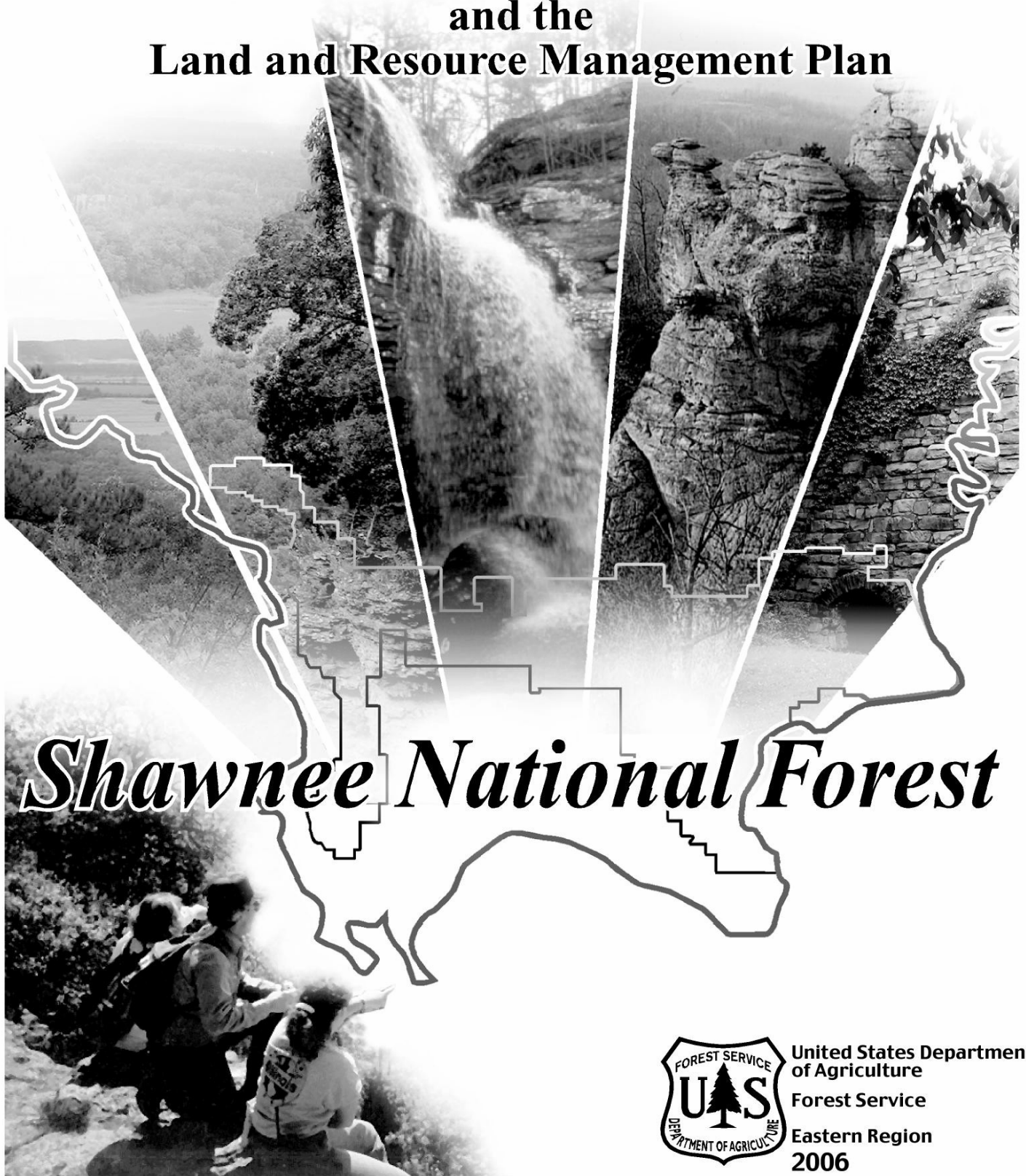


Executive Summary

Final Environmental Impact Statement and the Land and Resource Management Plan



Shawnee National Forest



United States Department
of Agriculture
Forest Service
Eastern Region
2006

This document can be accessed on the Shawnee National Forest website:
www.fs.fed.us/r9/forests/shawnee.

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TABLE OF CONTENTS

Overview	1
National Forest Decision-Making.....	1
Forest Planning Process.....	1
Summary of the 2006 Forest Plan	3
Forest-wide Goals	4
Management Area Prescriptions.....	6
How is the 2006 Forest Plan different from the 1992 Forest Plan?	8
Summary of the Environmental Impact Statement	11
Significant Issues	11
Alternatives Considered In Detail	14
Alternatives Considered but not Analyzed in Detail	18
Effects of the Alternatives	19
Changes Between Draft and Final	38
Future Changes to the Plan	40
Contacts	43
Other Documents	43

OVERVIEW

NATIONAL FOREST DECISION-MAKING

Resource management decisions for national forests are made at two levels. Programmatic decisions, as in forest plans, set broad direction for a national forest in the form of goals, objectives and standards. Project-related decisions are site-specific and address specific management activities necessary to achieve the programmatic management direction.

FOREST PLANNING PROCESS

The Forest and Rangeland Renewable Resources Planning Act (RPA), as amended by the National Forest Management Act (NFMA), requires that each national forest be managed under a published forest plan that is reviewed and updated every 10 to 15 years, or earlier if conditions change significantly. This revision of the Shawnee National Forest (Forest) Plan is part of the long-range national resource-planning framework. In addition to the RPA and the NFMA, the National Environmental Policy Act (NEPA), Government Performance and Results Act of 1993 and the 2004 Revision of the USDA Forest Service Strategic Plan guide the revision process.

For preparation of a new forest plan and revision of an existing plan, an analysis of the management situation is performed to assess conditions and supply and demand for forest resources. Public participation helps identify significant environmental issues that should be addressed in the planning process. Alternative management strategies responsive to the issues are developed, and the anticipated environmental consequences of each alternative are documented in a draft environmental impact statement (DEIS) and circulated for public review and comment. The Forest Service identifies in the DEIS the preferred alternative. A Proposed Revised Forest Plan that reflects the preferred alternative is prepared and circulated along with the DEIS. Public comments received on the DEIS and Proposed Revised Forest Plan are addressed and used to make any necessary changes. A Final EIS (FEIS) and revised Forest Plan are prepared.

National forest management is complex. The forests belong to all Americans and all have an interest in their management. Choosing the best course of action involves trade-offs. As stewards of these important lands, we have a responsibility to be responsive to the diversity of interests that make up the American public, as well as provide what is best for the Forest. Citizens have been instrumental in the development of our 2006 Plan. Thousands have contacted us to provide their input and many have collaborated in the forest planning over the past several years.

SUMMARY OF THE 2006 FOREST PLAN

The 2006 Forest Plan is based on the selected alternative from the FEIS and does the following:

- Establishes the management direction and associated long-range goals and objectives for the Forest for the next 10-15 years.
- Establishes management areas that reflect the biological, physical, watershed and social differences in managing each area of land; and management prescriptions that reflect different desired conditions and provide the specific management direction used to develop projects to implement the Plan.
- Specifies standards, which set specific constraints or parameters for achieving the goals, objectives and desired conditions.
- Identifies lands suitable for various multiple uses, including timber production, and establishes the allowable sale quantity.
- Establishes the monitoring and evaluation requirements needed to ensure that the direction is carried out and is achieving the intended results.

The 2006 Plan includes the following sections:

Forestwide Direction - describes Forestwide goals, objectives and standards.

Management Area Prescriptions - describe desired conditions, objectives and standards and guidelines for specific land allocations.

Implementation, Monitoring and Evaluation - contains information on how the Forest Plan will be implemented, details the requirements for monitoring and evaluating the Forest Plan and discusses how amendments or revisions will be done.

Appendices - contain additional detailed information relating to the Plan.

FORESTWIDE GOALS

Forest Plans make programmatic, broad-scale decisions, similar to city zoning allocations. They do not commit to site-specific projects; rather, they establish overall goals and objectives that the Forest Service will strive to meet. The goals that are emphasized in the 2006 Plan are:

1. Multiple-Use Management – Within its natural-resource capabilities and long-term sustainability, the Forest will provide a balance of multiple uses and public benefits that best meet desires and expectations.
2. Ecosystem Management – The resources of the Forest will be managed at an ecosystem and landscape level, in a manner that addresses the complex issue of biological diversity.
3. Public Relationships – The Forest will continue to be responsive to the needs and values of the public and the public will continue to be involved in the management of the Forest through an ongoing dialogue.

4. Recreation Management – The Forest will continue to welcome all, providing a broad range of high-quality recreational opportunities and experiences. The system trails on the Forest will be well-marked, mapped and maintained in order to provide for user safety and to protect natural resources.
5. Visual Resource Management – The Forest will work to blend the visual effects of management activities with the natural-appearing forest landscape.
6. Heritage Resource Management – The Forest will continue to identify, evaluate and preserve heritage resource sites.
7. Special-Feature Management – Unique natural environments, such as national natural landmarks and other natural areas, will be managed to preserve and protect their special features.
8. Research – The Forest will continue to play an active role in meeting research needs related to the ecosystems of the Forest, the interaction of people with their environment and the long-term effects of management practices.
9. Candidate Wild and Scenic River Management – Six streams on the Forest are candidates for inclusion in the national system of wild and scenic rivers. A quarter-mile corridor along each will be managed to retain the stream’s eligibility for inclusion in the system.
10. Wilderness Management – Seven areas on the Forest are congressionally-designated wilderness. Wilderness management will generally employ approaches and tools having the least effects on wilderness values.
11. Forest Ecosystem Health and Sustainability – The Forest will utilize various vegetation-management activities, such as landscape-level prescribed burning, timber harvesting and timber-stand improvement to help create and/or maintain the ecological conditions necessary to regenerate and maintain the oak-hickory forest-type. A variety of integrated pest management techniques will be used for the prevention and suppression of insect and pathogen infestations and non-native invasive species.
12. Range Management – The range program will not be a use of the Forest outside the Dixon Springs Agricultural Center. The Forest may use grazing to accomplish other goals such as research on wildlife habitat improvement
13. Wildlife and Fish Management – The Forest’s wildlife and fisheries management program will maintain or enhance habitat for all native species and ensure the diversity of natural communities throughout the forest environment.
14. Transportation System Management – The Forest will provide a system of roads and trails offering safe and efficient access for visitor use and enjoyment.
15. Soil, Water and Air Management – Soil productivity and water and air quality will be maintained and/or enhanced through best management practices and Forest-wide and specific management standards and guidelines.
16. Geology and Minerals Management – The Forest will protect and, in some instances, showcase unique geologic features to enhance public understanding, use and enjoyment. Mineral resource exploration, development and extraction will be considered and, if appropriate, approved for exploration, development and extraction activities in an environmentally sound manner that mitigates adverse effects on the forest ecosystem.
17. Land Ownership Management – The highest priorities of the Forest’s land-ownership–adjustment program are providing for ecological restoration, protecting historic resources, reducing management costs and meeting the needs of the public.

18. Law Enforcement – Forest Service law enforcement will continue to protect public safety and the resources of the Forest.
19. Fire Management – Fire-use, the combination of prescribed and wildland fire-use fire, is applied on the landscape to restore and/or maintain desired vegetative communities, ecological processes and fire-adapted ecosystems; and fire regimes, condition classes and desired fuel-loadings.
20. Human and Community Development – The Forest will provide human-resource programs that offer education, employment and resource experience opportunities. Opportunities will be made available for individuals and volunteer organizations to become partners in the management of the Forest through volunteer and challenge cost-share programs.

MANAGEMENT AREA PRESCRIPTIONS

A “management prescription” is a specification of management practices to be applied on the ground in a specific area and designed to attain multiple use and achieve the desired future condition of the land. Each describes the practices selected, the desired future condition of the land, and the standards and guidelines necessary to achieve that condition. A "management area" is a discrete unit (or units) of the Forest managed under a specific management prescription.

The acreage assigned and the spatial distribution of management areas can vary by alternative. Management-area selection depends on the mix of goods, services, uses and forest conditions desired under each alternative. A specific management prescription may be applied at several locations within the Forest; that is, a management area may not be (and usually is not) one continuous block of land. It is also possible to have an inclusion of one management prescription within another larger management area. The management direction required by the higher-level designation takes precedence over the inclusion, should conflicts arise.

The management area prescriptions considered for the various alternatives are as follows:

- **CH** – The *Camp Hutchins* area is assigned to a special management prescription to maintain ecological integrity.
- **CR** – *Candidate Wild and Scenic Rivers* have a corridor of ¼ mile on either side of streams that are managed to maintain their potential classification.
- **CV** – The *Cave Valley* area has a special prescription for maintaining the bottomland hardwood habitat in this area.
- **DR** – This prescription guides the management of *Developed Recreational Sites* such as campgrounds and picnic areas.
- **EH** – *Even-aged Hardwood Forest* is the emphasis in an effort to create conditions more suitable for the maintenance of the oak-hickory forest type. Shelterwood would be the probable method of timber harvest.
- **FI** – Forest-interior habitat is provided under the *Forest Interior (FI)* management prescription, with unfragmented forest interior management units of approximately 1100 acres minimum size.

- **FR** – Guidelines for managing *Filter Strips and Riparian Areas* are consolidated under prescription FR, most of which are unmapped areas within other mapped management areas.
- **HR** – Significant *Heritage Resource* sites are assigned to prescription HR.
- **LO** – Large openlands are to provide habitat for wildlife species requiring large openlands.
- **MH** – *Mature Hardwood Forest* provides emphasis on wildlife habitat and recreation, usually in proximity to areas of high recreation use.
- **MM** – Areas prescribed for *Minimum-Level Management* are generally isolated parcels, where the cost of access would be high.
- **MO** – The *Mississippi and Ohio Rivers Floodplains* are managed to provide bottomland hardwoods and wetlands for wildlife species requiring these habitats.
- **NA** – *Natural Areas* are managed under prescription NA for the maintenance of biological diversity and natural communities.
- **NM** – *Non-motorized Recreation* is the emphasis of this prescription and includes the Ripple Hollow and Camp Hutchins areas.
- **OB** – *Oakwood Bottoms Greentree Reservoir* is managed under prescription OB to provide flooded habitat for migratory and wintering waterfowl and other wetland species.
- **RA** – *Research Areas* such as Dixon Springs Agricultural Center, Kaskaskia Experimental Forest and the Palzo mine reclamation site are used for manipulative research under prescription RA.
- **RW** – The *Ripple Hollow* area is recommended for wilderness study under prescription RW.
- **UH** – *Uneven-Aged Hardwood Forest* is the emphasis and group selection is the primary method of timber harvest.
- **WW** – The management area for *Water-Supply Watersheds* is a new prescription which emphasizes maintenance of water quality in watersheds that are sources of community water supplies. These include the watersheds for Cedar Lake, Kinkaid Lake and Lake of Egypt.
- **WD** – Congressionally designated *Wilderness* is managed under prescription WD to maintain wilderness character and provide a wilderness recreation experience.

HOW IS THE 2006 FOREST PLAN DIFFERENT FROM THE 1992 PLAN?

A number of items related to the 1992 Forest Plan were found to be in need of change. The 2006 Plan is different from the 1992 Plan in a number of ways, primarily related to the “need-for-change” topics. The main differences between the 1992 and 2006 Forest Plans are discussed here:

Watershed Resources – The 2006 Plan provides additional emphasis on the management of watershed resources through establishment of two new management area prescriptions. The Water-Supply Watershed management area will provide additional protection to watersheds that provide drinking water to local communities. The Mississippi and Ohio Rivers floodplains will receive additional management direction for the restoration and management of bottomland hardwood forests and wetlands in these floodplain areas. The management area for filter-strips and riparian areas is eliminated in the 2006 Plan, and updated protections for riparian areas are applied Forest-wide.

Biological Diversity and Wildlife and Aquatic Habitat – Management for biological diversity involves management of habitats, and standards and guidelines for management of species with viability concerns. The 1992 Forest Plan addressed the need for forest-interior habitat through establishment of seven forest-interior management units (FIMU's) where little vegetation management could take place. The 2006 Plan takes a different approach by applying new standards and guidelines Forest-wide to any national forest ownership greater than one mile in diameter with forest-interior characteristics. Active vegetation management is proposed in these areas, primarily on ridgetops and upper slopes, to help maintain and improve the forest-interior habitat.

Although openlands are maintained under the 1992 Plan, a new, Large Openland management area is established under the 2006 Plan to help guide management of these habitats. Since many existing wildlife openings have not been maintained for many years, less than a third identified in the 1992 Plan would be maintained under the 2006 Plan. To promote the recovery and viability of federally listed threatened and endangered species, Regional Forester sensitive species and species of viability concern, standards and guidelines are revised and current lists are incorporated into the 2006 Plan. More emphasis is placed on control of non-native invasive species, and restrictive language regarding the use of pesticides is eliminated from the 2006 Plan. The number of management-indicator species is reduced from 18 in the 1992 Plan to 5 in the 2006 Plan. These five species represent both openland and forest interior-habitats and can be readily monitored. The 2006 Plan adjusts the management area boundary for the Oakwood Bottoms Greentree Reservoir to include some recently acquired, adjacent land well suited to similar management.

Recreation Management – One of the principal differences in recreation management, as well as one of the significant needs for change to the 1992 Forest Plan, involves equestrian use. The 1992 Forest Plan allows cross-country equestrian riding, which has led to a myriad of user-developed trails over the last 10-12 years. The 2006 Plan restricts equestrian use to designated system trails and establishes a Forest goal of developing a well-marked, mapped and maintained trail system to provide for user safety and protect the natural resources. This restriction is to be phased in by watershed as site-specific analyses and decision-making are completed.

The 1992 Plan includes a long-term, aspirational goal of creating a system of designated trails for ATV use. The 1992 Plan does not authorize ATV/OHM use, but identifies travel corridors for the future planning and designation of up to 286 miles of ATV/OHM travelways. It also provides for ATV use during the firearms deer season. The 2006 Forest Plan prohibits ATV and unlicensed OHM-use Forest-wide except for administrative use, access by emergency vehicles, or as authorized by permit or contract. The 1992 Plan allows bicycle use on ATV/OHM travelways and on roads open to licensed vehicles. The 2006 Plan allows bicycle use on system trails designated for bicycle use as well as roads open to licensed vehicles. The 2006 Plan eliminates the trail corridor map of the 1992 Plan and drops trail-density standards for management areas.

Forest Ecosystem Health and Sustainability – The 2006 Forest Plan establishes a goal of maintaining forest health and sustainability, replacing the previous goal in the 1992 Plan pertaining to timber management. The primary use of tree harvesting is to restore or maintain wildlife habitat and enhance healthy forests. One of the main concerns in maintaining wildlife habitat and a healthy forest is the maintenance of the oak-hickory forest ecosystem. Much of the Forest is regenerating to more shade-tolerant maples and beech. To help promote oak-hickory regeneration, the 2006 Plan proposes that shelterwood be the probable harvest method instead of the 1992 Plan's group-selection. Additional prescribed burning is also scheduled in the 2006 Plan to promote oak-hickory regeneration. About 12,400 acres of prescribed burning is scheduled each year under the 2006 Plan compared to 7,400 per year under the 1992 Plan. Non-native pine plantations will continue to be restored to native hardwoods under the 2006 Plan as under the 1992 Plan, except that these will now be considered part of the suitable timber base. Approximately 3.4 million board feet (MMBF) of hardwood timber was scheduled for harvest each year in the first decade of the 1992 Plan. About 1.1 MMBF of hardwoods is scheduled for harvest in the first decade of the 2006 Plan. About 5.6 MMBF per year of pine was potentially available for harvesting under the 1992 Plan, while approximately 3.6 MMBF is scheduled for harvest in the first decade of the 2006 Plan. While a minor amount of range management was allowed under the 1992 Plan, range is not managed under the 2006 Plan except for research purposes.

Minerals Management – No consent-to-lease decision will be made in the 2006 Plan, as there was in the 1992 Plan. No-surface-occupancy stipulations are applied to natural areas and riparian area filter-strips.

Wilderness, Roadless and Wild and Scenic Rivers – The Ripple Hollow area was tentatively recommended for wilderness study under the 1992 Plan. However, the 2006 Plan makes no wilderness study recommendations because no areas outside current wilderness areas were found to meet roadless area criteria. Trail-density limits in wilderness were 1 mile per square mile under the 1992 Plan. While no trail-density limits are established in the 2006 Plan, group-size limits are allowed, as are non-native materials, to provide visitor safety and resource protection. Candidate Wild and Scenic Rivers were all managed to protect eligibility as Scenic under the 1992 Plan. The potential classification of the candidate rivers was assessed and all will be managed under the 2006 Plan to protect eligibility as Recreational rivers, except for the upper reaches of Lusk Creek that will be managed to protect eligibility as Scenic river.

Land-Ownership Adjustment – The 1992 Plan includes priorities for acquisition by management prescription and provides a map identifying areas of the Forest where consolidation is a priority. It also directs acquiring only the interest needed to achieve land management objectives, rather than all available property rights. The 2006 Plan changed the priority list for land adjustments based on conditions/ situations and not management areas. The consolidation map is eliminated because land-acquisition opportunities that may occur during the management period cannot be anticipated. Standards and guidelines are revised to emphasize acquisition of all available property rights. The 2006 Plan recommends a proclamation boundary adjustment to include new lands in the Mississippi River floodplain that have come under federal ownership since the 1992 Plan was approved.

SUMMARY OF THE FINAL ENVIRONMENTAL IMPACT STATEMENT

Documentation of the 2006 Plan's anticipated environmental consequences is contained in its accompanying FEIS, along with the anticipated effects of other management alternatives. The FEIS is required by the NEPA to disclose the potential environmental effects associated with significant resource-related issues for a range of alternative-management strategies. This analysis of potential effects on the environment was used, along with public input, to make a final selection from among the alternatives considered in detail.

SIGNIFICANT ISSUES

Public involvement is a key part of the planning process. Providing for public comment helps identify what people want from the national forests in the form of goods, services and environmental conditions. Issues submitted by the public, as well as from within the Forest Service, guided the need to change current management strategies. After the initial phase of the public involvement process, the following issues were identified and then used to develop alternatives for the Plan revision. The significant issues were grouped into seven revision topics, listed below and addressed through the revision of the Forest Plan and the alternatives to the proposal.

A. Watershed Resources

Opportunities for improving watershed conditions over what was prescribed in the 1992 Forest Plan include new management direction for water-supply watersheds and the Mississippi and Ohio Rivers floodplains and revision of forest-wide filter-strip guidelines. Most interested citizens agree that riparian (stream-corridor) areas have special values; but there is disagreement about the width of a filter strip necessary to protect water quality and the need to restrict various uses in these areas. There is concern that unnecessary restrictions within riparian areas and filter strips will limit recreation opportunities. The effects of management and use practices on water quality are the basis for evaluating how this issue is addressed by the alternatives and/or mitigation measures.

B. Biological Diversity and Wildlife and Aquatic Habitat

Some interested citizens think that there should be little or no active vegetation management, that timber-harvesting will always hurt the forest and that “allowing nature to take its course” without interference is the best way to provide old-growth hardwood forests. Others believe that the forest can be managed to enhance biological diversity through active vegetation management, including prescribed burning and timber harvesting to maintain the oak-hickory forest-type and openlands for wildlife habitat; and through aggressive control of invasive species. Opportunities for enhancing biological diversity—and wildlife and aquatic habitat—include improvements in management direction for forest-interior habitat and large openlands and wildlife openings and in guidance for the protection and management of threatened, endangered and sensitive species, management-indicator species and natural areas. The effects of management and use practices on biological diversity and wildlife and aquatic habitat are the basis for evaluating how this issue is addressed by the alternatives or mitigation measures.

C. Recreation Management

Most agree that a trip to the Forest is more enjoyable when they find well-maintained trails, roads, campgrounds and picnic areas. However, there are others who want only natural, unaltered environments for their recreation. Horseback-riding on the Forest has expanded greatly in the last 10-15 years and there is disagreement over how to prevent resource damage caused by equestrian use, and whether or how to regulate equestrian use. One thing about which everyone agrees is the need for a well-marked, mapped and maintained trail system. But there is disagreement as to the appropriate number of miles of trails, where they should be constructed and whether equestrian use should continue to be allowed cross-country. There is also disagreement as to whether the use of ATVs and OHMs should be allowed. Some believe that the use of ATVs/OHMs has no more effect on the land than equestrian use and should be allowed anywhere horses can go. Others see ATV/OHM-riding as totally incompatible with environmental protection and other recreational uses. Opportunities for improving the 1992 Plan included determining the appropriate direction for developed and dispersed recreation, including equestrian, ATV/OHM and bicycle use on the Forest. The effects of management and use practices on recreational opportunities and experiences are the basis for evaluating how this issue is addressed by the alternatives or mitigation measures.

D. Forest Ecosystem Health and Sustainability

There is disagreement about whether trees should be harvested from the Forest. Some believe that timber harvesting, in conjunction with prescribed burning and other vegetation-management activities, can help maintain the conditions necessary for sustaining the oak-hickory forest. Some support uneven-aged management and group-selection harvesting as prescribed in the 1992 Plan, while others feel that shelterwood-harvest under the even-aged management system is better suited to create the conditions necessary for regenerating oaks and hickories. Some want all timber harvest stopped, along with any associated road building. They are concerned about below-cost timber sales and the effects of timber harvest on wildlife, water quality, visual quality and recreation.

Opportunities for improving forest health include a Forest goal emphasizing forest health and sustainability instead of timber production. Oak-hickory composition-objectives based on ecological land-types and the natural range of variability, along with prioritization of non-native pine-removal based on historic oak-hickory sites, are opportunities for improving forest health. Range-management opportunities are limited on the Forest and are best suited to the research purposes of Dixon Springs Agricultural Experiment Station.

The effects of management and use practices on forest ecosystem health and sustainability are the basis for evaluating how this issue is addressed by the alternatives or mitigation measures.

E. Minerals Management

Beneath the Forest lie deposits of mineral resources owned by the federal government, corporations and private citizens. These minerals can be used by industry and provide income to the federal and county governments. But mineral production usually requires some change in the forest: roads, mineshafts, drill rigs, tanks, pipelines, pumps, or open pits may be needed to develop the resource.

Some do not think that any form of oil and gas development is an appropriate use of the Forest; they are concerned about its effects on the Forest environment. The effects of minerals management on forest resources are the basis for evaluating how this issue is addressed by the alternatives or mitigation measures.

F. Wilderness, Roadless and Wild and Scenic Rivers

The Illinois Wilderness Act of 1990 designated seven areas on the Forest as wilderness. These wilderness areas encompass approximately 28,000 acres—about 11 percent—of the Forest. There is disagreement among interested citizens regarding the benefits of wilderness and the need for additional wilderness. Many would like additional wilderness and many others want no more areas designated as wilderness. The most significant issues concerning the future of Camp Hutchins, Burke Branch and Ripple Hollow are related to concerns about motorized use, effective and efficient trail maintenance and mineral exploration. Opportunities were explored for the identification of additional roadless areas and candidate wild and scenic rivers, along with the potential classification of existing candidate wild and scenic rivers. The effects of management and use practices on wilderness—existing and potential—and candidate

wild and scenic rivers are the basis for evaluating how this issue is addressed by the alternatives or mitigation measures.

G. Land-Ownership Adjustment

The Forest is comprised of fragmented federal ownership within the proclamation boundary. A consolidated Forest land-base would provide for better public use and efficient management. Existing land-ownership and adjustment guidelines occasionally inhibit acquisition of land that could provide public benefits, such as areas of the Mississippi River floodplain. Opportunities for improving land-adjustment guidelines in the 1992 Plan include new direction revising the prioritization list for surface ownership, a recommendation for statutory boundary-adjustment, elimination of the Forest consolidation map and emphasis on the acquisition of all available property rights in each land-adjustment case. The effects of land-ownership adjustment on the various resources are used to evaluate how this issue is addressed by the alternatives.

ALTERNATIVES CONSIDERED IN DETAIL

Four alternative ways of addressing the significant issues were developed in detail in the FEIS. A brief description of each alternative follows. (For a detailed chart on the comparison of alternatives, refer to Chapter 2 in the FEIS.)

Alternative 1 – No Action

Alternative 1 would continue management under the 1992 Plan. There would be some minor changes, such as stipulating in the Plan the protection of listed threatened, endangered and sensitive species while removing the outdated species lists; updating the standards and guidelines for protection of threatened, endangered and sensitive species; and adopting a more focused list of management-indicator species. The overall focus of the Plan would be unchanged; this alternative provides a mix of products and uses, avoids sensitive areas and continues use at about the same levels as provided in the past.

Recreation management includes a trail corridor map and proposed 338 miles of hiker/equestrian trails and 286 miles of ATV/hiker/equestrian trails. Cross-country equestrian riding is allowed and bicycle use is allowed on open roads and ATV trails.

Most hardwood timber would be harvested with group-selection and uneven-aged management practices. There is no scheduled timber harvest in the FIMUs, Cave Valley, Camp Hutchins, Burke Branch or Ripple Hollow. In addition, there would be no scheduled timber harvest in areas near lakes, streams, recreation areas, or other places identified as especially sensitive and popular for Forest users. Pine and pin oak are not part of the suitable timber base; however, they could be made available for harvest as a by-product of work to restore natural ecosystems and for wildlife habitat management at the Oakwood Bottoms Greentree Reservoir.

Provisions for mineral development and oil and gas leasing are allowed with special stipulations applicable in certain management areas.

Alternative 2 – Selected Alternative

Under Alternative 2, management for watershed resources is emphasized through the identification of water-supply watersheds—Kinkaid Lake, Cedar Lake and Lake of Egypt—and specifications for their management, management direction for the Mississippi and Ohio Rivers floodplains and revised riparian filter-strip guidelines. Biological diversity and wildlife and aquatic habitat would be enhanced through new standards and guidelines for the management of forest-interior habitat. Species that require large openland-habitat would benefit from the creation of a large-openland management prescription, while the number of small wildlife openings would be reduced to a more manageable quantity than that specified under Alternative 1. Standards and guidelines for the management and protection of threatened, endangered and sensitive species and species of concern would be revised, as under all alternatives. Natural areas would continue to be protected and managed for their unique features.

Changes in standards and guidelines pertaining to pesticide-use would support the control of invasive species, further protecting and enhancing biological diversity. The opportunity for wetland and bottomland hardwood management at Oakwood Bottoms Greentree Reservoir would be expanded through adjustment of the management-area boundary to include recently acquired adjacent land. As under all alternatives, the list of management-indicator species would consist of five species of birds that represent openland and forest habitats; species of recreational interest would no longer be listed.

Alternative 2 would restrict horseback-riding to designated system trails and allow the seasonal closure of equestrian trails not constructed for all-season use. It would emphasize the development of a mapped, marked and well-maintained trail system and would direct the closure and rehabilitation of user-developed trails not designated into the trail system. The trail-corridor map from the 1992 Plan would be withdrawn and trail-density standards and guidelines would be eliminated from all management areas. The use of ATVs would continue to be prohibited. Licensed-vehicle use would be allowed on all open roads. Bicycles would be allowed on open roads and on system trails designated for bicycle use. Additional developed recreational sites would be allowed.

Forest ecosystem health and sustainability would be a goal under Alternative 2, rather than the production of timber products. Maintenance of the oak-hickory forest-type within its natural range of variability is considered important for biological diversity and wildlife habitat. As a means of maintaining the oak-hickory forest-type, shelterwood under even-aged management would be the probable harvest method. A variety of techniques for site-preparation, reforestation and timber-stand improvement would be allowed. Increased prescribed burning on a variety of scales would be an important tool under this alternative for maintaining the oak-hickory forest-type and other vegetative communities.

The ecological restoration of non-native pine stands to native hardwoods would be prioritized on historical oak-hickory sites. The management prescription for Iron Mountain would be changed from heritage resource significant site to mature hardwood forest to facilitate additional vegetation management, while still protecting the heritage resources under Forest-wide standards and guidelines. Since there are no suitable

range-allotments that do not conflict with wildlife-habitat objectives, the range-management objective would be eliminated except for research purposes.

No consent-to-lease decision is made. All management areas except wilderness are identified as suitable for oil and gas leasing, but no surface-occupancy is stipulated in certain areas. There are no other changes in minerals-management direction.

Alternative 2 addresses the management of wilderness and areas that were considered for wilderness-study recommendation but failed to meet the basic requirements. Of these areas, Camp Hutchins and Ripple Hollow would be managed under the non-motorized recreation management prescription and Burke Branch would continue to be managed under the Mature Hardwood Forest management prescription. The standards and guidelines for wilderness management are revised to eliminate trail densities and to allow non-native materials for trail-signing and maintenance. Group-size limits would be allowed in wilderness.

This alternative identifies the potential classification of the six streams eligible for study as part of the national wild and scenic river system and revises the candidate wild and scenic river management prescription to reflect the results of the potential classification.

Alternative 2 makes some changes regarding land-ownership adjustment. The priority list for land-ownership adjustment would be revised and the consolidation map removed. A statutory adjustment of the proclamation boundary is recommended in order to include areas within the Mississippi River floodplain. The standards and guidelines regarding acquisition of property rights is changed to emphasize the acquisition of all available rights, while scenic and conservation easements would be acceptable when management objectives are met.

Alternative 3

Alternative 3 limits human-caused disturbance of the Forest and the land, responding to issues raised by interested citizens who think that prescribed burning, timber harvesting, pesticide use, wildlife openings, ATV use and oil and gas leasing are all, collectively and individually, detrimental to the environment. Alternative 3 emphasizes management for the preservation of mature and (eventual) old-growth forest across the landscape, non-motorized recreation, additional restrictions on equestrian use and additional habitat for forest-interior wildlife and plants. To avoid possible environmental effects of timber sales and to address the below-cost timber-sale issue, no land is classified as suitable for timber production. Watershed-resource proposals are the same as under Alternative 2.

Under Alternative 3, there would be no large-openlands or wildlife-openings management and no pesticide use. There would be no cutting of trees for any reason except for human health and safety, or administrative needs (i.e. road maintenance, special use permits, etc). There would be no new road construction and no ATV or OHM access or travelways. Equestrian use of natural areas would be prohibited. Trail-density standards would be eliminated from all management areas except wilderness, and densities would be calculated for each area. Prescribed burning would be used on small projects to maintain rare ecosystems and threatened, endangered and sensitive

species. Federal minerals would be unavailable for leasing. Invasive species would be controlled only through manual, mechanical or limited biological methods, such as grazing. The lists of threatened, endangered and sensitive species and other species of concern would be revised or removed, as under all alternatives. The activities enjoined by the court ruling on the 1992 Plan are not implemented under this alternative.

Alternative 4

Alternative 4 responds to issues raised by interested citizens who would like to see more recreational opportunities than are offered under the other alternatives. Many of these support the implementation of certain aspects of Alternatives 1 and 2 and are opposed to many of the provisions of Alternative 3. Alternative 4 emphasizes motorized and non-motorized recreation, habitat for both game and non-game wildlife and forest management to maintain the oak-hickory forest-type.

Under Alternative 4, wildlife openings and openlands would be managed as under the 1992 Plan. Shelterwood-harvesting with reserves and prescribed burning would be used to favor large, mast-producing trees with open understories and to help maintain the oak-hickory forest-type. Watershed-resource proposals are the same as under Alternatives 2 and 3.

Trail management under Alternative 4 is similar to the 1992 Plan; however, it emphasizes a well-marked, mapped and maintained trail system and removes the trail corridor map. Additional trails would be allowed in natural areas, and equestrian and bicycle use would be allowed on designated trails in natural areas. Alternative 4 retains the proposed 286 miles of ATV trail-corridor from the 1992 Plan and allows additional ATV and OHM opportunities on up to 50 percent of the maintenance level 1 and 2 roads, and allows licensed-vehicle use on open roads. Trail-density standards are removed from all management areas.

As under Alternative 2, no new wilderness recommendations are made. The management prescription for Ripple Hollow and Camp Hutchins would be changed to Mature Hardwood forest. Candidate wild and scenic rivers are managed as provided under Alternative 2. Mineral management would be the same as under Alternative 2, except that no surface occupancy stipulations would be applied forest-wide.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives not developed in detail (40 CFR 1502.14). Comments received from the public since the publication of the NOI and during the public alternatives development meetings provided suggestions for alternative methods of achieving the purpose and need. Some of these suggestions were outside the scope of the Plan revision or were determined to have components that would cause unnecessary environmental harm. Therefore, some alternatives were considered but dismissed from detailed consideration. These are summarized below.

Several suggestions, such as eliminating natural areas and candidate wild and scenic river corridors as management areas, expanding the list of management-indicator species and species of recreational interest, allowing only single-tree selection harvest, eliminating prescribed burning, allowing equestrian trails in all natural areas, converting all user-developed trails to Forest system trails, prohibiting all equestrian use, not expanding the Oakwood Bottoms Greentree Reservoir, and terminating the tenancy of the University of Illinois at Dixon Springs Agricultural Center, were not carried forward into detailed alternatives because they did not meet the purpose and need for the Plan revision. The following alternatives were considered but not analyzed in detail.

- **Recommending Wilderness Study for Ripple Hollow, Burke Branch and Camp Hutchins:** Many suggested that the Ripple Hollow, Burke Branch and Camp Hutchins areas should be recommended for designation as wildernesses.

Only congress can designate wilderness. However, the Forest Service can recommend an area for wilderness study if it meets certain roadless inventory and wilderness evaluation criteria. These areas were evaluated, along with others on the Forest, to determine whether they met the roadless inventory criteria. Other than areas that congress has already designated wilderness, no areas on the Forest were found to meet the criteria. Therefore, no areas on the Forest were further evaluated for wilderness or recommended for wilderness study. Since Ripple Hollow was tentatively recommended for wilderness study in the 1992 Plan, the wilderness study management prescription was used for this area under Alternative 1, the no-action alternative.

- **Use of Prescribed Fire Only, To Control Maple:** Some comments on the DEIS suggested that an alternative should be developed that considers the use of only prescribed fire to control maple-beech competition in the understory, without the use of other vegetation treatments, such as timber harvesting and timber-stand improvement activities.

The interdisciplinary planning team considered this approach, but determined that use of prescribed fire alone would not be sufficient to control maple-beech competition in order to sustain the oak-hickory forest type and the biodiversity dependent upon it. The shade-tolerant maple has become established in many places across the Forest and has grown to a size that would not be affected by prescribed burning alone. Several studies have shown that larger-diameter trees are not likely to be killed by prescribed burning alone. Franklin *et al.* (2003) found that burning did not affect stems greater than 3.8 centimeters diameter at breast height (DBH), and that thinning was generally necessary for the understory to respond to burning treatments. Rebbeck *et al.* (2004) found that red and sugar maples are susceptible to fire only when stems are small (less than 6 centimeters DBH). Elliott *et al.* (2004) found that most mortality from understory burning occurred in trees less than 10 centimeters DBH, and no trees greater than 20 centimeters DBH were killed.

The amount of sunlight reaching the forest floor is an important factor in the regeneration of oaks. Inadequate light often limits oak regeneration and recruitment into the overstory (Lorimer, 1993). If larger trees cannot be killed by prescribed

burning, other vegetation treatments would be required to eliminate competition and provide adequate sunlight for the establishment and growth of young oaks and hickories.

- **No Commercial or Non-Commercial Timber Removal During the Nesting Season of Migratory Birds:** A comment on the DEIS suggested that, in order for the Forest Service to be in compliance with the Migratory Bird Treaty Act, an alternative should be analyzed that prohibits timber removal during the nesting season of the migratory birds.

The Forest has taken, and continues to take, many planning and administrative actions to ensure the conservation of migratory birds. This is consistent with Executive Order 13186, which directs all federal agencies, including the Forest Service, to work with the US Fish and Wildlife Service to conserve populations of migratory birds. Alternative 3 allows no timber removal for commercial or non-commercial reasons unless needed for human health and safety. I believe this adequately portrays the effects of no timber removal during the nesting season on migratory birds, especially since the nesting season lasts through much of the spring and summer in southern Illinois. Accordingly, a separate alternative that limits timber removal only during the nesting season was considered unnecessary.

- **Benchmark Alternatives:** Several “benchmark” alternatives were developed during analysis for the Forest Plan revision. Benchmarks represent production potentials for various resources and uses. Benchmarks were developed for maximum timber production, maximum oak-hickory, maximum present net value of market values, and minimum level management.

The National Forest Management Act, Multiple-Use Sustained-Yield Act, Endangered Species Act, and other laws and Forest Service policy require that national forests be managed for a variety of uses as well as resource protection. The benchmark alternatives were eliminated from detailed consideration because they would not meet the purpose and need with regard to providing balanced resource protection and management.

EFFECTS OF THE ALTERNATIVES

This is an overview of the effects, by resource, of the management and use activities that are analyzed for both the short and long term, particularly as they relate to significant issues. Thirteen management and use activities are analyzed for their anticipated effects on the various resources: restrictive management; roads and trails management; recreational use of roads and trails; dispersed recreational use; developed recreational site use; timber harvest methods; vegetation treatments; fire management; integrated pest management; openings and openland management; aquatic resources management; minerals management; and land-ownership adjustment. The analysis of cumulative effects includes consideration of the incremental effects of all proposed activities, as well as the effects of all known past, present and reasonably foreseeable future actions on and around the Forest.

Effects on Soils

There is evidence that past land-management activities prior to Forest Service ownership have resulted in long-term damage to the soil resource. On national forest land, reforestation and soil-conservation practices have greatly reduced the erosion rates of old, previously agricultural fields.

The potential for affecting soil productivity is greatest under Alternative 1 because it projects the largest physical area managed with soil-disturbing activities. Considered together with the effects of past, present and reasonably foreseeable future actions in the 28 watersheds that contain the Forest, implementation of Alternative 1 would likely result in adverse cumulative effects on soils in some of the watersheds.

Implementation of Alternative 2 would result in greater effects on soils than Alternative 3, but lesser effects than Alternatives 1 and 4. Implementation of Alternative 3 would have the least potential for affecting soil productivity because it proposes minimal surface-disturbing activities and therefore should result in no adverse cumulative effects on soils. Implementation of Alternative 4 would have greater effects than Alternatives 2 and 3, but slightly less than Alternative 1. Considered together with the effects of past, present and reasonably foreseeable future actions in the 28 watersheds that contain the Forest, implementation of Alternatives 2, 3 and 4 should result in minimal adverse cumulative effects on soils.

Effects on Water Quality

The effects on water quality are directly related to the effects on soil. The more surface area disturbed, the greater the effect on water quality. Except for Alternative 3, there would be some degree of timber harvest and other surface-disturbing management activities on the Forest. Without mitigation, the effects of these activities can combine with the increased runoff from privately-owned lands caused by timber harvest or conversion of woodlands to agricultural fields, both of which reduce transpiration. When this occurs, channel erosion and degradation can accelerate beyond natural levels. These, in turn, can affect fish habitat, water uses and the visual appearance of water. Forest Service activities are less intensive compared to major local land uses such as agriculture and mining and the Forest employs mitigating measures to minimize the effects on soil and water.

Past activities affect water quality as well. The sedimentation of streams is directly correlated with soil erosion, as soil erosion supplies sediments that enter streams through overland flow (runoff). This negatively affects water quality. However, not all sediments eroded from upland sites reach the streams. Sediments suspended in runoff can be trapped in forest vegetation and litter and/or in coarse fragments on the soil surface.

Past soil-disturbing activities such as farming, grazing, land-clearing for agriculture, timber harvest, road construction and use, use of user-developed equestrian and hiker trails, unauthorized ATV use and mining, have increased sedimentation (above geologic rates) and have had a harmful effect on water quality. Past activities that have had a positive effect on water quality by controlling and reducing erosion and sedimentation

include the filling of abandoned wells and cisterns, management of natural areas and wilderness areas, pine and hardwood plantation establishment, tree planting, wetland restoration and road and trail maintenance.

The potential to affect water quality is greatest under Alternative 1, with adverse cumulative effects on water quality. Alternative 2 would have lesser effects on water quality than Alternatives 1 and 4 and more than Alternative 3. The effects of Alternative 2 should result in minimal adverse cumulative effects on water quality. Alternative 3 would have the least effects on water quality because of the minimal level of activity allowed and should result in no adverse cumulative effects on water quality. Alternative 4 would have fewer effects on water quality than Alternative 1, but more than Alternatives 2 and 3.

Effects on Air Quality

Under all alternatives, the implementation of most management activities could include the use of heavy equipment. Air quality can be locally (depending on winds) and temporarily affected by emissions from heavy equipment including skid steers, tractors, dozers, skidders, trucks, etc. In general, the effects of these activities on air quality are expected to be minimal to non-existent. Prescribed burning and minerals management can affect air quality.

The major pollutant of concern in smoke from fire is fine particulate matter. These pollutants are of concern because they can affect human health. They also cause reduced visibility and serve as sorption for harmful gases. Prescribed fire is an essential forest-management tool, but because it can have serious effects on air quality, smoke-management guidelines have been developed by the Forest Service to reduce the atmospheric impacts of prescribed fire. Forest-prescribed burning plans include smoke-management requirements that provide for smoke-dissipation to meet state and federal air-quality standards. For these reasons, the effects on local, regional or global air quality from the prescribed burning proposed in each of the alternatives would be virtually undetectable.

Air quality can be locally (depending on winds) and temporarily affected by minerals management through emissions from the heavy equipment used during road construction, drill-pad construction and drilling (about the same as several city buses). Because of the small amount of surface occupancy expected under Alternatives 1 and 2, the no-surface-occupancy under Alternative 4 and the prohibition on the leasing of federal minerals under Alternative 3, effects on air quality would be very similar in all alternatives. These effects would depend on the amount of drilling occurring on national forest land and, if on adjacent private land, its distance and proximity to national forest land and would be considered in site-specific environmental analyses of any proposed exploration activity. Since there has been no exploration activity on the Forest during the life of the Forest Plan, it is anticipated that the effects on local, regional, or global air quality from the possible future oil and mineral exploration activities proposed in each of the alternatives would be minimal to non-existent.

Considering past, present and reasonably foreseeable future actions and in light of the fact that the effects on local, regional or global air quality from activities proposed under each of the alternatives would be virtually undetectable, no cumulative effects are anticipated.

Effects on Forest Ecosystem Health and Sustainability

There are many views of what constitutes a healthy forest. To some observers, dead, dying and down trees are evidence of poor forest health, while others view them as evidence of cyclical diversity. For purposes of this analysis, forest health includes factors such as age, structure, composition, vigor; damage from insects, pathogens and invasive species; and resilience to fire and other disturbance agents. Generally a well-managed forest with a wide variety of species and age classes is a healthy forest and has fewer problems with native insect and pathogenic epidemics. Biodiversity is also an important factor in forest health and is discussed in the next section.

Past and present activities on and around the Forest have influenced forest ecosystem health and sustainability and have had the effect of creating the forest ecosystem that exists today. This ecosystem is much less extensive than the one that existed in pre-settlement times, but research indicates that pre-settlement witness-tree patterns largely reflect present-day patterns and frequencies of overstory trees. With the exception of non-native pine plantations, oak-hickory forest is dominant today in most of the same places where it was dominant in pre-settlement times.

Management under Alternative 1 would continue the conversion of the oak-hickory forest-type to the maple-beech type in restrictively-managed areas. Under this alternative, the implementation of a moderate prescribed-burning program, group-selection harvesting, tree planting where oak-hickory regeneration is lacking and timber-stand improvement would support a greater percentage of the oak-hickory forest-type than would occur if no actions are taken (Figure 1, Table 2). The conversion of non-native pine plantations to native hardwoods, including oaks and hickories, would enhance the natural biodiversity and health of the forest within a shorter timeframe than under Alternative 3. Management of the forest to maintain vigorous growth would support conditions that limit and/or prevent insect and pathogen problems. The limited control-options allowed under this alternative for non-native invasive species could improve forest health, but not to the extent of Alternatives 2 and 4. The overall effects of Alternative 1 would result in a forest ecosystem that is less healthy than might occur under Alternatives 2 and 4, but generally healthier and more sustainable than what would occur under Alternative 3.

Management under Alternative 2 would continue the conversion of the oak-hickory forest-type to the maple-beech type in restrictively-managed areas. However, under this alternative, the implementation of a landscape-scale prescribed-burning program, shelterwood harvesting, tree planting where oak-hickory regeneration is lacking and timber stand improvement would support a greater percentage of the oak-hickory forest-type than would occur if no actions are taken (Figure 1, Table 2). The conversion of non-native pine plantations to native hardwoods, including oaks and hickories, would enhance the natural biodiversity and health of the forest within a shorter timeframe than under Alternative 3. Management of the forest to maintain vigorous growth would

support conditions that limit and/or prevent insect and pathogen problems. The aggressive control of non-native invasive species allowed under this alternative would improve forest health to a greater extent than under either Alternative 1 or 3. The overall effects of Alternative 2 would result in a forest ecosystem that is healthier and more sustainable than might occur under Alternatives 1 and 3, but similar to Alternative 4.

The overall restrictive management proposed under Alternative 3 would limit the amount of disturbance allowed in the forest ecosystem and encourage the continued conversion of the oak-hickory forest-type to the maple-beech type across most of the Forest, except on areas of shallow soils and low site-productivity. The restrictive management proposed under Alternative 3 would allow no timber harvesting, no landscape-scale prescribed burning and no timber-stand improvement activities, all of which are necessary for oak-hickory regeneration and growth (Figure 1, Table 2).

The conversion of non-native pine plantations to native hardwoods would be delayed under Alternative 3, since the elimination of the pine overstory would depend on natural mortality only. It would not maintain the vigorous forest-growth necessary to prevent insect and pathogen problems. Less-aggressive control of non-native invasive species permitted under Alternative 3 would allow non-native invasive species to continue to be a problem. The reforestation of all openlands would increase the amount of forested land on the Forest by about one percent and have a minor, positive affect on forest health and sustainability. Implementation of Alternative 3 would result in a mature, old-growth forest ecosystem, with much of the Forest dominated by the maple-beech forest type, predisposed to outbreaks of destructive insects and pathogens and with continued non-native invasive species problems. The future forest ecosystem would not be as biologically diverse and, therefore, would not be considered as healthy and sustainable as the forest ecosystems resulting from Alternatives 1, 2 and 4.

Management under Alternative 4 would continue the conversion of the oak-hickory forest-type to the maple-beech type in restrictively-managed areas. However, under this alternative, the implementation of a landscape-scale prescribed-burning program, shelterwood-harvesting with reserves, tree planting where oak-hickory regeneration is lacking and timber stand improvement would support a greater percentage of the oak-hickory forest-type than would occur if no actions were taken (Figure 1, Table 2). The conversion of non-native pine plantations to native hardwoods, including oaks and hickories, would enhance the natural biodiversity and health of the forest within a shorter timeframe than under Alternative 3.

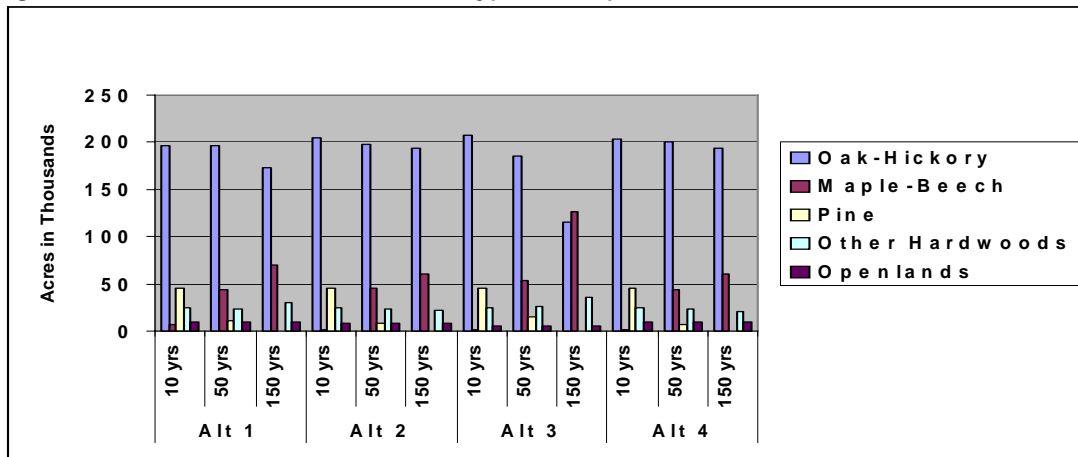
Management of the forest to maintain vigorous growth would support conditions that limit and/or prevent insect and pathogen problems. The aggressive control of non-native invasive species allowed under Alternative 4 would improve forest health to a greater extent than under either Alternative 1 or 3. The overall effects of the implementation of Alternative 4 would result in a forest ecosystem that is healthier and more sustainable than might occur under Alternatives 1 and 3 and similar to Alternative 2.

Prescribed burning would vary by alternative (Table 1.). Burning for site-preparation/brush disposal would be done near the time of timber harvest to help create conditions favorable to oak-regeneration, reduce logging-slash and control understory competition from more shade-tolerant species. The use of fire for landscape-scale hardwood-site preparation is prescribed for large blocks of forestland to mimic natural fire regimes and help maintain the oak-hickory forest-type through control of the more-mesic species in the forest understory. Burning for ecological purposes is prescribed in the Natural Area management prescription to help in the maintenance of the barrens natural communities and would occur approximately three times per decade. Large-openland management would utilize prescribed burning to help maintain the openland habitats.

Table 1. Acres (x 1,000) of prescribed burning in first decade under each alternative.

Type of Burn	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Site preparation/brush disposal	11	17	0	14
Landscape-scale hardwood site preparation	5	66	0	65
Ecological - natural area barrens	30	30	30	30
Large-openlands management	11	11	0	11
Total	57	124	30	120

Figure 1. Effects of alternatives on forest-types and openlands.



Proposed Land and Resource Management Plan and D.E.I.S.
Executive Summary

Table 2. Projected, long-term (150 year) age-/size-class distribution of the oak-hickory and maple-beech forest-types.

Forest-Type Age-/size-class*	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Oak-Hickory	Acres			
Seedlings/Saplings	4,284	13,848	1,431	13,294
Posts/Poles	14,537	54,957	4,067	54,901
Sawtimber	25,048	59,136	4,022	62,185
Old Growth	122,902	64,835	106,288	64,664
TOTAL	166,772	192,776	115,808	195,045
Maple-Beech	Acres			
Seedlings/Saplings	2,850	2,852	2,850	2,848
Posts/Poles	5,699	5,704	5,699	5,697
Sawtimber	8,999	8,701	8,723	8,675
Old Growth	57,832	42,858	109,371	41,676
TOTAL	75,380	60,115	126,643	58,897

*Size-classes based on ages: seedling/saplings = 0-20 years, post/poles = 20-70 years, sawtimber = 70-120 years, and old growth = 120+ years.

Timber harvesting is proposed under three alternatives as part of the vegetation-management program for maintenance of the oak-hickory forest-type and for conversion of non-native pine plantations to native hardwoods. Harvesting is proposed on lands considered suitable for timber management and, on lands considered unsuitable, for other purposes, such as natural-community management or habitat enhancement. Proposed timber harvesting and probable harvest methods are displayed in Table 3.

Table 3. Proposed and probable timber-harvest methods by forest-type during the first decade, on suited and unsuited lands (in acres).

Alternative and Forest-Type	Group Selection		Shelterwood		Shelterwood with Reserves		Thinning	
	Suited	Un-Suited	Suited	Un-Suited	Suited	Un-Suited	Suited	Un-Suited
Alt. 1 Hardwood Pine	2,770 0	0 0	0 0	0 0	0 0	0 4,380	0 0	0 0
Alt. 2 Hardwood Pine	0 0	0 0	3,197 0	659 0	1,500 3,814	400 586	263 0	95 0
Alt. 3 Hardwood Pine	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
ALT. 4 Hardwood Pine	0 0	0 0	0 0	0 0	3,393 3,838	1,642 562	512 0	630 0

The management and control of non-native invasive species would be most aggressive under Alternatives 1, 2 and 4, each of which allows the use of pesticides. Alternative 3, which allows only manual, mechanical and limited biological control-measures, would not be as efficient as the other alternatives in the control of invasive species.

Proposed Land and Resource Management Plan and D.E.I.S.
Executive Summary

The activities and outputs in the first and second decades associated with the vegetation-management program are presented in Table 4. The timber-harvest acreages and volume outputs include harvests for maintenance of the oak-hickory type and pine-plantation conversion on both suited and unsuited lands.

Table 4. Activities and outputs associated with vegetation management activities (per decade).

Activity	Unit	ALT. 1		ALT. 2		ALT. 3		ALT. 4	
		1 st decade	2 nd decade	1 st decade	2 nd decade	1 st decade	2 nd decade	1 st decade	2 nd decade
Sale prep/admin	Acre	7,170	15,549	10,514	23,723	0	0	10,577	22,367
Road reconstruction	Mile	47	67	94	105	0	0	95	97
Temporary road construction	Mile	29	43	59	66	0	0	59	61
Thinning	Acre	0	0	358	217	0	0	1,142	527
Group selection	Acre	2,770	3,349	0	0	0	0	0	0
Pine conversion	Acre	4,400	7,800	4,400	7,800	0	0	4,400	7,800
Hardwood shelterwood w/ reserves (1 st)	Acre	0	0	1,900	1,900	0	0	5,035	4,605
Hardwood shelterwood w/ reserves (2 nd)	Acre	0	0	0	1,900	0	0	0	5,035
Hardwood shelterwood (1 st entry).	Acre	0	0	3,856	3,650	0	0	0	0
Hardwood shelterwood (2 nd entry)	Acre	0	0	0	3,856	0	0	0	0
Planting	Acre	3,576	4,337	6,166	7,186	2,000	2,000	5,818	7,103
Natural regeneration/site prep	Acre	4,998	7,800	7,490	9,663	0	0	7,119	8,804
Site prep - Rx burn/BD	Acre	11,352	24,301	17,371	26,847	0	0	14,187	24,981
TSI - release	Acre	5,024	7,574	5,362	12,656	0	0	5,363	11,935
Hardwood site prep - Rx burn	Acre	5,000	5,000	66,218	66,218	0	0	64,886	64,886
Ecological Rx Burn	Acre	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Artificial regeneration large openland	Acre	0	0	0	0	3,400	0	0	0
Bulldozing in wildlife openings	Acre	1,800	0	0	0	0	0	1,800	0
Wildlife openings maintenance	Acre	2,500	2,500	700	700	0	0	2,500	2,500
Large openlands maintenance	Acre	2,700	2,700	2,700	2,700	0	0	2,700	2,700
Blowdown	Acre	2,834	2,834	2,837	2,837	2,837	2,837	2,837	2,837
Hardwood sawtimber	Mcf	1,096	1,222	1,621	6,568	0	0	1,607	4,428
Hardwood pulp	Mcf	569	442	653	2,731	0	0	717	1,891
Total									

Proposed Land and Resource Management Plan and D.E.I.S.
Executive Summary

Activity	Unit	ALT. 1		ALT. 2		ALT. 3		ALT. 4	
		1 st deca de	2 nd deca de	1 st decad e	2 nd decade	1 st deca de	2 nd deca de	1 st decade	2 nd deca de
Hardwood volume	Mcf	1,665	1,664	2,274	9,299	0	0	2,324	6,319
Pine sawtimber	Mcf	2,447	4,588	2,447	4,225	0	0	2,447	4,398
Pine pulp	Mcf	4,387	5,839	4,387	6,412	0	0	4,387	6,139
Total Pine Volume	Mcf	6,834	10,427	6,834	10,637	0	0	6,834	10,537
Total Volume	Mcf	8,499	12,091	9,108	19,936	0	0	9,158	16,856
Total Volume	Mbf	50,994	72,546	54,648	119,616	0	0	54,948	101,136

Effects on Biodiversity

Biodiversity, simply stated, is the variety of life and living things and the many processes associated with them. It is the plants and animals and their biological communities and ecological associations, or ecosystems. Biodiversity encompasses genetic diversity and variation, species diversity, community and ecosystem diversity and geographical or landscape diversity.

Management under all alternatives would maintain the habitats and communities in their current conditions during the first twenty years of the planning period. However, in the long term (100 years), some major differences would result from implementation of the alternatives. In general, Alternatives 2 and 4 would provide for the greatest degree of biological diversity. Of most interest are changes in mature and old-growth forest, barrens, early-successional forest and openland communities. Alternatives 2 and 4 would maintain the greatest amount of the oak-hickory forest-type and the species dependent upon it (Table 5). They would maintain the communities, vegetation-types and successional stages important to all native species on the Forest, including many at-risk species. Alternatives 2 and 4 would maintain almost 100 percent of the existing oak-hickory forest habitat and community in the long term (100 years), while Alternatives 1 and 3 would maintain less—7 percent and 30 percent less—respectively. Existing biodiversity would decline to some extent under all alternatives, considering the general decline of the oak-hickory and early-successional forests communities and habitats, with the least decline expected under Alternatives 2 and 4 and the most under Alternative 3.

Table 5. Acreage of mast-producing forests in the short term and long term.

Acreages from Spectrum Model	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Existing condition of oak-hickory Forests	192,800	192,800	192,800	192,800
Existing condition of mature (over 50 years) oak-hickory forests	177,800	177,800	177,800	177,800
Acreage of oak-hickory forests in the short term (20 years)	191,600	196,200	198,700	194,300
Acreage of mature (over 50 years old), mast-producing oak-hickory forests in the short term (20 years)	169,600	172,300	171,400	172,200
Acreage of oak-hickory forests in the long term (150 years)	166,772	192,776	115,808	195,045
Acreage of mature (over 50 years old), mast-producing oak-hickory forests in the long term (150 years)	147,950	123,971	110,310	126,849

The effects on viability of individual species of various ecological areas of the Forest, many of which have some degree of population-viability risk (at-risk species) are also evaluated. Conservation of these species, along with all the ecological units that are part of the Forest landscape, would result in the maintenance and/or improvement of the biodiversity of the Forest. The at-risk species are discussed in four groupings: management-indicator species, species with viability risk, species federally listed as threatened or endangered and species listed as sensitive by the Regional Forester of the Forest Service Region 9.

The MIS representing early-successional forest, grasslands and old fields are the yellow-breasted chat and northern bobwhite (Table 6, Figure 2). Implementation of Alternative 1 would result in minimal cumulative effects on the early-successional MIS and existing populations would be maintained with little or no overall increase on the Forest. Even though local populations of northern bobwhite and chat could increase near managed areas of the Forest with the implementation of Alternative 2 or 4, no general increase is anticipated due to activities on surrounding private land. Implementation of Alternative 3 would result in a decline in habitat capability for the early-successional MIS.

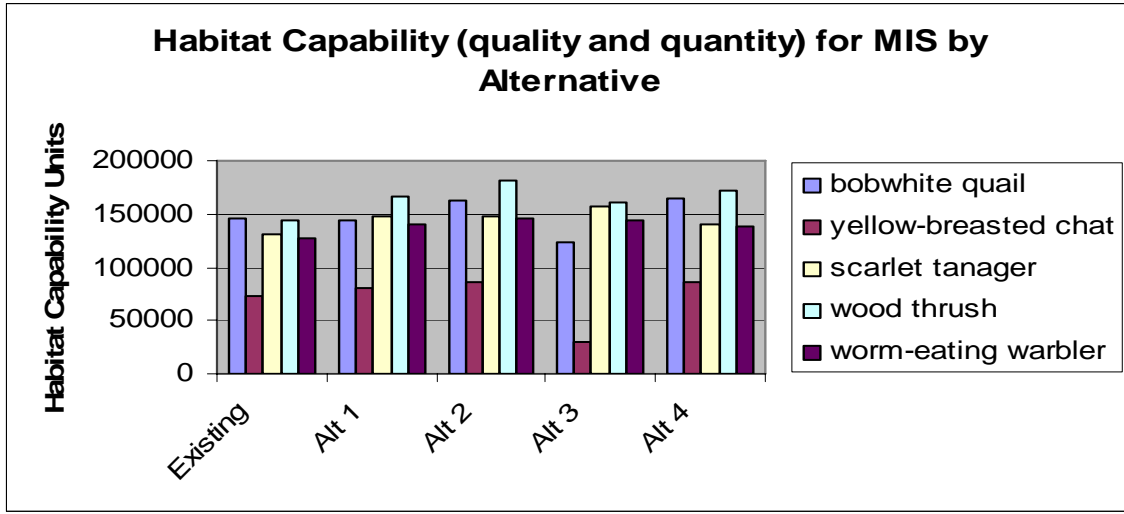
The MIS representing mature hardwood forest are the scarlet tanager, wood thrush and worm-eating warbler (Table 6, Figure 2). Even though habitat conditions on the Forest would improve for the mature-forest MIS with all alternatives, all alternatives would result in minimal cumulative effects, due to the large proportion of surrounding lands in private ownership and its continued, adverse effects on nearby national forest land. It is anticipated that existing mature-forest MIS populations would be maintained, with little or no overall increase on the Forest.

Proposed Land and Resource Management Plan and D.E.I.S.
Executive Summary

Table 6. Summary of effects on MIS habitats and populations.

MIS	Alt. 1 Cumulative Effects	Alt. 1 Population- Trends on the Forest	Alt. 2 Cumulative Effects	Alt. 2 Population- Trends on the Forest	Alt. 3 Cumulative Effects	Alt. 3 Population- Trends on the Forest	Alt. 4 Cumulative Effects	Alt. 4 Population- Trends on the Forest
Northern bobwhite	7% increase in habitat quality and quantity	Stable- slightly increasing	13% increase in habitat quality and quantity	Stable- slightly increasing	6% decrease in habitat quality and quantity	Slight decline	13% increase in habitat quality and quantity	Stable-slightly increasing
Yellow- breasted chat	22% increase in habitat quality and quantity	Stable- slightly increasing	26% increase in habitat quality and quantity	Stable- slightly increasing	19% decrease in habitat quality and quantity	Slight decline	25% increase in habitat quality and quantity	Stable-slightly increasing
Wood thrush	8% increase in habitat quality and quantity	Stable- slightly increasing	15% increase in habitat quality and quantity	Stable- slightly increasing	2% decrease in habitat quality and quantity	Stable	15% increase in habitat quality and quantity	Stable-slightly increasing
Worm- eating warbler	No change in habitat quality and quantity	Stable	2% increase in habitat quality and quantity	Stable	2% increase in habitat quality and quantity	Stable- slightly increasing	2% increase in habitat quality and quantity	Stable
Scarlet tanager	6% increase in habitat quality and quantity	Stable	8% increase in habitat quality and quantity	Stable	No change in habitat quality and quantity	Stable- slightly increasing	8% increase in habitat quality and quantity	Stable

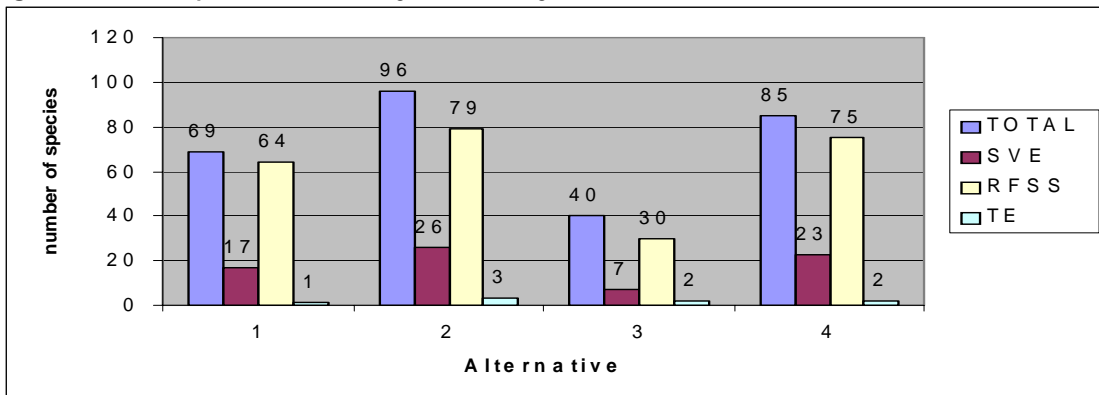
Figure 2. Habitat capability for MIS by alternative.



The many species with viability risk, federally listed threatened or endangered species and Regional Forester sensitive species, can all be affected differently by the management and use activities of the four alternatives (Figure 3, Table 7). Habitat for these species would generally be protected, maintained and improved if possible as a result of implementing Forest-wide standards and guidelines, or site specific mitigation measures. Generally, species requiring openland and early successional habitats would benefit more from Alternatives 1, 2 and 4 and would not benefit from Alternative 3. Species requiring mature and old growth forest habitat would benefit from all alternatives, but mostly through Alternative 3. Species that rely on the diversity of the oak-hickory forest type would benefit most through Alternatives 2 and 4 and least with Alternative 3.

Under any alternative, standards and guidelines are revised and updated for threatened, endangered and sensitive species. Therefore, all of these species will be protected under any alternative. However, Alternatives 2 and 4 would provide more-beneficial effects for the species that benefit from greater amounts of prescribed burning, large openlands, early-successional habitat and oak-hickory forest.

Figure 3. At-risk species beneficially affected by alternative.



Proposed Land and Resource Management Plan and D.E.I.S.
Executive Summary

Table 7. Summary of effects on habitats for species with viability risk.

Species	Habitat Indicators (from Tables 2-2 and 3-37)	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Red-headed woodpecker	Acres of open oak woodland – decades 2 and 10	15,000 15,000	76,200 76,200	10,000 10,000	74,900 74,900
Red-headed woodpecker	Acres of oak-hickory – dominated bottomland forests - decades 2 and 10	6,300 8,300	6,300 8,300	6,300 8,300	6,300 8,300
Red-headed woodpecker	Acres of oak-dominated upland forest - decades 2 and 10	186,700 176,400	189,900 192,400	192,400 131,400	188,000 190,300
Red-headed woodpecker	Acres of open, hardwood forests (0-60% canopy closure) – decades 2 and 10	81,100 37,500	78,000 62,200	77,700 36,200	78,900 64,900
American woodcock	Acres of early-successional (0-20 years old) hardwood forests – decades 2 and 10	16,400 7,000	18,200 13,800	21,609 5,700	16,400 14,900
American woodcock	Acres of managed grasslands, oldfields, wildlife openings – decades 2 and 10	23,500 23,500	7,400 7,400	0 0	23,500 23,500
River Otter	Miles of managed perennial streams – decades 2 and 10	150	150	150	150
Spring cavefish	Managed springs and seeps	All, including 16 large springs	All, including 16 large springs	All, including 16 large springs	All, including 16 large springs
River otter	Acres of managed swamps	All existing and future (about 1,100-2,000)	Same as Alt. 1	Same as Alt. 1	Same as Alt. 1
Carolina thistle, Pink milkwort, Prairie parsley	Acres of managed barrens communities – decades 2 and 10	2,700 2,700	2,700 2,700	2,700 2,700	2,700 2,700
Carolina thistle	Acres of prescribed burning – decades 2 and 10	15,000 15,000	76,200 76,200	10,000 10,000	74,900 74,900
Shortleaf pine and rhododendron	Acres of managed LaRue-Pine Hills/Otter Pond RNA	2,811	2,811	2,811	2,811

Effects on Forest-Interior Habitat

Under Alternative 1, interior habitats could be improved or maintained on about 75,300 acres (Table 8). Management of other areas should have no effect or slight positive effects on interior habitats as forest-diversity is improved. However, populations of most interior species may not improve in the planning area due to the fragmentation of land-uses and management on adjacent privately owned lands and the remote, adverse effects on wintering habitats in Central and South American countries.

Under Alternatives 2 and 4, interior habitats could be improved or maintained on about 99,400 acres (Table 8). These habitats would include the largest possible amounts of core, unfragmented, interior-forest acreage. Management of other areas should have no effect or moderate positive effects on interior habitats as forest diversity is improved. These two alternatives would also provide the most forest-diversity for those interior species dependent upon mixtures of successional stages of hardwood forests and habitats

for optimum habitat quality and use. However, populations of most interior species may not improve substantially in the planning area due to the fragmentation of land-uses and farming and grazing management on adjacent privately owned lands and the remote, adverse effects, especially of deforestation, on wintering habitats in Central and South American countries.

Alternative 2 would provide more unfragmented, high-quality, forest-interior and core-area habitats for forest-interior birds and other plants and animals dependent upon mature hardwood forests than would Alternative 1. This management would have beneficial effects on forest-interior species and their habitats.

Alternative 4 would affect forest-interior species and habitats in about the same manner as Alternative 2 except that, since the openings and openlands acreage would be comparable to Alternative 1, it would have greater adverse effects on interior habitats than those identified under Alternative 2.

Table 8. Forest-interior habitat (based on GIS analysis).

Acres	Alt. 1	Alts. 2 and 4	Alt. 3
Total directly managed for forest interior	7,600 acres (FI management area only)	56,290 acres (EH and MH management areas where interior guidelines are applied)	56,290 acres (MH management areas)
Total core areas within managed, forest-interior areas	700 acres (FI management area only)	9,388 acres (EH and MH management areas where interior guidelines are applied)	9,388 acres (MH management areas only)
Total core areas greater than 400 meters from hard edges	35,248 acres (in all management areas)	35,248 acres (in all management areas)	35,248 acres (in all management areas)
Total de facto forest-interior areas	67,700 acres (in WD, CV, CR, HR, NA, CH, RW and RA, other than Dixon Springs)	43,115 acres (1/2-mile radius of areas free of hard edges) in management areas CR, CV, HR, MM, NA, NM and WD indirectly providing habitat for interior species	43,115 acres (same as Alts. 2 and 4)
Total area managed directly and indirectly to benefit forest-interior species	75,300 acres	99,400 acres	99,400 acres

Under Alternative 3, mature hardwood forest habitats would be prevalent on approximately 232,000 acres of the Forest. Effective interior habitats (blocks of hardwood forest 500 acres or larger) would be maintained and/or improved on about 99,400 acres (Table 8). Non-forested land-uses, such as wildlife openings and large openlands and oldfields, would be eliminated. This could have minor, beneficial effects on forest-interior habitats by reducing forest fragmentation. Management of other areas should have no effect or slight positive effects as forest diversity is improved. Alternative 3 would provide the least forest diversity for interior species dependent upon mixtures of forest successional-stages.

Even with large acreages of mature and old-growth forest expected in the future under Alternative 3, populations of most interior species might not improve substantially in the planning area due to the fragmentation of land-uses and management on adjacent

privately owned lands (farming and grazing) and the remote, adverse effects on wintering habitats (from deforestation) in Central and South American countries.

Alternative 3 would not provide for forest diversity or maintain it in the future. Lack of disturbances and other successional stages of hardwood forest would limit forest diversity and result in effects for some interior bird species that would not be as beneficial as Alternative 2. For those interior bird species, such as the wood thrush, that also need some of the other successional stages of hardwood forest for parts of their life-cycle, this would not be as beneficial as Alternative 2.

Effects on Natural Areas

The Forest recognizes the value of unique biological and geological features and has designated 80 “natural areas” that are managed to ensure that the biotic diversity of the natural communities within them is maintained and/or enhanced. Natural area management guidelines are specified in the 2006 Plan under the Natural Area management prescription and in Appendix D. The Natural Area management prescription is intended to preserve, protect and enhance each area’s unique scientific, educational or natural intrinsic values. Natural areas include all research natural areas, sites listed on the national register of national natural landmarks, geological areas, zoological areas, ecological areas and botanical areas. Forest Supervisors have signed closure orders for the protection of the natural areas. These orders prohibit certain activities, such as fire-use (except for gas-stoves), rappelling or rock-climbing, off-highway vehicle use, equestrian-use and camping at unapproved sites. The Forest maintains on-the-ground marking of natural-area boundaries to ensure that the significant and exceptional features for which the areas are designated are bounded and protected.

Management of natural areas can be classified as passive or active. Passive management allows the ecological process of secondary succession to proceed and can result in the degradation and/or extirpation of disturbance-adapted communities (disclimax communities). For example, invasion of a plant community by the exotic species Japanese honeysuckle (*Lonicera japonica*) would result in a decrease in species diversity, frequency and abundance and can allow other species to invade the community and alter its composition. Active management through the application of prescriptions contained in Appendix D of the 2006 Plan allows for the restoration, maintenance and enhancement of these natural communities.

Considering past, present and reasonably foreseeable future actions and the effects on natural areas, both on and near the Forest, implementation of any of the alternatives would result in minimally adverse to no measurable cumulative effects. The value of the natural areas would be maintained in the short and long terms.

Effects on Candidate Wild and Scenic Rivers

Six streams on the Forest are identified in the Plan as eligible for inclusion in the national wild and scenic rivers system: Bay Creek, Big Creek, Big Grand Pierre Creek, Hutchins Creek, Lusk Creek and the Big Muddy River. The plan-revision interdisciplinary team—as directed by Forest Service guidance—determined interim classifications for the management of the six streams.

In addition, a forest-wide analysis was conducted to identify additional rivers for outstanding remarkable values and potential eligibility for inclusion into the national system. Twenty-three other streams were considered by the interdisciplinary team and evaluated for possible inclusion into the wild and scenic rivers system. None met the conditions that require free-flowing condition, the presence of one outstandingly remarkable value, or that protection or enhancement would not be provided through current management practices for riparian areas. A wild and scenic river classification and eligibility report (2003) was prepared on November 25, 2003.

The interim classifications apply only to National Forest stream-miles and lands within one-quarter mile on either side. Fragmented ownership patterns along each stream prevent contiguous management prescriptions. Rarely is Forest ownership longer than a continuous mile. Detailed descriptions of the outstanding remarkable values, corridor acreages, road mileages and trail mileages are included in the eligibility report in Appendix C.

The spatial boundary of this effects analysis is the watershed within which each of the candidate wild and scenic rivers occurs. None of the management activities proposed under any alternative is anticipated to have any adverse effect on the candidate wild and scenic rivers. Considering the past, present and reasonably foreseeable future actions and effects on candidate wild and scenic rivers, both on and near the Forest, implementation of this alternative would result in no cumulative effects on streams.

Effects on Wilderness

The Illinois Wilderness Act of 1990 designated seven areas of the Forest as units of the National Wilderness Preservation System. These areas were set aside as wilderness on the Shawnee National Forest to preserve natural features including native prairies and savannahs, old growth hardwood forests, deep ravines, limestone bluffs, waterfalls, sandstone cliffs and shelter caves. In addition, wilderness offers non-motorized recreation opportunities, a rare commodity in most public lands in Illinois. In November of 1998, two special-management areas—Eagle Creek and East Fork—were included into the Garden of the Gods and Lusk Creek Wilderness Areas, respectively. These wildernesses are also recovering from the effects of past home settlements, farming and grazing practices, roads, timber harvesting and planting of non-native pine trees. In addition, current impacts in some wildernesses are occurring primarily from unmanaged recreational equestrian use and the spread of non-native invasive plant species.

In all alternatives where management practices are proposed, the minimum-requirement tool guide should be used to determine the most effective tools and methods consistent with wilderness intent. In all alternatives, recreational use could rise, decrease or stay the same. Total use within wildernesses may be monitored in the event of significant resource damage, user conflicts, or satisfaction decline with opportunity for solitude.

A high level of horse use in wilderness on system and non-system trails, in old road corridors and riding cross country has heavily impacted system trails and had an effect on the natural conditions in wilderness. The cumulative effect of noise occurring outside of wilderness from recreational motorized use or management practices may affect the opportunity for solitude in all alternatives.

The cumulative impact of increased horse use on the natural condition in wilderness would be greatest in Alternative 1 due to increased impact of horses riding on non-system trails and cross country. Alternative 1 would recommend one area, Ripple Hollow to be managed as a candidate wilderness study area. If designated as wilderness, the natural areas would eventually convert to a beech/maple overstory, having a direct effect on the ecological integrity. The cumulative effects of eliminating horses on non-system trails and cross country with Alternatives 2, 3 and 4 would lead to re-vegetation of travel routes, having a positive effect on the natural condition in wilderness. This would offer greater opportunities for solitude for pedestrians away from trails, particularly during lower use seasons. The cumulative effect of having horses on system trails, however, may reduce the opportunity for solitude while on system trails, but increase the opportunity for solitude for pedestrians while off of system trails. Weather-related and seasonal effects are described in the effects section.

Effects on Recreation

The Forest is considered by many to be the primary outdoor-recreation attraction in southern Illinois. It has the largest consolidated land-base of all public lands in Illinois. Many attractions, including scenic vistas, historic sites, wilderness areas and trails are marketed by federal, state and private tourism organizations and individual businesses, increasing non-local use. Some businesses in rural southern Illinois depend on tourism revenue created by recreational opportunities offered on the Forest. With about 12-and-a-half million residents within 200 miles, the Forest is less than a one-hour drive from Indiana, Kentucky and Missouri. While Illinois residents are the primary visitors, the Forest is enjoyed by tourists from many other states.

In general, Alternative 1 would provide the greatest opportunities for equestrian use with cross-country riding being allowed. However, the quality of the riding experience would likely be lower since user developed trails are not maintained. Alternative 2 would restrict equestrian use to designated system trails, however the quality of the trail riding experience would be better with a well designed, marked, mapped and maintained trail system. An ATV/OHM trail system is not proposed under Alternatives 2 and 3 and therefore motorized recreation opportunities are more limited for these alternatives. Alternative 3 also includes additional restrictions on equestrian use. Alternative 4 offers the most motorized recreation opportunities with the proposed

ATV/OHM trail system similar to Alternative 1 and also includes additional riding opportunities on up to 50% of the level 1 and 2 Forest system roads.

There are currently 30 miles of hiker-only trail that could increase under all alternatives. Under all alternatives, system trails could be closed for resource damage, reconstruction, or for other administrative reasons. Foot-travel is not restricted under any alternative and hikers would share most non-motorized trails with equestrians.

Licensed vehicles, including licensed OHM, are allowed on all roads open to the public under all alternatives. Licensed vehicles would have access to over 2,800 miles of level-3, -4 and -5 roads of all jurisdictions. During the winter months, native-surface roads (usually level-1 or -2) are closed to motorized vehicles. During most of the year, roads offer inferior experiences for non-motorized users and serve primarily as connector routes. Hundreds of miles of roads are in poor condition, which has a direct, adverse effect on non-motorized users on roads or on road-connections between trails.

Under all alternatives, occasional prohibited use with motorized vehicles should be anticipated. Unauthorized use could cause resource damage and create unwanted noise, having a direct effect on other recreational experiences. Recreational use of OHVs that are not licensed, or do not qualify as ATVs or OHMs are not allowed under any alternative.

With all alternatives, the number of commercial and non-commercial special-use permits is expected to increase somewhat during the next ten years. Privately owned equestrian camps in proximity to the Forest are required to have a special-use permit if they offer outfitting or guiding services or hold recreational events. Total use, however, is not expected to rise significantly as a result.

As is displayed in Table 9, under Alternative 1, ATV/OHM use is expected to be about the same as equestrian use. Bicycle use is restricted to roads and ATV/OHM trails. Since bicycles already are allowed on roads, use is anticipated to increase only 20 percent from the current level with the additional 87 miles of new ATV/OHM trail-connections between roads. Alternatives 2, 3 and 4 would restrict horses to roads and system trails and eliminate user-developed trails. This is not anticipated to reduce the level of equestrian use; rather, it is expected to redistribute current use to roads and system trails. Under Alternative 2, equestrian use is expected to be about 20 percent less than under Alternative 1, due to some seasonal trail-closures. Recreational ATV/OHM use is prohibited under Alternative 2, except for administrative and permitted use (such as for people with disabilities) and is expected to be similar to Alternative 3. Bicycle use is expected to be about equal to equestrian use under Alternative 1 with the ability to ride on trails and roads.

Proposed Land and Resource Management Plan and D.E.I.S.
Executive Summary

Table 9. Estimated Forest visits for the year 2015 by alternative.¹

		NVUM*	Current use Projected to 2015	Alt. 1	Alt. 2	Alt. 3	Alt. 4
Non-local Use	Visits	176,657	203,156	203,156	203,156	199,889	203,156
Local Use	Visits	345,748	345,748	345,748	345,748	335,566	345,748
Equestrian Use	Visits	47,970	52,884	52,884	42,307	42,307	52,884
ATV/OHM Use	Visits	1,755	1,952	44,501	1,952	1,952	44,501
Bicycle Use	Visits	12,870	14,318	17,182	39,556	39,556	44,501
Total	Visits	585,000	618,058	663,471	632,719	619,270	690,790
% Difference from Alternative 1					+2%	-6%	+4%

¹ September 2004 update of visitor-use spreadsheet created by Michigan State University based on 2002 national visitor-use survey.

Under Alternatives 2 and 3, the level of equestrian use is expected to be less than under Alternative 1 by about 20 percent, due to seasonal and weather-related closures on trails and native-surface or grass roads. No recreational ATV/OHM use would be allowed, other than for accessibility, under Alternatives 2 and 3, so the use-estimates are significantly lower than under Alternatives 1 and 4. The management emphasis of Alternatives 1, 2 and 4 would be to retain and/or restore the oak-hickory forest-type, thereby maintaining or increasing biodiversity and the attractiveness of the landscape. Alternative 3 has the lowest estimate of recreational use because it envisions fewer trails (400 miles instead of 700) and results in reduced hunting and wildlife viewing opportunities over time as the amount of oak-hickory forest-type declines and species-diversity decreases.

Under Alternative 4, the level of equestrian use is expected to be about the same as under Alternative 1 without seasonal trail closures. Horses would be restricted to trails; however, possible non-motorized trail miles would double from Alternative 1. Bicycle use is expected to be at about the same level as equestrian use under Alternatives 2 and 3, less 10 percent to reflect seasonal trail and road closures. (Trails would not be closed seasonally or for weather conditions under Alternatives 1 and 4.) Increases in use would be higher than Alternative 1 under Alternatives 2, 3 and 4, with their allowance of multiple-use trails.

Most non-trail-related recreational activities are expected to remain the same under all alternatives, with the exception of a decrease in the long term under Alternative 3 in wildlife-related uses, such as hunting. The projected succession of the oak-hickory forest-type to the less biologically diverse beech-maple forest-type would result in the long term in a decrease in wildlife- and nature-based recreational uses, having an indirect effect on these recreational activities.

Under all alternatives, there are general forest areas smaller than 1,500 acres that are managed for non-motorized recreation; however, the presence of access roads into these areas places them into a Recreation Opportunity Spectrum (ROS) objective for Roded Natural. All alternatives would offer about the same opportunity for non-motorized experiences. Non-motorized settings can offer an opportunity for visitors to interact

without the disturbance of motorized vehicles within an area, even though the sight and sound of motorized vehicles may be experienced from adjacent areas.

Table 10. Recreation Opportunity Spectrum (ROS) class objectives in acres by alternative.

ROS Classes	Existing Inventory Meeting Criteria	Alternative 1 MA (Acres)	Alternative 2 MA (Acres)	Alternative 3 MA (Acres)	Alternative 4 MA (Acres)
Primitive	0	0	0	0	0
Semi-Primitive Non-motorized	5,576 acres	5.1, 9.3 (31,800)	WD (28,100)	WD (28,100)	WD (28,100)
Non-motorized ¹	0	9.4 (3,700)	NM (6,900)	NM (11,700)	0
Semi-Primitive Motorized	6,078 acres	0	6.6 (5,700) ²	0	0
Roaded-Natural (Includes the remaining MAs)	271,348 acres	240,600	235,400	236,300	248,000
Rural	1,605 acres	50% 7.1, 8.1 (8,500)	50% DR,RA (8,500)	50% DR,RA (8,500)	50% DR,RA (8,500)
Urban	0	0	0	0	0
Percentage of total acreage managed for a non-motorized objective	11	12	12	14	10

¹ Non-motorized is a Forest-designated ROS subclass of Semi-primitive Non-motorized. It retains all of the class criteria except that the core area may be 1,000 acres or greater and there are no limitations on the number of parties encountered per day.

² This acreage includes the Burke Branch area.

Management activities within each management area will be consistent with the desired ROS class objectives for the area. Most areas on the Forest are managed with the ROS class of roaded-natural. Table 10 displays the numbers of acres managed for the desired ROS objectives.

Under Alternative 1, construction of new developed recreational areas would not be allowed, unlike Alternatives 2, 3 and 4, which allow such construction. Any new developed recreational site would be consistent with the ROS class for that site and would not be expected to have a direct or indirect effect on the amount or quality of recreation under any alternative.

The development of equestrian campgrounds on privately owned land near the Forest has resulted in increased recreational equestrian use in the past decade. The total number of horseback-riders from existing equestrian campgrounds is expected to remain the same or increase in the foreseeable future, especially for visitors from out of state. However, the number of privately owned equestrian campgrounds is not expected to increase significantly.

Additionally, there currently are three known ATV recreational areas on private land near the Forest that could affect recreation on the Forest. These recreational areas, or other future ATV areas, are expected to be generally beneficial by providing an outlet for ATV/OHM riders to enjoy their recreational activities and reduce unauthorized use of the Forest. Alternately, their use could lead to the adverse effect of increased unauthorized use of the Forest.

Road management is currently occurring and is expected to continue in the future. Road management is associated with recreation site development, timber harvest, mineral extraction, wildlife habitat manipulation and the transportation of goods, services and personnel. About 430 miles of Forest Service roads are currently not receiving annual maintenance and remain open to public vehicular traffic. With anticipated increases in use and management activities, the lack of maintenance on primarily level-1 and -2 roads could compromise visitor safety or resource protection, having a direct effect on recreation. An increase in maintenance frequency would be needed under any alternative implemented for both system roads and trails.

Effects on Heritage Resources

The Forest contains a multitude of sites representing past human occupation and activities. Based on the most current figures, the Forest probably contains over 6,950 heritage-resource sites, of which 5,950 are likely to be eligible for inclusion on the national register of historic places. To date, the heritage program has recorded 2,827 heritage-resource sites. The primary mission of the Forest's heritage program is to administer the heritage resources in a spirit of stewardship for the inspiration and benefit of present and future generations. Heritage resources are important, non-renewable resources that require inventory, evaluation, protection and interpretation. They are recognized as being fragile and irreplaceable and represent important aspects of our nation's prehistoric and historic cultural heritage.

Direct effects to historic properties can result from both natural and humanly-induced earth-disturbing activities, including soil disturbance to varying depths; soil compaction or rutting; artifact alteration through prescribed fire; the alteration of a site's immediate or adjacent cultural and physical setting, such as by the addition of inappropriate visual or auditory elements; and land-use changes, such as exchanging land away from protection under federal historic preservation laws. Indirect effects to historic properties could include looting or vandalism due to increased access or use, or site degradation as a result of an off-site project or construction of roads or trails.

Several types of ground-disturbing land-management activities that vary in size (miles or acres) have the potential to affect heritage resources. These include recreation and aquatic resources management, fire management, vegetation treatments, wildlife management, road construction and maintenance, facility management (building and structure maintenance), land-use changes (land exchange and special-use permits) and minerals management. Any of these activities could directly affect unknown significant heritage resources.

Cumulative effects to heritage resources from all management activities should be extremely low due to field inventory, evaluation, protection and mitigation measures implemented prior to project-related activities. Natural processes such as weathering, erosion and wildfire could have cumulative effects on sites and artifacts over time.

Effects on Visual Quality

All the past and present actions both on and off the Forest have led to the development of the visual landscape-character that is presently visible in the planning area. (The planning area for visual concerns consists of the visible areas under federal and non-federal ownership. This includes a combination of agricultural, forested and urban settings in southern Illinois.) These actions have had a dramatic impact and change upon the pre-settlement landscape that was predominantly forested in southern Illinois. Land clearing for agriculture, road construction, open pit mining and urban development have had the most dramatic change upon the landscape character in this part of the State. The cumulative effect of these past and present actions has created the existing visual condition. These changes have resulted in a reduction of approximately 67 percent of the pre-settlement forested land within the Forest proclamation boundary.

Since the existing federally-owned property is 92 percent forested, there is little character change since establishment of the Forest in the 1930's. Regardless of alternative, there are no foreseeable long-term (50+ years) changes that will take place in the over-all forested landscape character. An inherent benefit of federal land ownership is the fact that forest management will ensure the perpetuation of the natural-appearing forest character, regardless of tree species, densities, or management practices under each alternative. The most noticeable variations of visual quality associated with forest management practices would be on a short-term (one to five years) basis.

The management activities under the alternatives that can have effects on the management activities occurring on National Forest land, such as shelterwood final overstory removals and road construction, are visually apparent, human changes in the natural environment. Other management activities not as apparent include recreation developments, small openings created through group-selection timber harvesting that mimic naturally occurring gaps and wildlife habitat improvements (e.g., ponds and small permanent openings).

Visual variety is commonplace in southern Illinois due to the intermingling of private land (cultivated lands and pasture) and National Forest land. Therefore, timber harvest to maintain or improve visual variety is unnecessary on the Forest. Conversely, it is the contiguous stands of timber on the Forest that provide most of the visual variety in this part of the state. Exceptions to this general rule include clearings to improve the viewing distances and vistas at or near recreational sites.

Land in the suitable timber base will retain a natural-appearing character, although timber harvest activities may be apparent. Forest visitors seeing harvested areas are likely to notice short term (up to five years), negative visual effects including color and textural contrasts from the presence of slash, new openings, exposed soil and reduced visual penetration into stands due to new, densely growing vegetation. The most apparent long-term (up to 20 years) visual effect is the opening created. Clear-cuts have the longest-term effect. Shelterwood is similar to a clear-cut but allows regeneration to become established before the remaining trees are removed. Group selection has considerably less effect and singletree harvests have the least effect on the visual resource. However, the total area affected, regardless of harvest technique, is also very

important to visual quality. The degree of adverse visual effect is directly related to the amount of harvest activity within a viewshed, as well as the intensity of the change.

The public's visual sensitivity towards or acceptance of timber harvesting is based on changes from a perceived existing natural condition. The best way to compare the existing condition with respect to cumulative future conditions is to compare the amount of acres harvested and the method of harvesting.

Harvest activities will be concentrated on a suitable land base, especially under Alternatives 1, 2 and 4. Therefore, timber harvest will have the potential to be more visually apparent in the areas where harvest is prescribed. Of course, there will be very little visual effect from timber harvest in that part of the forest where timber harvesting is not allowed or is unlikely to occur. The anticipated cumulative effects of the alternative actions on the visual resource are as follows:

Implementation of Alternative 1 will generate about the same level of visual-quality change through timber harvest as the 1992 Plan uses with group selection. Uneven-aged management generates less change in existing landscape character because more trees remain on site. If managed properly, it simulates natural openings created by wind-throw and natural mortality, when considered on an individual-site basis.

Implementation of Alternative 2 may create less overall adverse visual effects than Alternative 1 due to more concentrated harvesting units associated with even-aged management. Less of the Forest will be affected by harvest activities than with group selection and uneven-aged management. The initial shelterwood entries will resemble a thinning where 30 to 40 percent of the stocking is removed. However, where the final overstory removal of the shelterwood takes place under Alternative 2, more adverse visual effects may occur than with Alternative 1 because harvest activities will be concentrated on a smaller area and more visual contrast with the surrounding forest will be evident. Although some visual contrasts will be associated with the final removal phase of the shelterwood harvest method, the initial entries will stimulate advanced hardwood regeneration that will become well established and provide the appearance of a young forest. With the final overstory removal occurring 10-20 years after the initial entry, the advance regeneration could be 5-20 feet tall. This new growth will help reduce the stark visual contrast that would have been present with a total removal of all trees at once.

Under Alternative 3, there would be no timber harvest for any reason, no oil and gas leasing activities, no ATV/OHM travel-ways, no wildlife openings and very little prescribed burning. The negative visual effects associated with no management would be prevalent in the hand-planted pine-stands on the east side of the Forest and would exaggerate the decadent appearance of these stands in the near and distant future (10-50 years). This alternative would also reduce the possibility of visual variety since active timber management creates different dark-light color combinations and greater textural variations through the leaf-on season. This alternative could have a favorable effect upon those portions of the forest that are presently experiencing a conversion from oak-hickory to a maple timber composition. A higher maple population would provide a more dramatic fall color display for forest visitors and greater visual penetration since there is often less vegetation under maple overstories.

Alternative 4 will primarily use the shelterwood harvest method with reserves. This alternative would give the most flexibility to manage the desired visual variety and visual-quality objectives depending on the visual outcome and stand condition after the initial timber cuts are made. Final removal can be postponed, varied in remaining basal area, or delayed indefinitely.

Effects on Mineral Resources

Within the Forest proclamation boundary is the geologic potential for a variety of minerals ranging from energy-related minerals to industrial-use minerals and rare-earth elements. Energy-related minerals include oil, gas and coal, while tripoli, limestone and fluorite are considered industrial minerals. There has been no production of oil, gas or coal on Forest lands. The demand for minerals fluctuates and is difficult to predict. Many factors such as price, economic feasibility of extraction, technological advances and supply can determine the demand.

There are many legislative regulations determining the administration of federal minerals. For oil and gas and some industrial minerals such as tripoli, the Bureau of Land Management (BLM) is responsible for the issuance of federal leases, while the Forest is responsible for the surface management as the Surface Management Agency. Other common-variety minerals, such as limestone, are managed by the Forest.

Approximately 30 percent of the mineral estate is privately owned, either by reservation or outstanding rights. The mineral estate is generally the dominant estate. None of the management or use activities proposed under any of the alternatives is anticipated to have any effect on the mineral resources of the Forest.

Socioeconomic Effects

In preparation for revising the Plan, the Forest commissioned Indiana University to conduct a social assessment of the region in and near the Shawnee National Forest. The social assessment provided information on Forest resource uses and values. Participants viewed the forest in profoundly different ways. Recreation and use of the forest resources were very important to many. The majority of participants favored management objectives that would encourage and protect the biodiversity (28 percent) and environment of the forest (9 percent). The next most-favored forest value is recreation (26 percent). Smaller numbers of participants favored livelihood (10 percent), environmental protection (9 percent) and heritage (7 percent) values. The values favored least by the survey participants included forest products (5 percent), green space (5 percent) and spiritual values (3 percent), respectively. The proportional value of Forest values is not meant to be statistically representative of residents of southern Illinois or of interested citizen groups in general; these findings demonstrate the diversity of views held by representatives of interested citizen groups.

The Forest currently plays a minor role in the area's economy. It is associated with only 0.2 percent of the total local economy's jobs and 0.2 percent of the labor income. However, all alternatives propose an expanded role in terms of overall economic activity, especially Alternatives 1, 2 and 4. Government, services and retail trade are the

sectors of the economy that show the most benefit from the Forest's activities. Recreation, Forest Service expenditures and timber are the Forest's main contributor to the local economy in terms of employment and labor income except under Alternative 3, which has no employment or income resulting from a timber program. Payments to states and counties remain unchanged under all alternatives and mining and grazing programs contribute nothing to the local economy.

Present net value is the present value of future costs and revenues associated with management and use of the Forest. The PNV includes market values and non-market estimated values. Market values include those where the Forest Service receives money, such as for timber, special uses, etc. Non-market values are estimated values of amenities, such as recreation, including hunting and fishing and non-consumptive wildlife, which under all alternatives provides the greatest amount of benefits. The relative ranking of all four alternatives does not change from the first decade (0-10 years) to the last decade (90-100 years).

Alternative 3 has the highest PNV because of its relatively high values for recreation. However, the overall PNV costs are the lowest of all alternatives primarily due to a substantially lowered cost for both recreation and timber/vegetation management. Alternative 3 emphasizes management for mature and old-growth forest across the landscape, non-motorized recreation, additional restrictions on equestrian use and additional habitat for forest-interior wildlife and plants.

Alternative 1, the 1992 management direction, has the second highest PNV, because it has relatively low costs for both vegetation management and recreation, while garnering a high value for recreation.

Although it has the highest recreation values, Alternative 4 has the lowest PNV because it has the highest recreation costs of any of the alternatives. It also has the highest timber/vegetation management costs.

Alternative 2, with its emphasis on a variety of recreational opportunities and forest ecosystem health and sustainability, has relatively high recreation and vegetation management costs, but also high recreation values. It has the third-highest PNV, the second-highest recreation costs, the second-lowest timber and vegetation management costs and, finally, the second-highest recreation cost.

In assessing non-market, aesthetic-resource values, values and costs proposed for management of these benefits (recreation and wildlife and vegetation management) varies by alternative. Alternative 2 provides the most overall benefits (maintained recreation values and moderate vegetation management costs); Alternative 4 is similar but includes higher vegetation management costs; Alternatives 1 and 3 are similar with high recreation values and low vegetation-management.

By maintaining a forest ecosystem, the SNF also provides the public with many valuable, non-market/non-monetary resource benefits that are not fully considered in the PNV analysis. These benefits are not available, or are of limited availability, on other lands, particularly private lands. These include a forested landscape with high visual quality, clean water resources and habitat for a wide range of forest plant and

animal species. These values also are most beneficial to recreation and wildlife, the resources that provide the most benefit to the Forest Service.

Cumulative effects analysis is designed to reveal the context of alternative impacts within the planning area and over time. This is done by comparing total changes in the planning area *with* each alternative to total changes *with* no action. Such a comparison is done by estimating employment and income at the expected end of the forest planning horizon, about 15 years and calculating the share of the total economy that each alternative represents of the entire economy. Estimates for employment and income growth were derived by calculating the average annual increase in employment and the real average annual income growth for counties in the analysis area from 1969 to 2000 using U.S. Bureau of Economic Analysis county-level data.

For the alternatives, expected changes in the total number of jobs from current conditions will range from 3.8 percent under Alternative 3 to 29.5 percent under Alternative 4. The selected alternative, Alternative 2, shows a 23.8 percent change over current conditions in 2015. Expected changes to labor income for the alternatives from current conditions will range from 2.6 percent for Alternatives 3 to 32.0 for Alternative 4. Alternative 2 shows a 27.1 percent change and Alternative 1 shows a 23.0 percent change over current conditions in 2015. The cumulative effects show that, over time, the employment and income proportionate share of the economy that is attributable to national forest program management will increase under all alternatives, but most markedly under Alternatives 1, 2, and 4.

CHANGES TO THE FOREST PLAN BETWEEN THE DEIS AND FEIS

Over 2,300 comments were received from state and federal agencies and the public on the DEIS and proposed Forest Plan. Based on our review of these comments, some changes were made to the proposed Plan and incorporated into the 2006 Forest Plan (FEIS Alternative 2). These range from minor edits and clarifications to changes in some standards and guidelines and monitoring requirements. The following summarizes the major changes made between the proposed and final Plans.

THREATENED AND ENDANGERED SPECIES

- Updated the Plan Forest-wide standards and guidelines and strategies for the conservation of biological diversity, to include requirements pertaining to federally listed threatened and endangered species from the US Fish and Wildlife Service biological opinion of the 2006 Plan.

As a result of formal consultation with the US Fish and Wildlife Service on the effects of the 2006 Forest Plan on federally listed species, we have added additional direction to the Plan to ensure protection of the species and compliance with the biological opinion.

NO SCHEDULED TIMBER HARVEST IN OAKWOOD BOTTOMS GREENTREE RESERVOIR

- Scheduled no commercial timber harvesting in the Oakwood Bottoms Greentree Reservoir management area during the life of the Plan.
- Added prescribed burning, timber-stand improvement and tree planting in most of the greentree reservoir during the life of the Plan.

We made these changes as a result of environmental analysis and recent field observations that, in most locations, there is not sufficient merchantable timber to accomplish commercial timber harvesting in the Oakwood Bottoms Greentree Reservoir. Floods in the 1990's and infestations of forest tent caterpillar have created considerable mortality in the pin oak forest overstory. Mortality continues to occur in the mature overstory pin oak due to natural senescence of the older trees or other unidentified causes. Even though vegetation management cannot be achieved through commercial timber harvesting, there remains a need for prescribed burning, timber-stand improvement and planting to help maintain the oak forest-type within the greentree reservoir.

ADDITIONAL PLANTING, PRESCRIBED BURNING, TIMBER-STAND IMPROVEMENT AND WETLAND STRUCTURES

- Added additional acres of potential tree planting, prescribed burning and timber stand improvement, and some wetland structures, in the Mississippi and Ohio Rivers floodplains in anticipation of land acquisition during the life of the Plan.
- Added additional acres of timber-stand improvement in the even-aged hardwood and mature hardwood forest management areas to meet anticipated timber-stand improvement needs during in the first decade of Plan implementation.

These changes to the amounts of specific management activities were made in response to review of the proposed and probable management practices that are likely to be required during the life of the Plan.

NORMAL OPERATING SEASON AND TIMBER-STAND IMPROVEMENT GUIDELINES

- Moved the proposed Plan guidelines regarding the normal operating season for timber sale contracts and timber-stand improvement methods to a Forest Supplement of the Silvicultural Practices Handbook.

This change was made because the guidelines are better placed in the handbook supplement.

SUBSURFACE OWNERSHIP AND LAND-OWNERSHIP GUIDELINES

- Removed Plan guidelines related to subsurface ownership and land exchange.

Further review of the proposed Plan guideline regarding subsurface ownership revealed that this direction is not appropriate because subsurface rights cannot be subordinated, and because it would be very difficult to compare public benefits from surface values with the costs of acquiring subsurface rights. The guideline regarding land exchange is not appropriate because there are situations where National Forest System lands should be available for exchange in order to enhance management efficiency and to acquire desirable land parcels.

EDITORIAL CORRECTIONS

Editorial changes were made to correct misspellings, formatting, or to clarify management direction in the 2006 Forest Plan and FEIS. These corrections did not change the basic intent of the direction or the analysis.

FUTURE CHANGES TO THE PLAN

MONITORING AND EVALUATION

Monitoring is designed to answer questions regarding implementation of the 2006 Forest Plan. Monitoring and evaluation will tightly focus on accomplishment of the goals and objectives of the 2006 Plan and whether there is a need for change in the Plan. Evaluation reports will display how Plan decisions have been implemented, how effective the implementation has proved to be in accomplishing desired outcomes, and what we have learned along the way. This will allow a check and review of the validity of the assumptions upon which this decision is based.

The monitoring strategy in Plan Chapter VI ties in well with the strategic nature of Forest Plans. This monitoring strategy has four key components:

- 1 The overall strategy as described in Plan Chapter VI.
- 2 A monitoring implementation guide based on the Plan, detailing how monitoring will be accomplished.
- 3 An annual monitoring plan that outlines annual, specific tasks for the current year.
- 4 Annual monitoring and evaluation reviews, together with comprehensive evaluations conducted every five years, will provide a forum to review current annual and longer-term findings and identify specific modification if necessary.

Another important part of our adaptive management approach will be the establishment of an environmental management system (EMS) for the Forest, as required by the 2005 planning rule (36 CFR 219.5). The EMS will focus on monitoring, performance improvement, and the reduction of the environmental effects of selected significant aspects of our management under the 2006 plan. The EMS will complement the overall monitoring and evaluation strategy for the Forest.

AMENDING THE FOREST PLAN AND ADAPTIVE MANAGEMENT

This revision of the Forest Plan is shaped by a central idea: How we manage the Forest should adapt to changes in how we understand the ecological, social, and economic environments. This is adaptive management. The 2006 Forest Plan is well-structured for adaptive management because it describes well the desired conditions toward which we will strive as we implement the Plan. In fact, the desired conditions will be the basis for the projects we accomplish during the life of the Plan.

In making this decision to approve the 2006 Forest Plan, I am also deciding that the Plan will be adaptive and subject to change as we monitor, learn, and gain new information. The Plan revision has incorporated much that has been learned since implementation of the 1992 Plan. However, this Plan could still be improved as we learn more about ecosystem functions and processes. The Plan is not cast in stone, to be unquestioningly observed for the next 15 years. We will track progress toward reaching the desired conditions, and modify management actions when needed, depending on the results of our actions or new information. If a particular management strategy, technique, or practice is applied, its results will be monitored to see if the desired effect is occurring, and if not, a modified or new strategy will be developed and implemented. That new strategy will also be subject to monitoring, evaluation, and, if necessary, change.

Changes to the Plan will generally take the form of plan amendments or corrections and will follow the appropriate procedures specified in NFMA and its implementing regulations. The Forest Supervisor will determine whether changes to the Forest Plan require an amendment or can be made through an administrative correction. The correction of simple errors may take the form of an errata statement.

CONTACTS

More information on the 2006 Forest Plan and/or the FEIS can be obtained from:

Hurston A. Nicholas Forest Supervisor (618) 253-7114	or	Richard Blume-Weaver Planning Staff Officer (618) 253-7114	or	Stephen Hupe Forest Planner (618) 253-7114
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at the Shawnee National Forest, 50 Highway 145 South, Harrisburg, IL 62946.
Electronic copies of the FEIS, Executive Summary, 2006 Forest Plan and the ROD are available at: www.fs.fed.us/r9/forests/Shawnee.

OTHER DOCUMENTS

Contact the Forest Supervisor's Office at 1-800-MY WOODS (699-6637) if you would like a complete copy of the 2006 Plan and FEIS or digital copies on compact disc.