



Steppingstones



NEWSLETTER OF THE DEPARTMENT OF DEFENSE
PARTNERS IN FLIGHT PROGRAM

Landscape Conservation Cooperatives—Managing Change

Our nation's natural resources and landscapes are important to sustaining our quality of life and our economy. Native fish and wildlife species also depend on healthy rivers, streams, wetlands, forests, grasslands, and coastal areas to thrive. Managing these natural resources and landscapes has become increasingly complex. Land use changes and impacts such as drought, wildfire, habitat fragmentation, contaminants, pollution, invasive species, disease, and a rapidly changing climate can threaten people as well as the sustainability of native species and their habitats.

Landscape Conservation Cooperatives (LCCs) recognize that these challenges transcend political and jurisdictional boundaries, and require a more networked approach to conservation – one that is holistic, collaborative, and grounded in science to help inform land and resource management decisions.



*A group of volunteers helps replant marsh grass on a refuge.
Source: U.S. Fish & Wildlife Service*

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LCCs are a national network of public-private partnerships that work collaboratively across jurisdictions and political boundaries to leverage resources and to share science capacity. Partners include federal agencies such as the Department of Defense (DoD), state and local governments, tribes, universities, non-governmental

organizations (NGOs), landowners, and other stakeholders. Because no public or private entity alone has all of the conservation tools and capacities needed to address the cumulative impacts to America's land, water, wildlife, and cultural resources, LCCs coordinate across various programs and initiatives to jointly identify science and management priorities. Partner agencies coordinate with each other while working within their existing authorities and jurisdictions.

LCCs are inherently collaborative and seek to identify best practices, connect efforts, identify gaps, and avoid duplication among and between partners in an effort to support sustainable landscapes. They complement and build upon existing cooperative science and conservation efforts, including those for water resources and land and cultural partnerships. LCC products may include resource assessments, climate model applications to appropriate scale, vulnerability assessments, inventory and monitoring protocols, and conservation plans and designs.

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Landscape Conservation Cooperatives—Managing Change (cont.)

Core LCC functions include:

- ✦ identifying common science and conservation goals and priorities between partners;
- ✦ developing science-based tools and solutions to meet shared conservation goals;
- ✦ supporting biological planning, conservation design and adaptive management; and
- ✦ evaluating the effectiveness of scientific information and conservation actions.

Collectively, the current 21 LCCs form a national network of land, water, wildlife, and cultural resources managers, scientists, and interested public and private organizations – within the U.S. and across our international borders – that share a common need for scientific information and interest in conservation.

Key Components

A steering committee with members from resource management and science agencies (federal, state, tribal, and local) will guide each LCC. NGOs, universities, members of industry, and others may also contribute to the cooperative effort and may be part of the steering committee in some LCCs. Core staff will include a coordinator and science manager for each LCC. The partnership could also support other staff, including individuals with expertise in applied

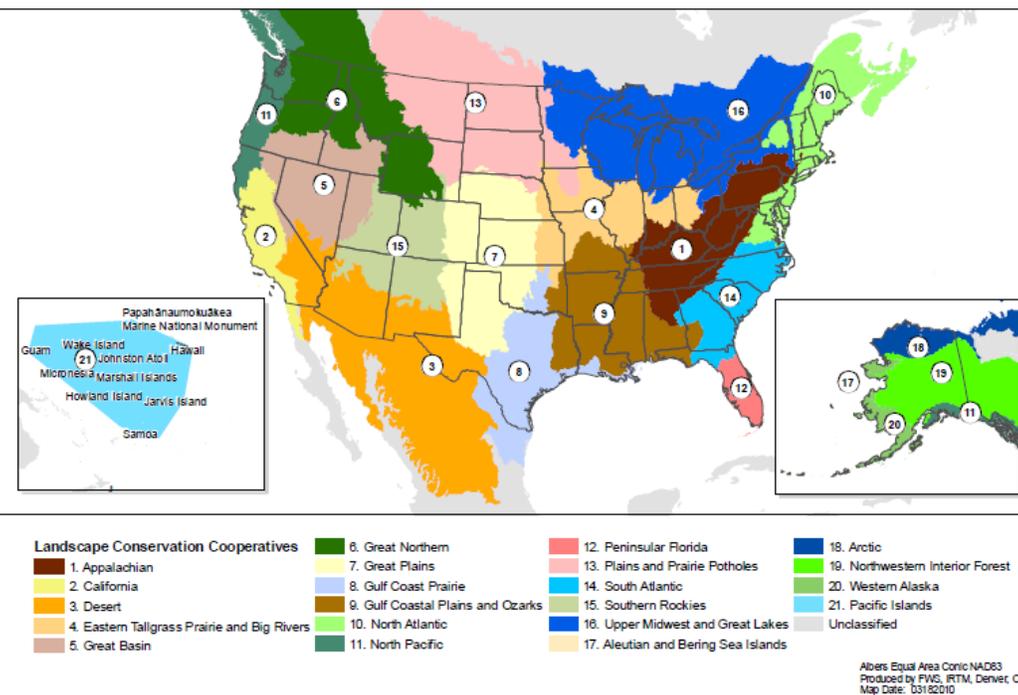
science (applying research results to the design, implementation, monitoring, and assessment of conservation actions), as well as geographers, GIS specialists, biometricians, cultural resources, and outreach specialists.

DoD agencies such as the U.S. Army Corps of Engineers (USACE) are represented on some LCC Steering Committees. Rick Nelson, Plains and Prairie Potholes LCC Coordinator, stated that, “the Corps has a major presence on the Missouri River, which runs right through the middle of the Plains Prairie Potholes LCC.”

In addition, the Desert Managers Group (DMG) and Mojave Desert Ecosystem Program (MDEP), both of which have strong DoD affiliations, have been engaged and offered support to DoD through a Mojave sub-region concept within the Desert LCC for the past year and a half. DMG has promoted this sub-regional approach since the Desert LCC operates across three distinct desert ecoregions and five states.

In cooperation with the Mojave Desert Initiative (MDI) out of Nevada, both DMG and MDEP developed a concept for a Mojave subgroup that would operate alongside a Sonoran, Chihuahuan, and Colorado river subgroup in support of the Desert LCC effort. This subgrouping would allow for existing organizations to address Desert LCC goals while being efficient and cost effective.

Landscape Conservation Cooperatives



Map of Landscape Conservation Cooperatives in the United States.

Source: U.S. Fish & Wildlife Service

- David T. Eisenhauer,
Office of Public Affairs,
U.S. Fish and Wildlife Service

Saving Tallgrass Prairie

Tallgrass prairies are one of the most diverse vegetative communities in North America. Grasses that can grow to over 8 feet in height, with lavish displays of ornamental wildflowers interspersed with other broadleaf plants, sedges, and woody plants dominate the landscape. Three major factors influenced the development of tallgrass prairie. First, frequent fire eliminated trees and controlled shrubs. Additionally, grasses and forbs adapted to grazing and fire due to underground growing points that quickly re-sprout. And finally, prairie plants can go dormant during a drought, and then begin growing again when rain returns. All of these natural events and characteristics have led to the tallgrass prairies we know today.

The tallgrass prairie is considered by many to be the most altered ecological community in North America. Originally spanning a relatively thin strip from southern Manitoba down through northern Oklahoma, tallgrass prairie covered approximately 142 million acres of the American heartland. Because of the deep, rich soils and precipitation patterns, European settlers were quick to plow and plant agricultural grain crops when they arrived. Current estimates of remaining acreage range from less than 1–4% of pre-settlement tallgrass. The Flint Hills area in east-central Kansas is by far the largest tallgrass prairie landscape remaining on the continent, with more acres than in all of the other prairie states and provinces combined. Even so, a sizable portion of the Flint Hills has been degraded by invasive plants, urban sprawl, urban-to-rural migration, woody encroachment, and fragmentation.

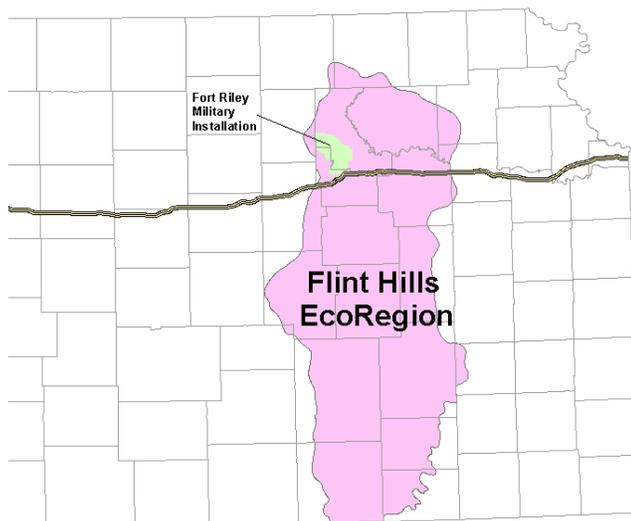


Flint Hills landscape and wild blue indigo (Baptisia australis) on Moyer Ranch, part of a 6,800-acre tract protected in perpetuity due to partnering of USDA-NRCS, Fort Riley, REPI, Kansas Land Trust, and Kansas Department of Wildlife & Parks.

© Photo courtesy of: Bruce L Hogle

The Fort Riley Military Installation (over 101,000 acres), located in the northern Flint Hills of Kansas, contains the largest expanse of tallgrass prairie in the public domain. Military training and management of tallgrass prairie are co-dependent on Fort Riley. Much of the grassland on Fort Riley has a flat, open topography, which lends itself to force-on-force maneuver training, an important component of the installation's mission. Prescribed burning is the most important method to provide the open space needed for maneuver training. Fire kills trees and maintains the grassland cover, which work together to sustain open vistas. Frequent burning (2 out of 5 years) helps reduce a build-up of dead vegetation on installation and lessens the potential danger of wildfires to soldiers and equipment in the field. Abundant rainfall and the capability of prairie vegetation to re-grow after disturbance allows the grassland to quickly recover from maneuver activities.

Healthy numbers of all mid-latitude bird species typical of tallgrass prairies occur on Fort Riley, including Greater Prairie-chicken, Henslow's Sparrow, Upland Sandpiper, and Dickcissel. Declines of these and other grassland fauna populations have coincided with the decline of tallgrass prairie across the nation. In an attempt to halt the decline of these tallgrass species, efforts are underway to try to permanently protect portions of the remaining tallgrass prairie within the Flint Hills region.



Location of the Fort Riley Military Installation in relation to the Flint Hills region of Kansas.

Photo courtesy of: Jeff Keating

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Saving Tallgrass Prairie (cont.)



*Soldier views train-fire activities across the open vistas afforded by the tallgrass prairie landscape at Fort Riley.
Photo courtesy of: Jeff Keating*

Fort Riley has partnered with the Kansas Land Trust through the Readiness and Environmental Protection Initiative (REPI) to purchase perpetual conservation easements on lands within designated encroachment buffer zones. Fort Riley's buffer zones were designated to target areas where incompatible development could potentially impact military training on the installation. These buffer zones also include protecting corridors that will maintain habitat bridges to other large, tallgrass prairie tracts away from the installation so that the installation does not become an island of prairie within a sea of developed areas. To date, over 12,000 acres of native prairie have been protected within Fort Riley's buffer zones.

Other organizations are also working to preserve tallgrass prairie in the Flint Hills of Kansas. The Nature Conservancy (TNC) in Kansas owns the 8,600 acre Konza Prairie, managed by Kansas State University, and is a part owner/manager, along with the National Park Service and



*Regal fritillaries (*Speyeria idalia*), an Army Species at Risk, on Mintleaf beebalm flowers are located on the Laman property. They are protected in perpetuity due to partnering of USDA-NRCS, Fort Riley, REPI, Kansas Land Trust, and Kansas Soil Conservation Council.
Photo courtesy of: Jeff Keating*

Kansas Park Trust of The Tallgrass Prairie Preserve (11,000 acres). TNC also has purchased conservation easements on over 36,000 acres of prairie scattered across the southern Flint Hills. The U.S. Department of Agriculture-Natural Resources Conservation Service has partnered with both the Kansas Land Trust and TNC to purchase some of these conservation easements through its Farm and Ranchland Protection Program.

In an effort to link together these scattered, protected parcels, the U.S. Fish and Wildlife Service established the one million-acre Flint Hills Legacy Conservation Area (FHLCA) in 2010, a new unit of the National Wildlife Refuge System. The purpose of the FHLCA is to help maintain the integrity of tallgrass prairie wildlife habitat and the ranching heritage of the Flint Hills by acquiring and protecting habitat through voluntary, perpetual conservation easements.



The Greater Prairie-chicken, while rare or extirpated in most of the country, is still relatively abundant throughout the Flint Hills in Kansas. Biologists on Fort Riley marked and equipped these birds with radio transmitters during a recent study.

Photos courtesy of: Jeff Keating

If successful, the combined efforts of these loosely-knit partners will protect habitat for more than 100 species of grassland birds, preclude the necessity of any additional listing of tallgrass prairie species as threatened or endangered, and thus help to ensure the long-term sustainability of military training at the Fort Riley Military Installation.

*- Jeff Keating,
Biologist, Fort Riley, Kansas*

Partnership Focus: Association of Fish & Wildlife Agencies: The Collective Voice for Fish and Wildlife Conservation

America's fish and wildlife belong to all of us as a public trust. For more than 100 years, state, provincial, and territorial fish and wildlife agencies have upheld the primary responsibility of conserving and preventing the exploitation of these resources on public and private lands and waters within their borders. The Association of Fish and Wildlife Agencies (AFWA) represents North America's fish and wildlife agencies and aims to advance sound, science-based management and conservation of fish and wildlife and their habitats in the public interest. AFWA represents its state agency members on Capitol Hill and before the Administration to advance favorable fish and wildlife conservation policy and funding and works to ensure that all entities work collaboratively on the most important issues. AFWA also provides member agencies with coordination services on cross-cutting and species-based programs that range from birds, fish habitat, and energy development to climate change, wildlife action plans, conservation education, and leadership training. Working together, AFWA's member agencies are ensuring that North American fish and wildlife management has a clear and collective voice.



and conserve wildlife. The states have primary authority and responsibility to manage resident birds and concurrent authority with the U.S. Fish and Wildlife Service (USFWS) to manage migratory birds.

State wildlife agencies have a legacy of partnering with DoD installations to develop Integrated Natural Resources Management Plans (INRMPs) as required by the Sikes Act. When it comes to bird conservation, AFWA helps the states engage in a variety of issues on regional, national, and international scales. For example, AFWA works on Capitol Hill to address critical legislative issues (e.g., North American Wetlands Conservation Act, Neotropical Migratory Bird Conservation Act, Farm Bill development and implementation). AFWA also works closely with the Bird Habitat Joint Ventures. Not only are state wildlife agencies members of the governing bodies of the Joint Ventures, but AFWA also works with them on private lands conservation, monitoring, and other issues. DoD is often a member of Joint Venture management boards, and works with partners to achieve regional bird conservation goals.

“AFWA understands that to achieve our conservation goals, we must dedicate ourselves to addressing the global challenges that have the potential to impact wildlife here at home.”

AFWA also works throughout the world to ensure United States and Canada fish and wildlife agencies are well represented on conservation issues. AFWA understands that to achieve our conservation goals, we must dedicate ourselves to addressing the global challenges that have the potential to impact wildlife here at home.

The State Fish and Wildlife Agencies that AFWA supports have broad statutory and constitutional authority over wildlife management with a mission to sustain, protect,



Lewis' Woodpecker is found westward of the Great Plains. Its slow, deliberate flight reminds one of a crow or jay more than a woodpecker.

*Photo:
U.S. Fish & Wildlife
Service*

In addition to their work on a regional scale, AFWA coordinates the North American Bird Conservation Initiative (NABCI; www.nabci-us.org) – a collaboration of federal (including DoD), state, and non-governmental partners who support effective and integrated bird conservation. NABCI partners work together to promote funding and policies that support effective bird conservation on a continental scale. DoD staff participate on NABCI subcommittees that work to build coordinated bird monitoring, augment conservation for birds on private lands, and produce an annual State of the Birds Report. Recent *State of the Birds* reports (www.stateofthebirds.org) highlight the impacts of climate change on birds, importance of public lands and waters to bird conservation, and a status report of U.S. birds and the habitats they rely upon.

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Partnership Focus (cont.)



The American Oystercatcher can be found along ocean shores and salt marshes.

Photo: U.S. Fish & Wildlife Service

State Wildlife Action Plans

Through the State and Tribal Wildlife Grants Program, each state and territory is required to develop a State Wildlife Action Plan (SWAP). SWAPs outline the steps that are needed to conserve wildlife and habitat before they become more rare and more costly to protect. Taken as a whole, they present a national action agenda for preventing wildlife from becoming endangered.

SWAPs assess the condition of each state's wildlife and habitats, identify the problems they face, and outline the actions that are needed to conserve and sustain them over the long term. By drawing together scientific data, these wildlife action plans identify what needs to be done in each state to conserve wildlife and the natural lands and waters where they live— with benefits for both wildlife and people. Each wildlife action plan reflects a different set of local issues, management needs, and priorities, so no two are identical. However, the states work together and with the USFWS to ensure nationwide coordination. These action plans can also be used when developing NRMPs for military bases. Cross-referencing SWAPs and INRMPS may help identify opportunities for partnership on common priority species and habitats. Each state has a SWAP Coordinator. You can find contact information for your Coordinator and additional information about each state's SWAP at <http://www.wildlifeactionplans.org/>.

Southern Wings Program

AFWA's Bird Conservation Committee developed the Southern Wings Program in March 2008. Southern Wings is a partnership of state fish and wildlife agencies that share a common vision to provide a funding mechanism for bird conservation projects in Latin America and the Caribbean. The Program is based solidly on the biology about birds

that occur in the United States as well as those that spend time on Latin American/Caribbean wintering grounds. The Southern Wings Program also allows interested states to financially participate in their program and provides states with progress and accomplishment reports. During the Program's inaugural year (2009-2010), seven states contributed over \$75,000 to the conservation of state agency priority birds in Latin America and the Caribbean through the Southern Wings Program. In 2010-2011, the second year of the Program, nine states and the North Eastern Association of Fish and Wildlife Agencies contributed \$128,500, not including an additional \$48,400 from partners. This Program offers the opportunity for partners to join with state agencies to conserve priority species throughout their lifecycle.



The Prairie Warbler breeds in the southeastern and central-eastern United States and winters in the southern United States, the West Indies, and coastal Central America. The species has suffered rather steep population declines since the 1960's.

Photo: U.S. Fish & Wildlife Service

AFWA considers DoD to be a critical partner with the State Wildlife Agencies to help them meet their mandate of conserving wildlife for the public good. Please see www.fishwildlife.org for more information on AFWA.

*- Deb Hahn,
AFWA, International Resource Director*

View From the Eyrrie

DoD Partners in Flight is celebrating 20 years of conserving birds and their habitats on Department of Defense (DoD) lands. The mission of DoD PIF, and of other natural resources programs within DoD, is to support and enhance the military's training, testing, and safety mission. Even after 14 years with this Program, I am still amazed that many people give a blank stare when I tell them what I do. We have accomplished a lot in 20 years, but, to be sure, we have more work to do.



The DoD PIF Program held its 10th annual planning workshop in Boise, Idaho in June. The Peregrine Fund hosted our meeting at their headquarters, the World Center for Birds of Prey, and I must say that The Peregrine Fund made sure it was one of our best meetings to date. The facilities were excellent and provided a great atmosphere for a productive meeting. Our hosts went out of their way with their hospitality. We received a personalized tour of the onsite Aplomado Falcon captive breeding facility, which is supported in part by Junior Kerns and White Sands Missile Range, who are participating in the reintroduction program for Aplomado Falcons in New Mexico. We also had some time to spend in what is likely the best ornithological library in the country. If you thought kids in a candy store is dangerous...

We had a packed agenda for the week, including a number of invited speakers and guests. We spent a half-day discussing eagle issues after listening to presentations about Golden Eagle research in the west from Robbie Knight, Dugway Proving Ground; Mark Fuller, USGS/Raptor Research Center; and Steve Slater, Hawk Watch International. We also discussed the new U.S. Fish and Wildlife Service (USFWS) eagle requirements and how DoD is working with USFWS to identify potential guidance for eagles specific to DoD and military training. Speakers presented additional information on this topic at the Sustaining Military Readiness Conference (www.smrconference.com/) in Nashville at the end of this past July. Additional discussions focused on implementing monitoring techniques and identifying



priority species. Participants also brainstormed ways that DoD PIF can help better promote conservation priorities by reviewing criteria in evaluating bird-related Legacy Resource Management Program proposals. One quote during the week strikes a chord that we should all embrace: "Irrespective of the product, the conversations are hugely important." This highlights the importance of talking to our partners to help progress the Program's conservation goals.

The Council for the Conservation of Migratory Birds met in December, and again in April. During the April meeting, the Council selected the first winner of the Presidential Migratory Bird Stewardship Award and recognized the Office of Surface Mining for their Appalachian Regional Reforestation Initiative, along with 22 co-applicants and many partners. Among many highlights of the nomination was the agreement signed with the UN Environment Program to plant 38 million trees in three years. This action will benefit priority bird species such as the Golden-winged Warbler and, eventually, the Cerulean Warbler on formerly mined lands. In other Council news, the Conservation Measures Committee is continuing to gather measures from federal agencies, and is currently exploring options for creating an online resource for agencies to use when searching for existing measures.

Secretary of the Interior Ken Salazar released *The State of the Birds 2011: Report on Public Lands and Waters of the U.S.* at a press event on May 3. I participated on the science team for this report and was present at this event at Kenilworth Park and Aquatic Gardens in Washington, DC. A PDF of the document, along with additional supporting data and graphs, can be found at www.stateofthebirds.org.



Peregrine Falcon
Photo: U.S. Fish & Wildlife Service

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View From the Eyrie (cont.)

The North American Bird Conservation Initiative (NABCI) formed 12 years ago. During this time, David Pashley, American Bird Conservancy; Bob Ford, USFWS; and Deb Hahn, AFWA (see partner article in this issue), successfully led the U.S. NABCI Committee and Allison Vogt recently completed her first set of NABCI meetings as the new bird conservation coordinator for AFWA. During recent meetings, members agreed to focus on following up on the 2011 *State of the Birds* report with more detailed actions for bird conservation on public lands, rather than initiate a new report for 2012. The NABCI Committee also discussed energy development and NABCI's role to help inform energy siting decisions and help develop other tools to minimize impacts to birds and habitat. Overall, the NABCI Committee's goal is to focus on future outcomes, not just output.

The revamped PIF Steering Committee met the day prior to the NABCI meeting. Discussions centered around a few key items, including how the NABCI monitoring subcommittee can best support PIF priorities, how to move the *State of the Birds* message forward in ways that generate conservation actions, and how to continue implementing the tri-national vision for bird conservation, Saving Our Shared Birds (www.savingoursharedbirds.org/).

Finally, I am pleased to announce that The Wildlife Society has formally accepted the Military Lands Working Group as a formal working group. The first official meeting of the working group will be held at the November TWS Conference in Hawai'i. If you are a TWS member, watch for your renewal notice - you can elect to join the Military Lands Working Group for the same \$5 dues as other working groups. Rhys Evans, Vandenberg AFB, and I are interim co-chairs until elections are held. We are excited about having a more intentional link with TWS and engaging the TWS membership in discussions about natural resources on military lands, including bird conservation.

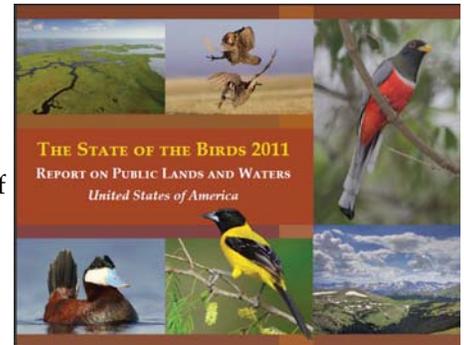
- Chris Eberly,
DoD PIF Program
Coordinator



State of the Birds

The *State of the Birds* report provides scientific data to help improve the conservation status of birds and the environment. The 2011 report highlights the importance of

America's public lands and waters for conserving wildlife and habitats, and provides our nation's first assessment of the distribution of birds on public lands. More than one-third of U.S. lands and all of our oceans are publicly owned and contain habitats that support more than 1,000 bird species, 251 of which are federally endangered, threatened, or of conservation concern. More than 300 bird species have 50% or more of their U.S. distribution on public lands and waters. This report also will help public agencies identify which bird species have a significant conservation potential in each habitat.



The 2011 report focuses on the following public lands and habitats: aridlands, grasslands, wetlands, arctic and alpine, forests, islands, coasts, and oceans, and discusses the conservation successes and challenges that each of these specific environments face. The report also highlights the bird stewardship responsibilities that multiple agencies share in every major U.S. habitat, including Bureau of Land Management, DoD, National Oceanic Atmospheric Administration, National Park Service, U.S. Forest Service, U.S. Fish and Wildlife Service, and other state agencies. Together, these agencies work together to support bird conservation across their public lands.

A few highlights from this year's report that are particularly noteworthy include:

- ✦ More than 97% of the U.S. native grasslands have been lost, mostly because of conversion to agriculture. As a result, grassland bird populations have declined from historic levels far more than any other group of birds.
- ✦ All of our nation's 46 waterfowl species, and many other wetland birds, depend on a network of National Wildlife Refuges and other publicly protected wetlands during all or part of their life cycle.
- ✦ Public forests are crucial for the recovery of endangered species, including Kirtland's Warbler, with 97% of its U.S. distribution on public lands.

To view the full 2011 State of the Birds report, click: [www.stateofthebirds.org/State of the Birds 2011.pdf](http://www.stateofthebirds.org/State%20of%20the%20Birds%202011.pdf).

Policy Perch: Plan and Policy Update

I'd like to share some highlights from my Natural Resources Policy Update presented at the DoD PIF Representatives' Annual Meeting in Boise in mid-June. At that time, I introduced four priorities, currently in draft form, that represent the framework upon which we are building our new DoD Natural Resources Strategy. These priorities are:

- ✦ develop policy and guidance;
- ✦ oversee DoD Components' natural resources programs;
- ✦ define needs and address gaps, and
- ✦ enhance outreach to develop and expand partnerships.

For those keeping score, this is a somewhat different structure than what I presented at the annual National Military Fish and Wildlife Association's annual training workshop in Kansas City last March.

To date, the DoD Natural Resources (NR) Program has made great strides to comprehensively address each of these priorities. Below are some of the top program actions associated with the first of these priorities: develop policy and guidance.

Natural Resources Conservation Instruction, DoDI 4715.03

The DoDI has been issued and is available at www.DoDNaturalResources.net, www.denix.osd.mil/nr/, and www.dtic.mil/whs/directives/.

INRMP Implementation Manual

Now that the new DoD Instruction is complete, we are working on the companion Integrated Natural Resources Management Plan (INRMP) Implementation



Manual. We will seek one final round of informal comments before requesting formal coordination. In addition to general INRMP-related provisions, the draft Manual also provides complementary procedures to help implement the DoDI 4715.03 in the field, including:

- ✦ ecosystem-based management principles and guidelines;
- ✦ DoD Forestry Reserve Account criteria to determine project eligibility and authority;
- ✦ valuing and managing DoD ecosystem services; and
- ✦ planning for climate change impacts to natural resources.

Coordination with USFWS Draft Sikes Guidance

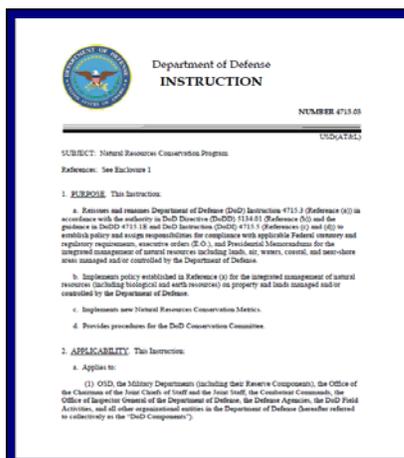
The DoD NR Program wants to ensure consistency between our new Instruction and draft INRMP Manual and the U.S. Fish and Wildlife Service (USFWS) Draft Sikes Guidance. We are working with USFWS to resolve apparent discrepancies related to consistency of definitions, the nature and timing of reviews for operation and effect, the unnecessary inclusion of environmental contaminants in USFWS guidance, and establishing a mutually agreed upon process to ensure USFWS and state input to annual DoD metrics reviews. We began this dialogue in June and held a follow-up meeting on August 9th.

Potential Legislative Changes

The House Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs introduced an additional request from the Army National Guard (ARNG) that would add 47 ARNG installations to Sikes Act coverage by modifying the statutory definition of "military installation." This change, if enacted, would align management of these state-owned lands with Army policy, streamlining funding.



Aplomado Falcon
Photo: Elaine R. Wilson,
www.naturespicsonline.com



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Policy Perch: Plan and Policy Update (cont.)

In addition, The Nature Conservancy (TNC) offered language to amend the Readiness and Environmental Protection Initiative (REPI), the DoD Legacy Resource Management Program, and the Sikes Act to address potential encroachment issues. All proposed TNC changes could enhance DoD's ability to participate in broad-scale initiatives, including those related to bird conservation, on adjacent non-DoD lands. For example:

- ✦ Amendments to §2684a would permit cooperative agreements to cover the future costs of the maintenance and improvement of natural resources on REPI buffer projects.
- ✦ Amendments to §2694 would address sustainability as an explicit purpose of Legacy-funded wildlife studies and would authorize DoD to assist in the development and implementation of ecosystem-wide management planning.
- ✦ Amendments to the Sikes Act would increase the potential scope and cost sharing abilities of interagency and cooperative agreements.

Pending Policy Memos

There will always be topics that require more immediate guidance than a formal DoD issuance (such as an Instruction or Manual) can provide. We currently are developing policy memos, to be signed by our Office of the

Secretary of Defense (OSD) Installations and Environment office, on several topics including white-nose syndrome, birds and power lines, access for disabled sportsmen, feral animals, and no net loss of wetlands. The first of these memos, *Reducing Bird Collisions at Power Lines*, is now in formal coordination.

- Peter Boice,
Deputy Director, Natural Resources



Gray Vireo Finds Important & Unique Winter Habitat on Arizona's Military Lands

In early 1995, I had a choice between two field jobs: search for nests of pineland birds in Big Cypress National Preserve, Florida, or get in at the ground floor of an effort to identify and describe the migratory route and non-breeding (wintering) grounds of American Swallow-tailed Kite. Less than two years later, I found myself in the *cerrado* of southwestern Brasil, photographing a young Kite that I had radio-tagged about five months before and nearly five thousand miles away. My interest in the non-breeding season ecology of migratory birds was piqued.

The Sonoran Desert, found in the southwestern U.S., is home to many fascinating and unique species. Among them is the elephant tree (*Bursera microphylla*), found throughout most of the Sonoran Desert and named for its stout trunk that is likely an adaptation for water storage. In addition to its interesting shape (from above it can look like an anemone), it also has great color (tan and purple branches with tiny bright green leaflets), texture (flaky bark



Elephant Tree
Photo: Wikipedia Public Domain

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Gray Vireo Finds Important & Unique Winter Habitat (cont.)

that may prevent the tree from getting sunburned), and aroma (it's in the same family as frankincense and myrrh). If you pull a leaflet off a turgid tree, pressurized stream of aromatic sap pours out. Due to all these desirable characteristics, native peoples of the Sonoran Desert region had countless uses for the elephant tree. It is a plant with plenty of charisma and symbolizes both the austerity and vitality of the Sonoran Desert. But perhaps most importantly for me, the elephant tree provides fruits that are critical, calorie-rich winter food for the Gray Vireo, a DoD species at-risk.



During the winter, Gray Vireos depend on small, calorie-rich elephant tree fruits like the ones shown here.

Photo: Leah L. Dunn

Scientists believe that Gray Vireo may have co-evolved with the elephant tree. The vireo's bill gape is just wide enough to eat a single elephant tree fruit, and the timing of the bird's arrival to and departure from its wintering grounds coincides with elephant tree fruit maturation. This close connection between the species suggests that the vireo's winter distribution should closely match the distribution of the elephant tree, which is primarily northwestern Mexico, southwestern Arizona, and small isolated populations in southern California.

When I realized that DoD lands in southwestern Arizona, specifically the Barry M. Goldwater Range (BMGR), may contain a large proportion of U.S. populations of elephant trees and wintering Gray Vireos, I developed a project to look more closely at the distribution of both species in Arizona, and explore the vireo's winter habitat use. In late 2009 and early 2010, we developed a state-wide distribution map of Arizona's elephant trees and conducted 61 call-playback surveys where elephant trees occur to determine Gray Vireo presence/absence.

As expected, we found that Arizona's largest expanses of elephant trees are on BMGR and adjacent to Cabeza Prieta National Wildlife Refuge (CPNWR). More than half of the

vireos we detected were on BMGR. Clearly, DoD lands play a significant role in the stewardship of these two species.

For me, perhaps our greatest accomplishment is that we revitalized the level of interest in this species assemblage among Arizona's natural resources management community. Other groups, including CPNWR and Arizona Field Ornithologists, will conduct more elephant tree searches and vireo surveys in the next few months, and timing could not be better. On BMGR, we noted areas of elephant tree die-offs, possibly related to drought and excessive heat. Researchers have noted very low elephant tree recruitment elsewhere in Arizona. This leads us to speculate that elephant trees in certain micro-climates may be showing negative signs of stress due to climate change. However, a warmer climate in Arizona could also allow the frost-sensitive elephant trees to slowly expand northward. In either case, additional efforts toward monitoring elephant tree population dynamics will be invaluable toward understanding the winter distribution of the at-risk Gray Vireo in the Southwest. This research will also help evaluate the degree of DoD's stewardship of this unique ecological community.

I thank the many talented and intrepid volunteers and research colleagues (both ornithologists and botanists) who made significant contributions to this project, especially during the five-day expedition across the infamous Camino del Diablo, just a few miles from the U.S.-Mexican border.

*- John Arnett, Luke AFB,
DoD PIF Western Regional Representative*

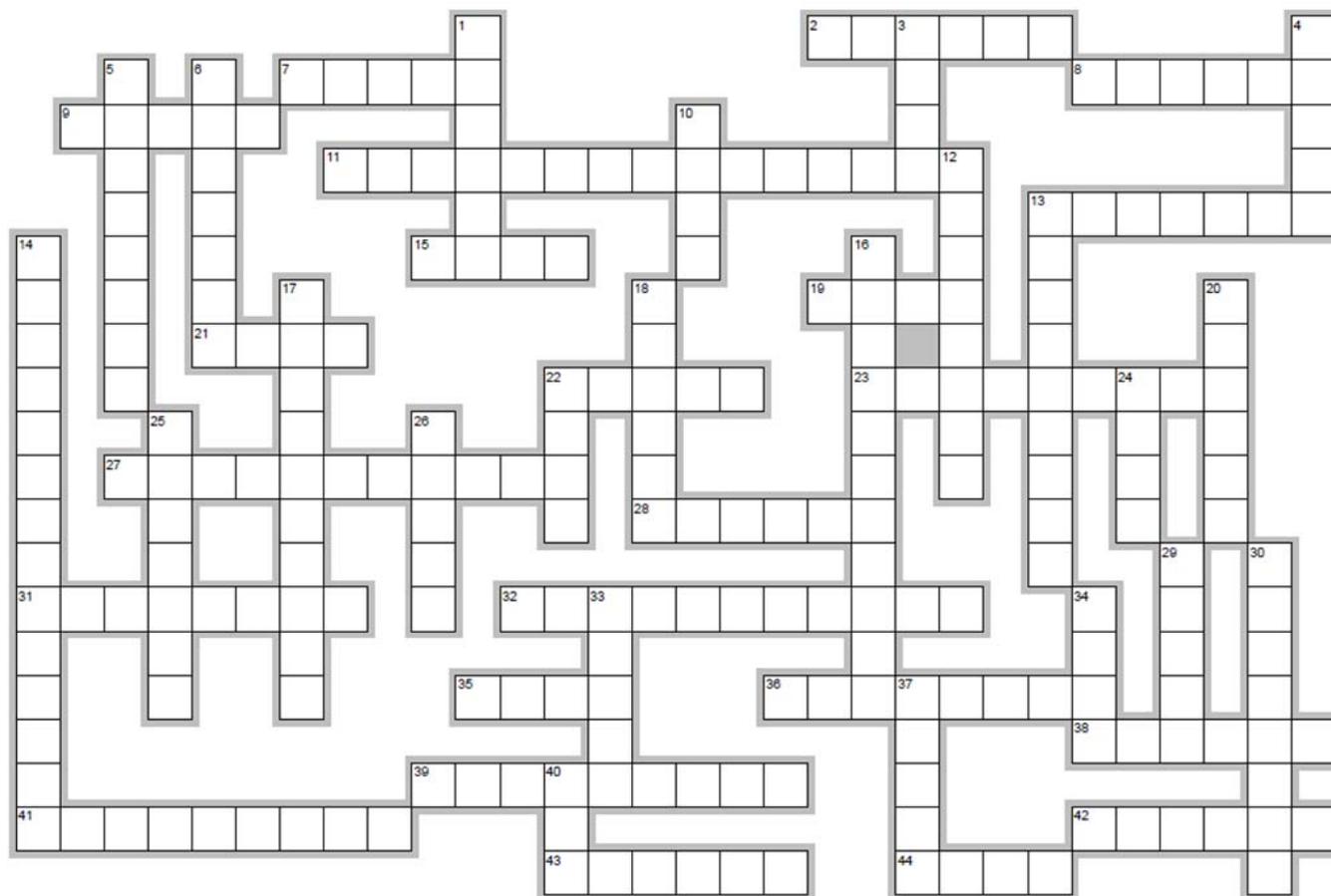
Bottom: The author conducting a playback survey for Gray Vireos in Ironwood National Monument near Tucson, Arizona.

Photo: Chris Eberly



*Top: Gray Vireo
Photo: U.S. Geological Survey,
courtesy of Greg Lasley*

Cross-Bird Puzzle: Parts of a Bird



Across

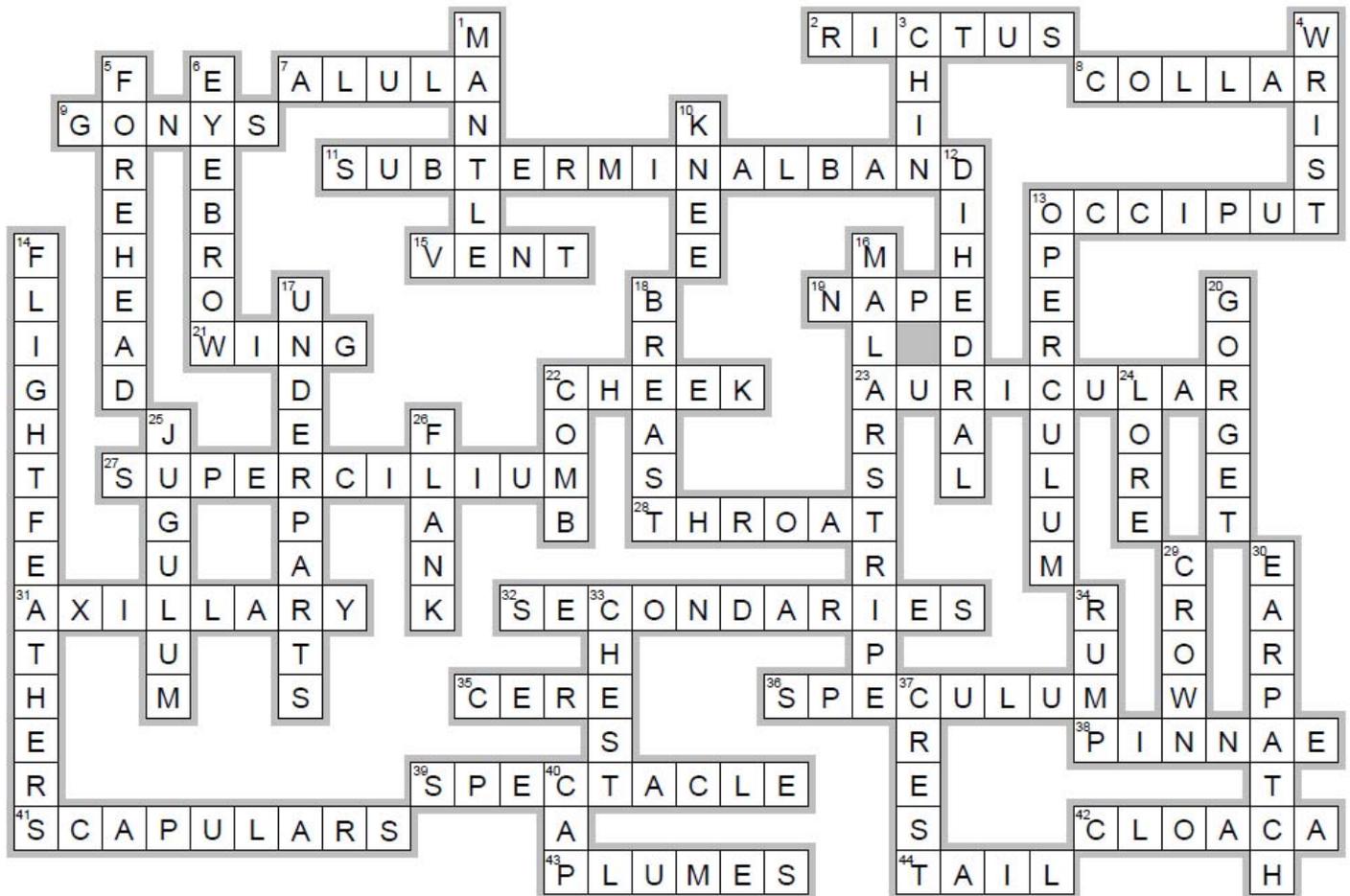
2. Base of the bill where the mandibles join
7. Three feathers springing from the base of the primaries
8. Rear portion of crown
9. Lowermost ridge on lower mandible
11. Stripe before tip of tail, 2 words
13. Rear portion of crown
15. Opening of the cloaca or anus
19. Back of the neck
21. Moveable feathered appendage
22. Area bounded by lore, eye, auricular, and lower mandible
23. Area around ear opening
27. Line of feathers above the eye commonly called the eyebrow
28. Front part of the neck
31. Ventral area between the body and the wing
32. Flight feathers attached to the elbow
35. Fleshy area between the beak and face
36. Highly colored area on secondaries of several ducks
38. Projecting feathers
39. Eye ring and supraloral line together
41. Area of feathers between the back and the wings
42. Single opening in birds used for both reproduction and excrement
43. Large conspicuous showy feathers
44. Feathers extending from the rear of the bird

Down

1. Upper surface of the wings and the back
3. Part of the face below the bill
4. Area at base of the primaries
5. Part of the face above the eyes
6. Line of feathers above the eye
10. Joint in the middle part of the leg
12. Wings of a flying bird held at an angle appearing to form a "V"
13. Swollen structure in pigeons overarchng the nostril
14. Primaries and secondaries, 2 words
16. Area at the sides of the chin, also called whisker or mustache, 2 words
17. Belly, undertail coverts, chest, flanks, and foreneck
18. Front part of the chest
20. Iridescent throat feathers on a hummingbird
22. Colored area over eye found in males
24. Area between the eye and the bill
25. Front part of the neck
26. Area between the belly and the wings, more posterior
29. Top of the head
30. Area around ear opening
33. Front part of the body
34. Area between the uppertail coverts and the back
37. Tuft on the head
40. Top of the crown

Thanks to Peter Boice for this edition's cross-bird puzzle!

Cross-Bird Puzzle Answer Key



CONTRIBUTING TO THE DoD PIF NEWSLETTER IS EASY!

*Want to highlight bird conservation efforts on your installation?
Have a great bird image you just have to share?
Send your ideas and images to Chris, Alison, or Erica.*



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