

# Chapter 3

## MANAGEMENT DIRECTION

### INTRODUCTION

This is the heart of the Plan. This section contains guidance needed to help meet goals and objectives. The Forest has identified environmentally sound management practices to help achieve these goals and assured the needs of the public are met. Some guidance is applied Forest-wide, while other parts are specific to individual management areas. This guidance sets the framework for making future site-specific decisions at the project level. The management area maps in Appendix J show the location of different management areas.

### Guidance

The goals discussed in Chapter 2 necessitate different treatment in different areas of the Hoosier National Forest. Management direction provides guidance for managing resources and uses on NFS lands.

Guidance is the direction governing how and where management activities can take place. The guidance includes both standards and guidelines as prescribed by the implementing regulations for the National Forest Management Act (36 CFR 219.11[c]).

We present guidance in two sections. The first section is Forest-wide guidance, applicable to all but specifically noted exceptions. The second section presents guidance for specific management areas, but does not repeat Forest-wide guidance. It further refines Forest-wide guidance by providing additional considerations, restrictions, activities, and direction that are to be applied to meet the specific objectives of each management area. Consult both sections before determining which management activities are appropriate in a management area.

We incorporate by reference the direction and guidance from Forest Service manuals and handbooks. The plan is designed to supplement, not replace, direction from laws and regulations.

This document identifies management areas, outlines activities compatible in each one, and provides guidance toward designing projects. Final decisions, however, will be based on project implementation and additional site-specific analysis.

Standards and guidelines are the specific technical direction for managing resources on the ground. They provide another link in moving toward the desired condition.

Only measures that are specific to the Hoosier are included in the standards and guidelines. Laws, regulations, and policies that apply to the entire National Forest System are not reiterated in the standards and guidelines. In addition, desired conditions and objectives that have a prescriptive component are not reiterated in the standards and guidelines.

Guidance includes standards and guidelines.

- \* **Standards** are shown with an asterisk. These must be implemented to achieve Forest goals and objectives. Deviation from a standard requires an amendment to the Forest Plan.

**Guidelines** (shown without an asterisk) should be implemented in most cases to achieve the goals and objectives. Deviation from a guideline does not require a Forest Plan amendment, but the rationale must be disclosed in the project decision documents. In some cases a guideline grants permission.

## Forest-wide Guidance

### Conservation of Threatened and Endangered Species Habitat

Refer to Appendix C for more information on threatened and endangered species on the Forest.

- \* Evaluate lands affected by Federal land adjustment activities and evaluate management activities to avoid or minimize effects on Federally designated threatened and endangered species habitat.
- \* Identify lands with known threatened or endangered species habitat as a top priority for acquisition.

Determine and implement management activities that will maintain and improve habitat features for threatened and endangered species.

Locate new activities away from areas that might negatively impact any threatened or endangered species.

#### Indiana Bat

##### Management of Hibernacula

- \* Establish a zone with a one-quarter mile radius around each known hibernacula of Indiana bats on the Forest. This zone may be irregular in shape to take into account likely flight paths, foraging habitat, and areas where Indiana bats are likely to swarm. Prohibit new construction activities within this zone.

- \* Considering both public and private ownerships, maintain or promote at least 70 percent forest canopy cover within a one mile radius of known hibernacula of Indiana bats. Timber harvest should be conducted within this zone only during hibernation and is restricted to single-tree and group selection.
- \* Implement prescribed fire within a five mile zone around hibernacula only when bats are unlikely to be swarming or staging. Burns should be conducted under conditions that will reduce or eliminate smoke dispersing into hibernacula.
- \* Develop management goals and directives (conservation plan) for each known hibernaculum at micro-topographical level, taking into consideration current conditions and future restraints and/or challenges. A five mile radius should be included from the entrance of the known hibernacula.

#### Management of Roosting Habitat

- \* Maintain a component of large, mature trees in harvest areas, retaining at least three live trees per acre greater than 20 inches diameter at breast height (DBH) of these preferred species (leave trees will be located along edges of the harvest area or in clumps to maximize their benefit to bats):
  - silver maple (*Acer saccharinum*)
  - bitternut hickory (*Carya cordiformis*)
  - shellbark hickory (*Carya laciniosa*)
  - shagbark hickory (*Carya ovata*)
  - white ash (*Fraxinus americana*)
  - green ash (*Fraxinus pennsylvanica*)
  - eastern cottonwood (*Populus deltoides*)
  - white oak (*Quercus alba*)
  - northern red oak (*Quercus rubra*)
  - post oak (*Quercus stellata*)
  - black locust (*Robinia pseudoacacia*)
  - American elm (*Ulmus americana*)
  - slippery elm (*Ulmus rubra*)
- \* If a stand possesses no trees greater than 20 inches DBH, leave 16 live trees per acre (leave trees will be located along edges of the harvest area or in clumps to maximize their benefit to bats) of these preferred species remaining in the stand.
- \* Shellbark hickory or shagbark hickory trees will not be harvested or killed for the purpose of timber stand improvement, unless the density of trees of these two species combined exceeds 16 trees per acre. If present, at least 16 live shagbark and shellbark hickory trees (combined) greater than 11 inches DBH must be maintained per acre.
- \* Firewood cutting permits must clearly state that standing dead trees may not be taken unless specific trees are identified in the permit by the Forest Service. When approved for removal, standing dead trees would be designated by Forest Service personnel and described in the firewood cutting permit.

- \* When demolition of abandoned buildings is considered, inspect buildings as necessary to confirm the presence or absence of maternal roosts prior to initiating operations. Delay operations until bats have departed buildings used as maternal roosts and provide suitable roost replacement.
- \* Any hazard tree that has characteristics of a potential maternal roost tree (splintered bole that provides crevices, evidence of decay so that either their bark is exfoliating, it possesses cavities, or dead portions of the tree have been used, excavated, or occupied by species such as woodpeckers or other cavity nesting birds and, most importantly, exposure of the roost to sunlight) will not be removed until consultation with a Forest Service biologist has been completed. An exception is, trees may be cut that are an immediate safety danger to an individual.
- \* Consultation will occur with the USFWS any time a hazard tree is identified as being used by bats.

All personnel tasked with the removal of hazard trees will attend training with a biologist to learn how to identify potential maternal roost trees.

When even-aged management is conducted, leave trees will be left along the edges of clearcuts or in large clumps (1/10th acre) to maximize their benefit to bats.

Retain dead and dying trees that have characteristics for potential maternal roost trees (leave trees) unless they are safety hazards. Characteristics for leave trees include evidence of decay so that either their bark is exfoliating, they possess cavities, or dead portions of the tree have been used, excavated, or occupied by species such as woodpeckers or other cavity nesting birds and, most importantly, exposure of the roost to sunlight. In addition, retain any tree that has a splintered bole providing crevices that can be used as roosts by eastern forest bats.

When possible, delay removal of hazard trees until bats are likely to occupy hibernacula, between September 15 and April 15.

If potential primary roosts are located during single-tree and group selection harvest planning, design harvests to create gaps that border these trees so as to improve their suitability as roosts.

When there are not at least three standing dead trees greater than 11 inches DBH per acre during single-tree or group selection harvest, consider girdling live trees.

In the event that an occupied primary roost is located on NFS land, designate a zone extending in a radius of 300 feet from the roost. Prohibit land management activities within this zone during the breeding season (April 15 – September 15).

Restrict prescribed burning within a radius of one mile from occupied roosts during the breeding season.

### Management of Foraging Habitat

- \* When conducting uneven-aged hardwood timber harvests or conducting hardwood timber stand improvements, maintain at least 60 percent canopy cover on a stand-by-stand basis. Design boundaries of timber harvest areas to be irregular in shape so as to enhance foraging by bats.

### Management of Water Sources

When conditions allow and need is determined, create shallow water extensions of existing waterholes and ponds to enhance insect diversity and abundance for foraging bats.

## **Gray Bat**

- \* When caves are found to contain gray bats, coordinate with the USDI Fish and Wildlife Service and other appropriate groups or agencies to determine if access to caves needs to be restricted.
- \* Establish a zone with a one-quarter mile radius around each known hibernacula of gray bat on the Forest. This zone may be irregular in shape to take into account likely flight paths, foraging habitat, and areas where gray bats are likely to swarm. Prohibit new construction activities within this zone.
- \* Considering both public and private ownerships, maintain or promote at least 70 percent forest canopy cover within a one mile radius of known hibernacula of gray bats. Timber harvest should be restricted to single-tree and group selection within this zone. Implement vegetation management to maintain or improve bat habitat for staging, swarming, roosting, or foraging. Implement prescribed fire within this zone only when bats are unlikely to be swarming, hibernating, or staging.

## **Fanshell**

- \* Prohibit any activity that might negatively affect the known but limited population in the East Fork of the White River, or any population located in the future.
- \* Prohibit the application of pesticides within the riparian corridors of the sixth level watersheds of the East Fork White River where the species has known occurrences. Currently, known sites in sixth level watersheds that contain some parcels of NFS lands are the E. Fork White River – Henshaw Bend and the E. Fork White River – Poplar/Willow Creeks.

## **Rough Pigtoe**

- \* Prohibit any activity that might negatively affect recovery of the rough pigtoe in the East Fork of the White River or any population located in the future.

- \* Prohibit the application of pesticides within the riparian corridors of the sixth level watersheds of the East Fork White River where the species has known occurrences. Currently, known sites in sixth level watersheds that contain some parcels of NFS lands are the E. Fork White River – Henshaw Bend and the E. Fork White River – Poplar/Willow Creeks.

## Maintain and Restore Sustainable Ecosystems

### Manage Vegetation to Provide Diverse Ecosystems

- \* Prohibit adverse modifications to the landscape within 660 feet of known active osprey nests and heron rookeries. Seasonally restrict management activities within ¼ mile of known osprey nests and heron rookeries to avoid disturbance during nest building, egg laying, incubation, and fledgling stages.

Design projects in a manner that ensures management activities would not adversely affect habitat of sensitive species, unless there is a higher priority concern, such as habitat for threatened and endangered species.

Avoid planting, seeding, or introducing nonnative species.

Consider planting mixed species where suitable to reduce insect and disease damage, increase visual variety, and add habitat diversity.

Where possible, restore native ecosystems.

Retain where appropriate large diameter trees and mature or over-mature stands around ponds, lakes, wetlands, and stream shorelines.

Wherever appropriate, manage cliff faces, springs, caves, barrens, and glades as special habitats to protect or enhance physical, historical, and ecological characteristics.

Leave downed logs, limbs, and other scattered ground materials resulting from vegetative management or natural causes on the site where appropriate.

Use sanitation and salvage harvests to remove dead, dying, diseased, or potentially affected trees except in Management Areas 5.1 and 8.1.

Skid roads should be designated by Forest Service personnel and should not exceed a gradient of 35 percent.

Where applicable, clearcutting may only be used where it has been found to be the optimum method of regeneration to meet multiple-use objectives and is essential to meet forest plan objectives, involving one or more of the following circumstances:

- To establish, enhance, or maintain habitat for threatened, endangered, or sensitive species.
- To enhance wildlife habitat or water yield values or to provide for recreation, scenic vistas, utility lines, road corridors, facility sites, reservoirs, or similar development.
- To rehabilitate lands adversely impacted by events such as fire, windstorms, or insect or disease infestations.

- To preclude or minimize the occurrence of potentially adverse impacts or disease infestations, windthrow, or other factors affecting forest health. To provide for the establishment and growth of desired trees or other vegetative species that are shade intolerant.
- To rehabilitate poorly stocked stands due to past management practices or natural events.

Accomplish regeneration primarily through natural means. Planting or seeding may be used if adequate stocking, desired species composition, or acceptable genetic quality cannot otherwise be achieved. Refer to Appendix B for minimum stocking standards following timber harvest for even-aged management and uneven-aged management using group selection.

As needed, use salvage to reduce hazardous fuels from disturbances such as storm events, fires, and insect or disease infestations.

Consider the experience of trail users when conducting activities near and along trails.

### **Regional Forester Sensitive Species**

- \* Aerial flights associated with national forest projects will not be permitted within ¼ mile horizontal distance and 500 feet vertical distance of any known active bald eagle nest.

When vegetation management is planned within one mile of a body of water greater than 40 acres, the Indiana Department of Natural Resources, Division of Fish and Wildlife will be consulted about protection of potential bald eagle nesting, roosting, and feeding areas.

Human entry within ¼ mile horizontal distance of an active bald eagle nest during courtship, nest building, incubation, or brooding periods will be discouraged.

- \* Prohibit adverse modifications to the landscape within 660 feet of known nests of sensitive raptor species. Seasonally restrict management activities within ¼ mile of known sensitive raptor species nests to avoid disturbance during nest building, egg laying, incubation, and fledgling stages.
- \* Prohibit timber harvests within a distance of 100 feet from the top and base of large cliffs or overhangs (see Appendix A, Glossary) except for the salvage of dead and dying trees, or sanitation harvest. Trees harvested outside but near this zone would require directional felling away from the cliff area. These rock outcrop habitats are not limited to solid cliffs and may include discontinuous rock faces (i.e. fractured cliffs, discontinuous large blocks).
- \* Prohibit planting of exotic or nonnative invasive plants within or near barrens, glades, and other sensitive plant communities.

When evaluating the need for harvest within 50 feet of a perennial or intermittent stream, consider the presence of sensitive species and potential effects.

In areas potentially affected by land exchange, surface-disturbing activities or vegetation management, assess the need for and, as needed, conduct surveys or inventories for Regional Forester sensitive species.

Maintain or enhance barrens or glades habitat. Removal of woody vegetation by burning, cutting, or mowing may be desirable to maintain or enhance these areas.

Avoid soil-disturbing activities in barrens or glades unless required to meet management objectives (i.e. provide for management access, put in fire lines for prescribed burns, or remove tall fescue or other nonnative invasive plants).

Identify other areas that are not barrens or glades, that harbor botanical Regional Forester sensitive species requiring full sun.

### **Nest Boxes and Other Structures**

For conservation and educational purposes, supplement natural cavities with nest boxes for cavity-nesting mammals and birds. Use nesting platforms or other structures as appropriate.

### **Forest Openings**

Whenever possible, create and maintain larger openings or opening complexes to provide habitat for species that are area sensitive.

Generally manage forest openings to provide early successional habitat to benefit wildlife species, provide habitat for native plant communities, add visual variety, and provide for recreation opportunities. Manage the edges of most forest openings as shrubby edge or thickets. Develop and maintain other areas, or portions of shrubby areas, in native forbs and grasses.

Where possible, improve wildlife forage and native plant diversity on transmission lines and pipeline right-of-ways.

Where conditions allow, locate openings away from heavily traveled roadways.

Consider public access and recreation when establishing openings.

Mow openings from August to October when possible to minimize disturbance to nesting birds while maintaining some herbaceous food and cover over winter.

Restore native plant communities and replace exotic pasture grasses and other nonnative plants wherever possible.

Retain standing dead trees in created openings as needed, in conjunction with opening development and maintenance.

## Caves and Other Karst Features

- \* Prohibit timber harvesting and prescribed burning within 200 feet of cave entrances, direct drainage inputs, such as sinkholes and swallow holes, and any streams flowing into a known cave, except for research purposes.
- \* Do not discharge drilling muds into a karst hydrologic system.
- \* Do not conduct surface disturbing activities on any slopes steeper than 30 percent adjacent to cave entrances without use of mitigation measures.
- \* Do not promote caves as available for general public use unless the Forest develops adequate protection measures to control and manage this use and can clearly establish that no substantial risk, harm, or vandalism of the cave would occur.
- \* Do not conduct seismic surveys within 200 feet of known cave passages or conduits.
- \* Location of caves on NFS lands will not be disclosed.
- \* Cave management will be integrated into general land management practices to protect cave resources from subterranean and surface impacts.
- \* Inventory and evaluate caves in accordance with the Federal Cave Resources Protection Act, Forest Service Manual direction, and Memorandum of Understandings with other organizations.
- \* All caves and karst features shall be excluded from leasing and mineral activities and no drilling will occur within the boundaries of any cave. Boundaries are defined as the area within the known cave plus a buffer zone of 200 feet around the cave.

Cease drilling operations and notify the authorized officer when anyone encounters previously undiscovered voids (more than 12 inches) within 300 feet of the surface.

Do not allow sediment from access roads and other activities to wash into caves or karst features.

Examine and inventory to the extent possible each cave and karst feature. Prepare management prescriptions and plans describing considerations and criteria for protection of cave resources whenever feasible.

Where practical and beneficial, restore cave and karst hydrologic systems choked with debris from non-natural causes or sediment.

Take corrective action if damage to karst or other resources exists and is likely to continue.

Whenever possible, remove non natural debris from sinkholes to improve water quality entering directly into karst systems.

Gating of cave entrances will only be considered as a last resort on a case-by-case basis for safety, and after evidence demonstrates this to be the only option to protect cave species and other resources.

Under normal circumstances, do not place signs with cave names or other information that would reveal cave locations outside of caves. Small signs or registers inside caves (20 to 100 feet) that discuss cave conservation or safety are acceptable.

The Forest will be careful not to promote or dissuade the recreational use of caves; unless it becomes necessary to control access to protect cave resources.

Information on caving basics, ethics and safety, and locations of broad regions of karst topography may be provided. Information about a particular cave may be exchanged with individuals who demonstrate a pre-existing personal knowledge of a cave's location, extent, and layout.

## **Aquatic Habitat and Species Management**

Manage vegetation canopies in and along streams and other aquatic habitats to maintain appropriate water temperatures and chemistry for fish and other aquatic species.

Incorporate habitat needs of animal and plant communities associated with wetlands into wetland design (islands, peninsulas, and standing live and dead trees). Consider the habitat needs of waterfowl, aquatic flora and other wildlife.

As opportunities arise, restore or enhance fisheries habitat in lakes, ponds, and streams by introducing large woody debris and maintaining or improving streambank and shoreline stability. Trees should be removed from dams of maintained lakes and ponds.

Avoid blocking fish passage in streams.

Consider improvement and enhancement of aquatic habitats in all management activities associated with lakes. Incorporate consideration of habitat needs of animals attracted to lakes into lake design including islands, peninsulas, and standing live and dead trees. Determine the type of access and boat and motor restrictions on lakes on an individual basis.

Maintain or enhance the habitat quality of waterholes as necessary.

Where other objectives do not conflict, reduce aquatic vegetation to 20 to 30 percent coverage on lakes and ponds for the purpose of fisheries.

Maintain, enhance, or create ephemeral wetlands where feasible to provide breeding sites for reptiles and amphibians, as well as to provide drinking sites for bats.

### **Special Areas and Research Natural Areas**

Consider nominating newly acquired land as Special Areas if those areas have significant natural characteristics or represent relatively undisturbed examples of important forest ecosystems.

### **Pest and Nonnative Invasive Species Management**

- \* Evaluate pest and nonnative invasive species problems and use integrated pest management to control them, as needed. This includes manual, mechanical, chemical, and biological control methods.
- \* When applying pesticides, identify measures required to reduce off-site movement, drift potential, and adverse effects on threatened and endangered species and their habitat, sensitive species and their habitat, human and wildlife health, non-target vegetation, water quality, and any other relevant environmental elements.
- \* Pesticides will only be applied in accordance with State regulations.
- \* Include appropriate clauses for the prevention or treatment of nonnative invasive species in Forest contracts and permits.

For projects having moderate to high risk of introducing or spreading nonnative invasive plants, incorporate nonnative invasive species assessments in project planning and include nonnative invasive species prevention and treatment methods in project development, analysis, and implementation.

Generally prioritize nonnative invasive species management as follows:

1. Prevention of new infestations
2. Early detection and treatment of new infestations
3. Treatment of sites with the greatest potential for spreading such as trailheads, boat ramps, parking lots, recreation areas, and administrative sites
4. Protection of known endangered, threatened, and sensitive plant and animal sites susceptible to harm from invasive species
5. Protection of Forest special areas and Research Natural Area
6. Containment and control of established infestations

### **Fire and Fuels Management**

- \* Suppress all wildfires on NFS land.

Whenever possible maintain or restore ecosystems to a pre-fire suppression condition.

Consider prescribed fire, mechanical treatment, and isolation in addition to timber sales and other utilization options as tools for fuel treatment after natural disturbance events.

Use prescribed fire to accomplish silvicultural objectives such as oak regeneration.

Where possible, use natural or existing man made barriers for fire control and as boundaries on prescribed fire.

When using prescribed fire in riparian areas, use backing fires when possible and avoid lighting directly in the riparian area.

Avoid using tilled fire lines in riparian corridors.

## Maintain and Restore Watershed Health

### Soil and Water Conservation

- \* Stabilize areas disturbed by management activities as soon as practical, or at least within the same growing season.
- \* Improve or maintain water quality by designing and maintaining roads in accordance with Appendix G.
- \* Reduce compaction and rutting by prohibiting heavy equipment use when the soils are in a saturated condition, thereby reducing surface runoff, soil erosion, and loss of soil nutrients.

With exceptions such as emergency release of water, manage flows from dams and impoundments so that downstream aquatic habitats, reservoir habitats, and aquatic species are minimally impacted.

Permission to remove sand, gravel, or other materials from streams will be considered on a case-by-case basis, and may include, but is not limited to these activities:

- Excavation of deep holes in stream channels to improve fisheries or other wildlife habitat
- Incidental excavation operations for culverts, bridges, fords, dams, trails, or other new or existing facilities.
- Restoration to a more natural or stable stream channel that has been filled by sediment from other land-disturbing activities.
- Removal of materials from sediment basins that have been installed to trap sediment from some upstream activity.

Give priority to stabilizing areas discharging soil into watercourses, especially those that affect the watershed of municipal or recreational reservoirs.

Water bodies may be created if there are adequate watersheds and soil conditions are conducive to construction of water-holding structures.

Maintain functioning wetlands and streams, and restore or enhance wetlands and streams in areas with historical hydrology or appropriate soil characteristics (floodplain characteristics).

Guide soil protection and management for all activities according to site capabilities as identified by interpretation of soil and other ecological site factors.

Prohibit log skidding and heavy equipment within streambeds.

Construct and maintain waterbars on skid trails to slow surface runoff before it creates channels and gullies or moves excessive amounts of sediment into streams.

Soil disturbing operations that extend over a number of operating seasons may require mulching of exposed areas to reduce surface erosion.

Designate log landings on site by Forest Service personnel. Locate landings on upland, well-drained, nearly level sites to minimize surface runoff and soil erosion.

When operations are complete, prepare landings to provide favorable site conditions for seed germination. The landings should be seeded with approved Forest Service seed mixtures and mulched to prevent erosion until vegetation becomes reestablished on the site. These actions should be taken as soon as practical after disturbance.

Logging or site preparation equipment should avoid plastic soils (soils that can be molded or shaped like clay) when the water table is within 12 inches of the surface or when soil moisture exceeds the plastic limit. Soil moisture exceeds the plastic limit if the soil can be rolled to pencil size (approximately ¼ -inch diameter and 6 inches long) without breaking or crumbling.

Resource management activities that may affect soil or water quality must follow Logging and Forestry BMP's for Water Quality in Indiana (IDNR 1998), or most recent version, as a minimum to achieve soil and water quality objectives. When Forest Plan standards exceed Indiana BMPs or water quality standards, Forest Plan standards take precedence.

Where topsoil is less than one inch thick or where organic matter is less than 2 percent, retain logging slash in place (perform limbing at the stump).

Designate the location of roads, trails, main skid trails, and similar features that disturb soils. Stabilize disturbed sites during use and revegetate after use to control erosion.

Utilize the "Indiana Handbook for Erosion Control in Developing Areas" (IDNR 1992) as well as "Best Management Practices for Erosion and Sedimentation Control" (USDOT 1995) for guidance on limiting sedimentation.

In disturbed areas, generally stockpile topsoil and return it to the site.

Restoring natural wetlands will be the highest priority to maintain and restore watershed health.

## **Riparian Corridors**

This guidance is applicable to the entire riparian corridor, which includes the riparian area and a portion of the terrestrial ecosystem along a stream channel. Appendix I further describes the riparian corridor.

Riparian corridors are not excluded from management activities. These are zones where the application of mitigation measures and forethought must be applied to ensure water quality and riparian values are protected.

Protect, enhance, or restore natural water flows when feasible.

Riparian corridors will consist of the riparian area and the adjacent terrestrial ecosystem for a combined 25 to 100-foot corridor depending on the type of stream. Permanent water bodies and perennial streams will consist of a 100-foot riparian corridor. This can be adjusted based on site specific analysis.

Intermittent streams will have a minimum 50 foot corridor from each stream bank and ephemeral streams will have a 25 foot minimum riparian corridor.

Waterholes or small ponds up to 0.5 acre with adjacent slopes no more than 5 percent should have a 25 foot riparian corridor. If adjacent slopes are steeper, wider corridors may be needed.

In general, roads and trails will not be constructed in riparian corridors unless no practical alternatives exist. Road and trail approaches to streams will be located to minimize erosion and sediment introduction to the stream.

Roads and trails will generally cross channels at right angles. Channel crossings will be accomplished using bridges, culverts, fords, or other appropriate crossing structures according to site specific conditions. Remove unnecessary crossings when a road or trail is decommissioned.

Limit heavy equipment crossings in riparian corridors.

Minimize cuts and placement of fills while building new roads in wetlands and riparian corridors in accordance with safety and other engineering road design criteria. Provide sufficient drainage to ensure that the absorption capacity of the riparian corridor is not exceeded.

Reconstruction and stabilization of existing roads, trails, and other facilities within riparian corridors is permitted.

Design and maintain roads and trails in riparian corridors to sustain natural hydrologic patterns and allow for passage of aquatic species. Install appropriate drainage and crossing structures for all new roads and trails to prevent sedimentation.

Road and trail surfaces within riparian corridors should be stabilized with aggregate or other suitable material. Normally, the Hoosier will maintain four inches of gravel surfacing on roads in riparian corridors while they are open to vehicular traffic.

Management within riparian areas will include the maintenance of shade suitable for aquatic organisms over the stream corridor, minimize soil disturbance, and promote mesic native species along perennial, intermittent, and some ephemeral streams dependent on site-specific aquatic resources.

Keep slash out of water bodies, stream channels, floodplains, and areas where it may be swept into streams, rivers, and water bodies except to meet other habitat objectives.

Soil-disturbing activities of approved practices within designated riparian corridors will require effective erosion control. Implement, as needed, erosion control measures such as straw bales in ditch lines and small drainages, berms in road embankments during construction, diversion ditches, slash and unmerchantable logs across slopes and trails, check dams in ditch lines, sediment detention basins, and sediment fences.

Preserve the integrity of stream channels, maintain the beneficial values of floodplains and wetlands, and protect the interest of the public when structures and facilities are constructed or rehabilitated.

Forest openings may be developed and maintained within riparian corridors.

Permit emergency construction of fire lines or other earth disturbing measures within riparian corridors, but these disturbed areas will be stabilized as soon as possible.

## Protect Our Cultural Heritage

- \* Inventory affected lands prior to conducting ground-disturbing projects. This includes, but is not limited to, such activities as prescribed burns, vegetation management, and proposed land exchanges.
- \* If heritage resources are discovered during project implementation, cease all activity in the vicinity until an archaeologist has made an on-site assessment.
- \* Conduct inventories in non-project areas to locate and identify all significant heritage resources managed by the Forest.
- \* Complete all heritage resource investigations with archaeologists, archaeological technicians, or paraprofessional archaeological technicians. Volunteers may assist if under the supervision of an archaeologist.
- \* Evaluate sites for significance and potential listing to the National Register of Historic Places (NRHP). Nominate significant sites to the NRHP.
- \* Consider sites that have not been formally evaluated as potentially eligible to the NRHP and protect them. Sites not eligible to the NRHP do not require protection but may have interpretive potential. Protect all unevaluated, eligible, and listed sites from ground-disturbing activities. Implement protective measures, including avoidance buffers and site condition monitoring, as recommended during site-specific project development and analysis. If a project cannot be redesigned and would adversely affect a NRHP-eligible heritage resource, the heritage resource staff will develop and implement a mitigation plan to minimize the affects. Develop the plan in consultation with the State Historic Preservation Office (SHPO).
- \* Periodically assess the nature and degree of damage to heritage resources due to vandalism, visitor use, and natural deterioration. Identify and implement protective measures.
- \* Do not disclose heritage site locations without the approval of the Forest Supervisor.
- \* Appropriately curate heritage resource collections. All archaeological and historic materials recovered from NFS lands are the property of the Federal government.

Design activities to avoid damage to heritage resources.

Conduct stabilization, rehabilitation, and restoration activities when appropriate.

Use accurate and up-to-date site and survey information with a graphic and tabular data base to efficiently and effectively manage the resources.

To the extent possible, offer and maintain an array of heritage interpretive opportunities and experiences including on-site signs, trails, presentations, tours, exhibits, volunteer

projects, special events, heritage tourism, and internet web pages. The Forest may develop an interpretive plan to identify specific opportunities and coordinate a systematic approach.

Develop a strategy to systematically evaluate all sites on the Forest through use of thematic evaluations or other applicable models or strategies.

Prefer in-situ (in-place) management as the method for the preservation of human remains and associated grave goods, regardless of age or ethnicity. Treat human remains with dignity and respect.

## **Provide for a Visually Pleasing Landscape**

Meet the visual quality objectives (VQO) indicated on the VQO map in Appendix J where not overridden by management area guidance.

Consult Handbook Number 462, National Forest Landscape Management, Volume 2, Chapter 1 where not overridden by the VQO map in Appendix J.

Rehabilitate the visual aspects of most projects as soon as possible.

## **Provide for Recreation Use in Harmony with Natural Communities**

- \* Camping is permitted anywhere unless restricted by Forest Order or other regulation.
- \* Prohibit public off-highway vehicle use in excess of 120 feet from the edge of roads identified on the Hoosier National Forest Motor Vehicle Use Map (MVUM). Motorized access applies to State licensed vehicles, not including all-terrain vehicles, utility terrain vehicles, or scooters, and is restricted to ingress and egress.

Prohibit paintball activity in Management Areas 5.1, 7.1, and 8.1 or where otherwise prohibited by regulation. Paintball guns are considered firearms and all applicable firearm regulations apply. Substances used in the paintballs and other devices must be water soluble and biodegradable.

Limit administrative use of off-highway vehicles to activities such as: trail or recreation site maintenance and construction, search and rescue, law enforcement, fire fighting, prescribed fire, permit administration, and maintenance of managed forest communities. Permit use of off-highway vehicles in activities such as contracts, volunteer and cooperative agreements, and special use permits only when specifically authorized by a line officer.

When possible, design roads, trails, and other facilities to enhance recreational experiences. Consider public health and safety, accessibility, and environmental quality as integral parts of recreation facility design and management.

Design or reconstruct roads open to the public to increase recreational opportunities by providing features such as parking, turnouts, overlooks, and points of interest.

### **Trails**

- \* Design trails to meet the standard of the highest impact user.
- \* Allow foot travel on any trail as well as off trails, unless otherwise prohibited.
- \* Allow horses, and other pack stock, on trails designated as open to horse use and on roads open to public vehicle travel, unless prohibited.
- \* Allow mountain bicycles on trails designated as open to mountain bicycle use, and on roads open to public vehicle travel, unless prohibited.
- \* Camping is not permitted at or within 300 feet of a designated trailhead, unless located in a campground or otherwise permitted.

Provide single and multiple-use trails.

Harden trails with appropriate material if conditions dictate. Motorized earth moving equipment may be used for trail maintenance.

Designate trails as system trails or special use permit trails.

Maintain a Forest-wide trail plan.

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## **Provide a Useable Landbase**

### **Land Ownership and Adjustment**

Give high priority to land adjustments through purchase or exchange, that consolidate forest ownership, provide access to existing NFS land and water, and protect or enhance threatened and endangered species habitat or other special areas.

Give high priority to obtaining lands to protect significant cultural sites; acquire or retain areas with caves or outstanding examples of karst features; permit protection, development, and management of wetlands, lakes, and ponds or recreation facilities; and protect water quality (See Appendix E).

Satisfy one or more of the following purposes when implementing land adjustments:

- Accomplish objectives of Federal law or regulation
- Meet demand for national forest resources, including recognized special areas
- Result in more efficient land ownership patterns
- Result in lower resource management costs

Land adjustments, such as purchases, exchanges, or donations, should assume the land allocation of the surrounding area, unless circumstances warrant placement into Management Area 9.2 for study as a special area or nomination of a research natural area.

Avoid encumbering land available for exchange with land uses that compromise land exchange opportunities.

Do not acquire land by condemnation except in extreme cases to acquire right-of-ways or clear title, if all other reasonable efforts fail. Land acquisition program deals with willing sellers and exchange proponents.

Consider acquiring subsurface rights under NFS land when the rights and funding are available.

Whenever possible, landlines will be located and marked to standard.

### **Transportation System**

Maintain effective closures (to public motorized vehicles) on Maintenance Level 1 (See Appendix A, Glossary) roads. Closure devices should be visually compatible with the surrounding area.

Decommission unneeded roads when possible.

Follow guidelines in Appendix G for Hoosier National Forest road design.

## **Access Rights**

Consider on an individual basis requests for easements or special-use permits for new or improved road access across NFS land by State or local units of government, private landowners, or other interests.

Consider requests for access to other ownerships across NFS land when no other reasonable access exists. Consider alternative access, management area objectives, and public input when evaluating access requests.

## **Public Parking**

Parking lots may be provided.

Avoid locating new parking sites and access points within sight distance of springs, seeps, and mineral licks to minimize disruptions to wildlife.

## **Provide for Human and Community Development**

### **Special Uses and Utility Corridors**

- \* Do not allow sanitary landfills on or beneath NFS lands.

Wherever possible, combine utility right-of-ways across NFS land into shared right-of-ways or corridors to reduce total forest impacts.

Consider visual qualities in the design of permitted activities and, where feasible, bury all new utility lines.

Approval of applications for distribution systems crossing NFS lands (such as utility right-of-ways serving individual residences) will be determined on a case-by-case basis.

Evaluate applications on an individual basis for other special uses involving NFS lands, including but not limited to wind, solar, and hydro power generation sites and communication towers.

Where possible, manage lands under special-use permits for overall plant and animal diversity and enhancement of native communities.

Base qualification for a special use permit trail on a case-by-case evaluation of ability to meet Forest Service criteria established in the Trail Plan.

### **Minerals and Geology**

- \* Allow for the exploration and development of gypsum in Martin and Orange counties.
- \* Prohibit surface disturbing mineral development (including oil and gas) when the Federal government owns the subsurface rights.
- \* When the minerals are owned by other parties, require reclamation plans for all proposed surface-disturbing activities on Federal lands. The affected lands must be reclaimed to their natural state using the best scientific knowledge and principles available.

Any proposal to lease minerals from the Federal government, with no surface occupancy, would require consultation with USDI Fish and Wildlife Service during environmental analysis or prior to leasing. Such consultation will occur on a project by project basis.

Allow for mineral exploration that does not disturb the land surface.

Do not preclude the ability of private mineral owners to exercise their outstanding or reserved mineral rights as defined by deed and public law.

Recreational gold panning may be allowed except in the Charles C. Deam Wilderness or within 200 feet of caves. Gold panning is restricted to active stream beds or unvegetated gravel bars. Digging in stream banks is not allowed and no more than two cubic yards of material may be moved within the site. Commercial ventures are not allowed and tools are limited to hand tools such as a shovel and a gold pan.

Recreational mineral collection may be allowed except in the Charles C. Deam Wilderness or caves. Only negligible surface disturbance is allowed for recreational mineral collection. Tools are limited to rock hammers, garden trowels, or shovels.

## **Buildings and Structures**

Ensure that building design and appearance are compatible with the forest environment.

Provide communication sites to support resource management objectives. Some commercial use may be provided if space is available and the commercial use would not conflict with Forest equipment or frequencies.

Consider adaptive re-use of historic structures in lieu of constructing new ones.

## **Public Health**

Emphasize and promote “pack-it-in, pack-it-out” methods of disposal and the Leave No Trace ethic.

Provide educational materials at offices and trailheads to aid the public in awareness and avoidance techniques for health risks such as tick borne diseases and poison ivy.

## Management Area Guidance

Management area maps in Appendix J show the locations of each of the ten management areas. Also included in Appendix J are maps of visual quality objectives and recreation opportunity spectrum classifications for each area of the Forest.

### Management Area 2.4

#### Desired Condition of Management Area

This management area protects and enhances water-based recreation opportunities, visual quality, and riparian values. This management area is associated with canoeable and fishable streams, rivers, lakes, and reservoirs. Maintain riparian corridors to protect, enhance, or restore channel stability, water flow, and habitat quality. The desired condition includes forested shorelines or corridors up to 1 mile or more in width, with an unbroken canopy in large-diameter trees of a variety of species. Human activities are evident but do not dominate the landscape. There is frequent interaction among visitors.

This management area generally features natural succession. Habitat is best suited to plants and animals of closed-canopied, hardwood forests with large trees, including bottomland species. A variety of tree species are present, including mixed bottomland hardwoods along rivers, streams, and lakes. Limited vegetation management is appropriate to create and improve habitat for wildlife and plant species within riparian corridors. Limited vegetation management includes maintenance of forest openings, wildlife habitat improvement for riparian dependent species, prescribed fire, or salvage and sanitation harvest when it is compatible with overall objectives.

Emphasize water based recreation opportunities such as canoeing, boating, fishing, waterfowl hunting, trapping, and nature watching. Viewing scenery, hunting, trapping, fishing, canoeing, boating, and trail use are key recreation activities. The Forest is generally accessible by canoe (on canoeable streams or lakes), foot travel, and vehicles on State and county roads.

The visual character of these areas emphasizes long corridors of big trees along rivers. In backwater areas of lakes and rivers, the areas have a big-tree character of bottomland hardwoods and riparian vegetation.

The Forest has portions of two U.S. Army Corps of Engineers reservoir shorelines included in the boundaries of this management area -- Monroe and Patoka.

Private lands in Management Area 2.4 are a high priority for acquisition on a "willing seller" basis as funds are available, or through the land exchange program.

#### Desired Condition for Eligible Wild and Scenic River Areas:

The Lost River and Little Blue River have been determined eligible for Wild and Scenic Rivers. This description applies to Federal lands within each river's corridor, and is designed to protect the potential classification and outstanding values of each river during this planning period.

The Lost River and Little Blue River will be protected from activities that could diminish or change the free-flowing character, water quality and recreational, scenic, heritage, wildlife, and other values.

## Guidance

### *Maintain and Restore Sustainable Ecosystems*

Allow limited management of vegetative communities to maintain suitable early successional habitat for wildlife.

Maintain some existing forest openings that have value for wildlife, vegetation, or recreation and are adjacent to roads or have administrative access.

As needed, conduct activities to reduce the spread and potential of insect and disease infestations.

### *Maintain and Restore Watershed Health*

Avoid vegetation management or removal of trees on banks or in associated riparian areas except as necessary to manage threatened, endangered, sensitive, and management indicator species, restore natural wetlands, stabilize banks, develop and maintain access sites for recreation, or restore natural riparian vegetation, which provides shade or nutrients for aquatic communities.

When constructing aquatic habitat structures, allow for safe passage of canoes.

Limit new structures or roads, and avoid management activities on NFS lands within a river's corridor that might degrade rivers.

### *Provide for Recreation Use in Harmony with Natural Communities*

- \* Limit average cumulative trail density to 2.0 miles per square mile or less. The density limit is a cumulative figure for the total Forest acreage for this management area. The density may be exceeded on any given piece of ground as long as it is not exceeded for that management area overall. These density limits are not intended to be a target for miles of a trail in a management area.

Construction of river or lake access points with parking, toilet facilities, garbage pickup, camping, and information boards and other amenities is permitted. Design access points to provide vehicle parking, protect the bank, screen vehicles from the view of river travelers, and facilitate authorized uses.

When possible, locate sanitary facilities outside of riparian corridors and provide drainage from parking lots away from the watercourse.

Dispersed or developed trailheads for mountain bicycle, hiking, and canoe access are permitted.

Trails for horses may pass through this management area but no trailhead specifically designed for horse use will be provided.

### Eligible Wild, Scenic, and Recreational River Guidance

These additional Standards and Guidelines provide further protection to the eligible corridors.

- \* Water supply dams and diversions are prohibited. Water quality is to be protected at its current level, or improved where possible.
- \* Issuance of licenses or exploratory permits for hydroelectric power development will be opposed until a wild and scenic river suitability study is completed.
- \* Development of any activity that would diminish the free-flowing character, including but not limited to flood control dams, levees, or channelization, is prohibited within the river's corridors.
- \* Recreation developments within the scenic and recreational corridors will not be easily viewed from the river.
- \* New recreation facilities that maintain or enhance river values (such as primitive campsites) are permitted within the scenic and recreational segments.

New transmission lines, gas lines, and water lines are discouraged. Where no reasonable alternative exists, additional or new facilities shall be restricted to existing rights-of-way.

## MANAGEMENT AREA 2.8

### Desired Condition of Management Area

The area is general forest with large areas of old forests and scattered openings associated with a variety of forest plant communities. A variety of tree species is present, but shade-tolerant species may dominate some forest communities over time. A natural variety of other tree species intermediate in shade tolerance is perpetuated, and in other forest communities they may dominate. This area provides a variety of forest types, reflecting different ecological sites and management activities. Openings in the canopy result in different canopy levels and animal communities associated with vertically diverse, shade-tolerant vegetation, as well as different successional stages of vegetation. There is a higher percentage of edge habitat in this management area than in most of the forest. Site-specific decisions result in many variations within this management area.

These areas include scattered blocks of NFS land. There is ample evidence of human activities, most of which blends well with the natural environment. Visual quality and recreation opportunities are protected and enhanced. Interaction among visitors is frequent.

Habitat in these areas is best suited to wildlife that uses large hardwood trees and a mosaic of different-aged hardwood forests. The desired condition of this area is to maintain 4 to 12 percent of the area in young forest habitat and up to an additional 3 percent as openings. The Forest manages the area primarily for plant and animal habitat diversity and timber harvest is an appropriate tool for use in this area.

Viewing scenery, hunting, fishing, dispersed camping, gathering forest products, horseback and mountain bike riding, and hiking are key recreation activities. Due to the diversity provided by the area, bird watching, berry picking, and mushroom gathering and other forest products are also common uses of this management area. Some of the areas are surrounded by private lands, but most are generally accessible by foot travel and State and county roads.

Large trees with a continuous canopy characterize much of this area. This area allows a wide variety of management techniques, each resulting in a slightly different visual character.

In areas of fragmented ownership, the visual character is that of islands of large diameter trees. There is often a visual distinction between private and NFS lands.

### Guidance

#### *Maintain and Restore Sustainable Ecosystems*

- \* Limit temporary opening size in a group selection harvest to no larger than 3 acres.
- \* Limit temporary openings created by clearcut and shelterwood harvests to 10 acres.

A timber harvest can occur when the adjacent certified re-established stand has reached a height that is greater than 20 percent of the height of the surrounding vegetation.

Provide a variety of opening sizes in character with the landscape.

Blend openings created by harvest with the surrounding area. Distribute openings across the landscape to provide for biological diversity as well as visual and site considerations.

As needed, treat stand understories prior to harvest to promote advanced regeneration of desired plant species.

Consider crop tree release in young hardwood stands to promote oak survival, earlier mast production, forage production, and additional growth on desirable species.

Control grape, ivy, and other vines as necessary to ensure satisfactory regeneration and growth of the desired species. Perpetuate some vines to meet wildlife needs.

Retain a variety of hardwood species in timber stand improvement and thinning operations.

Conduct thinning, improvement cuts, and timber stand improvements.

Establish forest openings on newly acquired land as necessary to meet management area objectives.

### *Maintain and Restore Watershed Health*

Restoring natural wetlands will be the highest priority to maintain and restore watershed health.

### *Provide for a Visually Pleasing Landscape*

Woody debris resulting from vegetative management and prescribed burning should receive special treatment along the visual foreground of frequently traveled roads, trails, and streams to meet the visual quality objective.

### *Provide for Recreation Use in Harmony with Natural Communities*

- \* Limit the average cumulative trail density to 2.5 miles per square mile or less. See the definition of cumulative trail density in Glossary (Appendix A).

Trails and trailheads for horses, mountain bicycles, and hiking are permitted.

*Provide for Human and Community Development*

Provide fuelwood to the public to better use wood left on the site after project implementation.

Allow for mineral development with no surface occupancy or disturbance in the Crawford Upland and Brown County Hills Ecological subsections.

## MANAGEMENT AREA 3.3

### Desired Condition of Management Area

This management area emphasizes diversity for wildlife species requiring a mix of early and late successional vegetative types and age classes. It is associated with a mosaic of forest conditions dominated by hardwood trees and their associated understory habitat. Horizontal and vertical diversity are present in the forest. Generally early and late successional stands are found in close proximity to each other to provide for those non-migratory species that require a mix of both of these habitats. Management is more intensive than in other management areas, but blends with the natural environment. There is a higher percentage of edge habitat created in this management area compared to other areas on the Forest. Site-specific decisions result in many variations within this management area.

This area will provide habitat for previously declining populations of wildlife, particularly Neotropical migrants, dependent on or associated with these habitat types. This management area will have the most concentrated areas of vegetative management activities, providing optimum habitat for many species.

Hardwood management is by even-aged methods, emphasizing a diversity of species such as ash, cherry, hickory, oak, yellow-poplar, and walnut to provide valuable habitat for wildlife and plant species. Vegetation management is more intense in this area than elsewhere in the Forest with as much as 16 percent of the forest in the 0-9 age class. Pine will also be harvested and the sites converted to native hardwoods.

To better provide specific requirements for a suite of wildlife species represented by species such as the ruffed grouse, yellow-breasted chat and American woodcock, even-aged harvest areas will not exceed 40 acres in size. The Forest manages the area primarily for plant and animal habitat diversity and timber harvest is an appropriate tool.

Maintained openings for wildlife are of a variety of sizes, well dispersed, and in character with the landscape. This management area also allows for maintaining and providing fishing lakes, marshes, ponds, and waterholes.

These areas include scattered blocks of NFS land. There is ample evidence of human activities, most of which blends well with the natural environment. Visual quality and recreation opportunities are protected and enhanced. Interaction among visitors is frequent.

Viewing scenery, bird-watching, hunting, and trail use are key recreation activities. The Forest is generally accessible by trails and a network of roads.

## Guidance

### *Maintain and Restore Sustainable Ecosystems*

- \* Limit temporary opening size in harvest areas to 40 acres or less.

A timber harvest can occur when the adjacent certified re-established stand has reached a height that is greater than 20 percent of the height of the surrounding vegetation.

Provide a variety of opening sizes in character with the landscape.

Blend openings created by harvest with the surrounding area. Distribute openings across the landscape to provide for biological diversity as well as visual and site considerations.

As needed, treat stand understories prior to harvest to promote advanced regeneration of desired plant species.

Consider crop tree release for young hardwood stands to promote oak survival, earlier mast production, forage production, and additional growth on desirable species.

Control grape, ivy, and other vines as necessary to ensure satisfactory regeneration and growth of the desired species. Perpetuate some vines to meet wildlife needs.

Retain a variety of hardwood species in timber stand improvement and thinning operations.

Conduct thinning, improvement cuts, and timber stand improvements.

Establish forest openings on newly acquired land as necessary to meet management area objectives.

### *Provide for a Visually Pleasing Landscape*

Woody debris resulting from vegetative management and prescribed burning should receive special treatment along the visual foreground of frequently traveled roads, trails, and streams to meet the visual quality objective.

### *Provide for Recreation Use in Harmony with Natural Communities*

- \* Limit the average cumulative trail density to 2.5 miles per square mile or less. See the definition of cumulative trail density in Glossary (Appendix A).

Trails and trailheads for horses, mountain bicycles, and hiking are permitted.

*Provide for Human and Community Development*

Provide fuelwood to the public to better use wood left on the site after project implementation.

Allow for mineral development with no surface occupancy or disturbance in the Crawford Upland Ecological subsections.

## MANAGEMENT AREA 5.1

### Desired Condition of Management Area

This is the Congressionally designated Charles C. Deam Wilderness.

The area provides a recreation experience offering a degree of solitude, physical and mental challenge and risk, inspiration, and primitive recreation. Opportunities exist for non-mechanized recreational activities such as hiking, backpacking, camping, horseback riding, scientific study, hunting, fishing, and nature study.

There is little evidence of human development except remnants of past human occupation such as old roads, ponds, orchard trees and domestic vegetation, stone foundations, and cellar holes that have been overgrown and dilapidated by natural forces. Other than trails, designated campsites, user created campsites, and existing cemeteries and the roads to them, there is little evidence of past human activities, and these remnants will soon deteriorate and become overgrown by natural forces.

Natural succession is the dominant process within the Charles C. Deam Wilderness. In the future there will be extensive areas of old-growth vegetation. Some younger trees and openings occur as a result of natural processes. Timber harvesting is not appropriate in this area.

Interaction with other users is low.

The area primarily along the Tower Ridge Road and State Road 446 is not part of the Congressionally designated wilderness and will be managed under other management area guidance. These areas are:

- Manage the Blackwell Horsecamp and Pond under Management Area 7.1 guidance.
- Manage the 200-foot set-back east of State Road 446, the 100-foot set-back on either side of Tower Ridge Road, the 100-foot set-back along Hunter Creek Road, and other set-backs as identified in the legal description for the Charles C. Deam Wilderness under Management Area 6.2 guidance.

### Guidance

#### *Conservation of Endangered and Threatened Species Habitat*

Manage habitat when consistent with wilderness management objectives and necessary to meet the needs of Federal endangered and threatened species.

#### *Maintain and Restore Sustainable Ecosystems*

- \* Suppress wildfires using non-motorized equipment. The Forest Supervisor may allow the use of motorized equipment.

Emphasize minimum impact fire suppression tactics to minimize short-term and long-term impacts on resources.

Use pesticides as necessary to prevent the loss of significant aspects of the wilderness, or to prevent significant losses to resource values on private or public lands bordering the wilderness. Pesticide use must be approved by the Regional Forester prior to application.

Emphasize the removal of nonnative invasive plant species, except those associated with heritage resources.

### *Protect Our Cultural Heritage*

- \* On-site cultural resource interpretation will not occur.

Off-site cultural resource interpretation of the Charles C. Deam Wilderness area sites may occur.

Consider heritage resources an integral part of the wilderness and inventory, evaluate, retain, and preserve them whenever possible. These resources are available for scientific study, provided the manner of study is consistent with the concept of wilderness.

### *Provide for Recreation Use in Harmony with Natural Communities*

- \* Motorized use or mechanized transport is prohibited except for emergencies approved by the Forest Supervisor and cemetery maintenance and access. Non-motorized wheelchairs used by persons with disabilities are permitted.
- \* Restrict horses and pack stock to those portions of the trail system specifically designated for their use. Prohibit off trail riding.
- \* Limit the trail system to 40 miles with no connectors to trails outside of the wilderness..
- \* Limit group size to no more than 10 people.
- \* There will only be five trailheads.
- \* Prohibit the use or possession of spray paint, and any paintball activity.
- \* Prohibit the discharge of firearms for target shooting or reasons other than hunting.
- \* Prohibit camping within 100 feet of ponds, lakes, trails, or streams except at designated sites. Camping throughout the rest of the wilderness is not restricted. Additional designated camping sites may be provided throughout the wilderness.

- \* Prohibit roadside parking and camping along Tower Ridge Road except at designated locations. Provide parking and signs at trailheads as needed.

Emphasize refuse disposal through a pack-it-in and pack-it-out program.

Maintain trails to a standard as low as possible while still protecting the resources and providing for visitor safety.

Use native materials in trail construction to the extent possible. Generally utilize native and local materials in completing trail construction and reconstruction. Use nonnative materials if it is determined they are necessary to protect resources. Trail work includes but is not limited to: tread maintenance, diversion ditches, side-sloping and waterbars to divert water from trails and maintain adequate trail drainage, brushing and removing trees that fall across the trails, and removing and scattering vegetation from the tread area to make the materials unobtrusive. Make drainage structures look as natural as possible.

Only minimal facilities are provided to prevent site deterioration and protect users from safety hazards.

Design structures such as gates and signs on the periphery of the area according to wilderness policy so that they blend with the wilderness characteristics of the area.

Designated sites may be provided with a wilderness style fire grate and wilderness privy.

Use signs to close trails, protect the environment, and provide direction to help correct environmental damage when needed.

Gathering of fruits, nuts, and mushrooms for private use may occur.

Emphasize educational programs to help potential wilderness visitors understand wilderness philosophy and management and problem behaviors that affect the wilderness resource.

### *Provide a Useable Landbase*

- \* Provide public access to cemeteries as stated in the act establishing the wilderness. Maintain access routes as necessary to prevent damage to adjacent lands and resources.
- \* Keep Tower Ridge Road and Hunter Creek Road open.

### *Provide for Human and Community Development*

- \* Prohibit corridors for power projects, transmission lines, and other facilities, except as authorized by the act establishing the wilderness.
- \* Do not permit commercial grazing. Consider other special uses on an individual basis. Do not issue outfitter guide permits.
- \* Do not allow special use permit trails originating from adjacent private lands. To accommodate adjacent landowners, two of the five allowable trailheads are located for their convenience.
- \* Prohibit military maneuvers.
- \* The Charles C. Deam Wilderness has been formally withdrawn from mineral leasing. Mineral extraction is prohibited.

Coordinate with the military to restrict flights below 2,000 feet.

Vegetation manipulation occurs in conjunction with trail maintenance, cemetery maintenance, and maintenance of the roads to leading to the cemeteries (including Terrill Ridge Road).

Determine appropriate search and rescue methods for each individual search and rescue, considering primitive means first. The USDA Forest Service will take the lead in protecting wilderness values.

Allow research activities that comply with and promote wilderness values.

Research projects that would yield the same results inside or outside the wilderness should be conducted outside of the wilderness.

Limit interviews and research contact with visitors unless there is a benefit to the wilderness resource.

## MANAGEMENT AREA 6.2

### Desired Condition of Management Area

This management area creates a physical setting that provides an opportunity for solitude and a feeling of closeness to nature. The area is general forest land with the appearance of extensive stands of forest dominating the landscape.

Over time, extensive stands of natural-appearing forests of shade-tolerant species will characterize the area. Stands will be dominated by large mature trees and will provide habitat for late-successional species. Some younger trees and openings will result from natural causes. Removal of commercial vegetation is not appropriate, other than salvage or sanitation harvest when it is compatible with overall objectives.

Key recreation activities include nature watching, hunting, trail use, and backpacking. The forest is generally accessible by foot travel, and from county or state roads around the perimeter of these areas.

Roads in the interior of these areas are closed to public motorized vehicles.

Interaction between users is low, and there is only subtle evidence of other users. Tranquility and solitude are probable experiences.

Though Management Areas 6.2 and 6.4 are very similar, there are some differences between the two. These differences are:

- In Management Area 6.2 no forest openings, waterholes, or ponds will be created and these existing features will not be maintained and will revert naturally.
- Visual quality objectives are more restrictive in Management Area 6.2 since some vegetative management is allowed in Management Area 6.4.
- Some management of pine is allowed in Management Area 6.4.

### Guidance

#### *Maintain and Restore Sustainable Ecosystems*

Allow identified research plots to remain active until the research study is complete, but only limited vegetation management could occur.

### *Provide for Recreation Use in Harmony with Natural Communities*

- \* Limit average cumulative trail density to 2.0 miles per square mile or less. See glossary (Appendix A) for definition of cumulative trail density.

Limit public motorized access to those roads on the periphery of the area, roads accessing active cemeteries, and roads under other jurisdictions. Use of other Forest roads is limited to resource management, administrative use, and foot travel.

Trails and trailheads for horses, mountain bikes, and hikers are permitted.

Minimize other recreation developments, and provide only those that prevent site deterioration or protect the user from health hazards.

### *Provide a Useable Landbase*

- \* Limit construction of additional roads except for roads associated with development of trailheads, parking lots, and other recreation facilities around the perimeter of these areas.

## MANAGEMENT AREA 6.4

### Desired Condition of Management Area

This management area creates a physical setting that provides an opportunity for solitude and a feeling of closeness to nature. The area is general forest land with the appearance of extensive stands of forest dominating the landscape with some openings.

Over time, extensive stands of natural-appearing forests will characterize the area. Stands will be dominated by large mature and over-mature trees and will provide habitat for late-successional species.

Natural barrens, glades, wetlands, and dry forest may be restored and perpetuated. In addition to openings in Mogan Ridge, Lukes Knob, and Felknor Hollow, some existing forest openings, ponds, and lakes may be retained. Old roads will grow in and blend with the natural setting. Commercial removal of vegetation is not appropriate, other than salvage or sanitation harvest when it is compatible with overall objectives.

Key recreation activities include nature watching, hunting, trail use, and backpacking. The forest is generally accessible by foot travel, and from county or state roads around the perimeter of these areas.

Roads in the interior of these areas are closed to public motorized vehicles, except seasonal use in Mogan Ridge.

Interaction between users is low, and there is only subtle evidence of other users. Tranquility and solitude are probable experiences.

Though Management Areas 6.2 and 6.4 are very similar there are some significant differences between the two. These differences are:

- In Management Area 6.2 no forest openings, waterholes, or ponds will be created and existing features will not be maintained and will revert naturally.
- Visual quality objectives are more restrictive in Management Area 6.2 since some vegetative management is allowed in Management Area 6.4.
- Some management of pine is allowed in Management Area 6.4.

### Guidance

#### *Maintain and Restore Sustainable Ecosystems*

Retain the currently maintained openings at Mogan Ridge, Lukes Knob, and Felknor Hollow, as well as openings that were established before to the 2006 Forest Plan.

Natural barrens, glades, wetlands, and dry forest that contain sensitive plant communities may be restored and perpetuated.

Allow timber stand improvement to hasten the conversion of pine stands to hardwood stands.

### *Maintain and Restore Watershed Health*

Maintain existing ponds, lakes, and wetlands.

### *Provide for a Visually Pleasing Landscape*

To the extent feasible, maintain visual quality objectives along most streams, trails or roads at a minimum of retention.

### *Provide For Recreation Use in Harmony with Natural Communities*

- \* Limit average cumulative trail density to 2.0 miles per square mile or less. See glossary (Appendix A) for definition of cumulative trail density.

Limit public motorized access to those roads on the periphery of the area, roads accessing active cemeteries, and roads under other jurisdictions. Use of other Forest roads is limited to resource management, administrative use, and foot travel.

Trails and trailheads for horses, mountain bikes, and hikers are permitted.

Minimize other recreation developments, and provide only those that prevent site deterioration or protect the user from health hazards.

### *Provide a Useable Landbase*

- \* Construct no new roads unless they would be associated with the development of recreational facilities such as, but not limited to, trailheads, parking lots, or other developments.
- \* Retain administrative access to existing forest openings including those at Lukes Knob and Felknor Hollow. Continue to keep these roads closed to public access.

Open the main east-west gravel road through Mogan Ridge that begins at Old State Route 37 to public access during fall deer hunting seasons between the approximate dates of October 1 to January 1 for purposes of managing deer populations.

## **MANAGEMENT AREA 7.1**

### Desired Condition of the Management Area

These areas provide for recreational facilities and developed sites. They include campgrounds, picnic areas, boat ramps, swimming beaches, and other areas intended to serve large numbers of people.

These areas vary in size, and the Forest collects user fees at most of them. Use in these areas is high-density, destination-type use.

The area contains a variety of forest types, ages, and size of timber stands. The emphasis is on maintaining large-diameter trees where possible. These areas provide a small number of shrub and herbaceous openings. Vegetative management maintains or enhances existing recreation, road and utility corridors, wildlife habitat, education, watershed values, and visitor safety.

Favor treatment of vegetation on transmission line right-of-ways to improve wildlife habitat and perpetuate a variety of native plant species and communities. Manage plant and animal habitats, including habitat improvements, to enhance visitor enjoyment and maximize sightings while protecting the habitats and populations.

Manage vegetation to ensure the long-term viability, safety, and attractiveness of the area. In these areas, focus vegetative management on hazard tree removal; control of nonnative invasive species; flower, nut, or berry production; scenic enhancement; and specific area objectives. Mowing is common in high-use areas.

Developments are evident and may dominate the landscape. Design, building materials, and placement of facilities and structures are such that they are in harmony with the environment. Accessible facilities are provided.

Management Area 7.1 recreation areas include: Blackwell Horse Camp, Blackwell Pond (Brooks Cabin), Buzzard Roost, Celina Lake, German Ridge, Hardin Ridge, Hickory Ridge Fire Tower, Hickory Ridge Horse Camp, Indian Lake, Mano Point, Saddle Lake, Shirley Creek Horse Camp, Springs Valley, Tipsaw Lake, and Youngs Creek Horse Camp.

The transportation system is designed and constructed to safely and comfortably accommodate both specialized recreation vehicles and associated service vehicles.

The visual character of these areas reflects a higher percentage of open land than is generally found in the Forest, intermingled with trees, trails, roads, powerlines, buildings, and parking lots. The sights and sounds of humans are acceptable here, and a high degree of interaction between users is expected.

## Guidance

### *Maintain and Restore Sustainable Ecosystems*

- \* Rehabilitate sites and regulate use, to provide erosion control and minimize soil compaction.

Apply pesticides to control undesirable terrestrial and aquatic vegetation such as but not limited to woody vegetation on dams, poison ivy, Asian milfoil and stinging nettles and to control stinging insects, ticks, or chiggers when needed.

Maintain vegetation diversity and increase diversity using prescribed fire techniques.

Permit tree removal when appropriate, for purposes such as safety, facility expansion, vista maintenance, and site maintenance.

Trees may be cut to promote growth and vigor and to prevent insect and disease infestation.

### *Protect Our Cultural Heritage*

Encourage on-site interpretation of heritage resources.

### *Provide for a Visually Pleasing Landscape*

- \* Visual quality objectives shall meet modification standards or better, within recreation area boundaries.
- \* Manage visual quality objectives for forested areas adjacent to entrance roads and trails, and around associated lakes as far as the foreground limit as partial retention or better.

Provide and maintain scenic vistas where appropriate.

In developed recreation areas, there may be evidence of routine maintenance, such as mowing grass, pruning brush and trees, maintaining scenic vistas, or removing hazard trees.

### *Provide For Recreation Use in Harmony with Natural Communities*

Provide trailheads where feasible.

Prohibit paintball activity.

Design new recreational developments to minimize health and safety problems, protect the environment, complement recreational opportunities, and provide access.

As needed and feasible, include facilities such as beaches, boat ramps, cabins, electricity, fish cleaning stations, flush toilets, hardened campsites, hot showers, parking lots, roads, picnic shelters, sewer or dump stations, water, and user conveniences at developed sites.

Design developments oriented to pedestrians. Design trail access to encourage walking between sites.

Design roads and trails to accommodate the high-density recreation use and related activities associated with the area.

Provide and maintain hiking, horse, mountain bicycle, interpretive trails, and service trails where applicable.

Permit hunting except within the marked recreation area boundaries. Hunting may be permitted within the boundaries if conditions warrant and line officer approves.

Fees may be charged.

### *Provide a Useable Landbase*

Roads in certain areas of developed sites may be closed to allow for recreation site rehabilitation or to concentrate use during off-season to provide services more efficiently.

### *Provide for Human and Community Development*

- \* Provide and maintain buildings and structures for recreation opportunities. Emphasize visually appealing facilities and safety.
- \* Dispose of solid waste generated from developed sites at approved sanitary landfills.

Recycling may be provided.

Clearly mark developed recreation area boundaries.

Make dead and down wood available for firewood whenever feasible.

Bury utility lines and pipelines when possible.

## MANAGEMENT AREA 8.1

### Desired Condition of Management Area

These are the Research Natural Areas (RNAs). This designation allows unique ecosystems to follow natural processes for scientific purposes. Research may be conducted in these areas to improve understanding of natural processes and to increase the benefits from our forests.

The Hoosier has one Research Natural Area, the Pioneer Mothers Memorial Forest, an 88-acre old growth hardwood forest.

The RNA program is a cooperative partnership with Forest Service Research. RNA's require preparation of an Establishment Record, approved by the Forest Supervisor and the Research Station Director. The Chief of the Forest Service has approval authority to designate these areas. No RNA's are proposed at this time. The Forest Supervisor and Station Director have responsibility for record keeping, recommending, reviewing, and approving research and management activities in RNA's.

These nationally significant areas must meet one or more of the following criteria:

- Contributes to the diversity of plant communities and wildlife habitat.
- Typifies important forest, shrubland, grassland, alpine, aquatic or geologic types.
- Represents special or unique characteristics of scientific interest and importance.
- Helps carry out provisions of laws, such as providing habitat for endangered species.
- Protects or maintains special aquatic, geologic, or heritage resources or potential natural communities.

The rare or outstanding values of the areas are the primary consideration. Other resource values and uses are secondary to the protection of the area's special values for public education and enjoyment.

Each research natural area has a specific management plan developed for management of the area. Vegetation management occurs if it is compatible with the purpose of the designation and is addressed in the management plan for the specific area. Commercial timber harvest is not an appropriate tool.

Recreation uses are subject to the regulations that designated the specific areas. Determine access, road construction, reconstruction or closure needs during specific research natural area management plans.

## Guidance

### *Maintain and Restore Sustainable Ecosystems*

- \* Use pesticides if they are compatible with the management plan for the area.

Protect and preserve to the extent possible the natural condition of the forest or other qualities identified as the reason for its designation, while conducting research within the direction of the management plan written for the area.

### *Provide for Recreation Use in Harmony with Natural Communities*

- \* Prohibit mountain bike and horse use.
- \* Prohibit hunting and trapping.
- \* Prohibit camping.
- \* Prohibit paintball activity.

Limit developments to prevent site deterioration or protect the user from health hazards. Developments are subject to the regulations designating the area.

Permit hiking trails if they are consistent with guidelines established in the RNA management plan.

### *Provide a Useable Landbase*

Limit public motorized access to those roads on the periphery of the area.

### *Provide for Human and Community Development*

- \* Permit only those special uses and utility corridors that meet the intent of the management plan for the area.

## MANAGEMENT AREA 8.2

### Desired Condition of Management Area

These are designated special areas, which include unique or unusual botanical, ecological, geological, scenic, historic, prehistoric, or zoological values and other areas which merit special recognition and management. Management of these areas will emphasize the protection, perpetuation, or restoration of their special features and values. Management of these areas will emphasize management for Federally listed threatened, endangered, and proposed species, as well as Regional Forester sensitive species and State listed species if the species or habitat is present or has the potential to exist in the specific area.

The special areas included in Management Area 8.2 guidance as of 2006 are:

|                  |                                 |
|------------------|---------------------------------|
| Beaver Creek     | Horse Mill Branch               |
| Browning Hill    | Huron Woods                     |
| Boone Creek      | Luke Knob                       |
| Buzzard Roost    | Oil Creek                       |
| Carnes Mill      | Pioneer Mother Memorial Forest* |
| Clover Lick      | Plaster Creek                   |
| Deer Creek       | Potts Creek                     |
| Faucett Chapel   | Rockhouse Hollow                |
| Grease Gravy     | Stinking Fork Creek             |
| Gypsy Bill Allen | Tar Springs                     |
| Harding Flats    | Tincher                         |
| Hemlock Cliffs   | Wesley Chapel                   |

\*Not to be confused with the 88-acre RNA (Management Area 8.1) of the same name.

These regionally or locally significant areas must meet one or both of the following criteria:

- Be representative of unique or unusual geological, ecological, cultural, or other scientific values; or
- Have the potential to be a regional or national landmark based on natural or cultural values.

Special areas occur throughout the forest where there are special characteristics. They include cultural, historic, scientific, and scenic values as well as a variety of ecosystems and forest conditions. Plant and animal species and communities vary depending upon the characteristics of each area.

The rare or outstanding values of the areas are the primary consideration. Other resource values and uses are secondary to the protection, maintenance, and restoration of an area's special values for public education, enjoyment, and study.

Each special area has an establishment record (Appendix H).

A management plan will be prepared for each special area. Management plans identify special features of each area, area boundaries, desired conditions of the area, and specific management direction to achieve desired conditions. A special area may be designated an 8.2 Management Area before a management plan is finalized for it. With appropriate analysis

and public involvement, management activities essential for perpetuation of special features, such as unique ecosystems, may take place before final development of an area management plan.

## Guidance

### *Maintain and Restore Sustainable Ecosystems*

Inventory and evaluate biological diversity of special areas and adjoining ecosystems to the extent practical. Apply information from the inventory and evaluation to refine area management needs and plans.

Restore disturbed sites to native plant communities typical of the area. Tools applicable in these areas include, but are not limited to, burning, harvesting, seeding, and planting.

Permit research in special areas. Harvest of trees associated with research plots is acceptable.

Control or eliminate, as practical, invasive species of plants with emphasis on nonnative species. This includes native species that are degrading the area (for example, Eastern redcedar in barrens communities). Vegetation control methods include prescribed burning, girdling, cutting, herbicide use, and hand pulling.

### *Provide for Recreation Use in Harmony with Natural Communities*

Provide recreational use that is consistent with protecting the area's unique values. Determine appropriate uses in the management plan for each area based on individual site characteristics and public interest.

Where signs and other developments are used, design and construct them to limit the impacts on significant site features. Determine the compatibility of trails for hiking, mountain bike, and horse use in the special area management plan. Allow the continued use of pre-existing designated trails unless monitoring determines unacceptable resource damage is occurring from such use.

### *Provide a Useable Landbase*

Limit public motorized access to those roads on the periphery of the area. Limit Forest Service road use to administrative use and foot travel.

May provide parking for access on the periphery of each area. Keep developments to a minimum.

*Provide For Human and Community Development*

Prohibit vegetation management unless necessary to maintain the vegetative character or ecosystem for which the area was established.

Permit pre-existing special uses and utility corridors. Permit new construction of utility corridors and special uses within existing roads and right-of-ways. Prohibit new development outside of the existing utility or road corridors.

## **MANAGEMENT AREA 8.3**

### Desired Condition of Management Area

This management area provides for research and scientific study of forest ecosystems. The only experimental forest on the Forest is the Paoli Experimental Forest, a 632-acre area located southwest of Paoli on the Tell City Ranger District.

The Forest Supervisor, Research Station Director, and Regional Forester may cooperatively establish further areas for research. The Forest is not considering any additional experimental forests at this time.

Research at the Paoli Experimental Forest takes an integrated, multidisciplinary approach to research problems in the Central Hardwood Forest from the landscape level to individual stand management.

### Guidance

#### *Maintain and Restore Sustainable Ecosystems*

Manage the area as needed to complete the assigned research.

Provide and maintain wildlife habitat developments.

#### *Provide for Recreation Use in Harmony with Natural Communities*

Do not encourage recreational uses, and provide no developments or facilities for recreation use. Allow foot travel.

#### *Provide a Useable Landbase*

Generally, keep this area closed to motorized public vehicles.

#### *Provide for Human and Community Development*

Vegetation management will be used to meet research objectives.

## **MANAGEMENT AREA 9.2**

### Desired Condition of Management Area

This management area emphasizes the protection and maintenance of environmental values. This designation serves as a holding category until further study and recommendations on specific designation can be made. There are currently no Management Area 9.2 areas on the Forest.

Forest-wide guidance will be followed and individual guidance will be developed as needed.