaa>. Developed with NatureServe, these guides introduce an approach for assessing the vulnerability or susceptibility of a refuge's biological and infrastructure resources to a range of stressors, such as development, invasive species, and climate change. The RVAA process provides practical considerations and approaches for land managers beyond the National Wildlife Refuge System. NatureServe and the natural heritage network programs in Oregon and Virginia conducted two refuge pilot projects following these guides. Those project reports can be accessed at www.fws.gov/Refuges/whm/refugeResourceVulnerabilityAssessments.html.

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

<http://twitter.com/#!/DoDNatRes>

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