

**Big Oaks National Wildlife Refuge**

**Annual Narrative**

**Madison, Indiana**

**Fiscal Year October 1, 1999 to September 30, 2000**

**\*2000 CLIMATIC DATA**

	<u>Temperatures</u>		<u>AVG</u>	<u>Precipitation</u>	
<u>Totals</u>					
<u>Month</u>	<u>Maximum</u>	<u>Minimum</u>		<u>NWR<sup>1</sup></u>	<u>Normal<sup>2</sup></u>
January	38.4	16.7		4.81	3.30
February	49.6	27.0		5.19	2.94
March	67.9	34.8		2.87	4.22
April	67.4	38.5		4.63	3.83
May	81.9	52.7		3.80	4.31
June	87.2	60.6		4.47	4.14
July	88.5	61.9		3.60	4.77
August	87.5	59.1		4.91	2.91
September	78.9	50.3		5.44	3.03
October	75.3	43.7		2.63	2.47
November	53.7	32.3		3.54	3.09
December	<u>33.2</u>	<u>16.8</u>		<u>2.30</u>	<u>3.16</u>
<b>TOTALS:</b>	<b>67.5</b>	<b>41.2</b>		<b>48.19</b>	<b>42.17</b>
	<b>(AVG)</b>	<b>(AVG)</b>			

1. Rainfall and temperature data from Muscatatuck NWR gauge.
2. Normal rainfall is from the 1951 to 1977 period.  
(Recorded at Seymour, IN)

## INTRODUCTION

The U.S. Fish and Wildlife Service established Big Oaks National Wildlife Refuge (NWR) on June 30, 2000. The refuge was dedicated on July 8, 2000, with a ceremony on the former Jefferson Proving Ground (JPG) in southern Indiana. Indiana Congressman Baron Hill and U.S. Fish and Wildlife Service Director Jamie Rappaport Clark were among the distinguished guests that spoke to approximately 400 who attended the outdoor ceremony held near Old Timbers Lake.

Big Oaks National Wildlife Refuge encompasses more than 50,000 acres of grasslands, woodlands and forests that, since 1940, a portion of which were used for Army ordnance testing. The U.S. Fish and Wildlife Service has managed wildlife resources at JPG since 1997, when the Service first entered into a 3-year agreement with the Army. JPG was closed by the Army as a result of the Base Closure and Realignment Act in 1995.

Under negotiated Memorandum of Agreement (MOA) between the Army, Air Force, and the Service, the Army will retain ownership of the land, with the Service operating Big Oaks NWR on a 25-year lease. The Air Force will retain use of a bombing range, which is not included in the portion designated as a National Wildlife Refuge, and is located near the center of the former proving ground. Large safety buffer areas separate the Air Force range from public use areas of the refuge. The Service and the Army were previously operating under a 3-year agreement which ended on September 30, 1999.

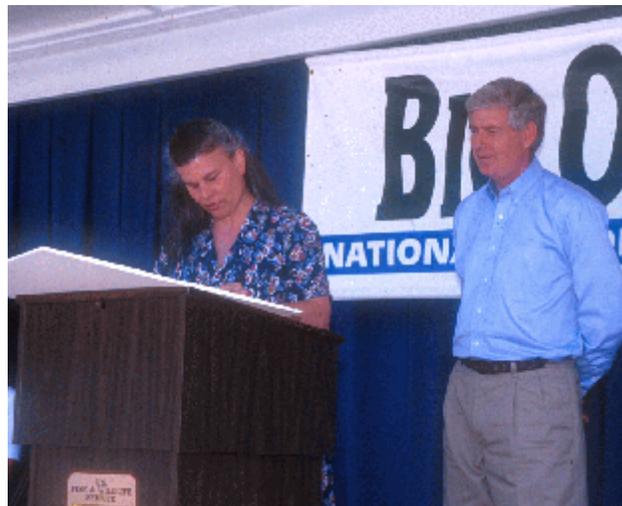
The Air National Guard continues to use 1,033 acres on JPG as an air to ground practice range and maintains the extensive system of roads and cultural resources found on the base through a separate MOA with the Army. The Army continues to oversee base security, ordnance removal, and the transfer of 4,164 acres leased (i.e., fee title will be transferred as parcels are remediated of ordnance and other contamination) to non-federal entities south of the historic "Firing Line."

The Army originally acquired 55,264 acres in Jefferson, Ripley, and Jennings counties in late 1940-41 for the testing of ammunition. Large buffer areas, needed by the Army for safety and security, have reverted to forest, and JPG now contains one of the largest contiguous forest areas remaining in Indiana, Illinois, and Ohio. During the 55 years of Army operation, established impact fields were burned periodically and treated with herbicides to reduce fuel loads and prevent the spread of wildfire from ordnance testing. These management practices led to the establishment of extensive grassland and savannah-like areas over large portions of JPG.

Because of its large size and diverse habitats, many bird species rare in the surrounding landscape are common within the confines of Big Oaks NWR. Initial surveys by Service staff have indicated that Big Oaks NWR is used by at least 200 different species of birds. Twenty-two of these bird species are state or federally listed or are of management concern. The area is especially important to breeding forest interior bird species and grassland birds. Henslow's sparrows require extensive, thick grasslands for nesting; Big Oaks NWR has one of the 5 largest breeding populations of Henslow's

sparrow. Although Henslow's sparrow populations have decreased dramatically nationwide because of changing agricultural practices and loss of tallgrass prairie, over 1000 pairs nest at Big Oaks NWR and Jefferson Range and their local population appears relatively stable. Bald eagles are frequently sighted near Old Timbers Lake, a 165 acre lake built by the Army in the early 1970's. Big Oaks NWR/JPG has been listed as a **Globally Important Bird Area** by the American Bird Conservancy for its importance to grassland birds (e.g., Henslow's sparrow) and forest birds (e.g., cerulean warbler). The Henslow's sparrow's abundance at JPG has been stated as one of the determinant factors in the "Global" designation.

A total of 41 species of fish, 8 species of freshwater mussels, 24 species of amphibians, and 18 species of reptiles have been found on JPG. Indiana bats, federally endangered, forage along the forested stream corridors and use dead snags to wean their young at Big Oaks NWR. Initial Service surveys have indicated several maternity colonies located within Big Oaks NWR.



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Service Director Jamie Rappaport Clark dedicates Big Oaks NWR as William Hartwig, Service Region 3 Director looks on with approval.



Little Otter Creek on the newly established Big Oaks National Wildlife Refuge

### **HIGHLIGHTS:**

**Big Oaks NWR established and dedicated (see Introduction)**

**Surveys estimated 900 pairs of Henslow's sparrows at Big Oaks NWR (section 1a.)**

**North American Butterfly survey counted 40 species and 1024 individual butterflies**

**Nearly 1000 nests of grassland and forest birds monitored**

**A total of 78 avian species were detected in breeding bird monitoring project**

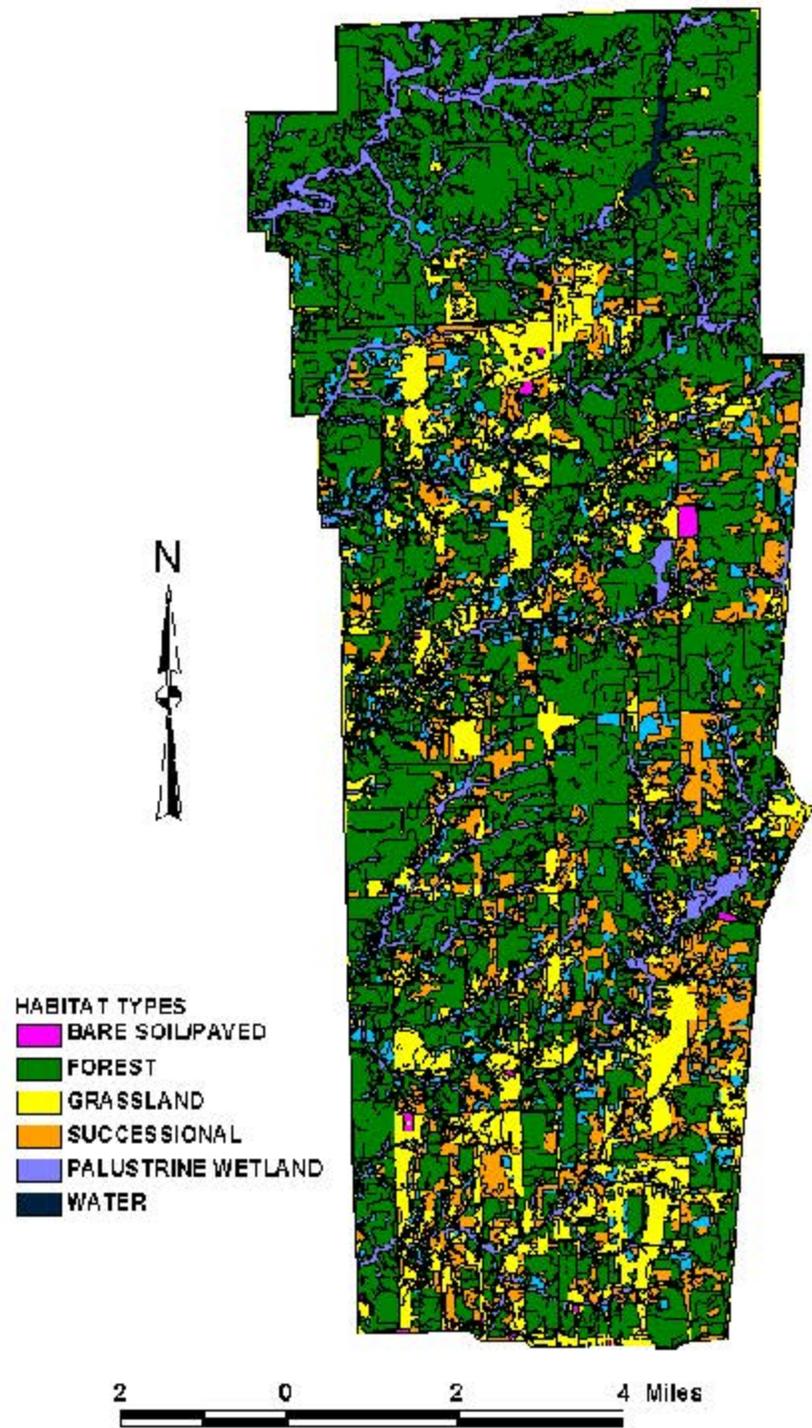
**A total of 4,200 acres treated with prescribed fire (section 3f.)**

**New refuge visited by 2,145 members of the public in its first 3 months**

**Service staff blitzes media with 5 news releases which resulted in an estimated 31 newspaper articles, 1 magazine article, 2 television broadcasts, and 4 radio interviews**



Big Oaks NWR is a 50,000 acre island of habitat in a highly altered landscape.



Simplified aggregation of Big Oaks NWR habitat classifications based upon aerial photograph interpretation.

## 1. MONITORING AND STUDIES

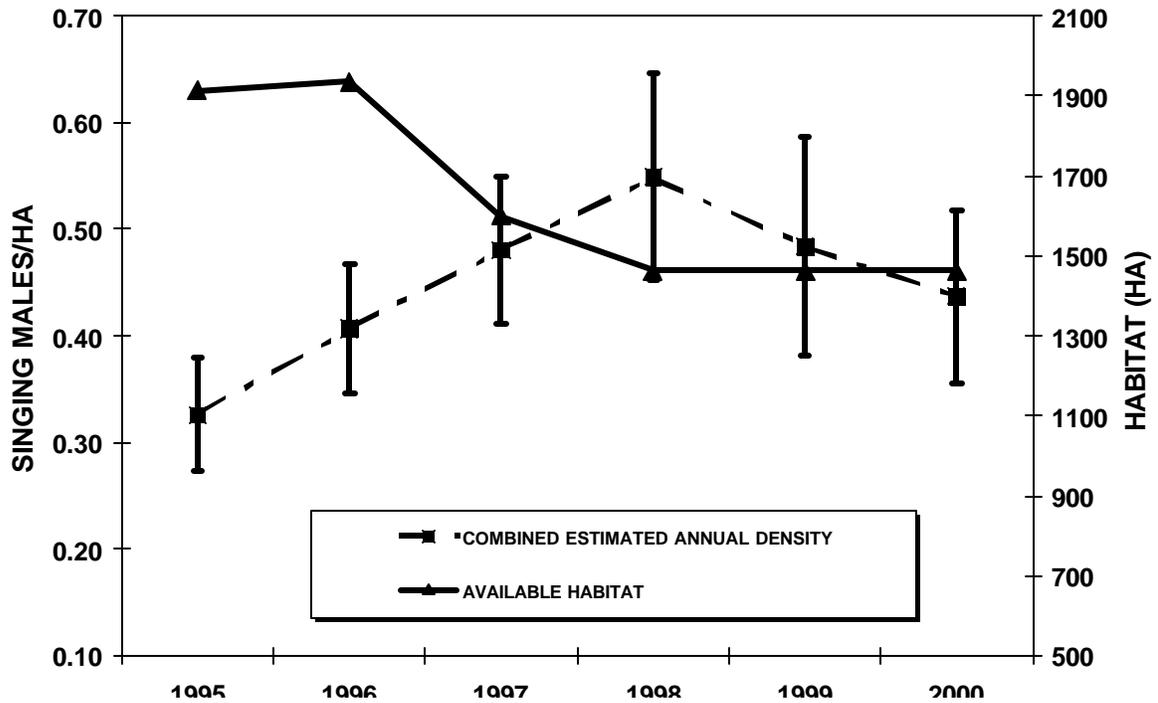
### 1a. Surveys and Censuses

Big Oaks refuge staff along with 4 volunteers participated in the North American Butterfly Association (NABA) annual count on July 22. A total of 40 species and 1024 individuals were counted during the survey. The number of species was slightly down from the 42 species that were detected during the 1999 survey. Rarities observed during the survey included the hoary edge skipper and the 'olive' juniper hairstreak.

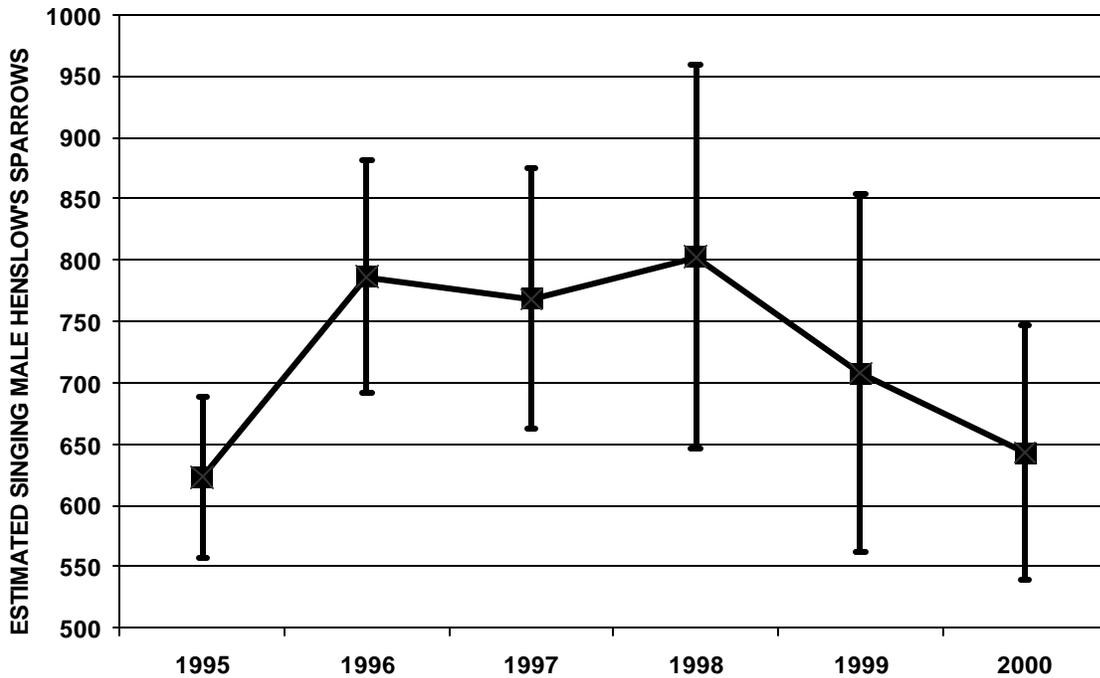
The heronry was active again during the 2000 breeding season. However, this past fall a windstorm blew over the major nesting tree. How this event will impact the nesting colony remains to be seen.

Kirk Roth, a Hanover college student and summer intern at Big Oaks NWR, conducted an Independent Study under the direct supervision of Dr. Dennis McDonald. The study addressed Henslow's sparrow territory size. Territory size was based on territorial song behavior of male Henslow's sparrows. Singing male Henslow's sparrows were observed and each singing location (song perch) was marked and later cataloged using a global positioning system. Song perches were then connected to determine the area of each territory. Average territory size was 0.22 hectares (n = 8).

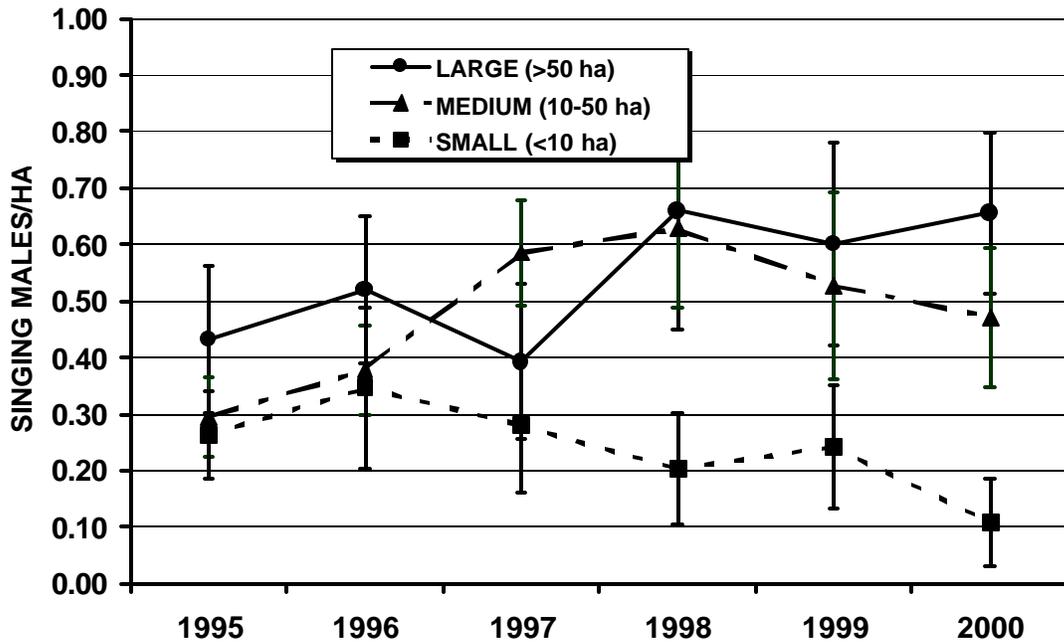
Henslow's sparrow roadside transect surveys were conducted to count singing males within grasslands adjacent to roads. The survey has been performed since 1995. From the count data, an average density is calculated and applied to the total available habitat to obtain an estimated population at Big Oaks NWR. A total of 37 sites were surveyed twice by Service staff to determine presence or absence. These counts are used as an index to gauge habitat conditions and monitor general population trends. In 2000, the average density detected was  $0.44 \pm 0.08$  singing male/ha; this extrapolates to  $644 \pm 117$  singing male Henslow's sparrows (95 % CI, uncorrected for the detection probability of territorial male Henslow's sparrows) on 1463 ha of grassland habitat estimated on Big Oaks NWR/Jefferson Range. If we incorporate our estimate of Henslow's sparrow detectability (0.716), the average breeding density in 2000 would be  $0.61 \pm 0.11$  (SE) singing male/ha; this extrapolates to  $899 \pm 161$  (95 % CI) singing male Henslow's sparrows. Henslow's sparrow density was slightly down from 0.48 singing males per survey area (June, July 1999), but this difference was not statistically different. Habitat quality of grasslands of smaller size appears to be decreasing based on the estimated density of singing male Henslow's sparrows.



Change in overall density of singing male Henslow's sparrows detected on roadside transects and available grassland habitat on Jefferson Proving Ground, IN, 1995-2000.

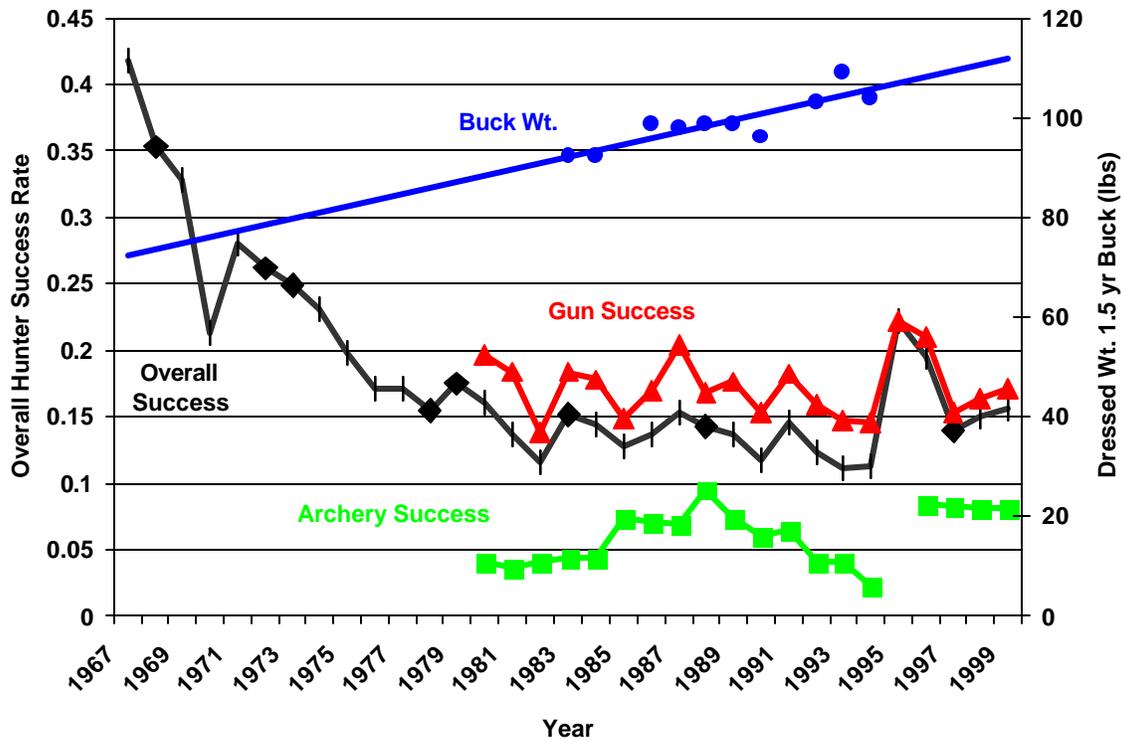


Number of singing male Henslow's sparrows and 95 % CI's estimated from roadside transects and extrapolated by the amount of habitat estimated by GIS on Jefferson Proving Ground, IN, 1995-2000. Estimated number was not corrected for detectability of Henslow's sparrows.

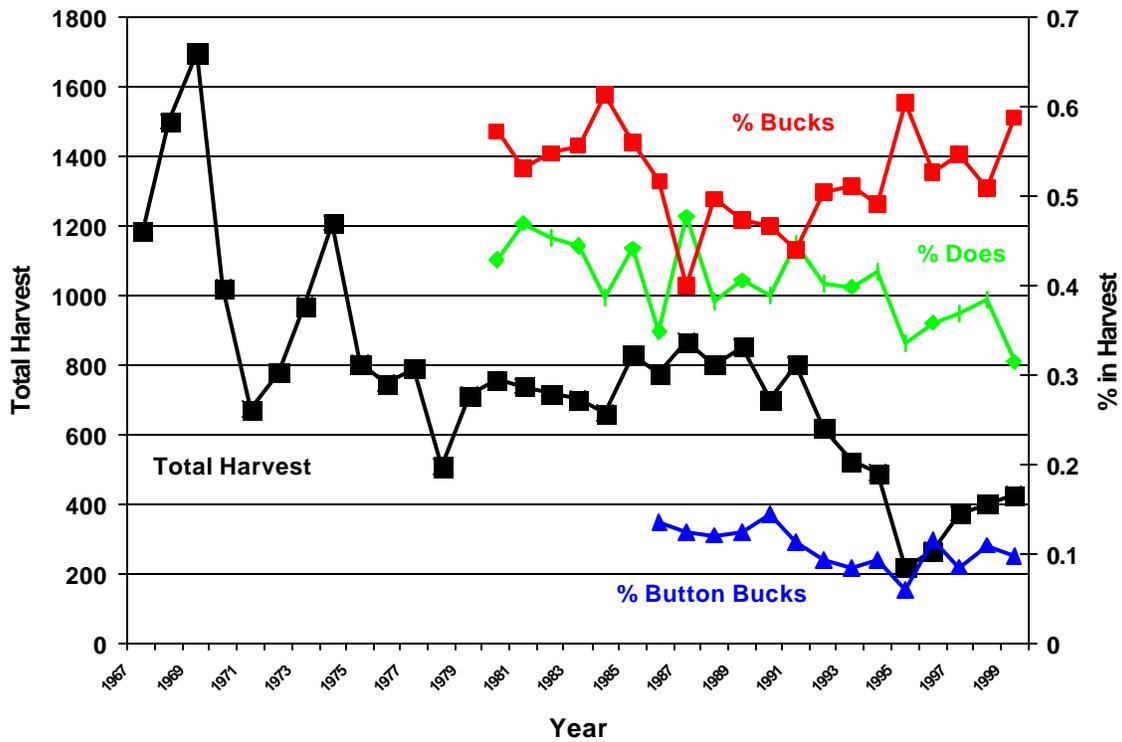


Effect of grassland size on density of singing Henslow's sparrows on roadside transects on Jefferson Proving Ground, IN, 1995-2000.

Deer populations at JPG were extremely high in the 1960's and 1970's. Habitat became degraded and a browse line developed before adjustments in harvest brought the population to lower levels. Prehunt densities were estimated at approximately 30 deer/sq. mi. by the Indiana Department of Fish and Wildlife (IDFW) in the mid-1990's. A past goal stated by IDFW biologists was to stabilize success rates during the gun season to 15 - 20 %. Harvest ratios of bucks and does should be roughly equivalent, but in recent years, bucks have made up the majority of the harvest. Since JPG was closed in 1995, harvest has decreased with the lower recreational use at the site. Presently, the deer herd appears to be increasing slightly, but with continued harvests the population level could be stabilized. Approximately 400 - 500 deer were harvested at JPG during each of the last 3 years. Refuge staff will consult with IDWF biologists to adjust harvest recommendations for future hunts at the new refuge.



Hunter success rate for deer hunting and dressed weight of 1.5 year old bucks on Jefferson Proving Ground, 1967-1999.



Total deer harvest (1967-1999) and percentages of antlered bucks, button bucks, and does in the harvest (1980-1999) at Jefferson Proving Ground.

## 1b. Studies and Investigations

Refuge staff worked in the field each week during May-August monitoring grassland bird nests. The staff assessed the productivity of birds on 5 grassland plots (~ 20 ha) within unrestricted areas. Spot mapping was conducted on these plots to estimate densities. Nest productivity of Henslow's sparrows, field sparrows, eastern meadowlarks, common yellowthroats, and prairie warblers were used to assess brown-headed cowbird parasitism, predation, and the general health of these bird populations. A total of 168 nests representing 21 species were monitored in 2000. Of the 168 nests found during the 2000 breeding season, 19 were Henslow's sparrow nests. Henslow's sparrows were initially absent on 2 grassland plots treated with prescribed fire during the spring. These plots were recolonized in August by breeding Henslow's sparrows and four nests were found in these previously burned areas. To our knowledge, this is the first documentation of Henslow's sparrows successfully nesting in a grassland the same year of a burn, although our data indicate that it is not an uncommon occurrence. In the 3 years (1998-2000) of this study, a total of 77 active Henslow's sparrow nests have been found, the largest sample of this species ever monitored. Nearly 1000 forest and grassland bird nests have been monitored from 1998-2000

A June breeding bird survey was established to sample overall refuge bird diversity. A total of 135 point counts were proportionately distributed among major habitat types along routes of travel on the refuge. The road-side survey was chosen because of the prevalence of closed areas (no access areas) throughout the refuge. These routes will be the basis for long-term monitoring of bird populations at Big Oaks NWR. A total of 78 species were detected in the first year of the project and included a state endangered species (Henslow's sparrow) and several species of concern (black and white warbler, cerulean warbler, hooded warbler, and red-shouldered hawk) for Indiana. Other notable rarities included blue grosbeaks, dickcissels, grasshopper sparrows, and a black-throated green warbler.

The refuge staff spent one night mist-netting for Indiana bats. Seven bats were captured of which one was a female Indiana bat. The Indiana bat was radio marked, however, the maternity roost tree was not located.

Two graduate students used Big Oaks NWR as a study site for their doctoral graduate work. The refuge staff helped Siri Ibarguen, a graduate student at Ohio State University, capture 9 adult Henslow's sparrows in 1999. Siri is working with genetic and trace element markers to track Henslow's sparrows to their wintering sites in the southern United States, and the refuge staff awaits the completion of her dissertation. Joe Phelps, a graduate student at Purdue University, is doing a similar project with bird dispersal that uses genetic and trace element markers. Service staff helped Joe with collecting feathers and genetic samples from eastern phoebe and Acadian flycatcher nestlings in 1999. These studies are using the most current scientific techniques to answer basic conservation questions that could provide useful management information when they are completed.

## **2. HABITAT RESTORATIONS**

### **2a. Wetland Restoration**

The 50,000 acres of Big Oaks NWR include approximately 6,000 acres (8.5 %) of wetlands (delineated from National Wetland Inventory maps) and 45,000 acres (91 %) of uplands. The remaining 0.5 % of the Big Oaks NWR area is in riverine or deepwater habitats. Jurisdictional (Section 404 Clean Water Act) wetlands probably constitute a higher percentage of JPG's area; a large proportion (> 30 %) of the area has soil types classified as hydric. The release of river otters and the subsequent cessation of trapping following the 1995 base closure has allowed the local beaver population to reoccupy much of their historical habitat. These new beaver impoundments are rapidly and naturally increasing the area of permanent water and diversity of wetlands found on Big Oaks NWR.

### **2b. Upland Restoration**

Service staff and Indiana Department of Natural Resource-Division of Soil Conservation employees cooperated in a soil erosion control project at Big Oaks NWR. This cooperative project treated an eroded site along 1/4 mile section of a road near the Refuge boundary. The site was a major contributor to off-site sedimentation and reduced water quality within the Graham Creek/Muscatatuck River watershed. Control techniques consisted of placement of rip-rap revetment. We are awaiting the arrival of a backhoe from Muscatatuck NWR to better place the revetment. Once the backhoe work is complete, workers from the State Department of Corrections will help hand place the revetment in accordance with the restoration plan developed by the State Division of Soil Conservation.

Big Oaks NWR staff conducted hand-clearing of newly established woody vegetation within a 75-acre area of the Refuge. The hand-clearing, combined with the re-introduction of prescribed fire within an additional 4,200-acre, area was needed to offset the loss of grasslands following the U.S. Army's cessation of their fire management program in 1994 and subsequent base closure in 1995.

## **3. HABITAT MANAGEMENT**

### **3e. Forest Management**

The refuge staff is currently investigating how forest inventory data could be incorporated into GIS databases. Forest management goals at Big Oaks NWR currently are associated with decreasing the level of forest fragmentation in areas outside of grassland focus areas. Natural succession will greatly increase the amount of forest interior habitat throughout Big Oaks NWR within the next 40 years.

Early in the morning on April 9, 1999, a tornado touched down west of JPG and remained on the ground for several miles east of the property boundary. These tornado damaged forested areas are

rapidly returning to earlier successional stages and are influencing long-term wildlife-habitat relationships within these areas of the refuge.

### **3f. Prescribed Burning**

During March 8 and 10, Service staff at Big Oaks NWR, with much needed help from the staffs of Muscatatuck Refuge and Bloomington Field Office, used prescribed fire to maintain and enhance grassland habitats at Big Oaks NWR. Prescribed fires were ignited in 6 subunits totaling 4,200 acres. The staff utilized backing fires ignited and monitored by a crew of 5-10 people over a 2-day period. Additional prescribed fires are planned for an estimated 5,000 acres in 2001.

Fire is the primary tool available for maintaining grassland habitats at the Refuge due to dangers associated with UXO. The effects of variations in timing and frequency of fire regimes will be studied to determine the methods that maximize the benefits of our efforts on grassland habitats. Vegetation monitoring plots were established by Ball State University researchers during the summer to monitor species composition within burn units. The staff is analyzing the effectiveness of the burn by comparing photo points before and after the burn. The long-term viability of grasslands at Big Oaks NWR is uncertain without periodically supplementing our burn efforts with mowing and discing, which is currently not available without armored equipment.



Getting Started



4,200 acres later

## **4. FISH AND WILDLIFE MANAGEMENT**

### **4a. Bird Banding**

Big Oaks National Wildlife Refuge continued its participation in the Monitoring Avian Productivity and Survivorship (MAPS) program sponsored by The Institution For Bird Populations (IBP). The purpose

of the program is to provide critical conservation and management information for populations of landbirds breeding within the United States. The refuge has 6 MAPS stations that are manned by IBP interns from May thru August. IBP interns followed standard MAPS methodology and protocol while monitoring bird populations on the refuge. Refuge staff has not yet received FY 2000 monitoring information.

#### **4c. Reintroductions**

Indiana Department of Natural Resources, Division of Wildlife personnel continued their efforts to monitor the progress of river otters released on the refuge. A total of 31 river otters have been returned to the refuge's faunal community since January, 1996. Biologists with the Division of Wildlife have released 303 otters to Indiana watersheds since the program began in 1995. Division of Wildlife biologists reestablished otters from existing populations in Louisiana and transported the otters to Purdue University, where the otters received vaccinations and physical exams. Since the first otter release, otters have been sighted at several locations on the refuge.



River otters have become a more common site on the refuge due to the success of the reestablishment efforts by the Indiana Department of Natural Resource Division of Fish and Wildlife.

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#### **4d. Provide nest structures**

Observation bunkers that were previously used in ordnance tests are being converted to "bird houses" on selected areas of the refuge. These structures were fitted with predator-proof doors and nest platforms and roosts. Hopefully, they will entice barn owls, black vultures, and turkey vultures to use these structure. Eastern phoebes and barn swallows already use these observation bunkers for nesting. Refuge staff continue to monitor converted bunkers for the presence of nesting birds, especially raptors.

## **5. COORDINATION ACTIVITIES**

### **5a. Interagency Coordination**

The refuge coordinated with the Division of Wildlife, Department of Natural Resources, and the Army to allow public hunting for white-tailed deer and wild turkey on JPG. Two, 3-day state deer hunts and turkey hunts were conducted in addition to the Army's sponsor/guest hunts.

The staff also coordinated with Nongame personnel of Indiana Division of Wildlife on surveys of river otters, mussels, stream amphibians, and other nongame species of wildlife on JPG.

The staff coordinated with the Jefferson County Soil and Water Conservation District, Natural Resource Conservation Service, Indiana Department of Natural Resource's Division of Soil Conservation, and the Army on erosion control within restricted areas of JPG.

### **5c. Private Lands Activities**

Refuge Wildlife Biologists Teresa Vanosdol-Lewis and Jason Lewis assisted a local landowner on initial plans for a wetland restoration. Work on this project is on-going.

## **6. RESOURCE PROTECTION**

### **6a. Law Enforcement**

Big Oaks NWR staff, the Indiana Department of Natural Resources Law Enforcement Division and the Air National Guard work jointly to improve natural resource protection issues, site security, and vandalism issues on the refuge. FWS Special Agent Larry Harris, Muscatatuck NWR's Refuge Officer Donna Stanley, and several local Indiana Conservation Officers performed law enforcement duties on Big Oaks NWR.

The following citations/warnings were issued in 2000 by refuge and state officers:

	<b>Citation</b>	<b>Warning</b>
Failure to carry & produce valid fishing licence	1	
Failure to carry PFD in water craft	1	2
Failure to mark limb line as required	1	
Littering	1	
Over daily possession limit for large mouth bass	1	
Illegal use of limb line		1
Illegal possession of large mouth bass within slot limit	4	3
Failure to display motorboat registration number		2
Fishing with more than 3 poles		1
Failure to register boat as required		1
Total	9	10

### **6c. Contaminant Investigations**

The U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) continued their bi-annual Environmental Radiation Monitoring (ERM) of the former Delta Impact area. The purpose of the bi-annual monitoring is to examine the fate and transport of depleted uranium (DU) from the DU impact area. According to the report, “ERM sampling indicated there were no levels of uranium detected above the established action levels in any of the samples collected. The overall ERM was sound....” The ERM plan requires bi-annual sampling of soil, sediment, surface water, and ground water from known sampling locations which includes 9 ground water sampling wells located on the refuge. CHPPM recommended that the investigation into the extent of the DU contamination in areas along the firing line be continued.

### **6f. Cultural Resource Management**

Under the negotiated agreement that established Big Oaks NWR, the Service did not inherit cultural resource responsibilities for the historic structures on the former proving ground. The refuge staff coordinate other management activities that could affect cultural resources with the Regional Office cultural resource liaison and the State Historic Preservation Officer.

## 7. PUBLIC EDUCATION

### 7a. Provide Visitor Services

Big Oaks NWR was established on June 30, 2000 and was formally dedicated on July 8, 2000. Approximately 400 people attended the Dedication Ceremony to witness 50,000 acres of Indiana become Indiana's third and largest refuge. Keynote speakers included the Director of Fish and Wildlife Service Jamie Rappaport Clark and Indiana Congressman Baron Hill. Wildlife tours of the refuge were conducted for official visitors, media personnel, and the general public following the commemoration.



Jamie Rappaport Clark speaks at dedication. © James R. Fisher



The crowd gathers for the big celebration.

© James R. Fisher



Retired Service employee, Dave Hudak speaks from the heart.

© James R. Fisher



Congressman Baron Hill, Region 3 Director Bill Hartwig, Service Director Jamie Rappaport Clark, and Refuge Manager Lee Herzberger enjoy a laugh at the celebration.

© James R. Fisher



Deputy Assistant Secretary of the Air Force (Installations), Jimmy G. Dishner, emphasizes a point. © James R. Fisher



Deputy Assistant Secretary of the Army (Installations and Housing), Paul W. Johnson, was glad the negotiations are over. © James R. Fisher



Congressman Baron Hill, a primary force that helped establish the refuge. © James R. Fisher



Congressman Baron Hill receives Conservation Legislator of the Year for Indiana National Wildlife Federation representative, Paula Yeager. © James R. Fisher

Big Oaks NWR officially opened for public use on July 17, 2000. The refuge is currently open April through November on every Monday and Friday, and the second and fourth Saturday of the month. Visitors can enjoy wildlife-dependent activities such as hunting, fishing, wildlife photography, wildlife observation, environmental education and interpretation. Guided wildlife tours of the refuge can also be arranged for groups on an advanced registration basis. Fishing has been the most popular use of the refuge. Fishing occurs on Old Timbers Lake, a 165-acre lake full of bass, bluegill, crappie, and catfish. The diversity of habitats at Big Oaks provides great opportunities for birding, wildlife viewing, and photography. Hiking to enjoy such wildlife dependent activities is also allowed in the day-use area around Old Timbers Lake, but presently no developed trails exist. As roads and bridges are improved, about 10,000 acres of such day-use activities will be available. About 25,000 acres of the refuge will be available to tours and special hunts. Large safety buffer areas separate the Air Force range from public

use areas of the refuge. All visitors currently check in at building 125 at the Big Oaks NWR office. All visitors were required to obtain an annual or daily public access permit (\$3.00/day or \$15/year) and fees were waived for holders of duck stamps or golden age passports or golden eagle passports and for those 16 yrs or under in age. The refuge currently is designated as a special fee area, and entrance fees are returned to the refuge to fund visitor activities and improvements to visitor facilities. Visitors must attend a safety briefing, and sign an acknowledgment of danger agreement before entering the refuge. A total of 2,145 visitor use-days was tallied during the first 3 months of the refuge's existence.



Refuge visitors must annually attend a safety briefing and then purchase an access permit



..... and then enjoy wildlife dependent recreation

Approximately \$ 40,000 worth of refuge signs were ordered this past year to help orient visitors throughout the refuge. Refuge staff spent many long hours in the field marking boundaries of public use areas. Much of the refuge is restricted to all public entry due to contamination of unexploded ordnance and every visitor needs to be aware of what areas are closed.



Sign placement for safety was the highest priority

Refuge staff also provided coordination for state deer and turkey hunts and conducted interpretive tours of the facility for the general public, school groups, and local civic organizations. The staff also conducted guided tours on the former JPG during Muscatatuck NWR’s Bird Festival, “Wings over Muscatatuck”.

## **7b. Outreach**

Newspaper articles, magazine articles, television coverage, and radio interviews and broadcasts made the FWS message known to the community. The headline published in a regional newspaper, “Birth of a national wildlife refuge...Big Oaks NWR dedicated,” highlighted the successful outreach effort by Big Oaks NWR staff. The theme of many of these forms of media emphasized the cyclical and complicated road that often plague the establishment of new refuges. Refuge staff were featured on regional radio and television programs discussing events ranging from the Migratory Bird Festival at Muscatatuck NWR to the Big Oaks NWR dedication. Staff met with local historical groups interested in the history of the refuge and gave numerous tours and presentations to conservation groups, university students, and

official visitors. Intern/volunteer announcements were sent to on-line natural resource job sites and publications to locate a diverse pool of students interested in being a part of the Big Oaks NWR's staff. Local radio stations, newspapers, and television stations were notified by the refuge regarding prescribed fire activities. In fiscal year 2000, there were 5 news releases, 31 newspaper articles, 1 magazine article, 2 television broadcasts, and 4 radio interviews and several radio broadcasts concerning Service activities at Big Oaks NWR.

## **8. PLANNING AND ADMINISTRATION**

### **8a. Comprehensive Conservation Planning**

Staff at Big Oaks NWR completed an Interim Comprehensive Conservation Plan (CCP) associated with the establishment of the Refuge in July 2000. Within this document we defined our goals and objectives for the Refuge and outlined public use activities available prior to completion of our CCP. We anticipate attending the CCP course held at the National Conservation Training Center in October and completion of our CCP within 3-4 years. Additionally interim plans for public access and for hunting and fishing were completed and approved.

### **8b. General Administration**

#### **Personnel**

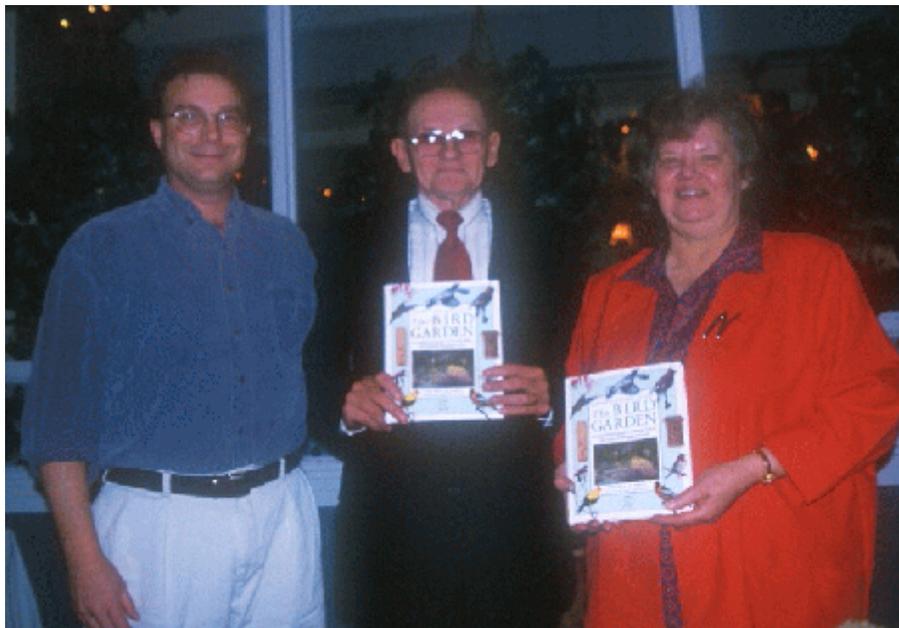
Lee Herzberger,  
Refuge Manager, GS-13 PFT  
Dr. Joseph R. Robb,  
Refuge Operations Specialist, GS-11 PFT  
Stephen A. Miller,  
Refuge Operations Specialist, GS-11, PFT  
Jason P. Lewis  
Wildlife Biologist, GS-7, PFT  
Teresa Vanosdol-Lewis,  
Wildlife Biologist, GS-7, PFT  
Linda Gordon,  
Administrative Technician, GS-5, PFT

#### **Green Thumb Personnel -**

Naomi Barton (started August)  
George Tilley (started August)



BONWR staff, from left to right: Lee Herzberger, FWS Director Jamie Rappaport-Clark, Joe Robb, Steve Miller, Linda Gordon, Teresa Vanosdol-Lewis, and Jason Lewis.



Refuge Operations Specialist Joe Robb congratulates Greenthumb program members George Tilley and Naomi Barton for a job well done.

The staff is supervised by the Refuge Manager at the Muscatatuck / Big Oaks NWR complex office near Seymour, IN. The staff has a functioning office in Building 125 adjacent to the Army's Site Management Team which is led by Ken Knouf. The Army's civilian Site Management Team also includes long-time JPG employees Phil Mann and Yvette Hayes. Several other positions (Fence Repair and Gate Attendants) have been contracted by the Army through a local employment agency.

Four student volunteers participated in a summer "intern" program at Big Oaks NWR and at Muscatatuck NWR. Nicole Candelora (Urbana, OH), Tamara Gross (Muncie, IN), Kirk Roth (Hanover, IN), Eric Suttles (Stillwater, OK) were provided housing and a monthly subsistence stipend to enable their participation in management and monitoring activities from mid-April through early September. All the interns participated in the bird productivity study at Big Oaks NWR and the Nongame Breeding Bird Survey at Muscatatuck NWR. The interns gained valuable experience in conservation and habitat management while the refuge gained a capable field crew during the busy field season.



Summer Volunteer/Intern Kirk Roth attending the refuge entrance gate. Gate house was an office trailer found as excess property from the National Weather Service.



Big Oaks NWR volunteer/interns, from Left to Right: Nicole Candelora, Eric Suttles, Tamara Gross.

### **Equipment and Facilities**

An office trailer, surplus from the National Weather Service in June, is being used as the gatehouse at BONWR (see photograph on Pg.58).