



Steppingstones



NEWSLETTER OF THE DEPARTMENT OF DEFENSE
PARTNERS IN FLIGHT PROGRAM

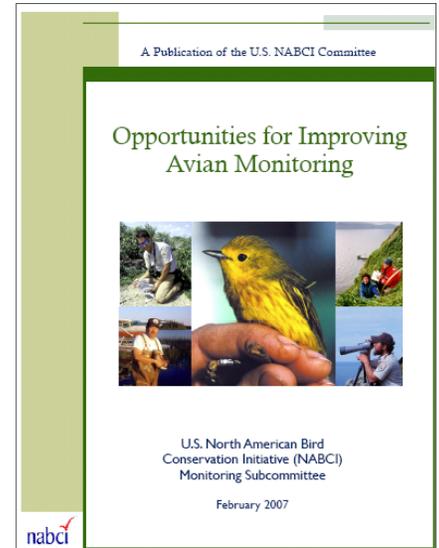
Implementing Effective Monitoring

Why does the Department of Defense (DoD) monitor birds? DoD, like other federal agencies, is subject to regulations establishing responsibilities for monitoring migratory birds. Compliance with these legislative requirements supports DoD's training and testing mission and provides its natural resources managers with data to assist conservation of priority species and habitats. The Migratory Bird Rule (50 CFR 21) addresses the potential impacts of military readiness activities on populations of migratory birds. It also establishes a process to implement conservation measures if and when an impact is expected, as determined through the National Environmental Policy Act (NEPA) process. A Memorandum of Understanding between DoD and the U.S. Fish and Wildlife Service, under the auspices of Executive Order 13186, states that for non-military readiness activities, prior to initiating any activity likely to affect populations of migratory birds, DoD shall: (1) identify the migratory bird species likely to occur in the area of the proposed action and determine if any species of concern could be affected by the activity; and (2) assess and document the effect of the proposed action on species of concern.

that DoD meets its conservation and regulatory responsibilities for monitoring birds, the U.S. Geological Survey (USGS), American Bird Conservancy, and the U.S. Army Engineer Research and Development Center are helping DoD document and begin implementing the goals of a

Coordinated Bird Monitoring Plan (CBM Plan). The CBM Plan relies heavily on recommendations in the U.S. North American Bird Conservation Initiative Monitoring Subcommittee report entitled [Opportunities for improving avian monitoring](#) and on a review of 358 current DoD bird monitoring programs. Implementation of the CBM Plan also will incorporate recommendations from [The Northeast Bird Monitoring Handbook: Ten Steps to Successful Bird Conservation through Improved Monitoring](#).

Current activities associated with implementing the CBM Plan's goals include helping DoD representatives identify focal populations of bird species to monitor on each installation, and the representation of those species within the installation compared to the population levels in the surrounding landscape. Conceptual models describing how DoD activities affect bird populations are in the development phase, and will assess whether existing monitoring programs and protocols are effective in meeting DoD's needs. New models will continually evolve as new needs are identified. Following the creation of these models, statistically robust approaches to sampling and data analyses will be designed in consultation with bird monitoring experts to minimize errors and biases.



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Different bird species have different monitoring needs. Some species are effectively monitored via large-scale monitoring programs, such as the Breeding Bird Survey. Other species, including secretive marsh birds, shorebirds, raptors, waterfowl, nightjars, and upland game birds are best monitored using specialized protocols. To ensure

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The Bald and Golden Eagle Act Overview

Background and History

Population declines of the Bald Eagle in the United States began during the 1800s from widespread shooting for feathers and trophies, leading to extirpation. In addition to trophy hunting, Bald Eagle populations decreased due to loss of prey base. This occurred as a result of uncontrolled hunting of waterfowl, shorebirds and small mammals. The loss of nesting habitat from development and forest clearing and exposure to carrion baited with thallium sulfate, strychnine, and other poisons resulted in a combination of factors that also contributed to the decrease in Bald Eagle numbers observed through the 1940s.



Bald Eagles
Photo: USFWS

In response to the population decline, the Bald Eagle Protection Act ([16 U.S.C. 668-668d](#)) was passed in 1940, specifically protecting Bald Eagles. A 1962 amendment extended this protection to the Golden Eagle for reasons

such as population declines, recognized value to agriculture in the control of rodents, and to provide greater protections to Bald Eagles because of their similar appearance to juvenile Bald Eagles. This amended statute became known as the Bald and Golden Eagle Protection Act (Eagle Act). The Eagle Act prohibits the take, possession, sale, purchase, barter, or offering to sell, purchase or barter, transport, export or import, of any Bald or Golden Eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. "Take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, or disturb (16 U.S.C. 668c; [50 CFR 22.3](#)) a Bald or Golden Eagle.

Beginning in the late 1940s, the widespread use of dichloro-diphenyl-trichloroethane (DDT) and other organochlorine pesticides devastated eagle productivity. The accumulation of these chemicals in the fatty tissue of adult female Bald Eagles impaired calcium metabolism necessary for normal eggshell formation, causing eggshell thinning. This resulted in massive reproductive failure because the fragility of many eggs led to breaking during incubation or to embryonic mortality. In 1978, the Bald Eagle within the lower 48 states was listed as endangered under the Endangered Species Act (ESA) from DDT and other factors listed above.

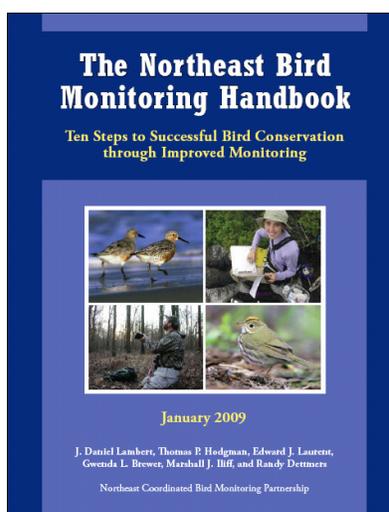
Almost 30 years after the Bald Eagle's endangered listing, ESA protection and much conservation and management, the U.S. Fish and Wildlife Service (USFWS) determined that the factors responsible for the listing of the Bald Eagle

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Implementing Effective Monitoring (cont.)

These data are organized and stored within the CBM Database, managed by USGS. Results of the data analyses will be presented in formats that support sound management and conservation decisions by DoD. These decisions are continually evaluated through monitoring efforts so that management practices can be adjusted when necessary within an adaptive management framework.

Implementation of goals from the draft CBM Plan already is providing DoD's natural resources community with the knowledge and tools to make more



efficient and effective resource management decisions. A proactive approach to monitoring, and the utilization of standardized protocols and data repositories, will help DoD continue its leadership role as informed and active stewards of the nation's natural resources.

- Ed Laurent, American Bird Conservancy, Chris Eberly, DoD Partners in Flight, and Richard Fischer, U.S. Army Research and Development Center

The Bald and Golden Eagle Act Overview (cont.)

(ESA Section 4(a)(1)) no longer applied and, therefore, the Bald Eagle no longer required the protection of the ESA. On July 9, 2007 ([72 FR 37346](#)), USFWS declared the Bald Eagle recovered and removed it from the Federal List of Endangered and Threatened Wildlife. Since the delisting, the Eagle Act is the primary law protecting Bald and Golden Eagles. Eagles are also afforded protection under the [Migratory Bird Treaty Act](#) (MBTA) per the 1972 amendment of the migratory bird convention between the U.S. and Mexico.



*Bald Eagle
Photo: USFWS*

Legislative Changes

From 2006 to 2010, USFWS finalized a number of items in the Federal Register that address the delisting of the Bald Eagle and clarify and expand upon the protection of eagles under the BGEPA:

1) Further defining “disturb” under the Eagle Act (Final, June 5, 2007; [72 FR 31131](#)) – The term “disturb” is very similar in context to “harm” and “harass” under the ESA. USFWS clarified that “disturb” means to agitate or bother an eagle to a degree that causes or is likely to cause, based on the best scientific information available, injury to an eagle, a decrease in its productivity, or nest abandonment. This type of unauthorized disturbance or “take” may result from habitat degradation and/or manipulation, or by substantially interfering with normal breeding, feeding, or sheltering behavior caused by human activities, including approaching the nest too closely, or construction or recreational activities in close proximity to the nest.

2) Development of the [National Bald Eagle Management Guidelines](#) (Guidelines) (Final, June 5, 2007; [72 FR 31156](#)) – USFWS developed these Guidelines to advise landowners and land managers with Bald Eagles of the circumstances under which the protective provisions of the Eagle Act may apply to their activities. The Guidelines also serves as a tool on how to avoid disturbing Bald Eagles.

The USFWS exercises enforcement discretion under the Eagle Act and will prioritize its enforcement efforts to focus on those individuals or entities who take Bald Eagles

or their parts, eggs, or nests without implementing appropriate measures recommended by the Guidelines. The Guidelines focus primarily on active and alternate nests. In general, USFWS recommends:

- a. keeping a distance between the activity and the nest (distance buffers),
- b. maintaining preferably forested (or natural) areas between the activity and around nest trees (landscape buffers), and
- c. avoiding certain activities during the breeding season.

The Guidelines generally recommend that activities be conducted either 330 or 660 feet away from a Bald Eagle nest, depending on visibility and/or the activity, and the status of the nest. However, the Guidelines are also careful to emphasize that site-specific factors should always be considered, and that buffers may need to be expanded in open areas with few visual or topographic buffers.

In addition to Bald Eagles, the USFWS is developing raptor management guidelines that will include Golden Eagles. These guidelines, along with available literature and assistance from the USFWS, will help land managers with the conservation and management of Golden Eagles and will also serve as a tool on how to avoid disturbing eagles.

3) Permits for Bald Eagle take previously exempted under ESA (May 20, 2008; [73 FR 29075](#)) – This permit authorizes take of Bald Eagles in compliance with the terms and conditions of a Section 7 incidental take statement (ITS) under the ESA. If a federal agency wanted to continue

their take authorization established under an existing Biological Opinion, USFWS required them to obtain a [50 CFR 22.28 permit](#). To obtain this permit, the federal agency had to be in full compliance with the terms and conditions contained in the applicable ESA ITS. If a federal agency did not choose to continue their ITS, then they were not authorized to “take” a Bald Eagle until obtaining an Eagle Act permit, which were not available until September 2009.



*Golden Eagle
Photo: USFWS*

The Bald and Golden Eagle Act Overview (cont.)

4) Issuance of two permit regulations to address "take" of eagles and eagle nests (September 11, 2009 ([74 FR 46836](#)):

a. [50 CFR 22.26](#) – This permit authorizes the limited take of Bald and Golden Eagles "for the protection of...other interests in any particular locality" where the take is associated with and not the purpose of an otherwise lawful activity, and such take cannot practicably be avoided. "Practicable" in this context means capable of being done after taking into consideration, relative to the magnitude of the impacts to eagles, cost, existing technology, and logistics in light of overall project purposes.

b. [50 CFR 22.27](#) – This permit authorizes removal and/or relocation of eagle nests where genuine safety concerns necessitate the take (e.g., where a nest tree appears likely to topple onto a residence, at airports to avoid collisions with eagles, or for a nest located on an electrical transmission tower that interferes with necessary maintenance of the utility and jeopardizes the eagles' safety).

If you determine that a Bald or Golden Eagle (individual(s) or nest) may be taken as a result of your proposed action, USFWS recommends that you obtain a permit ([take of individual\(s\)](#); [take of nest\(s\)](#)) and "comply with all avoidance, minimization, or other mitigation measures determined by the USFWS as reasonable and specified in the terms of your permit to compensate for the detrimental effects, including indirect effects, of the permitted activity." Given all the requirements for obtaining a permit to "take" an eagle or its nest, the question might be asked, "how is this any different than a Section 7 consultation under the ESA?" One difference is that USFWS concurrence is not necessary when an agency determines its activity has no impact, and therefore chooses not to seek a permit.

However, the agency bears the risk that its determination is incorrect, regardless of whether or not USFWS concurs. If take results contrary to the agency determination, that take will constitute a violation of the Eagle Act. USFWS is available to provide technical assistance to federal agencies in planning or modifying projects to avoid or minimize impacts on Bald and/or Golden Eagles. Individuals seeking more information on eagles should review the USFWS's website at <http://fws.gov/migratorybirds/baldeagle.htm>.

Population information for both Bald and Golden eagle species will guide the USFWS in determining how many permits may be issued in an eagle management unit (as



*Left: Golden Eagle in flight.
Top: Bald Eagle in flight.
Photos: USFWS*

defined in the USFWS environmental assessment of the rulemaking), including other types of permits the USFWS already issues. Priority will be given to Native American requests for permits to take eagles (under existing regulations) where the take is necessary for traditional ceremonies. Because of the limited size of the Bald Eagle populations in the Southwest, permits may not be available in most locations. Disturbance or take of Golden Eagles is likely to be limited everywhere in the U.S. due to potential population declines.

5) The Post-delisting Monitoring Plan for the Bald Eagle (June 4, 2010; [75 FR 31811](#)) - The Post-delisting Monitoring Plan (PDMP), a requirement of the ESA (Section 4(g)(1)), directs USFWS and the states to monitor the status of the Bald Eagle by collecting data on occupied nests over a 20-year period with sampling events held once every five years. Data collection was started in early 2009. The purpose of the data collection is to determine if at any time the population of Bald Eagles in the contiguous 48 States warrants expanded monitoring, additional research, and/or resumption of Federal protection under the ESA.

There are no specific requirements for DoD. However, as stated in the PDMP:

"Bald Eagle monitoring in most States has been carried out by a combination of Federal agencies, Tribes, private organizations, and individuals. While the Service [USFWS], in cooperation with the States, is responsible for post-delisting monitoring of Bald Eagles, continued participation and cooperation of all our partners is important for monitoring success. We anticipate that the combined efforts of all of our partners working together will provide the necessary resources to implement this Plan."

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The Bald and Golden Eagle Act Overview (cont.)

With respect to using this PDMP to detect the rate of decline used for permitting purposes under the Eagle Act, the USFWS stated in the Eagle Permits rule ([74 FR 46836](#)):

“The PDMP is a national-level monitoring plan designed to detect declines that would merit reconsideration of the Bald Eagle as threatened or endangered under the ESA, whereas the population trends on which we would base take thresholds under this take permit regulation will be smaller in scale and at levels that are below the detectability of the PDMP.”

Eagle Act Penalties

Unlike the MBTA, the Eagle Act is not a strict criminal liability statute. Under criminal law, strict liability means that violations of the MBTA can result in the conviction of defendants even though they may be ignorant of the law's prohibitions. The old maxim, “ignorance of the law is no excuse,” is true in such a case. For a prosecutor to convict someone under the MBTA, it is not necessary to prove that they knowingly violated the law. They may be convicted of either a misdemeanor or felony solely for doing the act regardless of whether or not they were aware of the specific provision of the law violated.

Under the Eagle Act, a criminal violation occurs when someone “shall knowingly, or with wanton disregard for the consequences of his act take, possess, sell...” live or dead eagles, or their parts, nests or eggs. By means of the federal alternative fine statute, a violation of the Eagle Act can result in a criminal fine of \$100,000 (\$200,000 for organizations), and imprisonment for one year, or both, for a first offense. Penalties increase substantially for additional offenses, and a second violation of this Act is a felony. The Eagle Act also provides for civil penalties of up to \$5,000 per violation.

An unpermitted take of an eagle could also be punishable under the MBTA. Such violation could result in a \$15,000 maximum fine with up to six months in jail for a misdemeanor. Baiting is a criminal violation punishable under Title 18 of the federal code with fines of up to \$100,000 for individuals and \$200,000 for organizations.

The following are potential scenarios involving the violation of the MBTA or the Eagle Act. An installation requests funding to implement measures necessary to avoid adverse effects on eagles, but the funding is denied. If the installation goes ahead with the action and an eagle is "taken", then the installation is at risk. If an installation gets a permit and requests funding to implement

conditions of the permit, but is denied from up the chain, then fault for noncompliance with the permit could possibly fall on the individual(s) who denied the funding.

Ideally, requesting information from and working with USFWS could help avoid such scenarios or any potential prosecution for a violation of the Eagle Act or MBTA. However, even though an installation may be cooperating with USFWS, this would not preclude a third party from filing suit under the Administrative Procedures Act.

Power line electrocutions are another concern, not just for eagles but for raptors and other migratory birds. Previous court cases (e.g., [U.S. v. Moon Lake Electric Ass'n, Inc](#)) ruled that power companies are liable for electrocution deaths of migratory birds under the Eagle Act and MBTA. DoD installations should be proactive and modify existing power lines when dead and/or injured birds are found, where high-risk lines are identified, or if concerns of legal compliance are at issue. New power lines that are not constructed to avoid bird electrocutions could be considered a “...wanton disregard for the consequences...” under the Eagle Act if an eagle is electrocuted, and fines for such violations can be very costly. For example, on July 14, 2009 in Casper, Wyoming, one of the largest electric utilities in the West, PacificCorp, pleaded guilty in federal court to illegally killing Golden Eagles and other migratory birds in the state. The court ordered PacificCorp to pay over \$10.5 million for the violation. In addition, under the terms of its plea agreement, PacificCorp must implement an Avian Protection Plan for the state of Wyoming that will include retrofitting and modernizing its electrical distribution and transmission system to reduce eagle mortalities. Until this past year, PacificCorp failed to use readily available measures to address avian electrocutions. According to USFWS, these measures can save numerous eagles and other birds, and hold companies liable when they fail to implement measures to prevent electrocutions.

Summary

To create a compatible atmosphere between eagle conservation efforts and the military mission that avoids interruptions, installations should engage in long-term planning for the eagle, become proactive in their conservation efforts in writing and on the ground, and abide by guidance from USFWS in regard to avoiding disturbance to eagles. It is also advisable to conduct active eagle monitoring and surveying efforts, or have plans to carry out these activities in place.

- Jay Rubinoff,
Army Environmental Command

BRAC PIF Mitigation and Environmental Stewardship: Fort Belvoir, VA

Fort Belvoir's Base Realignment and Closure (BRAC) Operations Office Environmental Team works closely with the Directorate of Public Works Environmental and Natural Resources Department (DPW ENRD). Together, they ensure that BRAC construction projects comply with local, state, and federal environmental laws, and that mitigation measures, as identified in the National Environmental Policy Act (NEPA) process, are accomplished. Mitigation recommendations by DPW ENRD, regulatory agencies, and the public include invasive/exotic vegetation control, removal of impervious surfaces, stream habitat restoration, Partners in Flight (PIF) habitat restoration, creation of wildlife underpasses, and wildlife refuge expansion. Environmental stewardship is also a major goal of the team. Examples of environmental stewardship for site clearing and new building construction include tree replacement, bird nest surveys, and bird safe buildings.

This article will focus on several PIF habitat restoration projects. These projects include manipulating habitat and constructing artificial nest structures. Habitat manipulation is conducted by planting native understory trees and shrubs in forested areas to improve depleted understory habitats or by cutting trees and planting native grasses and shrubs to re-establish early-successional habitat. These restoration projects were designed to not only benefit PIF species, but other wildlife as well.



This location had trees over 17' tall thinned and then tilled and planted with native shrubs, understory trees, and warm-season grasses to enhance an early-successional habitat type (field with scattered trees less than 20' tall). This area was selected for enhancement based on breeding bird survey data that indicated lack of use by four declining PIF SOC which formerly used the area.

Photo courtesy of: Gregory Fleming

Habitat Manipulation

During the early 2000s, a high deer population depleted the understory layer in much of Fort Belvoir's forested habitat. As a result, understory-nesting PIF Species of Concern (SOC), such as Kentucky (*Oporornis formosus*) and Hooded Warblers (*Wilsonia citrine*), were not identified on breeding bird surveys as often as they were in surveys prior to 2000. Because cutting trees in forested areas is discouraged as a management practice, adding shrubs and understory trees in forested areas lacking an understory component was the only option for habitat manipulation in these areas. This strategy is twofold. First, planting an understory component restores the missing understory that is important for PIF SOC, such as Kentucky and Hooded Warblers. Second, it creates a seed bank of understory species for the future. Wildlife will implement this understory seed bank by consuming the nuts and berries found there and disbursing their seeds throughout the forest for future regeneration.

Artificial Nest Structures Construction

Fort Belvoir previously implemented Eastern Bluebird (*Sialia sialis*) and Wood Duck (*Aix sponsa*) nest box programs. Therefore, it was a natural progression for the staff to add nest structures to benefit PIF species when developing PIF habitat restoration projects. Staff built a Chimney Swift (*Chaetura pelagica*) roosting/nesting tower in the spring of 2010, and surveys indicate it was used during spring migration. This structure was built to replace



This forested area was void of an understory component and required the planting of mostly shade tolerant native shrubs and understory trees. Since many areas had few canopy openings, shrubs and understory trees were planted in areas where sunlight hit the ground.

Photo courtesy of: Gregory Fleming

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Military Training Enhancing Whip-poor-will Habitat at Camp Edwards, MA

Camp Edwards, the National Guard's major training site for New England, is located on Cape Cod, Massachusetts. It makes up the largest parcel of open space left on Cape Cod, and is truly an island of biodiversity in a sea of development. Camp Edwards is home to nearly 40 species of state-listed and one candidate species for federally listing. This biodiverse, disturbance-based ecosystem is maintained by military training.

The Whip-poor-will (*Caprimulgus vociferus*) is a ten inch long nocturnal bird that gets its name from its rhythmic *whip-poor-will* call that is repeated over and over. It is a



Female Whip-poor-will with young and transmitter.
Photo courtesy of: John Kelly

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BRAC PIF Mitigation and Environmental Stewardship (cont.)

a nearby chimney that was historically utilized as a roosting and nesting structure that was demolished prior to BRAC activities. In addition, eight Prothonotary Warbler (*Prothonotaria citrea*) nest boxes and five Eastern Screech-Owl (*Megascops asio*) nest boxes were erected in appropriate habitat.



The chimney structure in this photo is the replacement Chimney Swift tower that was erected and utilized during spring 2010 migration.

Photo courtesy of: Gregory Fleming

Additional Considerations for PIF Species:

Tree replacement: Fort Belvoir DPW ENRD has a tree replacement policy that states that every tree four inches in diameter or larger removed is replaced with two trees that are two inches in diameter. Accordingly, several thousand trees will be planted as a result of the construction of the BRAC 2005 projects at Fort Belvoir. A good example of fulfilling the tree replacement policy is the development of the Fort Belvoir North Area Revegetation Plan. This

document takes into account the replacement of lost PIF SOC habitat that occurred during the construction of buildings and associated infrastructure.

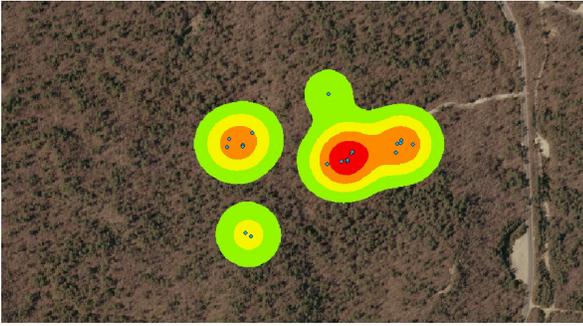
Migratory bird nest surveys: For most species, the Northern Virginia breeding bird season occurs from May 15 to July 15. Contractors were encouraged to conduct land clearing operations prior to or after the nesting season. When this was not possible, DPW ENRD and BRAC staff conducted bird nest surveys to avoid destroying active bird nests. When an active nest was found, the area was flagged and not disturbed until after the young birds fledged the nest. These surveys are not normally conducted during the nesting season when NEPA has been completed on a project.

Bird Safe Buildings: Existing buildings with bird strike problems were identified and solutions were recommended. Additionally, four new building construction designs were reviewed and input provided to reduce the risk of bird collisions into the windows of the new buildings.

In conclusion, by taking into account PIF habitat considerations during the early planning/design phase and during construction, DPW ENRD and BRAC environmental staff worked together with BRAC 2005 stakeholders (e.g., Army Corps of Engineers project managers, construction contractors, and incoming tenant partners) to ensure that important PIF habitat was restored and enhanced to ensure future use by PIF species and other wildlife.

- Gregory W. Fleming, Pamela J. Couch, and Michael L. Hudson

Military Training Enhancing Whip-poor-will Habitat at Camp Edwards, MA (cont.)



*Example kernel analysis for home range
Photo courtesy of: John Kelly*

migratory bird that arrives on Camp Edwards in late May and leaves at the end of August. Their summer range extends from Southern Canada to the Southern U.S. and in the mountains as far south as Mexico, while their winter range stretches from the Gulf of Mexico to Honduras. Camp Edwards has a relatively large population of Whip-poor-wills; however, the species is declining throughout the rest of Massachusetts. Due to this decline, Camp Edwards took on the responsibility of investigating the factors behind the difference in population size. The spatial dynamics of Whip-poor-wills on Camp Edwards are being studied to better understand their habitat needs. Camp Edwards will use data collected for this project and incorporate Whip-poor-will management in future plans.

Using two different methods, Whip-poor-wills were captured during feeding hours after sunset. One capture method involved deploying various sized mist nets in feeding and travel corridors for several hours at dusk. Occasionally playing a cassette tape of Whip-poor-will calls from the mist net location helped lure the birds into the net, where they were then entangled and captured. A second method was used when a Whip-poor-will was found incubating eggs. Since the bird was on a nest, a hoop-net with a 3-foot handle was used for capture. After capturing a Whip-poor-will, observations of sex, weight, tarsus length, and wing chord length were made. An aluminum United States Fish and Wildlife Service ID band was attached, and a radio transmitter was placed on the bird's back using elastic thread for harness material. Using radio telemetry equipment, Whip-poor-wills were located twice a week during daytime hours to gather daytime roost data. Daytime roost observations included canopy coverage, ground cover type, and dominant trees and shrubs. Data was recorded with a Trimble Pathfinder GPS/datalogger unit and then exported into Arcview GIS. Night roost and feeding locations were obtained by triangulating the Whip-poor-will's location with radio telemetry equipment and then analyzing the triangulation data with LOAS and Arcview GIS software.

Based on minimum convex polygons, day roost home range varied in size from 0.1 to 3.0 hectares while feeding areas ranged in size from 7.5 to 25.0 hectares. The day roost locations were mostly within the feeding areas. The actual area used for day roosting was smaller relative to the day roost home range since the Whip-poor-wills would typically roost in one spot for several days or weeks, move, and settle down in one roost spot again. The birds were found roosting and feeding in mixed wood habitats with under stories of huckleberry and scrub oak, and over stories of pitch pine and white oak.



*Left: Whip-poor-will transmitter attachment
Photo Courtesy of: John Kelly*



*Right: Whip-poor-will transmitter attachment
Photo Courtesy of: John Kelly*

Whip-poor-will locations were found closer to training venues (i.e., land navigation courses, dig sites, landing zones, etc.) than random points in the study area, on average 178 meters versus 369 meters respectively. In addition, Whip-poor-will locations tended to be closer to training area roads than expected, and night locations tended to be closer to roads than day locations, suggesting that maneuver corridors may be important for foraging. Finally, one quarter of all Whip-poor-will locations taken during the study were located within land navigation courses, despite only making up 8% of the study area, suggesting land navigation activities are not inhibiting use and may even be enhancing habitat. The land navigation courses were burned during the study. After the burning, all radio collared birds in the area immediately moved into the burned area. This is evidence to the positive effects of fire on the ecosystem. Thus, military training through sound environmental stewardship is shown to benefit the Whip-poor-will at Camp Edwards.

- John Kelly, Natural Resources Manager, Camp Edwards, MA & Annie Curtis, Natural Resources Planner, Camp Edwards, MA

Site Profile: Fort Campbell, KY/TN

Fort Campbell, Kentucky and Tennessee

Location: Christian and Trigg counties, KY; Montgomery and Stewart counties, TN

Land Size: 107,000 acres

Mission: Supports combat readiness training, mobilization, and rapid deployment of mission-ready forces. Helicopters are the primary means of transportation for the division and provide the backbone for tactical, logistical, and combat training.

Bird Conservation Region: Central Hardwoods (BCR 24)



time periods. Land management consists of using various management tools to set back succession in training areas. Prescribed burning is the primary tool used to reduce woody vegetation, although mechanical clearing and herbicide application are also used in conjunction with burning for more effective woody vegetation control. Nevertheless, the land cover composition has changed from being about 70% open lands and 30% forest at the time the base was established in 1940, to just the reverse today.

Fort Campbell, home to the 101st Airborne Division Screaming Eagles, functions as an Army training installation for the only Air Assault Division in the world. It is also one of the most important sites for grassland bird conservation in the eastern United States. Fort Campbell has a significant population of Bachman's Sparrow, Dickcissel, Henslow's Sparrow, Grasshopper Sparrow, and other high priority grassland birds, qualifying it as a Globally Important Bird Area by the American Bird Conservancy. Located on the Kentucky-Tennessee state line, Fort Campbell contains one of the largest native grasslands east of the Mississippi River, doubling as both ideal airborne training land and unique grassland bird habitat. Based on historic accounts by European settlers, Fort Campbell was situated on the southern edge of the 2 million acre Kentucky "Big Barrens" region - a large native grassland kept open by Native American burning and grazing by herds of deer, elk, and bison. Today, prescribed burning provides most of the disturbance needed to mimic the historic barrens landscape.

Land Use and Management

At 107,000 acres, Fort Campbell consists primarily of hardwood forest, loblolly pine plantations, native grassland, and leased agricultural fields. Approximately 12,000 acres of the installation make up the cantonment area, leaving more than 95,000 acres of the reservation as woodland and grassland for training. Impact zones and ranges occupy 26,000 acres, resulting in 69,000 acres of maneuverable training land. The Agricultural Outlease Program manages more than 6,500 acres, including hay leases in the drop zones.

One of the biggest land management challenges on Fort Campbell is arresting plant succession and keeping lands suitable for training. Fort Campbell lies within the ecoregion of the eastern deciduous forest, such that open lands naturally regenerate into forest over relatively short

The large drop zones provide significant habitat for area-sensitive grassland Birds of Conservation Concern. Suckchon drop zone (1,400 acres) contains the largest Henslow's Sparrow population on the base, as well as in the state of Tennessee. Management by the Fisheries and Wildlife Program includes rotating the burns among several sections in the drop zone and spraying herbicides to remove exotic vegetation.



*Prescribed burning conducted by the Forestry and Fisheries and Wildlife Programs to control woody growth and manage grassland habitat
Photo courtesy of: Daniel Moss*

Grassland Bird Research

North American Breeding Bird Survey data shows well-documented declines in eastern grassland bird populations over the last 40 years. The cause of these declines is primarily related to the loss of grassland habitats. Military lands provide significant native grasslands for early successional birds. Beginning in 1999, a series of five graduate students (D. Moss, J. Giocomo, D. Hinnebusch, E. Hockman, and C. Lituma) under the direction of Dr. David Buehler with the University of Tennessee's Department of Forestry, Wildlife and Fisheries, began a long-term research project documenting grassland bird distribution and abundance and nesting ecology on Fort Campbell. This

Continued on next page

Site Profile: Fort Campbell (cont.)

research has been supported DoD Legacy Resource Management Program, the University of Tennessee (UT), and Fort Campbell. The analysis of more than 1,500 early successional bird nests provides important data on avian reproductive parameters, including nesting attempts, daily nest survival, nest success, and clutch size for many Birds of Conservation Concern. These baseline demographic data provide useful information to help military natural resources managers better understand how different management tactics influence bird populations.



*Failed nesting attempt
Photo courtesy of: Daniel Moss*

A UT assessment of eastern military lands identified over 162,500 acres of grassland patches greater than 100 acres in size managed by DoD. Productivity data on Henslow's Sparrow, Grasshopper Sparrow, Field Sparrow, Dickcissel, and Eastern Meadowlark on Fort Campbell suggests that managing for native warm season grasses, rather than exotic, cool-season grasses, such as Fescue, can help create self-sustainable populations of the species that use these grasslands. In addition, waiting until August 1 before mowing fields in areas where grasslands are managed by mowing or haying has been shown to maximize nest success and fledgling survival, also resulting in sustainable bird populations. The final key component to population sustainability is the availability of large grassland tracts. Avian productivity in large fields on Fort Campbell is sufficient to produce sustainable populations, whereas productivity in small fields is insufficient, leading to population sinks. In spite of the long-term range-wide declines of these grassland bird species, research on Fort Campbell shows that most of these species populations can be self-sustaining when managed properly.

Fort Campbell provides a functional template for the management of grasslands on DoD lands, but has also proven useful as a template for managing other public and private lands for grassland bird conservation. A comparative study between Fort Campbell grasslands, state wildlife management area grasslands, and private native grass fields revealed that sustainable bird populations were only found on Fort Campbell. Lessons learned from the Fort Campbell experience provide a valuable understanding of how to improve on other land ownerships for grassland birds. Improving the productivity of other lands for grassland bird conservation will help take some of the responsibility for this resource off of DoD lands and increase the likelihood of successfully stabilizing bird populations. For more information on the Eastern Military Grasslands project, please visit: http://nativegrasses.utk.edu/projects/militarygrasslands/militarygrasslands_main.html.

Bachman's Sparrow

Recent research has focused on the Bachman's Sparrow, a U.S. Fish and Wildlife Service Bird of Conservation Concern, as well as a Partners in Flight Watch List species. Bachman's Sparrow populations are in decline across their entire range, from Texas to Virginia along the Gulf and Atlantic coasts, and as far north as central Ohio and Missouri. The main threat to Bachman's Sparrow is the loss and fragmentation of their habitat, which includes primarily pine and hardwood (oak) savannas. Lack of fire or other regular disturbance allows vegetation to quickly grow up and become too thick for the species to use. The majority of Bachman's Sparrow populations and sparrow research are found in pine savannas. Little is known about Bachman's populations and nesting ecology in oak-dominated systems. A significant, persistent Bachman's Sparrow population has been documented at Fort Campbell and is associated with the unique oak savannas located around the impact zone. UT joined up with the Fort Campbell environmental staff in 2009 to study the population size and habitat requirements with the goal of creating a conservation strategy for this population.



*One of 29 territorial Bachman's Sparrow males banded at Fort Campbell in 2009 and 2010
Photo: Emily Hockman*

Continued on next page

Site Profile: Fort Campbell (cont.)

Thirty-three territorial Bachman's Sparrow males were found during 2009 and 2010 on Fort Campbell. Surprisingly, no color-banded adults from 2009 were re-sighted in 2010, although one banded fledgling from 2009 returned in 2010. This population represents the largest known population breeding in oak-savanna habitat across the range of the species. The areas around the impact zone are generally suitable because of the frequent (annual) burning of the associated grasslands. Prescribed burning in the impact zone not only maintains ideal savanna habitat for Bachman's Sparrow, but also decreases the threat of large fires caused by munitions and increases visibility for training exercises. This is another good example of how management of lands for training and grassland bird conservation is highly compatible on Fort Campbell.



*Suckchon Drop Zone provides 2.2 square miles of open native grass fields for Airborne training and grassland bird species
Photo courtesy of: Daniel Moss*

Validation of Bird Monitoring Methods

Grassland bird population monitoring is traditionally based on the analysis of North American Breeding Bird Survey (BBS) data. This data is based on roadside counts, typically associated with private lands. For birds like Henslow's and Bachman's Sparrows, understanding the biases associated with these roadside counts is important for fully understanding the basis for their declining population trends. Fort Campbell's well-researched population of grassland species provided a unique opportunity to validate the assumptions associated with roadside counts. In the summer of 2010, UT researchers used the extensive grasslands on Fort Campbell to determine the detectability of these priority birds on roadside counts and compared these estimates with off-road counts. This study aims to fill in some of the gaps in the BBS and provide a more accurate picture of grassland bird populations in this area.

Other Bird Projects

A number of other miscellaneous bird projects are ongoing at Fort Campbell:

- ✦ **Point Counts:** Standardized 10 minute point counts have been conducted yearly since 1997 at between 110 and 140 locations in the rear area. Count results are analyzed and submitted to the respective state wildlife agencies for inclusion in the national U.S. Geological Survey Bird Point Count Database.
- ✦ **Nightjar/Owl Surveys:** Monitoring Nightjars and owls was set up in 2008 to better understand nocturnal populations.
- ✦ **Colonial Bird Surveys:** Fort Campbell has a large number of wetlands, which support Great Blue Heron colonies. These colonies have been monitored for the past 15 years, including 1 to 4 active colonies per year.
- ✦ **Citizen Science:** A number of citizen science surveys are conducted yearly on Fort Campbell, including Christmas Bird Count, Great Backyard Bird Count, and North American Spring and Fall Counts.
- ✦ **Prairie Chicken:** A habitat analysis was conducted to look at the feasibility for trapping and releasing Greater Prairie Chickens on Fort Campbell. Historical records indicate this species roamed the Barrens before they were extirpated.
- ✦ **Wood Duck Project:** A Murray State University graduate research project, conducted by A. Lehman, studied Wood Duck nesting success, intraspecific brood parasitism (nest dumping), nest predation and competition, blood parasite occurrence, and stress levels of Wood Duck hens nesting in clustered and unclustered nest box sites. Wood Duck nest boxes were installed on Fort Campbell for the study and are currently monitored and maintained by Fort Campbell biologists.
- ✦ **Quail:** Fort Campbell maintains the largest known Northern Bobwhite population in the mid-South region. Population indices based upon call counts and harvest data stretch back to the 1950's. The base remains one of the best public hunting places for quail in the region, providing opportunity for both military and civilian hunting. Bobwhite population declines on Fort Campbell mirror the national trend; however, grassland habitat remains good relative to other public lands. Call, covey, and flush counts are currently used in conjunction with harvest data to monitor quail numbers and set harvest limits in training areas.

Site Profile: Fort Campbell (cont.)

✍ **Bird/Animal Aircraft Strike Hazard (BASH):** Bird surveys conducted in 2004/2005 documented the local populations around Campbell Airfield, the army's largest airfield, to collect baseline information for the BASH program. Results were summarized and used to identify potential species that pose a significant threat to pilots and aircraft.

✍ **Public Outreach:** The Fisheries and Wildlife Program provides a number of birding educational opportunities to the public including Earth Day and field trips for local birding clubs.

- *Dr. David Buehler, Professor, University of Tennessee, Daniel Moss, Wildlife Biologist, Fort Campbell, and Emily Hockman, Graduate Student, University of Tennessee*

Partnership Focus: American Bird Conservancy

The American Bird Conservancy (ABC) is a non-profit organization whose mission is to conserve native wild birds and their habitats throughout the Americas. They are the only U.S.-based group with a major focus on bird habitat conservation throughout this vast area. ABC acts across the full spectrum of threats to birds to safeguard the rarest bird species, restore habitats, and reduce threats to unify and strengthen the bird conservation movement. ABC seeks innovative, fair solutions to difficult issues and advances bird conservation through direct action and by finding and engaging the people and groups needed to succeed, regardless of their political, economic, or social point of view. Their approach to effective bird conservation involves analyzing issues using the best available science, facilitating networks and partnerships, sharing information, developing and implementing collaborative strategies, and establishing measurable outputs.

ABC maintains an incredible array of conservation programs, which are shared among four divisions: Domestic Habitat, Conservation Advocacy (also referred to as Policy), International, and Oceans and Islands. There is considerable overlap in the work that each division conducts. For example, work to prevent further declines in the Cerulean Warbler population involves policy efforts to halt mountaintop mining in the species' Appalachian breeding grounds, domestic habitat efforts to reforest sites in the same area, monitoring efforts to determine Cerulean populations and trends, and international conservation of habitat on its wintering grounds.

Science and monitoring staff play a key role in developing the biological foundations on which much of today's bird conservation efforts are based. One example of this involves the implementation of the DoD Coordinated Bird Monitoring Plan. ABC leadership in coordinated monitoring efforts in the Northeast, Southeast, and elsewhere are contributing to an implementation strategy that will link DoD with other agencies and conservation organizations to maximize monitoring activities on DoD lands.

Another key area of involvement for ABC is with Joint Ventures (JV). ABC employs the JV Coordinators for the Appalachian Mountains JV, Rio Grande JV, Oaks and Prairies JV, and Central Hardwoods JV. ABC is under contract with the Intermountain West JV to provide leadership and facilitation for all-bird conservation action in the Northern Rockies Bird Conservation Region (BCR), and GIS support for the delivery of 11 state implementation plans covering nearly 500 million acres of the interior western states. ABC staff also serve a dual role for bird conservation as the Northern Pacific Rainforest BCR Coordinator and as one of two Pacific Coast JV Science Coordinators. Among the key projects in the Pacific Northwest is the Reintroduction of Western Bluebirds to northwest Washington and southwest British Columbia from Fort Lewis (highlighted in the February 2010 issue of *Steppingstones*) project.

In addition to working with JVs, ABC has maintained a direct connection with the DoD PIF program since 1997, when ABC provided an office for the new DoD PIF Coordinator at their headquarters in The Plains, Virginia. Since 2003, ABC has managed the DoD PIF Coordinator contract. ABC meets monthly with the DoD PIF Coordinator to review contract and budget progress and, more importantly, to discuss ongoing and planned bird conservation activities. David Pashley, former PIF National Coordinator and U.S. North American Bird Conservation Initiative Coordinator, is the "DoD liaison" for ABC. David also attends the annual DoD PIF Planning Workshop.

ABC is on the leading edge of bird conservation. The DoD PIF and ABC partnership helps DoD maximize DoD PIF effectiveness in the management of birds and their habitats, and helps link DoD to other agencies, organizations, and initiatives dedicated to bird conservation throughout the Western Hemisphere.

For more information, please visit <http://www.abcbirds.org>.

- *Chris Eberly,
DoD PIF Program Coordinator*

Policy Perch: Plan and Policy Update

Getting ready for vacation is a lot like birding – try to check as many boxes as possible in the time allotted. In my case, that means checking a box to provide a quick update on significant policy-related bird conservation efforts before heading to Cape May County, New Jersey, to study some shorebirds and mystery novels.

- ✦ DoD PIF Strategic Plan. My supervisor and I met with the Deputy Assistant Secretary of the Air Force (Energy, Environment, Safety and Occupational Health) to identify a way forward to an Air Force concurrence on the Plan. We asked for – and are still awaiting – specific suggested wording changes that would address the Air Force’s concerns.
- ✦ Coordinated Bird Monitoring Plan. It took a power outage in our office, but I was finally able to undertake the detailed review that I promised in May. Although the technical information appears sound, the current draft isn’t ready for posting on a DoD Web site or for final Military Service review. I expect to receive a revised Plan by mid-November.
- ✦ Eagle Permits. U.S. Fish and Wildlife Service (USFWS) issued a Final Rule on eagle permits in 2009 that requires a new permitting process that will directly affect military activities. USFWS Migratory Bird Program personnel are currently finalizing a programmatic permit process and determining how to issue programmatic and individual permits for different agencies. Chris Eberly and I are in conversations with USFWS. We expect they will provide Questions and Answers on the new permitting process within the next month or two.

✦ Sustaining Military Readiness (SMR) Conference 2011. The dates and location are set! SMR 2011 will be held in Nashville, TN, July 25-29. The format will again allow for workshops and training courses; invited papers for plenary and technical sessions; and posters and exhibits. Current ideas for workshops and training courses include:

- ✦ an Ecological Forestry workshop;
- ✦ Section 106 workshop; and
- ✦ either a Sikes 101 or ESA training course.

Please let me know if you have any specific suggestions for any part of the conference.

- Peter Boice,
Deputy Director, Natural Resources



Help! We Need Your Photos!

We need *YOUR* help!! The *Endangered Species Bulletin* is highlighting DoD in its Spring 2011 issue! We would like the cover to captivate the reader and demonstrate DoD’s positive interactions with endangered species. If you have any photographs of soldiers helping with research or management activities, a bird perched on military equipment, or other captivating shots, please e-mail them to Erica Evans at evans_eric@bah.com.



Photo: USFWS

Your photograph could be chosen as the cover page of the Spring 2011 *Endangered Species Bulletin* issue!



Photo: MCB Camp Pendleton

View From the Eyrie

I finally took the time to visit Fort Indiantown Gap National Guard Training Center (FIG), located at the intersection of Interstates 78 and 81 in eastern Pennsylvania. The reason for my visit was the presence of a single bird: a Chuck-will's-widow. This species, the more southerly relative of the Whip-poor-will, came to my attention when I saw it listed on the state's rare bird alert in late spring. This species does not normally breed in Pennsylvania. Although the alert location did not specifically mention FIG, it seemed close. When I inquired about it with Joe Hovis, FIG natural resource manager, he responded, "It's not *close* to FIG. It's *ON FIG!*"

As the summer progressed and the Chuck-wills-widow continued its stay on the training center, I wondered if this northern movement of southern species would become the norm as we experience changes in climate. At any rate, I visited FIG in August, and heard the song of this nearly famous bird. However, what really struck me was not the beauty of hearing the Chuck-will's-widow's song for the first time in many years, but the other sounds that evening. FIG is an active National Guard Training Center, and even though I was there on a Friday evening, the artillery fire was quite evident. David McNaughton, FIG Wildlife Office, took time out of his schedule to show me around FIG and take me to the tank range where the Chuck-will's-widow had taken up summer residence. We were on a public road, accessible to anyone, listening to this bird and several Whip-poor-wills that seemed oblivious to the noise and activity surrounding them. David told me something I hear all over the country: birds don't seem to be bothered by noise from military training.



Chuck-will's-widow
Photo: iStockPhoto.com

The U.S. Fish and Wildlife Service (USFWS) understands the value of military lands for conservation. In addition to awarding a Military Conservation Partner award each year,

their "Partners in Conservation" program just honored Fort A.P. Hill, Virginia for their conservation efforts. The USFWS web site describes Fort A.P. Hill, as follows:

"One of the most important strategies to conserve wildlife is finding innovative ways to link large habitat areas together. Military installations often provide excellent areas for wildlife, and provide much needed connections to keep habitat intact. Fort A.P. Hill, in central Virginia, is a 'crown jewel' for military training, and a key partner in conserving wildlife and traditional local community land uses such as farming. Lieutenant Colonel Jack Haefner, Commander of Fort A.P. Hill, describes [in a video, at <http://www.fws.gov/video/flash/fortaphillv3.html>] how the U.S. Army's ACUB – Army Compatible Use Buffer – program provides multiple benefits for Virginians, and for the nation."

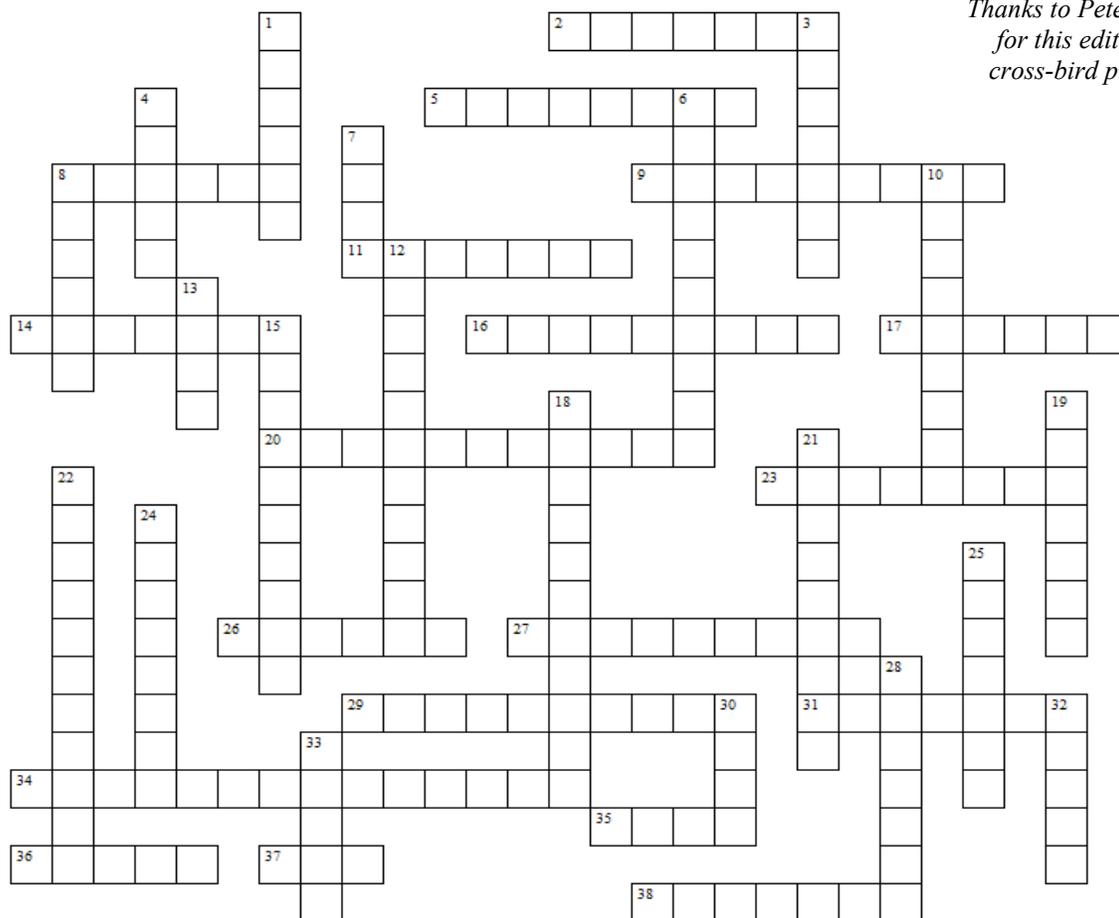
DoD installations take their stewardship responsibility seriously, and continue to take a leadership role in protecting valuable conservation resources found on DoD lands, including birds and their habitats. For example, raptor electrocutions are a serious threat to eagles and other raptors, especially in the west. Camp Pendleton responded to this threat by recently completing an Avian Protection Plan (APP) to better protect raptors from electrocutions from power transmission lines. The DoD Partners in Flight program is working with several other installations on preparing similar APPs. Many installations are also exploring renewable energy development. Proper placement (siting) of wind turbines is crucial to minimizing bird (especially songbirds in the East, raptors in the West) and bat mortality, and APPs can provide recommendations related to wind energy and power lines. Solar energy presents an additional challenge/opportunity. Luke Air Force Base (AFB), Arizona, will develop a 15-megawatt array on 101 acres south of its runway early next year. This project is a great alternative to covering valuable desert habitat, since this vacant land could not have been otherwise developed due to regulations to protect Luke AFB flight operations. The 52,000 photovoltaic panels will use blue anti-reflective coatings and no mirrors, so any glare for Air Force pilots should be similar to the glare when flying over a lake. The Luke AFB array will be the largest on government property, eclipsing the 14-megawatt facility at Nellis AFB, Nevada, which opened three years ago. This is just one more example in a long line of win-win success stories.

- Chris Eberly,
DoD PIF Program Coordinator

Cross-Bird Puzzle

Coming to (Bird) Terms I

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



ACROSS

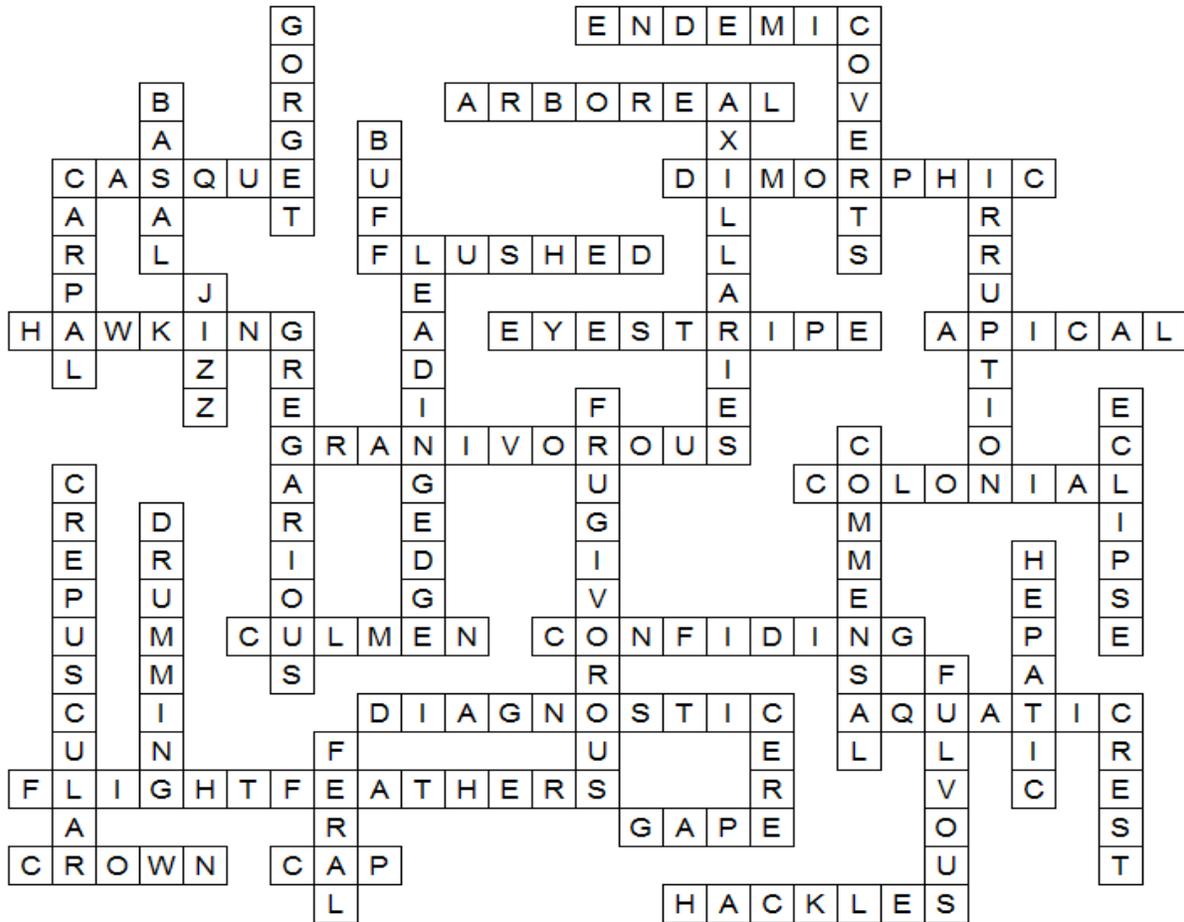
- 2 Indigenous and confined to a place
- 5 Living in trees
- 8 Growth above the bill on hornbills
- 9 Having two forms of plumage
- 11 Disturbed into flight at close quarters
- 14 Capturing insects in flight
- 16 Stripe through the eye
- 17 Outer extremities, particularly of the tail
- 20 Grain-eating
- 23 Roosting or nesting in groups
- 26 Ridge on upper mandible of the bill
- 27 Not shy
- 29 Sufficient to identify a species or subspecies
- 31 Living on or in water
- 34 Primary and secondary wing feathers (two words)
- 35 Basal part of the beak (mainly for young birds and raptors)
- 36 Upper part of the head
- 37 Upper part of the head
- 38 Long and pointed neck feathers

DOWN

- 1 Band across the upper chest
- 3 Small feathers on wings and base of tail
- 4 Innermost extremities, particularly of the tail
- 6 Underwing feathers at the base of the wings, forming 'armpits'
- 7 Yellowish-white with a hint of pale brown
- 8 Bend of a closed wing, sometimes called shoulder
- 10 Mass movement of a population from one place to another
- 12 Front edge of wing (two words)
- 13 Essence or striking characteristics of a species
- 15 Living in communities or flocks
- 18 Fruit-eating
- 19 New dull plumage after breeding season, especially in ducks
- 21 Living together with man for mutual benefit
- 22 Active at dusk and dawn
- 24 Rhythmic territorial hammering on trees by woodpeckers
- 25 Rust or liver-colored plumage phase, mainly in female cuckoos
- 28 Brownish-yellow
- 30 Patch of bare skin on upper base of bill of raptors
- 32 Extended feathers on the head
- 33 Escaped and living and breeding in the wild

Cross-Bird Puzzle Answer Key

Coming to (Bird) Terms I



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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