

U.S. DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ENVIRONMENTAL ASSESSMENT

for

Opening portions of Patoka River National Wildlife Refuge and Management Area
for Hunting and Fishing as Proposed in the 1996 Hunting and Fishing Plan

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Abstract:

The U.S. Fish and Wildlife Service proposes to open portions of the Patoka River National Wildlife Refuge and Management Area (Refuge) for hunting (migratory birds, white-tailed deer and a variety of upland game) and sport fishing. This proposal is being made so that the Refuge can comply with its major objectives regarding habitat restoration and outdoor recreation opportunities. Alternatives considered in this proposal include: A) No action (no hunting or fishing); B) Opening select areas to hunting and fishing as deemed appropriate by Refuge staff in coordination with Indiana DNR biologists and interested public; C) Opening all areas to unlimited hunting and fishing, relying solely on applicable state and federal regulations; D) Utilize Refuge staff or other Fish and Wildlife Service personnel to achieve desired wildlife population levels. Alternative B is the preferred alternative.

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CHAPTER 1. PURPOSE AND NEED FOR ACTION

SECTION 1.1 BACKGROUND/INTRODUCTION

The Patoka River National Wildlife Refuge and Management Area was established on September 7, 1994. The Wildlife Refuge portion of the project encompasses 6,800 acres and the area designated as the selection area for Wildlife Management Areas totals 15,283 acres. Differentiation between Wildlife Refuge and Wildlife Management Area was necessitated by the presence of surface-minable coal and applicable provisions of the Surface Mining Control and Reclamation Act of 1977. Because objectives and management goals are the same for both areas, for the purposes of this assessment the entire area will simply be referred to as "Refuge". The Refuge encompasses 22,083 acres of bottomland forest and associated uplands along a 30-mile stretch of the Patoka River in Pike and Gibson Counties of southwestern Indiana (Figure 1). The purposes for which the Refuge was established, as contained in the Final Environmental Impact Statement and approved by Regional Director Sam Marler in his Record of Decision of September 7, 1994, include:

1. Restore, protect, and manage a bottomland hardwood forest ecosystem for the many values associated with these wetlands.
2. Restore, protect, and manage uplands that complement and/or protect wetlands.
3. Restore, protect, and manage migratory bird habitat, with special emphasis on habitat for wood ducks.
4. Restore, protect, and manage habitat for endangered and threatened species of plants and animals.
5. Increase public opportunities for outdoor recreation and environmental education that are compatible with the primary resource objectives of the Refuge.
6. Provide wildlife extension services and restore wetland habitat in southwestern Indiana per landowner requests according to guidelines of the Service's Partners for Wildlife program.
7. Improve water quality in the Patoka River watershed to reduce adverse impacts on human health and wildlife productivity, enhance the fishery resource, and increase the attractiveness of the water resources for wildlife-oriented public recreation.

In order to help fulfill several of the above goals, particularly that involving outdoor recreational opportunities, the U.S. Fish and Wildlife Service (Service) proposes to open selected areas acquired by the Refuge to recreational hunting and fishing. Shaded areas on Figures 2 and 3 represent those areas now in Federal ownership and total approximately 225 acres; areas cross-hatched include an additional 1500 acres that will also be open if pending acquisition procedures are completed as expected. Yearly updates of areas available for hunting and fishing will be made as additional parcels are acquired and approved for these activities.

Specific objectives of the hunting and fishing programs include:

1. Increase public opportunities for outdoor recreation. The National Environmental Policy Act (EIS) process leading up to the establishment of the Refuge involved several public meetings/open houses and extensive public review and comment. A common concern voiced by local sportsmen, conservation organizations, and State natural resource representatives involved the availability of Refuge lands for traditional hunting and fishing activities. The Service was very clear in its commitment to provide these type of activities, both in the EIS and in responding in writing or verbally to concerned individuals.

2. Control the size of white-tailed deer populations. The Refuge area is characterized by large numbers of healthy deer. Currently, local deer populations are subjected to relatively heavy hunting pressure which has kept this population at an acceptable level. Without a hunting program, deer numbers on Refuge lands would quickly increase to the point where depredation on neighboring farm land, as well as degradation of Refuge habitats could become a serious problem. Large deer numbers would also negatively impact Refuge efforts to restore bottomland hardwood forest through reforestation, ie., browsing of newly planted seedlings may necessitate costly re-planting in order to obtain suitable stocking rates and reduce the health and vigor of surviving seedlings.

The Refuge Recreation Act of 1962 (16 U.S.C. 460K) and the National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668-ddee) provide authorization for hunting and fishing on National Wildlife Refuges. The effects of hunting and fishing on refuges have been examined in several environmental review documents, including the Final Environmental Impact Statement on the Operation of the National Wildlife Refuge System (1976), Recommendations on the Management of the National Wildlife Refuge System (1978), and the Draft Environmental Impact Statement on the Management of the National Wildlife Refuges (1988). Nothing in the establishment authority for Patoka River Refuge (Emergency Wetlands Resources Act of 1986) precludes hunting on the Refuge. In summary, hunting and fishing, as herein proposed, is intended to: A) fulfill the Service's commitment to provide the public with opportunities for outdoor recreation; B) provide valid fish and wildlife management techniques to influence the distribution and abundance of these animals and aid Refuge habitat restoration and management activities; and C) help insure healthy wildlife populations in balance with available habitat.

SECTION 1.2 DECISIONS THAT NEED TO BE MADE

The Regional Director, U.S. Fish and Wildlife Service, Twin Cities, Minnesota, is the official responsible for determining the action to be taken in the proposal by choosing an alternative. He will also be required to determine whether the preferred alternative has a significant impact on the quality of the human environment.

SECTION 1.3 ISSUES AND CONCERNS

As described previously, the Service sought and received significant public input during the preparation and review of the EIS for the establishment of the Refuge. One of the noteworthy issues raised by the Refuge support group (Patoka Refuge Individuals Defending the Environment), other federal and state resource agencies, private conservation groups, and local sportsmen involved the availability of refuge lands for traditional use of fish and wildlife resources. The input of these diverse entities was instrumental in the Service's adoption of outdoor recreation as one of the primary purposes of the Refuge. Because of the nature of the Patoka River project, i.e., restoration, protection and management of a healthy, diverse bottomland hardwood ecosystem, it was the consensus of those participating in the Refuge's establishment that hunting and fishing opportunities should be provided to the maximum extent possible, subject to any restrictions necessary to assure restoration success and to protect sensitive areas or species.

The Fish and Wildlife Service has the following concerns:

- the goal of providing the public with opportunities for outdoor recreation will not be fully realized if hunting and fishing is prohibited.
- the health and general condition of some wildlife, particularly white-tailed deer, will deteriorate if the population level is allowed to exceed the carrying capacity of available habitat.
- efforts to re-establish (through reforestation) bottomland hardwood communities will be negatively impacted if ungulate populations are not adequately controlled.
- the procurement of sufficient funds for the Refuge to develop and conduct the hunting and fishing programs.

SECTION 1.4 PERMITS, LICENSES AND OTHER COMPLIANCES REQUIRED

Permits: No federal, state or local permits or licenses are required to institute the Refuge public hunting and fishing programs.

Endangered species: The following federally listed threatened, endangered or proposed species are known to occur in the Refuge:

Bald eagle - threatened: the bald eagle is a rare visitor in the Refuge area, primarily occurring during the late winter months. However, the breeding population in Indiana is expanding and it is reasonable to assume that eagles may eventually nest in the Refuge as habitat restoration and development proceeds. If this occurs, fishing and hunting activities may have to be restricted near the nest site to avoid disturbance.

Indiana bat - endangered: Indiana bats are known to occur within the Refuge, and the capture of two lactating females (1993) documents use of the area as a maternity site. Because of the chronology of this use, however, negative impacts associated with hunting or fishing activities is not anticipated.

Copperbelly water snake - proposed threatened: the forested and scrub-shrub wetlands in the Refuge are considered by herpetologists to be some of the finest copperbelly habitat remaining anywhere within its range, and local populations are considered to be stable. Hunting and fishing should have little if any impact on the snake or its habitat.

Fat pocketbook mussel (endangered): This species has not been documented within Refuge boundaries in recent times. There are populations existing in relatively close proximity to the Refuge, ie., the lower Wabash River, and with habitat development and enhancement, re-colonization may occur. The conduct of hunting and fishing programs should not have any effect on this species.

A consultation pursuant to Section 7 of the Endangered Species Act was conducted as a part of the EIS for Refuge establishment. The consultation process concluded that establishment of the Refuge with its stated purposes and objectives would not affect the recovery of any federally listed species that may be found on the area.

Historic preservation: Areas to be opened to hunting and fishing contain evidence of use by earlier cultures, particularly Native Americans of the Miami, Piankeshaw and Shawnee groups. While no above ground features are evident, artifacts associated with hunting, camps, etc, are present. Portions of the Wabash and Erie

Canal are visible at some locations within the Refuge boundary. No other unique historical or archeological structures are known to exist on the area. Where new facilities associated with hunting or fishing are required, the Section 106 process of the National Historic Preservation Act will be followed.

CHAPTER 2. ALTERNATIVES

SECTION 2.1 INTRODUCTION

This chapter will explain how alternatives were formulated, describe alternatives, compare alternatives, and identify the preferred alternative.

SECTION 2.2 FORMULATION OF ALTERNATIVES

Alternatives were developed that would be consistent with current development and acquisition activities and complementary to future biological management programs planned for the Refuge.

SECTION 2.3 ALTERNATIVES ELIMINATED FROM DETAILED STUDY

An alternative that would permit unrestricted access for hunting and fishing on all Refuge lands during all applicable state and federal seasons was eliminated due to the potential for unacceptable disturbance to non-target species and the inability for Refuge staff to modify these activities to accommodate special resource problems or the needs of other public use interests. Another alternative that was eliminated from consideration involved the use of Service personnel to maintain desirable fish and wildlife population levels. This alternative was considered infeasible due to the lack of sufficient man-power, overwhelming logistical problems, and the fact that it would unnecessarily deprive the public of the opportunity to utilize their natural resources.

SECTION 2.4 DESCRIPTION OF ALTERNATIVES

Alternative A: No hunting or fishing (No Action)

This alternative would prevent the Refuge from achieving its goal of providing the public with opportunities for outdoor recreation and continuing the traditional use of the area's fish and wildlife resources. It would also impede the goals of restoring, protecting and managing the biologically diverse assemblage of plant and animal communities associated with a bottomland forest ecosystem.

Alternative B: Open select areas to hunting and fishing as deemed appropriate by Refuge staff in coordination with local Indiana DNR biologists and interested public

This alternative would allow hunting and fishing on some or all of the areas acquired by the Refuge after determining that: 1.) such activity is consistent with other resource objectives, and 2.) biological monitoring programs on the Refuge and local DNR properties provide adequate assurances that target species supports a harvestable surplus. Hunting and fishing will be conducted in accordance with all applicable state and federal regulations. Coordination with DNR biologists and interested individuals or conservation groups will promote continuity and understanding of Service and state resource goals and objectives, and will help assure that the decision-making process takes into account all interests. Targeted species, such as white-tailed deer, upland game and waterfowl, will be the primary focus of most hunting activity, although a minor amount of incidental hunting for other species will also occur. Fishing interests will likely concentrate on panfish and largemouth bass in isolated ponds and oxbows, while catfish will make up the majority of the catch in the Patoka River. Harvest estimates are difficult to project in that hunter and angler response is unknown at this time. Based on public use records for nearby state lands, and considering the limited acreage currently acquired by the Refuge, it is anticipated that hunters and anglers will record less than 500 use days the first year. This figure will increase in proportion, and at a rate comparable to future Refuge land acquisitions.

SECTION 2.5 COMPARISON OF ALTERNATIVES

ALTERNATIVE	DEER CONTROL	COMPATIBILITY WITH REFUGE OBJECTIVES	ENDANGERED SPECIES	STAFF TIME AND FUNDS NEEDED
-A- NO ACTION	-	-	+	+
-B- HUNTING & FISHING	++	+	+	+

+ meets goals; ++ exceeds goals; - does not meet goals; -- adverse impacts

SECTION 2.6 PREFERRED ALTERNATIVE

The preferred alternative is the implementation of Alternative B.

CHAPTER 3. AFFECTED ENVIRONMENT

This chapter describes the environmental components of the area that would be affected by the implementation of alternatives.

Flowing 162 miles through 4 counties in southwestern Indiana, the Patoka River represents a classic meandering midwestern stream. It's floodplain contains some of the finest examples of bottomland forested wetland remaining in the state. Although somewhat degraded by past drainage and land development efforts, the array of wetlands and other habitat types continue to support a rich diversity of fish and wildlife species. The principal naturally-occurring habitat type in the Patoka River Refuge is bottomland forested wetland, the most endangered of all our nation's wetlands. The nearly 7,000 acres remaining in the Refuge area is undoubtedly a remnant of once vast stands that dominated the floodplains of all southwestern Indiana. Major tree species include swamp white oak, swamp chestnut oak, pin oak, cottonwood and sycamore, with over 60 other plant species found in this community. Scrub-shrub is another wetland type found in the Refuge (1,050 acres). Dominated by buttonbush, red-osier dogwood and swamp privet, these interesting wetlands are commonly associated with the isolated meanders (oxbows) of the Patoka River. A most notable example of the emergent wetland type is found at Snakey Point where cattail, bulrushes and smartweeds represents 250 of the 1,000 acres of this important habitat type in the Refuge. The primary natural community found on adjacent valley slopes is upland hardwood forest. The majority of the 3,300 acres of this habitat type is located in the eastern portion of the Refuge and is composed of such valuable species as white and red oaks, beech, sugar maple, wild cherry, black walnut and a variety of hickories. In addition to the above natural communities, the Refuge area also includes nearly 7,850 acres of agricultural lands, most of which (5,100 acres) is located in the Patoka River floodplain and subjected to annual flood events.

The diverse Project habitats support equally diverse wildlife populations, with more than 380 species of mammals, birds, reptiles, amphibians, fishes and mollusks known or expected to occur here. The Patoka River and associated wetlands provides some of the most productive wood duck nesting and brood-rearing habitat in the state, and supports several active nesting colonies of great blue herons. White-tailed deer and wild turkeys thrive in the rich bottomland forest ecosystem, as do an array of neotropical migratory songbirds. Specific data related to abundance or population size is not available for most of the fish and wildlife species in the area. Indiana DNR figures for deer in local counties indicates that the expected density in the Refuge area is between 25 and 30 deer per square mile. Based on check station figures, wild turkey numbers are at an all time high statewide. Consultation with DNR property managers and district biologists indicates that populations of other game species (rabbits, squirrels, quail, etc), while fluctuating in size due to annual climatic and biological events,

are maintaining themselves in good health and numbers. Weekly waterfowl surveys conducted by the DNR on nearby areas indicate that a reasonable fall/winter estimate for the Refuge is 5,000 to 8,000 ducks and geese, particularly during periods of lowland flooding.

The Patoka Valley supports several species on the federal Endangered Species List. The threatened bald eagle utilizes the area during summer and migration, and eagles nest within 25 miles of the Project. The endangered Indiana bat is found foraging for insects under the canopy of bottomland forests, and a recent discovery documented the presence of at least one maternity colony. The Refuge area contains some of the best remaining habitat in the nation for the northern copperbelly watersnake, a species soon to be listed as threatened. At least one endangered mollusk (fat pocketbook), as well as the Indiana crayfish, a federal Candidate Species, may also occur here.

The Service has recognized the unique attributes of the Refuge area since the mid 1980s. To address the ongoing loss of wetlands nationally, two plans, the National Wetlands Priority Conservation Plan and the North American Waterfowl Management Plan were developed to provide the focus for acquisition, protection, restoration and renewal of our Nation's wetlands. Both plans identified the bottomland forested wetlands along the Patoka River in Pike and Gibson counties, Indiana as an important focus area.

CHAPTER 4. ENVIRONMENTAL CONSEQUENCES

Alternative A. - No Action (No Hunting or Fishing)

Without a hunting or fishing program, the Refuge would essentially represent a sanctuary unavailable to the public for the harvest of fish and wildlife resources. This would make it impossible for the Refuge to fully meet one of its priority objectives, ie, increase public opportunities for outdoor recreation and environmental education, and would be contrary to the President's recent Executive Order (Management and General Public Use of the National Wildlife Refuge System) directing the Service to provide expanded opportunities on Refuges for compatible wildlife-dependent recreational activities, including hunting and fishing. Ecological impacts would center around the expected increase in the white-tailed deer population if hunting was forbidden. Large numbers of deer would degrade existing habitat through over-browsing. A decrease in habitat quantity and habitat quality would not only result in a decrease in the health and vigor of the deer herd, but would negatively impact numerous other wildlife species that are dependent on this same habitat. In addition, large numbers of deer would reduce the success of Refuge habitat restoration activities (bottomland

reforestation) by increasing mortality of planted seedlings through depredation and altering the desired species composition. Increasing the span of time required to re-establish Refuge forests would also delay fulfilling several other project objectives related to restoring, protecting and managing various components of the bottomland ecosystem. Maintaining the entire Refuge as a sanctuary would encourage land acquisition both in and adjacent to the Refuge boundaries by individuals or groups lured by the prospects of enhanced hunting opportunities. The result would be to impede the Service's acquisition program, thereby reducing the potential to fully realize the purposes for which the Refuge was established.

Alternative B. - Opening select areas to hunting and fishing as deemed appropriate by Refuge staff in coordination with Indiana DNR biologists and interested public.

This alternative would allow hunting and fishing, in accordance with applicable state and federal regulations and consistent with other Refuge objectives, on portions (or all) of lands acquired by the Service.

The environmental consequences of allowing hunting and fishing would primarily impact on the success of Refuge efforts to implement reforestation activities and to enhance and maintain the bio-diversity of the bottomland ecosystem. The conduct of a biologically sound deer hunting program will assure a herd in balance with available habitat, and minimize depredation on newly-planted seedlings associated with bottomland hardwood re-establishment. Not only will this help the Service reach its resource priorities in a timely manner, but will also maximize the development of additional, high-quality habitat for other wildlife species. A successful reforestation program will also take currently cultivated lands out of production, reducing the amount of soil sediments reaching Refuge waterways and improving water quality for a variety of aquatic resources. Finally, an effective deer hunting program will decrease the likelihood of depredation complaints from adjacent landowners. Crop depredation was a common concern voiced by neighboring farmers during the public review stage of the EIS.

Disturbance of non-targeted wildlife species that use the area could result in additional stress on these animals, but the impacts are not expected to be significant. Hunter and angler ingress and egress will be limited to foot travel, and Refuge regulations prohibit the removal of any plant materials. With these constraints on visitor behavior, impacts to wildlife habitat and local plant communities will be minor.

Hunting and fishing will result in the removal of game species and a resulting decrease in the populations of these species. Annual analysis of these populations utilizing available harvest data, periodic surveys, and consultation with personnel from adjacent state wildlife management lands will help determine any necessary annual adjustments to the Refuge hunting and fishing program and assure the

maintenance of viable fish and wildlife populations.

Although hunting and fishing may cause intrusion and some disturbance to threatened and endangered species, that disturbance is not considered to be significant and would not jeopardize the recovery of any federally listed species in the area.

Finally, the implementation of a hunting and fishing program would promote a wildlife-dependent form of recreation and go a long way towards reaching the Refuge's objective of increasing outdoor recreation opportunities for the public.

List of Preparers and Reviewers

This document was written by Robert Dodd, Wildlife Biologist, U.S. Fish and Wildlife Service, Patoka River National Wildlife Refuge & Management Area. Review was completed by William McCoy, Project Manager, U.S. Fish and Wildlife Service, Patoka River National Wildlife Refuge & Management Area. Details of the Hunting and fishing program are contained in the proposed hunting and fishing plan.

Record of Consultation and Coordination

The Environmental Assessment was prepared in consultation and coordination with the following:

<u>NAME</u>	<u>AFFILIATION</u>	<u>INPUT</u>
John Wade	Indiana DNR	Hunting, population data
Jeff Thompson	Indiana DNR	Hunting, population data
Lewis Bender	Indiana DNR	Deer data
John Castrale	Indiana DNR	Non-game data
Fred Hadley	Consultant forester	Reforestation concerns
Scott Pruitt	Fish & Wildlife Service	Endangered species
Charles Bauer	Refuge support group	Public reaction to plan
Bill Phillips	Refuge support group	Public reaction to plan

NOTE: The National Environmental Policy Act (EIS) process leading up to the establishment of the Refuge involved several open houses/public meetings and extensive public review and comment. Both in the EIS and in public dialogue, the Service was very clear in its commitment to open the maximum acreage of refuge lands for traditional hunting and fishing activities for the public. This decision, which was reviewed and commented on by hundreds of individuals and organizations, was overwhelmingly supported.