

Birds and Bombs: How Bird Conservation Planning and the Military Mission Work Together

Chris Eberly and Jeff Keating

*Department of Defense (DOD) installations with significant natural resources are required to write and implement an Integrated Natural Resources Management Plan (INRMP). These plans must support the military training mission but also incorporate principles of ecosystem management at a landscape scale. Bird conservation planning by conservation initiatives such as Partners in Flight is based on a landscape-level, ecosystem approach and focus on partnerships. State and federal programs are working toward similar objectives. We illustrate how the partnerships and science of bird conservation planning benefit INRMPs and support the military mission. © 2006 Wiley Periodicals, Inc.**

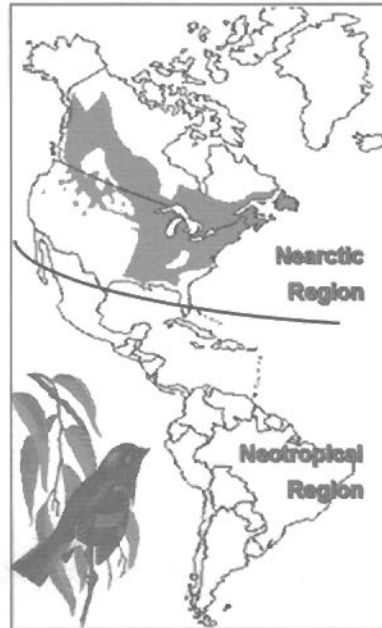
MIGRATORY BIRDS

Migration is the regular seasonal movement of animals from one place to another, often from a breeding site to a nonbreeding site and back. Migratory birds include long-distance and short-distance migrants. In a legal sense, migratory birds also include resident birds that do not truly migrate. Long-distance (or Nearctic-Neotropical) migrants are truly birds of two worlds (**Exhibit 1**) that spend more time in the Neotropics (south of the U.S.-Mexico border) than they do on their breeding grounds in the Nearctic (or temperate) region. More than 325 species of birds migrate to the Neotropical region each year from their Nearctic breeding grounds. Short-distance (or temperate) migrants breed in the northern portion of the Nearctic region and migrate to the central and southern United States during their nonbreeding season.

The United States has been an active participant in the internationally coordinated management and conservation of migratory birds.

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**Exhibit 1. Map Showing Approximate Delineation
of the Nearctic and Neotropical Regions.**



Note: The American Redstart (*Setophaga ruticilla*) is pictured, along its breeding (in the Nearctic Region) and nonbreeding (in the Neotropical Region) ranges. Map courtesy of Smithsonian Migratory Bird Center

The Migratory Bird Treaty Act¹ (MBTA) is the primary legislation in the United States established to conserve migratory birds. The MBTA implements the U.S. commitment to four bilateral treaties, or conventions, for the protection of a shared migratory bird resource. The treaties and subsequent amendments impose substantive obligations on the United States for the conservation of migratory birds and their habitats, including sustaining healthy migratory bird populations for consumptive and nonconsumptive use. The MBTA is a strict criminal liability statute over which the U.S. Fish and Wildlife Service (USFWS) has exclusive authority. The USFWS can issue permits to allow the intentional "take"² of a migratory bird through a hunting permit or a special permit. Each of the treaties protects selected species of birds and specifies closed seasons for hunting game birds, and the USFWS maintains a list of the species protected by the MBTA.³ There is no provision or permit for unintentional take at this time.

As the intent of the MBTA came under scrutiny due to the actions of federal agencies, the intent of Congress on how the MBTA applied to federal agencies was not clearly delineated. An Executive Order⁴ was drafted to enhance coordination and communication among federal agencies regarding their responsibilities under the MBTA. The Execu-

tive Order requires federal agencies to incorporate migratory bird conservation into their agency activities and to enter into a Memorandum of Understanding (MOU) with the USFWS. For the Department of Defense (DOD), this MOU will address activities not related to military readiness, such as facilities maintenance and construction operations.

Litigation against federal agency actions⁵ continued. The District of Columbia Circuit court ruled that activities by the Department of Navy at an island in the western Pacific Ocean resulting in take of migratory birds without a permit violated the MBTA.⁶ Subsequently, Congress provided legislative relief to DOD in the National Defense Authorization Act for fiscal year 2003 by exempting *military readiness activities* from the take prohibitions of the MBTA. However, it requires DOD, in consultation with the Department of the Interior, to identify measures to minimize, mitigate, and monitor bird takes from military readiness activities. This interim exemption is valid until a final Migratory Bird Rule is finalized.⁷



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BIRD CONSERVATION PLANNING

Partners in Flight⁸ was initiated in 1990 to address declines in populations of migratory landbirds. The mission of Partners in Flight includes three fundamental concepts: (1) conserve the highest-priority bird species and habitats to avoid further declines or extinctions, (2) focus on birds and their habitats while they are still relatively common, and (3) focus on building partnerships that include federal and state agencies, nongovernmental organizations, industry, academic researchers, and individuals. The partnership promotes conservation and voluntary partnerships throughout the entire Western Hemisphere. The DOD Partners in Flight program has produced a Strategic Plan⁹ describing DOD's role in this initiative and the bird conservation priorities for military lands.

Partners in Flight adapted the basic tenets of conservation planning to its bird conservation strategy.¹⁰ First, conservation priorities must be set by identifying which species need the most attention and what habitats support those species. Next, realistic population objectives must be established. The simple question of how many birds are enough becomes much more involved when taking into account social and economic considerations that will affect future generations. After objectives are established, conservation action occurs where management action or protection is required. Finally, the success of the planning effort must be evaluated by monitoring how birds and the landscape respond to management actions, the plan adjusted accordingly, and new management actions applied. This process is also known as adaptive resource management. Properly executing each of these steps is critical, because even the best management plan will be ineffective in achieving pragmatic conservation objectives if it doesn't address the species or habitats most in need of conservation action.

Each of the major bird conservation initiatives¹¹ has now completed a national or continental planning effort, including an assessment of



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each bird species. In order to integrate and maximize bird conservation efforts across the landscape of North America, the North American Bird Conservation Initiative was organized in 1998. The goal of *integrated bird conservation* is to deliver the full spectrum of bird conservation through regionally based, biologically driven, landscape-oriented partnerships. It strives to initiate and broaden bird conservation partnerships, increase financial resources available for bird conservation, and enhance the effectiveness of conservation by facilitating the integration of resources, partnerships, and communication among agencies and organizations involved in North American bird conservation. DOD, through its Partners in Flight program,¹² is an active member in all the bird conservation initiatives.

BIRD SPECIES OF CONCERN

The assessments of priority bird species by each of the bird initiatives include similar general categories of vulnerability:

- *Immediate action*: Species requiring immediate action to avoid extinction, usually already on the federal threatened and endangered species list;¹³
- *High concern*: Species whose populations are at significant risk due to declining populations and/or significant losses of habitat;
- *Moderate concern*: Species that need to be monitored to ensure their numbers do not begin to decline; and
- *Low concern*: Species whose populations and habitats are relatively stable.

Populations or habitats can change dramatically in a short period of time, usually in response to anthropogenic impacts, so continued monitoring is still required.

The USFWS maintains lists of priority species related to its trust responsibilities and legislative mandates. Before a plant or animal species can receive protection under the Endangered Species Act,¹⁴ it must first be placed on the federal list of endangered and threatened wildlife and plants ("listed"). Potential listing follows a strict legal process to determine the degree of threat a species faces. An "endangered" species is one that is in danger of extinction throughout all or a significant portion of its range. A "threatened" species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species that are candidates or proposed for possible addition to the federal list. *Birds of conservation concern*¹⁵ are non-listed birds of the United States and its territories that are of conservation concern due to population declines, naturally small ranges or population sizes, threats to habitat, or other factors. Landbirds, shorebirds, and waterbirds are included in this list. *Game birds below desired condition*¹⁶ are those species whose population are below long-term averages or management goals, or for which there is evidence of declining population trends. This list refers to waterfowl and migratory

Exhibit 2. Map Showing Military Installations and Bird Conservation Regions for the United States



Note: Copies of the map are available from ceberly@dodpif.org.

shore and upland game birds of management concern, and includes Flyway-specific populations of several species.

The DOD Partners in Flight program has compiled all seven of the above lists of species of concern for each military installation¹⁷ and each Bird Conservation Region (Exhibit 2). This database is designed to help military natural resource managers incorporate bird species of conservation concern into their management plans.

NATURAL RESOURCE MANAGEMENT PLANNING

Integrated Natural Resources Management Plans (INRMPs) are the means by which DOD fulfills its responsibility as a steward of public lands while maintaining full support of the military mission. The origins of this requirement lie in the Sikes Act.¹⁸ Originally developed to allow a Florida military installation to institute a fish, wildlife, and game conservation program, it has evolved from a focus on hunting and fishing programs to fully embrace the principles of ecosystem management. The Sikes Act Improvement Act of 1997 required that an INRMP be prepared and implemented for every military installation with significant natural resources. In addition to complying with legal mandates, an INRMP must conserve and rehabilitate natural resources, provide for sustainable multipurpose use of resources (including hunting, fishing, and nonconsumptive uses like bird watching), and allow for public access when possible. The benefit of partnerships is reinforced by now requiring the USFWS and state

wildlife agencies to participate in the INRMP review process and achieve "mutual agreement" with DOD. By identifying, understanding, and managing the relationship between conservation and military readiness, DOD and the federal and state agencies readily find these two seemingly opposed issues are not mutually exclusive.

While the USFWS has the trust responsibility for migratory birds through international treaties, states have a legal responsibility to manage fish and wildlife resources within their state. The Pittman-Robertson Act¹⁹ (wildlife) and Dingell-Johnson Act²⁰ (sport fishing) provide funding for the selection, restoration, rehabilitation, and improvement of fish and wildlife habitat, research, and the distribution of information. Federal aid funds are derived from an excise tax on hunting and fishing equipment and cover up to 75 percent of qualifying project expenses, while the state provides at least 25 percent from a nonfederal source. Funding from these license-based programs was responsible for the recovery of many critically imperiled fish and wildlife species during the twentieth century and continues to form the core of state agency budgets. However, relatively little funding has been available for the thousands of species of fish and wildlife that are not hunted or fished.

More recent legislation benefited nonconsumptive aspects of wildlife management, some of it specific to migratory birds. The North American Wetlands Conservation Act²¹ encourages partnerships among federal agencies, states, and others to protect, restore, enhance, and manage wetlands and other habitats for migratory birds, fish, and wildlife. The Neotropical Migratory Bird Conservation Act²² establishes a matching grants program to fund projects in the United States, Latin America, and the Caribbean that promote the conservation of healthy populations of neotropical migratory birds. A portion of the Act's funds is dedicated to projects outside the United States, but many states receive funds for conservation work within their state borders. The Farm Bill²³ allows national farm policy to incorporate voluntary, incentive-based conservation programs such as the Wetlands Reserve Program, Grassland Reserve Program, and Wildlife Habitat Incentives Program. These programs provide stability in the agricultural economy as well as public benefits in the form of fish, wildlife, soil, and water conservation. The State Wildlife Grants Program²⁴ provides funding to every state and territory to support cost-effective conservation aimed at preventing wildlife from becoming endangered.

In order to make the best use of the State Wildlife Grants Program, Congress charged each state and territory with developing a statewide Wildlife Action Plan.²⁵ These proactive plans, known technically as "comprehensive wildlife conservation strategies," identify the species and habitats of greatest conservation need. The plans, which must be approved by the USFWS, consider the broad range of wildlife in each state and their associated habitats within the ecosystem, and outline the steps needed to achieve their conservation.



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INTEGRATING PLANNING EFFORTS

Planning efforts by the bird conservation initiatives, states, the USFWS, and DOD all strive to achieve similar goals and objectives: conserve biodiversity at a landscape level, focus on the ecosystem rather than single species, use a science-based approach, build partnerships wherever possible, and include socioeconomic factors and nonconsumptive uses of resources.

Coordinating with the state wildlife agency during INRMP planning benefits both the state and the military installation planning efforts. Management actions to achieve common priorities become more efficient and cost-effective. Mutual planning efforts between federal, state, and DOD partners take the mystery out of the process and make approval and signoff of plans secondary to the effectiveness of the partnerships. And addressing regional and local issues outside of the military installation can help deal with issues of encroachment relating both to development and to sensitive species.



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MONITORING BIRD POPULATIONS

We monitor species and populations in order to be able to identify problems, and hopefully also their causes. Monitoring helps managers design management plans that are appropriate to the resource needs and provides the data to effectively evaluate the success of the implementation of those plans. The value of monitoring depends on clear objectives, coordination at the appropriate geographic scale, use of state-of-the-art monitoring methods, and proper and safe archiving of data.

The bird conservation initiatives are collaborating to better coordinate bird monitoring across taxonomic and geographic lines. This approach to "coordinated bird monitoring" is being led by the landbird and shorebird initiatives and aims to increase the efficiency and utility of bird monitoring through improved coordination between the bird initiatives, field workers and statisticians, and decision makers and technical experts. The vision is that all monitoring activities are management-driven, science-based, scale-dependent, and implemented through partnerships. A coordinated approach to monitoring will facilitate the assessment of integrated management planning efforts.

DOD leadership has recognized that a coordinated approach to monitoring can increase the efficiency of monitoring efforts and ensure that DOD obligations under the National Defense Authorization Act and the migratory bird Executive Order are fulfilled. The DOD Partners in Flight program is facilitating the development of a coordinated monitoring plan for DOD lands with the North American Bird Conservation Initiative and the other bird initiatives. This plan includes a review of existing bird monitoring programs, guidelines for the design of bird monitoring surveys, a plan for monitoring bird species of special concern, and recommendations for DOD's role in continental bird monitoring programs. A number of states have embraced similar coordinated monitoring efforts, but DOD is the first federal agency to initiate such a plan.

**Exhibit 3. Henslow's Sparrow (*Ammodramus henslowii*)
(Photo by Teresa Lewis)**



HENSLOW'S SPARROWS AND TRAINING AT FORT RILEY

Fort Riley is a 100,656-acre Army installation located in northeastern Kansas within the Flint Hills physiographic region. The general character of the land surrounding Fort Riley is rural, with small, scattered farm communities and two larger cities near the installation borders. Lands north of Fort Riley are a mixture of rangeland and row crop. Lands to the south are predominantly rangeland. The tallgrass prairie is the most altered ecological community in North America, with less than 4 percent of the original 142 million acres remaining. The Flint Hills region has retained more acres of tallgrass prairie than in all the other prairie states and provinces combined. Even so, a sizable portion of the Flint Hills region has been degraded by invasive plants, woody encroachment, urban sprawl, and continued fragmentation.

The military training lands on Fort Riley are composed of high upland prairies, alluvial bottomland flood plains, and broken and hilly transition zones that feed intermittent and perennial streams. Under natural conditions, this region consisted of tall- and mixed-grass prairies dominated by native grasses, including big bluestem, indian-grass, and switchgrass. The grasslands on Fort Riley now are composed of high-quality native prairie, tame pastures, and former agricultural fields. Land-use activities on Fort Riley produce a mosaic of light disturbance to localized, substantial impact.

In Fort Riley's 2001 INRMP, specific objectives were identified that directly pertained to management actions for nongame birds: (1) manage for native forest species, (2) conduct Henslow's sparrow surveys, (3) implement Henslow's sparrow habitat prescriptions, and (4) conduct breeding bird surveys. The Henslow's sparrow (**Exhibit 3**), a bird of the tallgrass prairie, is specifically mentioned in two of the objec-

Exhibit 4. Two Large Fields with a Broken Tree Line Separating Them (Fort Riley Photo)



tives, and is included in a third. Breeding bird survey²⁶ data suggest that the Henslow's sparrow continental population declined more than 68 percent over the last 30 years. The 1996 USFWS status review of this species²⁷ showed the Henslow's sparrow was listed as endangered or threatened in 12 states and as a special concern species in another four. In that same report, Fort Riley was identified as a site with one of the major breeding populations of this species.

As a priority species in Fort Riley's 2001 INRMP, Henslow's Sparrow management objectives included designated "no-burn" areas in the annual prescribed burn plan, specifically to retain high-quality Henslow's Sparrow habitat. High-quality habitat was considered to be unburned, unhayed tallgrass prairie that had good standing dead vegetation and litter, in fields that were 60 acres or larger. These areas were not to be intentionally burned, and any wildfires starting in them were to be aggressively extinguished. Hay-cutting regulations prohibited areas dominated by native grasses from being cut before July 1, and additional "Bird Conservation Areas" were identified in lessee maps that could not be hayed until July 15. Bird Conservation Areas were fields with the size, vegetative species composition, and spatial characteristics that made them especially attractive nesting sites for Henslow's sparrows and other grassland-dependent birds. Delaying cutting until after July 15 would allow most chicks to successfully leave the nest before the nests would be destroyed by the hay cutting.

Another objective in the 2001 INRMP was the removal of scattered trees from grasslands that reduce the value of those grasslands to the Henslow's sparrow, a ground-nesting bird that will not nest near trees (**Exhibit 4**). Cutting down scattered trees creates more nesting habitat and may eliminate field fragmentation if two smaller fields separated

Exhibit 5. After Trees Are Removed, Two Fields Are Functionally Turned Into One Larger Field, Enhancing Nesting Opportunities for Grassland Birds (Fort Riley Photo)



by a tree line are turned into one large field (**Exhibit 5**). Henslow's Sparrows and other grassland birds also avoid otherwise suitable habitat when the woody component exceeds a threshold limit, so overabundant brush was also to be removed or thinned.

The military mission benefits from implementing the Henslow's Sparrow management objectives. Fort Riley's flat, open topography lends itself to force-on-force maneuver training, an important component of the installation's mission. Prescribed burning is the most important method to maintain the open space needed for maneuver training. Burning kills trees, removes the aboveground grassy vegetation from previous growing seasons, keeps woody encroachment in check, and stimulates growth of new grassland cover, which all work together to maintain open vistas (**Exhibit 6**). Frequent burning (two out of five years) reduces the accumulation of dead vegetation and helps to lessen the potential danger of wildfires to soldiers and equipment. Hay cutting is also used as a means to reduce the fuel supply and hopefully prevent catastrophic wildfire. Weapon firing lines become obscured by tree growth (**Exhibit 7**). Removing large trees from the grassland preserves the ability of commanders to view troop field maneuvers during force-on-force training without being compromised.

As mentioned previously, monitoring the effectiveness of management practices is critical to the success of a management plan. Fort Riley's 2001 INRMP included provisions to continue Henslow's sparrow surveys to provide additional management data, particularly regarding the effects of prescribed burning and haying. Fort Riley also supported a graduate research project to assess the effects of haying on

Exhibit 6. Removing Trees Also Allows Commanders to Better View Troop Maneuvers During Training (Fort Riley Photo)



Henslow's sparrows and examine possible alternatives to make haying and Henslow's sparrow nesting more compatible.

Henslow's sparrow numbers declined across the installation between 2002 and 2004, which coincided with a severe regional drought. The lack of rainfall resulted in poor grass growth during those years, which led to poor nesting conditions due to insufficient grass litter and little standing dead vegetation remaining in the fields. While it was believed that neither military training nor land management actions were responsible for the declines in Henslow's sparrow numbers, land managers identified a different management strategy that might allow for "banking" of high-quality habitat to lessen the effect of the next drought.

The INRMP is currently under revision to include new strategies to facilitate bird management while enhancing the military mission. In the past, Fort Riley's land managers tended to characterize habitats by "maneuver area" (2,000–7,000 acres in size) and make management decisions on a training area basis (500–1,500 acres). Prescribed burning would use training areas as the smallest burning unit, often combining several areas into one burn event. While this strategy allowed a lot of land to be burned in a short amount of time, it may not be the best strategy to maximize bird production.

Fort Riley is now shifting toward conducting management on smaller land units. Rather than a training area being the smallest unit for a prescribed burn, it will be the largest unit. The low end for a burn may be as small as 10 acres. Because the time component to burn smaller units will increase, burning will occur between September and April, instead of only during March and April. The size of hayfields will also be decreased in any given year, and no cutting will occur in

Exhibit 7. An Example of Tree Lines Becoming Overgrown and Obscuring Firing and Viewing Lines (Fort Riley Photo)



tallgrass prairies until at least July 15. Farmers will begin rotational hay cutting, cutting fields every other year rather than annually cutting all hay fields. Smaller burn areas and rotational haying will create a better juxtaposition of habitat types.

Finally, Fort Riley has begun developing conservation agreements with adjoining landowners, in coordination with the USFWS Private Stewardship Program.²⁸ Through these agreements, Fort Riley will assist the landowners with prairie restoration, specifically clearing trees from their land, if the landowners agree to implement management practices that benefit native prairie bird species like the Henslow's sparrow. Partnering with landowners near the installation will provide more habitat for grassland birds in the Fort Riley region, further increasing the numbers of Henslow's sparrows that the region can support.

Natural resource management decisions at military installations should always be checked against the installation's mission. While not every action needs to support the mission, no action should harm the mission. At Fort Riley, land managers met with military training staff early in the INRMP revision process to discuss future land management needs from the mission perspective. As the Army restructures into modular Units of Action, Fort Riley is anticipating that units will be smaller, using smaller parcels of land per training event, and training more frequently. Consequently, from a military perspective, it will be more desirable to manage land at a finer scale. Juxtaposing hayed, burned, and unburned areas will provide better alternative vegetation conditions for commanders to choose from for training and should also provide firefighters more alternatives when responding to wild-

fires. Conservation agreements with adjoining landowners may establish the rapport and trust needed for later discussions the installation may initiate in establishing training buffer zones.

The bird conservation actions in Fort Riley's INRMP will help sustain the habitat. Assuming the land currently meets the installation's mission, sustaining the land should also sustain the long-term mission. New opportunities will emerge to design management plans around changing mission requirements. Not only can bird conservation actions coexist with the mission, but when developed in cooperation with military planners, conservation actions can be designed to directly benefit the mission.

CONCLUSION

Military installation commanders and natural resource managers are faced with a daunting array of legal requirements and a seemingly endless array of biotic considerations during the management planning process. The scientifically tested principles of ecosystem management and effective partnerships promoted by the bird conservation initiatives are vital to successful conservation. Integrating bird conservation strategies into INRMP planning and implementation can provide the foundation for identifying, building, and sustaining key conservation actions and partnerships. Training, operations, and public works units at each military installation; state and Federal agency personnel; and conservation organizations should be partners in the natural resource plan development and implementation process. These partnerships are the key to maximizing the effectiveness of a management plan that sustains the viability of all ecosystems encompassed by an installation and ensures no net loss of the capability of installation lands to support the DOD mission. ❖

NOTES

1. The Migratory Bird Treaty Act of 1918, 16 U.S.C. 703–712, was based on the Convention for the Protection of Migratory Birds signed with Great Britain in 1916 on behalf of Canada. The MBTA was subsequently amended after treaties were signed with Mexico (1936, amended 1972, 1995), Japan (1972), and Russia (1976), and the amendment of the treaty with Canada (1999). The MBTA states it is "unlawful . . . to pursue, hunt, take, capture, or kill any migratory bird except as permitted." "Take" means "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect."

2. Ibid.

3. The list of species protected under the MBTA appears in Title 50, Section 10.13, of the Code of Federal Regulations (50 CFR 10.13).

4. Executive Order 13186, "Responsibilities Of Federal Agencies To Protect Migratory Birds," was signed by the President in January 11, 2001.

5. On July 18, 2000, the U.S. Court of Appeals for the District of Columbia ruled in *Humane Society v. Glickman*, 217 F.3d 882 (D.C. Cir. 2000), that federal agencies are subject to the take prohibitions of the MBTA. The United States had previously taken the position, and two other courts of appeals held or suggested, that the MBTA does not by its terms apply to federal agencies. See *Sierra Club v. Martin*, 110 F.3d 1551, 1555 (11th Cir. 1997); *Newton County Wildlife Ass'n v. U.S. Forest Service*, 113 F.3d 110, 115 (8th Cir. 1997).

6. On March 13, 2002, the U.S. District Court for the District of Columbia ruled in *Center for Biological Diversity v. Pirie*, F. Supp. 2d., that the Navy activities at Farallon de Medinilla resulting in the take of migratory birds without a permit from the U.S. Fish and Wildlife Service violated the MBTA and the Administrative Procedures Act.
7. As of February 2006, the final Migratory Bird Rule had not yet been published in the *Federal Register*.
8. Bird conservation initiatives include Partners in Flight (www.PartnersInFlight.org), the U.S. Shorebird Conservation Plan (www.fws.gov/shorebirdplan), Waterbird Conservation for the Americas (www.waterbirdconservation.org), the North American Waterfowl Management Plan (www.nawmp.ca), the North American Bird Conservation Initiative (www.nabci-us.org), and the DOD Partners in Flight program (www.dodpif.org).
9. DOD Partners in Flight. (2002). Department of Defense Partners in Flight strategic plan (C. Eberly, Ed.). Warrenton, VA. Available at http://www.dodpif.org/strategic_plan or in hard copy from ceberly@dodpif.org.
10. Rich, T.D., Beardmore, C. J., Berlanga, H., Blancher, P. J., Bradstreet, M. S. W., Butcher, G. S., et al. (2004). Partners in Flight North American landbird conservation plan. Ithaca, NY: Cornell Lab of Ornithology.
11. See note 7.
12. *Ibid.*
13. Endangered Species Act of 1973, 16 U.S.C. 1531-1544, Public Law 93-205. List of threatened and endangered species under the Endangered Species Act, 50 CFR 17.11, Available at http://ecos.fws.gov/tess_public/TESSWebpage.
14. *Ibid.*
15. U.S. Fish and Wildlife Service. (2002). Birds of conservation concern 2002. Division of Migratory Bird Management, Arlington, VA. 99 pp. Available at <http://migratorybirds.fws.gov/reports/bcc2002.pdf>.
16. Game birds below desired condition are a subset of the species protected by the Migratory Bird Treaty Act (see 50 CFR 10.13) that pose special management challenges because of a variety of factors (e.g., too few, too many, conflicts with human interests, societal demands).
17. Species of concern on DOD lands. Available at <http://www.dodpif.org/BCRMap.htm>.
18. Sikes Act, 16 USC 670a-670o, was approved in 1960 and provides for cooperation by the Departments of the Interior and Defense with state agencies in planning, development, and maintenance of fish and wildlife resources on military reservations throughout the United States.
19. The Federal Aid in Wildlife Restoration Act (Pittman-Robertson Act), 16 U.S.C 669-669i, was approved in 1937.
20. The Federal Aid in Sport Fish Restoration Act (Dingell-Johnson Act), 16 U.S.C 777-777k, was approved in 1950. The Wallop-Breaux Amendment was approved in 1984.
21. The North American Wetlands Conservation Act, 16 U.S.C. 4401-4413 (Supp. 1991), was approved in 1989.
22. The Neotropical Migratory Bird Conservation Act, Public Law 106-247, was passed by Congress in 2000.
23. The Food Security Act of 1985, also known as the Farm Bill, 16 U.S.C. 3801-3862.
24. State Wildlife Grants, Department of the Interior and Related Agencies Appropriations Act of 2002; Public Law 107-63, Title I.

25. For information on state Wildlife Action Plans and the eight required elements, please see http://www.teaming.com/state_wildlife_strategies.htm.
26. Breeding Bird Survey. Available at <http://www.pwrc.usgs.gov/bbs/>.
27. Pruitt, L. (1996). Henslow's Sparrow status assessment. United States Fish and Wildlife Service, Bloomington, IN. 113 p. Available at <http://www.fws.gov/midwest/Endangered/birds/hesp-sa.pdf>.
28. The U.S. Fish and Wildlife Service Private Stewardship Program provides grants and other assistance on a competitive basis to individuals and groups engaged in local, private, and voluntary conservation efforts that benefit federally listed, proposed, or candidate species, or other at-risk species. Available at http://www.fws.gov/Endangered/grants/private_stewardship/index.html.