

Appendix C

FEDERALLY ENDANGERED AND THREATENED; SENSITIVE SPECIES; MANAGEMENT INDICATOR SPECIES

Federally Endangered, Threatened, and Proposed Species

As a Federal agency, the USDA Forest Service has defined responsibilities in supporting recovery objectives for Federally listed endangered, threatened, and proposed species. Populations of these species will receive individualized attention. Management activities that may affect Federally listed species occur in consultation with the USDI Fish and Wildlife Service. If additional species that occur on the Hoosier become listed as endangered or threatened, the Hoosier will consult with USDI Fish and Wildlife Service as appropriate (50 CFR 402.16).

The USDI Fish and Wildlife Service have identified five Federally listed species as having part of their range on the Hoosier National Forest. Indiana bat (*Myotis sodalis*), gray bat (*Myotis grisescens*), rough pigtoe mussel (*Pleurobema plenum*), and eastern fanshell mussel (*Cyprogenia stegaria*) are listed as endangered. The USDI Fish and Wildlife Service delisted the bald eagle (*Haliaeetus leucocephalus*) in August 2007.

Indiana bat is widespread in Indiana and occupies much of the eastern half of the United States, from Oklahoma, Iowa, and Wisconsin east to Vermont, and south to northwestern Florida. Although there are a limited number of occurrence records for this species on the Hoosier National Forest, its habitat occurs throughout the Forest. Gray bat and eastern fanshell are of limited distribution in Indiana. There are only three known records of gray bat and one of the eastern fanshell on or near the Hoosier National Forest. There is evidence that the rough pigtoe mussel occurs or occurred in the Wabash and East Fork White Rivers in Indiana.

MANAGEMENT DIRECTION

Conservation Plan for Federally Threatened, Endangered, and Proposed Species

This Plan fulfills Endangered Species Act Section 7(a)(1) obligations for conservation of threatened, endangered, and proposed species. The Hoosier National Forest is committed to conserving, protecting, and maintaining habitat for Federally listed species. The Conservation Plan of the Hoosier National Forest is, first of all, this Land and Resource Management Plan. The foundation of the Hoosier National Forest's Conservation Plan is the allocation of land into management areas that have the ecological conditions needed by particular species. A primary purpose of management area allocations is protection of biological diversity, including the conservation of

threatened and endangered species. Management area desired conditions and guidance aid in conserving threatened and endangered species by providing a variety of ecological conditions.

Management Area (MA) MA 2.8 and 3.3 provide benefits for a variety of users and resources. These management areas allow for vegetation management, which serves a variety of wildlife purposes, including the maintenance or enhancement of roosting habitat for the Indiana bat. MA 5.1 and MA 6.2 provide isolation, opportunity for natural succession, and areas with limited modification. Areas with such characteristics provide important habitat for wildlife, including threatened and endangered species. MA 6.4 primarily provides for natural succession to an old growth (climax) condition and limited modification. The direction for MA 8.1 (Research Natural Areas) includes "providing habitat for endangered species." MA 8.2 areas are Special Areas, and their management emphasizes the protection, perpetuation, or restoration of their special features and values. Special features include barrens, caves, and rock outcrops. The 632-acre Paoli Experimental Forest, which provides opportunities for studying the effects of specific management actions, is presently the only area designated 8.3. Taken together and with other Forest Plan guidance, the management areas provide a variety of habitats for various wildlife and plant species, with emphasis on threatened and endangered species. Approximately 60 percent of the Forest is in areas not appropriate for timber harvesting.

Recovery plans have been prepared for eastern fanshell mussel, gray bat, Indiana bat, and rough pigtoe mussel. The USDA Forest Service will work with the USDI Fish and Wildlife Service to identify and meet recovery objectives for the species on the Forest.

The purpose and goal of any conservation plan is recovery of each species such that there is no longer a need to list it as endangered or threatened under criteria found in Section 4(a)(1) of the Endangered Species Act, as amended. Actions of the Hoosier National Forest are directed toward conservation of listed species and, whenever possible, contributing toward recovery objectives outlined in approved recovery plans.

Relationship to Other Documents

To meet the consultation requirements under Section 7(a)(2), the Hoosier National Forest completed the Programmatic Biological Assessment for Land and Resource Management Plan Hoosier National Forest (Biological Assessment) in April 2000. The Fish and Wildlife Service responded with their Biological Opinion on the Land and Resource Management Plan Hoosier National Forest, Indiana on July 31, 2001. This Biological Opinion provided terms and conditions to ensure that actions carried out under the direction of the Forest Plan would minimize the potential for incidental take. The Biological Assessment included a list of management activities with amounts (acreages, miles, etc.) estimated to occur in the next five years.

Species-specific recovery plans provide additional guidance for conserving and recovering each endangered or threatened species throughout its range. Each recovery plan has been developed by a team of scientists who are experts on the species being addressed. The Hoosier National Forest encompasses only a small part of the range of each of the four endangered or threatened species, so all recovery objectives may not be applicable to the Forest.

The Biological Assessment and subsequent includes analysis and direction related to bald eagles which were delisted in August 2007. The direction still applies to the species.

Direction

The Endangered Species Act provides authority for the Hoosier National Forest to be involved in and further the protection and recovery of threatened and endangered species. Section 7(a)(1) states, "All other Federal agencies shall, in accordance with and with the assistance of the Secretary, utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species and threatened species listed pursuant to Section 4 of this Act."

Section 2(b) of the Endangered Species Act states, "The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for conservation of such endangered species and threatened species..."

The policy of Congress, according to Section 2(c)(1), is "that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of this Act."

Biological evaluations or assessments will be conducted as part of site-specific analyses for known populations of Federally listed endangered, threatened, and proposed species (FSM 2672.4). Guidelines and mitigating measures are implemented if a determination is made through a biological evaluation or assessment that a species may be affected.

If it is determined that an endangered, threatened, or proposed species may be affected by a management decision, evaluation criteria will be established in consultation with the USDI Fish and Wildlife Service as early in the process as possible. These criteria will identify: (1) what (if any) additional information is needed and (2) what mitigation measures or course of action is most appropriate for conservation of the species involved. The Forest Service is responsible for collecting additional information if needed.

Current management direction for the Hoosier is not likely to adversely affect gray bat, eastern fanshell or rough pigtoe mussel, or bald eagle (delisted in August 2007), as determined by the July 31, 2001 biological opinion from the USDI Fish and Wildlife Service - Bloomington Field Office. That Biological Opinion also concluded that continued implementation of the Forest Plan was "not likely to result in jeopardy" to the Indiana bat.

Some conservation actions may change if a species recovers and is delisted. The Conservation Plan will evolve as the Forest learns more about individual species, their limiting factors and habitat requirements, and the effects of various activities on these species. The following paragraphs provide direction in various aspects of the management of the Hoosier National Forest with regard to threatened and endangered species.

- Consult with USDI Fish and Wildlife Service to ensure that activities planned and

implemented on the Hoosier National Forest meet both the letter and intent of the Endangered Species Act, as amended.

- Cooperate with experts in other agencies, universities, organizations, and Forest Service research to identify objectives and projects that will conserve, protect, and recover populations and habitats of threatened and endangered species.
- Provide training and continuing education to Hoosier National Forest employees to ensure our workforce has the best scientific information available upon which to base decisions concerning threatened and endangered species on the Forest.
- Provide accurate and current information about the threatened and endangered species' life history requirements, habitat needs, threats to survival, and population and habitat status on the Hoosier National Forest, in Indiana, and across the species' ranges to ensure a sound basis for decision-making.
- Provide the public opportunities to learn about and appreciate threatened and endangered species so they will understand the importance of activities designed to maintain, protect, and recover these species and their habitats.
- Devise and implement a plan to guide the silvicultural management of the Forest that is based on sound principles of ecosystem management and works within the capabilities of the land to sustain natural resources, provide biodiversity, including habitat for, and populations of, threatened and endangered species.
- Acquire lands that provide habitat for threatened and endangered species through exchange with, or purchase or donation from, willing landowners.
- Ensure compliance with all laws, regulations, and policies pertaining to endangered and threatened species on the Hoosier National Forest.
- Cooperate with the USDI Fish and Wildlife Service law enforcement and other law enforcement agencies in enforcing laws and regulations pertaining to endangered and threatened species.

The Hoosier will report accomplishments that aid in the conservation of threatened and endangered species in the annual Monitoring and Evaluation Report.

Regional Forester Sensitive Species

As of October 20, 2003, the Regional Forester has designated 741 species as sensitive in the Eastern Region. This list updated the February 29, 2000 Regional Forester sensitive species lists for both animals and plants. These are plant and animal species for which population viability is recognized as a concern, as evidenced by a downward trend in population or habitat capability.

Regional Office staff maintain the Regional Forester sensitive species list, which is located on the internet site at: http://www.fs.fed.us/r9/wildlife/tes/tes_lists.htm. The current list for the Hoosier National Forest and any future updates are posted there.

In August 2007 the USDI Fish and Wildlife Service delisted the bald eagle. Forest Service directions (FSM 2670, R9RO Supplement 2600-2000-1) states that a delisted species be added to the Regional Forester sensitive species list and remain there for at least five years after delisting. Bald eagle will be added to the Regional Forester sensitive species list during the annual update.

Based on the October 2003 list, the Hoosier has 119 species as Regional Forester sensitive species. Of these species, 89 are animals and 30 are plants.

Another 8 animals and 40 plants that are sensitive species within the Eastern Region occur on the Forest. Risk evaluations for those species determined that they were not at risk or there is no concern about their continued viability on the Forest, and therefore, these 48 species are not designated as sensitive for the Hoosier.

Regional Forester sensitive species are designated and considered to be at risk, if they:

- Are candidates for listing under the Endangered Species Act;
- Have been delisted under the Endangered Species Act within the last five years;
- Have The Nature Conservancy species status ranks of G1-G3, T1-T3, N1-N3;
- Or are considered to be at risk based upon their state status ranks (S1-S3) and their respective forest risk evaluation.

Species listed as Regional Forester sensitive species must have at least one documented occurrence within the proclamation boundary of an Eastern Region national forest or grassland and be recognized as a valid species by taxonomic experts. The Regional Forester sensitive species list has been routinely and periodically maintained through a species risk evaluation process.

Direction and methods for maintaining and updating the Regional Forester sensitive species list is contained in a Region 9 supplement to the Forest Service Manual (FSM) 2670. The Forest Service Manual 2670 provides direction for sensitive species protection and management. The primary purpose of this direction is to be proactive and prevent each species from any loss of viability and ensure that any actions are not likely to cause a trend towards that species being listed as Federally endangered or threatened. In addition, it provides a basis for establishing sound management priorities for all Forest wildlife and plants.

As part of site-specific analyses, biologists will conduct biological evaluations to review and evaluate possible effects on sensitive species (FSM 2672.4). Project level analyses would identify and provide other necessary guidelines and mitigating measures not previously mentioned under Forest-wide guidance or management area guidance.

Management Indicator Species

Management Indicator Species Selection Process

The National Forest Management Act directs the Forest Service to select and track species that are of special interest or indicative of management trends. These species are called management indicator species (MIS). These MIS are selected on the basis of being likely candidates to provide information on the effects of management activities.

Forest biologists reviewed 31 species identified as MIS in the 1991 Forest Plan Amendment along with the list of proposed MIS species developed in 1994 with the following criteria in mind:

- The diversity of habitats found on the Hoosier,
- Current forest issues,
- Feasibility and cost associated with monitoring populations across the forest,
- Ability to assess the effects of management activities listed in the alternatives on the selected species as well as the effects of additional species that utilize similar habitats, and
- Recommendations of the species viability evaluation panels.

The lack of creel surveys on the forest limited the selection of fish species, and the lack of surveys covering the three terrestrial species limited their selection. Because breeding bird survey routes have already been established on the Forest and breeding bird data has been consistently collected over the last ten years, bird species were chosen as MIS. After this selection, another criterion that was reviewed was whether a bird species was included in Cornell Lab of Ornithology's "Birds in Forested Landscapes Program." Data could be collected for this program with little additional cost, and could provide data regarding the specific habitat requirements of high-priority forest birds across the landscape.

Management Indicator Species Selected

The following five species were selected as MIS to cover a range of habitats, as well as a range of response to the issues presented in the Forest Plan: yellow-breasted chat (*Icteria virens*), American woodcock (*Scolopax minor*), Louisiana waterthrush (*Seiurus motacilla*), wood thrush (*Hylocichla mustelina*), and Acadian flycatcher (*Empidonax virens*).

Yellow-breasted chat and American woodcock are MIS of early successional hardwood habitats. The effects of forest activities on these species indicate the effects on wildlife associated with early successional upland hardwood forest, open lands including old fields, and herbaceous open lands. The remaining species are associated with mature forests of varying tract sizes ranging from wood thrush on small tracts, to Louisiana waterthrush, to Acadian flycatchers which require much larger tracts of forest interior habitat. These species represent the effects on forest interior and forest fragmentation. Response to fire would vary among the species.

Table C.1 shows the management indicator species selected and the associated habitat conditions or life history traits for each.

Table C.1

MANAGEMENT INDICATOR SPECIES AND ASSOCIATED HABITAT CONDITIONS

Management Indicator Species	Habitat Conditions Associated with Species
yellow-breasted chat	<ul style="list-style-type: none"> • Early successional habitat; requires moderate to dense understory • Nests are located on lower limbs of trees or shrubs, hidden among leaves in a shady area
American woodcock	<ul style="list-style-type: none"> • Habitat requirements of woodcock vary with activity, time of day, and season. The birds prefer early successional habitats created by periodic disturbance of the forest. Therefore, young forests and abandoned farmland mixed with forested land are ideal woodcock habitat. • Woodcock use forest openings, clearcuts, fields, roads, pastures, and abandoned farmland as display areas for courtship. • Nests and broods are found in young to mixed-age forests, but young, open, second-growth stands are preferred. Nests are located on the ground. • During summer, young hardwoods and mixed woods with shrubs provide daytime cover for feeding.
Louisiana waterthrush	<ul style="list-style-type: none"> • Mature deciduous or mixed forests with moderate to sparse undergrowth, near rapid flowing streams. • Nests are located on the ground along stream banks, hidden in the underbrush, or among the roots of fallen trees.
wood thrush	<ul style="list-style-type: none"> • Inhabits the interior and edges of deciduous and mixed forests, generally in cool, moist sites. • Requires moderate to dense understory and shrub density with a lot of shade. • Nests are located on the lower limbs of a tree or shrub, usually 10 - 13 feet above ground, hidden among leaves in a shady area.
Acadian flycatcher	<ul style="list-style-type: none"> • Inhabits large tracts of mature, mesic, forests with shrubby understory. • Nests are usually placed on a fork of a horizontal branch well away from the main trunk. Height ranges from 6 – 30 feet.