Winter 2012-2013

Natural Selections

Department of Defense Natural Resources Program

IN THE NEWS

DOI Announces New Climate Science Center Initiatives

More than $10 million has been awarded by the Department of the Interior's regional Climate Science Centers to universities and other partners for research to assess the impacts of climate change and other landscape-scale stressors to guide managers of parks, refuges, and other resources in planning how to help species and ecosystems adapt to climate change.

Topics being addressed include:

- how sea-level rise will affect coastal resources
- how climate will affect vegetation
- how these changes will affect valued species
- how changes in water availability will affect both people and ecosystems—and ecosystem services

Ultimately, these projects will identify strategies to ensure that resources across landscapes are resilient.

FY 2012 CSC Funded Projects

SPOTLIGHT

Celebrating 40 Years of Marine Mammal Protection

By Helen Golde, Acting Director, NOAA Fisheries Office of Protected Resources and Jonathan Shannon, Outreach Specialist, NOAA Fisheries Office of Protected Resources

Photo by Shane Guan, NOAA

Forty years ago the American public urged Congress to pass the Marine Mammal Protection Act. In the Act, Congress recognized that marine mammals are a 'resource of great international significance' and, further, are a significant element of the marine ecosystem. Congress directed that marine mammals be 'protected with sound policies or resource management and that the primary objective of their management should be to maintain the health and stability of the marine ecosystem.' The Act prohibits, with limited exceptions, killing, capturing, or harassing marine mammals, and it requires action to rebuild depleted populations. Since 1972, the mandates of this milestone legislation have evolved with our increasing understanding of the ocean, the role of marine mammals in ocean ecosystems, and the potential influence of human activities on marine mammals and their environments.

NOAA Fisheries, the U.S. Fish and Wildlife Service, and the Marine Mammal Commission share responsibilities under the Act and are working together to fulfill the Act's goals while keeping pace with changing ocean conditions and human activities. Our investment in scientific

INSIDE THIS ISSUE

continued on page 3

NATURALLY SPEAKING

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

A Time for Reflection

I'm writing this the day before Thanksgiving – a time to reflect on our blessings and to consider our priorities for the coming year. Casting those thoughts in a work-related context may seem especially difficult at a time when the now familiar Fiscal Cliff looms, but even given the uncertainty that we currently face, the big picture remains clear–

Funding Oversight. DoD-wide and Military Department program budgets will continue to be scrutinized to ensure that scarce funds are used efficiently and in support of mission testing and training priorities. It behooves us to continue to explain the very real connections between resource stewardship and the military mission. Also, I'm planning to move up proposal review and expedite processing of approved funds for both the Legacy and Forestry Reserve Account programs, since we've been informed that funds will be meted out based on obligation rates.

Conference and Travel Restrictions. All conference travel will require in-depth justification and undergo high-level scrutiny. The repercussions for the National Military Fish and Wildlife Association's (NMFWA) annual training workshop and other "DoD" events are unclear. What is clear is that we will not be able to provide our normal DoD support memo, though I do hope to get approval for an advisory memo. Also, each DoD Component will need to submit a detailed cost estimate for all attendees within its organization. The good news? There's a strong preference for DoD to tag onto existing events, rather than to convene DoD-sponsored events. I understand the importance of in-person training and information sharing, and hope that you will be able to attend NMFWA or other training opportunities.

Top Priority Policy Issues. John Conger, Acting Deputy Under Secretary of Defense (Installations and Environment), requested that each Director identify short- and medium-term priorities. Natural Resources currently has two—the Sikes Tripartite MOU and candidate species.

- The revised MOU currently is undergoing pre-signature coordination. The goal is to provide greater consistency on Sikes-related issues between DoD, the U.S. Fish and Wildlife Service, and the Association of Fish and Wildlife Agencies, and to streamline the review process for existing INRMPs. We also are working to complete two complementary guidance documents, a DoD INRMP Implementation Manual and USFWS Sikes Guidelines.

- For candidate species, we will soon send a request to the DoD Components to assess installation progress in addressing each candidate species in their INRMPs, as appropriate. Results of a mid-year study indicated that only one-half of these candidates were adequately addressed at that time.

Updating Existing Policy. It's been almost two years since DoD Instruction (DoDI) 4715.03 was signed. By now, we should have a better idea of what's working well and what parts of the DoDI might need fine-tuning. I invite you to send me your thoughts and ideas. I will consolidate comments over the next year and then initiate, as needed, a series of pen and ink changes.

Finally, I'd like to thank the hundreds of talented and dedicated folks within and outside DoD with whom it's my continuing pleasure to work, and to welcome Alison Dalsimer, who was selected to fill the position of Senior Research Associate with Colorado State University's Center for Environmental Management of Military Lands (CEMML). Alison will provide onsite support to OSD's Natural Resources team. She can be reached starting January 1, 2013, at Alison.Dalsimer.ctr@osd.mil, or currently at 571-372-6893.

understanding of marine mammals has taught us much about their biology, behaviors, and perhaps most importantly about how their health mirrors the health of our ocean. We have accomplished much in the past 40 years, though we still have a lot to do and much more to learn. Our partnerships with the Department of Defense (DoD) help us as we strive to learn more and improve our management of human activities affecting marine mammals.

Cooperating on Acoustic Research

NOAA partnered with the Navy and the Bureau of Ocean Energy Management (BOEM) to support the development of science-based tools that better assess the cumulative effects of human-induced sound on marine mammals and other protected resources. These tools will help inform better decisions under multiple management authorities (MMPA, ESA, NEPA, and regional ocean planning) that address cumulative impacts, protected resources, and underwater noise. Additionally, these tools will facilitate better planning for agencies and industries responsible for noise-producing activities by supporting the development of more effective mitigation and monitoring measures for protected resources. Learn more at http://cetsound.noaa.gov.


Tagging a Risso's dolphin during SOCAL BRS

Photo by John Calambokidis, Cascadiaresearch.org

NOAA, the Navy, and a team of scientists from academia and the private sector are also collaborating on a series of Behavioral Response Studies designed to increase understanding of marine mammal behavior and reactions to sound. The Southern California Behavioral Response Study, or SOCAL-BRS, is midway through its data collection efforts (2010-2015). Building on previous research in the Bahamas (2007-2009), each subsequent study helps build a better scientific basis for estimating risk and minimizing the effects of active sonar training and testing on marine mammals. Learn more at http://sea-inc.net/socal-brs/.

Partnering for Marine Mammal Health

The Marine Mammal Health and Stranding Response Program was established under the MMPA 20 years ago to respond to and investigate the causes of marine mammal strandings and mortality. DoD is an important partner in these efforts by helping to increase our response and data collection abilities. Some examples include: military personnel assisting with the rescue of out of habitat dolphins after Hurricanes Katrina and Rita in 2005, Navy staff serving as members and a chair of the Working Group on Marine Mammal Unusual Mortality Events, and Navy staff assisting in the Barataria Bay dolphin health assessment in August of 2011.

More recently, NOAA Fisheries and the Navy signed a national Memorandum of Understanding (MOU) that established a framework for the Navy to assist NOAA Fisheries with response to and investigation of Uncommon Stranding Events during major training exercises. We are now in the process of drafting regional stranding assistance agreements to implement the MOU. Learn more about the Health and Stranding Response Program at www.nmfs.noaa.gov/pr/health.

Making an Impact, On and Off-Duty

On or off duty, service members, DoD staff, and their families are making a difference for marine mammals. Facility staff conduct clean-ups to remove sources of marine debris, conserve candidate species on their grounds, and work to control invasive species. DoD facilities and Morale Welfare and Recreation programs also provide many avenues for outdoor recreation and opportunities to connect to the natural world. By following responsible wildlife viewing guidelines and fishing tips, DoD personnel help protect local marine mammals while enjoying them in their natural habitat. Learn more at www.nmfs.noaa.gov/pr/education/viewing.htm and www.dontfeedwilddolphins.org.

Continuing the Work We Have Started

Today, the oceans are a very different place than they were 40 years ago. Thanks to the MMPA, we have a handle on many of the threats that marine mammals faced in that earlier age. Still, many species remain endangered or depleted, and a new and complex set of challenges has emerged, such as climate change, ocean acidification, and increasing noise levels in the ocean. NOAA Fisheries will continue to work with the Department of Defense and other national and international partners to develop new technologies and approaches to management, ensuring our application of the Act continues to evolve in a globalized and fast-changing world.

For more information about the 40th anniversary of the MMPA, visit www.nmfs.noaa.gov/pr/laws/mmpa/anniversary.


Military personnel assist dolphin rescue after Hurricane Rita

Photo courtesy of NOAA Southeast Fisheries Science Center

STEPPINGSTONES CORNER

View from the Eyrie: The Unknown Story of the Life of Seabirds

By Chris Eberly, DoD PIF Coordinator

As natural resource managers on military installations, adaptive resource management is a basic premise for how we do our jobs. We rely on the best science available to plan for the appropriate management action, implement the action, then evaluate the effectiveness of the action. The U.S. Fish and Wildlife Service (USFWS) incorporates this philosophy into Strategic Habitat Conservation. However, what if the science is lacking for a resource you must manage? Principle #15 of the Rio Declaration (from the 1992 Rio Conference, or "Earth Summit") notes: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." The precautionary principle thus tells us that even though we may not think we know enough, we must still do what we can to prevent population declines or habitat degradation.

Photo by Kim Dietrich, NMFS

Seabirds are generally long-lived birds that spend the majority of their lives at sea. When they do come on land to nest, it is often in inaccessible or remote areas that make nest monitoring a challenge, at best. If you have ever been on a pelagic fishing or birding trip, you also know that many seabirds follow fishing boats to take advantage of a free meal in the form of bait or chum. Unsuspecting birds will grab bait from a bait line (which can be several miles long) as it leaves the fishing boat, get caught on the hook, and be dragged underwater where they drown. The Agreement on the Conservation of Albatrosses and Petrels (ACAP; www.acap.aq) came into force in February 2004 due to declining seabird populations, known impacts from longline fisheries, and an overall lack of knowledge about the full life-cycle of these birds. Currently 13 member countries participate in ACAP, which covers 30 species of albatrosses, petrels, and shearwaters. The United States is not an official signatory as of yet, since ACAP was initially created for species in the Southern Hemisphere. However, the United States participates via the National Oceanic and Atmospheric Administration (NOAA) as a "participating non-party" and one of the "range states," and Northern Hemisphere species have been recently included. While primarily focused on seabird by-catch issues, other key conservation measures within ACAP aim to restore breeding habitats, eliminate or control non-native species detrimental

Photo by Chris Eberly

to albatrosses and petrels, initiate and support research, raise awareness, and exchange information.

So what does this have to do with the Department of Defense? Navy vessels do not engage in fisheries and rarely interact with seabirds while at sea, and DoD lands do not harbor many seabird nesting colonies. On Kaua'i, the Pacific Missile Range Facility (PMRF)-Barking Sands is taking steps to assist Newell's Shearwater (ESA-Threatened), Band-Rumped Storm-Petrel (ESA-Candidate), and Wedge-Tailed Shearwater by reducing or altering lighting on the site. Each fall the keiki (the Hawaiian word for "baby" or "child," literally meaning "the little one") of Kauai's native seabirds fly to the ocean for the first time using the moonlight on the sea to navigate their way. If the birds encounter lights from buildings, stadiums, or street lights, they circle them until they are exhausted or injured during their fall to the ground. Seabird aid stations, like the one John Burger of PMRF is showing in the photo, have been placed in key areas around Kaua'i, and the group Save Our Shearwaters collects injured birds each morning and rehabilitates them with a high success rate. PMRF is shielding lights, redirecting them horizontally (to point downward), and experimenting with green lighting – literally. Initial results seem promising for seabirds, but more time is needed to better assess the overall success of these actions.

Photo by Chris Eberly

Seabirds, like many other native bird species in Hawai'i, are susceptible to introduced mammals. Rats, mongoose, dogs, and cats predate eggs and young birds, and goats and hogs destroy habitat and trample nests. An expensive but highly effective solution is to fence nesting areas and remove non-native predators and herbivores. A fine mesh screen prevents both small and large mammals from entering the protected area. Seabirds have shown immediate positive results where this fencing has been installed. Wedge-Tailed Shearwaters increased from 400 to more than 1,700 after only one year. Where appropriate, DoD is partnering with groups on projects like this to help overall seabird (and honeycreeper) populations on and near DoD lands, which helps protect the mission and prevents more extinctions on this embattled island chain.

WHAT'S HOPPIN' IN DOD PARC?

Forging the Way for Better Understanding in 2013

By Robert E. Lovich and Chris Petersen, Naval Facilities Engineering Command

Photo by Jarrod Derr

Photo by Chris Petersen

Photo by Seth Berry

Photo by Chris Petersen

The Department of Defense (DoD) Partners in Amphibian and Reptile Conservation (PARC) was originally formed in 2009 to provide leadership, guidance, and support for the conservation and management of amphibians and reptiles on military lands. Since that time, significant progress has been made on many fronts, including growth of the program's membership to include more than 150 members, development of several tools and outreach materials, and accomplishment of several goals within the program's action plan. Summarizing our accomplishments, we find 2012 was an exciting and productive year for the program that has paved the way for gaining an even better understanding of amphibian and reptile species and their relationship to our military mission in 2013.

In March of 2012, DoD PARC conducted both a workshop and a technical breakout session at the National Military Fish and Wildlife Association meeting in Atlanta. Presentations were made on the new photo web site and amphibian and reptile database (more information below), and there was even a frog swabbing demonstration from a Zoo Atlanta biologist. The minutes from the workshop are available on the DoD PARC web site - www.dodnaturalresources.net/PARC-Resources.html.

Finalizing the DoD PARC logo (seen above) was an important step in branding for the organization. Wherever and whenever you see the DoD PARC logo, you will know a positive impact is being made toward amphibian and reptile conservation and management, both by and for the military, in support of our military mission.

DoD PARC has developed what has become a popular group and photo web site (http://dodparcphotolibrary.shutterfly.com). The purposes of the site are to share amphibian and reptile photographs, literature, reports, and publications among DoD biologists and environmental planners. The web site also contains links to other informative sites regarding amphibians and reptiles, an event calendar, and discussion forums for members to use in sharing with and contributing to the greater conservation community.

This year, DoD PARC developed a species database for amphibians and reptiles for the majority of the military installations in the continental United States—and some bases outside of the United States. This database serves to fill numerous needs in the community. Many of our bases simply lacked a rigorous list of amphibian and reptile species. With data calls, updates of Integrated Natural Resource Management Plans (INRMPs), and other relevant planning documents needed to support our projects and missions, it is essential that we have the most accurate species occurrence data. This database provides a peer-reviewed amphibian and reptile species list for more than 700 military installations, ranges, and training areas. To download a copy of the database, visit www.denix.osd.mil/nr/FishandWildlife/TerrestrialAnimals.cfm.

DoD PARC conducted amphibian disease surveys for the chytrid fungus *Batrachochytrium dendrobatidis* (*Bd*) at 30 military installations in 2009 and 2011. This research provided baseline data on the general health of amphibians on military lands and provided insight into their vulnerabilities from disease. The final report from 2009 can be downloaded at www.denix.osd.mil/nr/upload/Final_Route_66_Bd_Report-with-appendix.pdf. The 2011 report is being drafted currently and will hopefully be published soon. DoD PARC personnel received the first ever Natural Resources Conservation Award from the National Military Fish and Wildlife Association in 2011 in recognition of this work.

In 2013, DoD PARC will be conducting amphibian disease sampling across the DoD landscape, including bases in other countries, using a 'citizen science' approach. The 2013 effort will include sending installation natural resource staff all the field and lab materials necessary to sample amphibians themselves. As a result of funding from the DoD Legacy Resource Management Program, the cost of all materials and analysis of the samples will be at no cost to your base. With this study, we hope to complete one of the single largest sampling events for the amphibian disease (*Bd*) in a single season ever conducted. ***If you are interested in receiving a kit to sample amphibians on your base, please contact us at robert.lovich@navy.mil or chris.petersen@navy.mil!***

Several of our recent meetings have focused on solidifying the DoD PARC organizational structure. The result is the adoption

of a structure that mimics one of our most important federal partners—the U.S. Fish and Wildlife Service. Very soon, we plan to establish our leadership for each of the regions—including both a chairperson and a co-chairperson to oversee operations of the DoD PARC mission within their region. If you are interested in being involved, or have the capacity to serve in a leadership role, please let us know. We encourage you to join, and look forward to your involvement.

DoD PARC continues to provide sound, scientifically valid, and mission-focused support for amphibians and reptiles on military lands. It has been an exciting and productive 2012, and DoD PARC anticipates even more significant accomplishments in 2013. Please contact us if you are interested in becoming involved. We look forward to a bright future full of partnerships that will serve both the military mission and our ever-evolving environment. In this time of disappearing natural resources, habitats, and species, the defenders of our great nation have the opportunity to lead the way in herpetofaunal and landscape conservation. DoD PARC is proud to support our nation's military while also protecting amphibians and reptiles.

DoD PARC Organizational Structure

POLLINATOR PARTNERSHIP

S.H.A.R.E. and Efforts to Promote Pollinators

The Pollinator Partnership (P2) recently launched a new initiative to Simply Have Areas Reserved for the Environment (S.H.A.R.E.). When you plant pollinator-friendly plants, native plants that provide food and shelter for pollinators, you benefit all aspects of the environment. Anyone can S.H.A.R.E.; homeowners, land managers, farmers, individuals, and corporations can all help make a difference for these vital species. If you would like to get involved in this P2 initiative, add plants that provide essential habitat for pollinators such as bees, butterflies, moths, beetles, and hummingbirds. After planting, register with S.H.A.R.E. and your location will be added to a landscape map recognizing your contribution.

For more information, including planting guides, visit www.pollinator.org/SHARE.htm.

SERDP
DOD • EPA • DOE

Funding Available for Environmental Research and Development

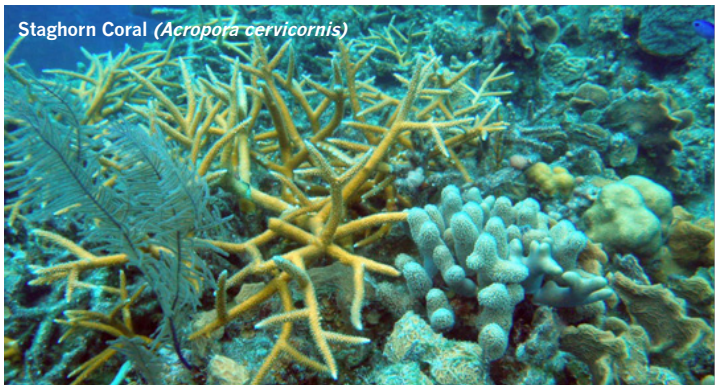
The Department of Defense's Strategic Environmental Research and Development Program (SERDP) is seeking to fund environmental research and development in the Resource Conservation and Climate Change program area. SERDP invests across the broad spectrum of basic and applied research, as well as advanced development. The Resource Conservation and Climate Change program area supports the development of the science, technologies, and methods needed to manage DoD's installation infrastructure in a sustainable way. SERDP is requesting proposals that respond to the following two focused Statements of Need (SONs) in Resource Conservation and Climate Change:

- Recovery of Ecological Processes Impacted by Non-Native Invasive Species in the Pacific Islands
- Climate Change Impacts to Built Infrastructure in Alaska

Proposals responding to the Fiscal Year 2014 SONs will be selected through a competitive process. All pre-proposals are due to SERDP by **January 8, 2013**. The SONs and detailed instructions are available at www.serdp-estcp.org/Funding-Opportunities/SERDP-Solicitations.

Coral Reef Initiative Database

By Phillip S. Lobel, Biology Department, Boston University


Staghorn Coral *(Acropora cervicornis)*

Coral reefs are diverse ecosystems that provide critical habitat for approximately 25 percent of all marine organisms. Up to 75 percent of the world's coral reefs are threatened due to continued pressure from a combination of local and global stressors. To facilitate consistent management and conservation of DoD-protected marine species and associated benthic marine habitat (coral reef ecosystems), the Legacy Resource Management Program supported development of the Coral Reef Initiative Database.

The database provides installation personnel access to information on coral reef species (both animals and plants) and associated benthic marine habitats. Information is focused on providing data related to the identification, distribution, biology, ecology, critical habitats, and management strategies for critically endangered coral reef associated species. It also provides the latest information on threats and assessment techniques and is organized by geographic locations that pertain to DoD facilities and responsibilities. Resource managers can search for threatened and endangered species by region associated with a specific installation, and links are provided to outside resources as well as pdfs of relevant documents (nearly 900 to date).

The Coral Reef Initiative Database is an easily accessible, up to date and fully documented source of information for DoD managers, aiding compliance with multiple Federal Acts and Executive Orders particularly with regards to the need to inventory biologically or geographically significant or sensitive natural resources. The database provides resource information for use in decision-making regarding on-shore or near-shore activities in order to maintain military readiness with minimal adverse impacts to the marine environment.

For the database, visit www.denix.osd.mil/nr/crid/Coral_Reef_Iniative_Database/Home.html.

USGS
science for a changing world

Did You Know? Sea Levels Are Rising Unevenly

From USGS News Release (6/24/2012), http://www.usgs.gov/newsroom/article.asp?ID=3256&from=rss_home#.UKQKB2ctR1s

Rates of sea level rise are increasing three-to-four times faster along portions of the U.S. Atlantic Coast than globally, according to a recent U.S. Geological Survey report published in *Nature Climate Change*. Since about 1990, sea level rise in the 600-mile stretch of coastal zone from Cape Hatteras, North Carolina, to north of Boston, Massachusetts – coined a "hotspot" by scientists – has increased 2 - 3.7 millimeters per year; the global increase over the same period was 0.6 – 1.0 millimeter per year.

The USGS report shows that the sea level rise hotspot is consistent with the slowing of Atlantic Ocean circulation. Models show this change in circulation may be tied to changes in water temperature, salinity, and density in the subpolar north Atlantic. Differences in land movements, strength of ocean currents, water temperatures, and salinity can cause regional and local highs and lows in sea level.

The increases in sea level rise rate that have already occurred in the hotspot will yield increases in sea level of 8 to 11.4 inches by 2100. This regional sea level increase would be in addition to components of global sea level rise, projected to be roughly two-to-three feet or more by the end of the 21st century.

To determine accelerations of sea level, USGS scientists analyzed tide gauge data throughout much of North America in a way that removed long-term (linear) trends associated with vertical land movements. This allowed them to focus on recent changes in rates of sea-level rise caused, for example, by changes in ocean circulation.

UPCOMING EVENTS

Conferences, Workshops, and Training

ACES and Ecosystem Markets 2012

A Community on Ecosystem Services Linking Science, Practice and Decision Making

December 10-14, Fort Lauderdale, Florida

ACES and Ecosystem Markets 2012 is an international collaboration of three dynamic communities - A Community on Ecosystem Services (ACES), the Ecosystem Markets Conference, and the Ecosystem Services Partnership (ESP). This conference will provide an open forum to share experiences and state-of-the-art methods, tools, and processes for assessing and incorporating ecosystem services into public and private decisions. The focus of the conference will be to link science, practice, institutions, and resource sustainable decision making by bringing together ecosystem services communities from around the United States and the globe. For more information, visit www.conference.ifas.ufl.edu/aces/.

13th National Conference on Science, Policy and the Environment

Disasters and Environment: Science, Preparedness, and Resilience

January 15-17, Washington, D.C.

This conference will address themes including cascading disasters, the intersection of the built and natural environments, disasters as mechanisms of ecosystem change, rethinking recovery and expanding the vision of mitigation, human behavior and its consequences, and "No Regrets" resilience. Leaders from the emergency response, scientific, policy, conservation, and business communities, as well as federal and local government officials will work to develop strategies and launch new partnerships and initiatives to improve the forecasting, preparedness, responsiveness, and resilience of communities to environmental disasters. Visit www.environmentaldisasters.net for more information.

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 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. Watch www.nmfwa.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.

Invasive Plant Webinar Series

A new webinar series on topics related to invasive plants is being offered by organizers of the North American Invasive Plant Ecology and Management Short Course (NAIPSC). NAIPSC is a three-day course consisting of intense instruction and learning for those interested in the basics of invasive plant ecology and management.

The webinar series features speakers conducting research, working on projects, or involved in activities related to invasive plant species. The first seven webinars have taken place and are now archived. Additional webinars are planned for 2012-2013 and will cover topics related to biocontrol, increasing stakeholder involvement, large-scale restoration efforts, new invasive plant species, invasive plant genetics, and the latest in plant identification tools.

Designed to inform participants who are actively involved in invasive plant management, research, and/or policy, the webinar series provides an online venue for sharing resources, ideas, and information. Participants have access to the discussion forum, information and technique updates, and unique networking opportunities. NAIPSC's Adobe Connect chat room, a real-time online meeting place, will also be available to share documents, ideas, and presentations.

For more information, visit the NAIPSC web site at http://ipscourse.unl.edu/.

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.

Policy and Guidance

Considerations and Recommendations When Developing Integrated Natural Resources Management Plans (INRMPs) – Final Report and Fact Sheet (Legacy 07-356)

This project used the INRMP template to draft a model document for Fort Drum and then conducted a thorough critique of the final report. Through this effort, a suite of recommendations was developed that may aid in the development of an INRMP or the update of an existing INRMP.

Climate Change Vulnerability Assessment Guidance for Conserving DoD Ecological Resources – Training Materials (Legacy 10-460)

Materials include sixteen presentations and exercises regarding climate change adaptation and vulnerability assessments from the August 2011 Climate Change Vulnerability Assessment Training Course.

Threatened, Endangered, and At-Risk Species Management

An Assessment of Vulnerability of Threatened, Endangered, and At-Risk Species to Climate Change – Technical Notes for Barry M. Goldwater Range and Fort Huachuca (Legacy 09-433)

Future climate change is anticipated to result in ecosystem changes and, consequently, many species are expected to become increasingly vulnerable to extinction. This scenario is of particular concern for threatened, endangered, rare, and at-risk species. A simple flexible strategy is needed to help integrate climate change into management planning and actions. This assessment uses basic ecological principles to rank individual species of interest according to predicted climate change responses and associated population declines balanced by those responses expected to incur resilience or population increases.

Cooperative Red-Cockaded Woodpecker Translocation Strategy Throughout the Southeast – Final Report and Fact Sheet (Legacy 08-412)

Since the early 1990s, the use of translocations as a management strategy has expedited Red-Cockaded Woodpecker (RCW) recovery throughout its range. The objective of this project was to expand translocation efforts regionally by providing additional staffing resources (i.e., translocation biologists). The final report details the monitoring of 100 RCW groups, banding efforts, roost cavity checks, and the trapping and translocation of sub-adult RCWs from the pool of 100 groups.

Kirtland's Warbler: A Success Story of Cooperative Conservation on Saving an Endangered Species – Monograph and Fact Sheet (Legacy 10-119)

The Kirtland"s Warbler Recovery Team was appointed by the U.S. Fish and Wildlife Service under the 1973 Endangered Species Act. The purpose of this project was to interview remaining early team members and partners of the Kirtland Warbler Working Group, gather the papers, pictures and videos that document the history of the team's recovery planning process, and summarize and archive these items to share with the conservation community, present and future.

Landscape-Level Habitat Associations and Phylogenetics of Desert Tortoises on Southwestern Arizona Military Ranges Managed by the Army, Air Force, and Marines – Final Report and Technical Note (Legacy 09-385)

Given the possibility of future ESA listing and the challenges that such a decision would create for DoD, it is prudent to understand the distribution of desert tortoises on military ranges within the Sonoran Desert so that appropriate management decisions can be made to reduce conflicts while maintaining the military readiness mission. The primary objective of this study was to develop a landscape-level predictive habitat model for desert tortoises inhabiting the Yuma Proving Ground and Barry M. Goldwater Range in southwestern Arizona. A secondary objective was to characterize the phylogenetic grouping of desert tortoises inhabiting these DoD-managed lands.

White Nose Syndrome and Bats: DoD Readiness on Military Installations II - Western USA – Fact Sheet (Legacy 11-445)

White Nose Syndrome (WNS) is causing the most precipitous decline in North American wildlife this century. This project was designed to share critical updates and foster cooperative strategies for dealing with this potentially catastrophic disease. A 3-day workshop was held at Fort Huachuca, Arizona. DVD and print materials were created and distributed to assist installations in determining the presence of WNS and responding to it. A map of relative risk for WNS to installations was developed and guidance provided to installations on submitting current/future installation bat data.

DoD PARC Strategic Plan Implementation, Management, and Technical Support – Meeting Minutes (Legacy 12-423)

These minutes detail the DoD Partners in Amphibian and Reptile Conservation (PARC) Implementation Workshop held in March 2012, a preliminary step to implementing the DoD PARC Strategic Plan. Topics covered at the workshop included updates from the initial workshop in 2011 (Nashville TN) and path forward, DoD PARC project updates and accomplishments, discussion of future projects and implementation, as well as priorities and action items.

Determining Marine Migration Patterns and Behavior of the Gulf Sturgeon in the Gulf of Mexico off Eglin Air Force Base, Florida – Technical Note (Legacy 10-428)

This project used acoustic telemetry technology to determine the presence or absence, location, and movement patterns of Gulf sturgeon in Gulf of Mexico critical habitat near Eglin Air Force Base. It identified movement patterns of Gulf sturgeon from different river systems, overwintering locations, level of river fidelity, and performance of the receivers in a harsh marine environment.

Fish and Wildlife Management – Birds

Modeling the Impact of Climate and Anthropogenic Change on Birds and Vegetation on Military Lands in California – Final Report, Technical Note, and Fact Sheet (Legacy 10-465)

This project analyzed climate change impacts on bird distributions on DoD lands in California, emphasizing threatened, endangered, and at-risk species (TER-S) and species of special concern. The project assessed changes in broad vegetation types, evaluated how changes vary regionally and among installations, determined the effects of changes in land use (housing development) on bird distributions in areas surrounding installations, tested the effectiveness of assessments of species vulnerability to climate change, and summarized the findings that may help to inform forward-looking environmental management on DoD installations.

NEW! NATURAL RESOURCES DOCUMENTS *Continued*

Monitoring Migratory Birds Using Automated Acoustic Technologies – Presentation and Fact Sheet (Legacy 10-245)

This project assessed the calling phenology of the Mexican Spotted Owl at Fort Huachuca and Eastern Whippoor-Will at Fort Drum and the behavior of the autonomous recording units and sound analysis software (Raven, XBAT) used in previous research funded under SERDP and Legacy.

Avian Response to Grassland Management Around Military Airfields in the Mid-Atlantic and Northeast – Final Report and Fact Sheet (Legacy 10-381)

Grasslands associated with airfields in the eastern United States frequently support breeding populations of grassland birds that are of conservation concern, but can also support bird species that are potentially hazardous to aircraft operations. A better knowledge of how various species respond to management actions in airfield grasslands will have benefits for both conservation and air safety. This project studied the relationships among avian habitat use, grassland habitat management, vegetation structure, and landscape characteristics on three military airfields: Westover Air Reserve Base in Massachusetts, the Lakehurst section of Joint Base McGuire-Dix-Lakehurst in New Jersey, and Patuxent River Naval Air Station in Maryland.

Assessing BASH Risk Potential of Migrating and Breeding Osprey in the Mid-Atlantic Chesapeake Bay Region – Final Report (Legacy 08-292)

The recovery and expansion of Osprey populations in North America in recent years has resulted in an increased threat of collisions (strikes) with aircraft. This study improved understanding of Osprey movements along the eastern seaboard during all parts of their annual cycle (i.e., breeding season, fall migration, wintering period, and spring migration). An advanced operational risk management process emphasizing the safeguarding of military assets and preserving readiness was demonstrated. This project expanded current bird avoidance model systems while determining effective solutions for reducing Osprey-strike risks through the combined efforts of flight safety officers, airspace managers, natural resource managers, wildlife biologists, and geospatial analysts.

Invasive Species Management

Logistical and Technical Support for the North Carolina Sandhills Weed Management Area (NCSWMA): Sharing DoD Invasive Plant Species Management Strategies with Installation Neighbors – Final Report (Legacy 09-334)

This project enabled the NCSWMA to inventory and control invasive plant populations on lands in the vicinity of the military installations in the Sandhills region. It assisted the NCSWMA in implementing regional invasive plant management strategies—preventing the establishment of new invasive plants; inventory, control and monitoring of existing invasive plant populations; increasing public awareness of invasive plant issues; and facilitating cooperation with land managers and landowners throughout the Sandhills region. This report provides detailed maps and GIS data.

Sustainable Cooperative Invasive Species Management Areas (CISMAs) for Effective Management on Military Bases and Adjacent Lands Across Florida – Poster and Fact Sheet (Legacy 11-437)

CISMAs address the threat of invasive non-native species on DoD lands, private and public lands, and rights of ways within their boundaries. This exhibit poster presented at the April 2012 Florida Exotic Pest Plant Council Annual Symposium details this highly successful project.

Ecosystem Management

Inventory and Prioritization of Impaired Sites in the Yellow River Watershed in Alabama and Florida – Technical Note (Legacy 09-432)

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. This technical note outlines the recommendations and lessons learned.

Submerged Aquatic Vegetation (SAV) Restoration Using Innovative Seed-Based Technology – Final Report and Fact Sheet (Legacy 10-060)

This study used an innovative technology to coat eelgrass seeds for restoration at two sites in the Chesapeake Bay watershed. By utilizing this technology, and honing in on the best mixture for the seed coating technology, seagrass restoration will be more efficient and cost effective. The final report includes a cost-benefit analysis and management recommendations.

Tracer Ignition Minimization (TIM) Tool – Technical Note and Fact Sheet (Legacy 10-374)

The small arms tracer round is one of the largest causes of military training ignited wildfires. In this study, observations of fire ignitions in the laboratory were used to build predictive capacity related to the probability that a military tracer round coming to rest in *Megathyrsus maximus* (guinea grass) fuels will start a fire. The resulting TIM tool can be used to identify specific times when tracer usage is safe. It can be used in conjunction with a fire danger rating system, or independently, to help make decisions regarding range usage and weapons restriction requirements.

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

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

Deputy Director, DoD Natural Resources
Director, Legacy Resource Management Program
Peter Boice: peter.boice@osd.mil

Natural Resources Specialist, Legacy
Jane Mallory: jane.mallory.ctr@osd.mil

DoD Conservation Program Support
DoDNRConservation@bah.com

Natural Selections

Natural Selections is written and published quarterly by HydroGeoLogic, Inc.

Information and ideas for future articles are always welcome. Address comments and suggestions to Alicia Shepard: ashepard@hgl.com

To be added to our distribution list, please send an e-mail to NaturalSelections@hgl.com.