Chapter 2

Alternatives

Introduction

Alternatives provide a framework for analyzing various ways of meeting the purpose and need for revising the Forest Plan and, more specifically, to address the issues discussed in Chapter 1.

A Forest Plan revision considers a range of alternatives for natural resource management. One alternative has been selected as the guiding strategy for natural resource management on the Wayne National Forest for the next 10 to 15 years. The Revised Forest Plan that accompanies this Final Environmental Impact Statement (Final EIS) is based on the selected alternative (Alternative E Modified). Another document, the Record of Decision, will outline the process and rationale for choosing the selected alternative.

This chapter, which describes and compares the alternatives considered for the 2006 Forest Plan, is divided into the following sections:

- Alternative Development
- Alternatives Eliminated from Detailed Study
- Elements Common to All Alternatives
  - Laws, Regulations and Policies
  - Management Areas
- Alternatives Considered in Detail
  - A
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  - E Modified
  - F
- Comparison of Alternatives
  - Management Area Allocation
  - Estimated Management Activities/Outputs
  - How the Alternatives Address the Issues

Alternative Development

In 2002, the Forest Service issued a Notice of Intent (NOI) to revise the WNF Forest Plan. The NOI informed the public about the formal revision process and identified an initial list of topics to be addressed. The Forest Service solicited comments or suggestions from the public on the proposed revision topics. These public comments helped frame the issues that drive the revision.

After the WNF's planning team assembled information about the Forest's resources and the issues, that information was made available to the public. The public was then invited to workshops to help the Forest Service develop alternative approaches to addressing the issues. The Forest Service used the alternative themes developed at the workshops to formulate five alternatives, in addition to the no-action alternative (continuation of current Forest Plan direction). While all alternatives would provide a wide range of multiple uses, goods, and services, each addresses the issues in different ways.

Scoping and issue development were described in Chapter 1. Appendix A also describes public involvement in more detail. Table 2 - 1 summarizes the public involvement process through publication of the Draft EIS.

The National Forest Management Act (NFMA) requires the development and analysis of a broad range of reasonable alternatives that respond to the issues and concerns identified during the planning process. Alternatives must also address the purpose and need for change. The WNF has considered a broad range of alternatives based on the following criteria:

- Alternatives address the issues raised during the planning process
- A range of outcomes and outputs would result from the alternatives
- Alternatives are distributed between minimum and maximum benchmarks (see Appendix B)
- Alternatives respond to regional management direction

Table 2 - 1. Summary of Alternative Development

Alternative Development Phase	Public Involvement/Information
Assess need for change	Need for Change document
Identify revision issues	Letter to mailing list inviting comment Three pre-Notice of Intent (NOI) public meetings NOI published April 2002 with 90-day public comment period Ten post-NOI public meetings Content Analysis document
Assemble information	Analysis of the Management Situation Recreation Feasibility Study Species Viability Evaluations Social Assessment
Define alternatives	Identification of Issues document Development of Alternatives document Three Alternative Development Workshops Four Plan Revision Newsletters
Identify preferred alternative	Draft Environmental Impact Statement and Proposed Revised Plan published April 2005 with 90-day public comment period

Alternatives Eliminated from Detailed Study

Several alternatives were considered in the initial analysis. Some were developed internally, some were developed during the public alternative development workshops, and others were proposed by groups or individuals. Some alternatives had similar themes and are grouped together here for discussion. This section briefly describes the alternatives that were not studied in detail and discusses the reasons for their elimination. These alternatives are labeled by their major emphases.

Benchmark Alternatives

Several “benchmark” alternatives were developed during analysis for the Forest Plan revision. Benchmarks represent maximum production parameters for various resources and uses. Benchmarks were developed for maximum timber production, maximum early-successional habitat, maximum off-road vehicles, maximum present net value of market values, etc. These benchmarks were updated for the revision analysis based on the expansion of NFS land ownership since approval of the 1988 Forest Plan.

The benchmark alternatives were eliminated from detailed consideration because they would not provide balanced resource protection and 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 benchmarks did serve their

purpose, however. They helped define the range within which the alternatives considered in detail must fall.

No Commercial Timber Harvest Alternative

A number of individuals and organizations proposed consideration of alternatives that would include no commercial timber harvest. Some of these comments suggested that vegetation treatments to meet habitat objectives would be acceptable to them, but *commercial* timber sales would not be. No evidence was found to suggest that the degree of vegetation management necessary to provide for viability of all species could be accomplished without commercial timber harvest. This alternative was eliminated from detailed study because it would not provide habitat needed to support the viability of *all* the animals and plants native to the Wayne, and would not adequately address the need to restore and maintain the mixed oak ecosystem.

Timber sales are designed and implemented to improve desired wildlife and plant habitat. A timber purchaser recovers the cost of felling and removing the wood by selling the timber that is harvested. Therefore, the Forest Service does not directly pay for the work to be done. If the same habitat is created through a service contract in which trees are felled or killed but not removed and sold, then the entire cost of the operation must be borne by the taxpayers. Additionally, if the trees were left in the forest, there would be added fuels and impediments to firefighting access.

The Secure Rural Schools Act severed the direct relationship between commercial timber harvesting and the funding of local schools. Counties may now opt to receive a constant level of Payment in Lieu of Taxes (PILT) funding, based on the acreage of NFS ownership within the counties. Prior to the Act, PILT fluctuated from year-to-year based on the payments the Forest Service received for the sale of timber in a county in the prior year.

However, it should be noted that the no-harvest proposal is addressed in some degree in all the alternatives considered in detail. These alternatives include management areas where there would be no commercial timber harvest. The largest of these management areas are the Future Old Forest and Future Old Forest with Minerals Activity.

Alternatives with Recommendations for Wilderness or Wild/Scenic River Designation

A number of individuals and organizations proposed consideration of alternatives that would include recommendations for wilderness and/or wild, scenic, or recreation river designation. (The Forest Service can recommend wilderness or wild or scenic rivers, but Congress makes actual designations.)

As noted in the discussion of issues in Chapter 1, the WNF contains no areas that meet the "roadless" definition. For an area to be recommended for wilderness designation, it must first meet roadless area requirements. Similarly, the Wayne has no river segments that meet wild, scenic, or recreation river criteria. Therefore, none of the alternatives considered in detail include recommendations for wilderness or wild, scenic, or recreation river designation.

However, the wilderness issue is indirectly addressed to some degree in all the alternatives considered in detail. The considered alternatives include varying acreages of the Future Old Forest and Future Old Forest with Minerals Activity Management Areas. The management prescriptions applied in these areas are relatively similar to the management applied to roadless areas:

- A target recreation experience of semi-primitive non-motorized
- No commercial timber harvest
- Road construction essentially limited to that necessary to provide access to privately owned minerals.

The "Conservation" Alternative

This alternative was submitted by an individual active in the group Friends of the Wayne. The alternative included maps of management area allocations, but did not include levels of treatments or outputs. The management area allocations would have included substantially more Future Old Forest than the no-action alternative and no management area with any even-aged timber harvest.

This alternative was eliminated from detailed study because it would not provide habitat to support the viability of *all* animals and plants native to the Wayne (particularly those that require early successional habitat) and would not adequately address the need to restore and maintain the mixed oak ecosystem. However, the no-action alternative is similar to the conservation alternative in that it would not include any even-aged management. And, Alternative F would allocate to the Future Old Forest (FOF) or Future Old Forest with Mineral Activity much of the same area proposed for FOF in the Conservation Alternative.

Modifying Management of Off Highway Vehicles (OHV)

OHV use is one of the Forest's primary recreation activities and one of the topics of most interest to many Forest users. The Forest Service considered alternatives that would modify current OHV management, including reducing or eliminating OHV use, and substantially increasing the area allocated to OHV use.

These alternatives were eliminated from detailed study because analysis of public input indicates there is little support for either eliminating OHV use on the Forest or for substantially increasing the area allocated to their use. Rather, there is still broad support for the OHV management strategy in the current Forest Plan. Most of the concerns expressed regarding OHV management are related to implementation of the current strategy:

- Many OHV users are dissatisfied with the amount of new trail construction that has been accomplished.
- Many other Forest users are concerned with the impacts of OHV use on other resources due to illegal OHV use and/or inadequate maintenance of OHV trails.

National Park Designation

A number of individuals and organizations proposed consideration of alternatives that would include making all or part of the WNF a national park. This alternative was eliminated from detailed study because such a change is not within the authority of the Forest Service.

Elements Common to All Alternatives

Seven alternatives were studied in detail. They have a number of features in common.

Laws, Regulations, and Policies

All alternatives were designed to comply with applicable laws, regulations, and policies. All the alternatives meet the minimum management requirements of the Code of Federal Regulations (36 CFR 219.27.) These requirements guide the development, analysis, approval, implementation, monitoring, and evaluation of forest plans, including:

- Resource protection
- Vegetative manipulation
- Silvicultural practices
- Even-aged management
- Riparian areas
- Soil and water protection
- Diversity

Management Areas

All the alternatives use the same basic set of management areas (MAs). The alternatives do differ in the total acreages and locations of the MAs. (See Table 2 - 3 and the alternative maps.) How the MAs in the 2006 Forest Plan compare to the MAs in the 1988 Forest Plan is summarized in Table 2 - 2.

Table 2 - 2. Revised Plan/1988 Plan Management Area Comparison.

Revised Plan MA Name	MA Map Abbrev.	1988 Plan MA Number
Diverse Continuous Forest	DCF	2.2
Diverse Continuous Forest with Off-Highway Vehicles	DCFO	2.3
Historic Forest	HF	NA
Historic Forest with Off-Highway Vehicles	HFO	NA
Forest and Shrubland Mosaic	FSM	3.1, 3.3, 6.1
Forest and Shrubland Mosaic with Off-Highway Vehicles	FSMO	3.2
Grassland-Forest Mosaic	GFM	NA
Future Old Forest	FOF	6.2
Future Old Forest with Mineral Activity	FOFM	NA
River Corridor	RC	2.1
Developed Recreation	DR	7.1
Timbre Ridge Lake	TRL	NA
Special Areas	SA	8.2
Research Natural Areas	RNA	8.1
Candidate Area	CA	9.2

A brief description of each MA follows. Each MA has a different mix of resource uses. These descriptions highlight only an MA's predominant use. The emphasis in each area should not imply an exclusive use. Detailed descriptions of all the MAs can be found in Chapter 3 of the Revised Forest Plan.

Diverse Continuous Forest

Large blocks of mature forest that contain a variety of tree species of diverse ages and sizes characterize this management area. These features provide habitat for interior-forest wildlife species.

Shade-tolerant/fire-intolerant species such as maple and beech are becoming more predominant in the forest understory and canopy on the more mesic sites in this management area. The effects of low-intensity ground fire are evident, generally on ridges or drier slopes where efforts to perpetuate oak and hickory species are emphasized. A variety of mature forest conditions are maintained over time using predominately uneven-aged timber harvest and occasional prescribed fire.

Moderate amounts of dispersed, non-motorized recreation opportunities are offered in this management area. Examples of dispersed recreational activities that occur in these areas include hiking, mountain bike riding, horseback riding, hunting, fishing, viewing scenery and wildlife, and gathering forest products

Diverse Continuous Forest with Off-Highway Vehicles

This management area emphasizes trails for motorized recreation and mature forest habitat for conservation of forest interior species. Vegetation conditions and management are similar to the Diverse Continuous Forest MA. Off-highway vehicle trails are developed and maintained to provide safe trail riding. Moderate amounts of non-motorized recreation are also available. Hiking, horse, and mountain bike trails may be created to connect an existing trail system as long as these do not interfere with the OHV trails.

Historic Forest

The emphasis of this management area is restoration and maintenance of the mixed oak ecosystem through a combination of mostly uneven-aged timber harvest and frequent prescribed fire.

Forest conditions have always varied over space and time, due to natural processes and changes in climate as well as natural and man-made disturbances. Forest ecologists believe current conditions of the central hardwood forests lie outside their historic range of variability. The desired future condition of this management area is a mix of vegetation more nearly resembling the historic range that existed prior to $18^{th}/19^{th}$ century settlement and development.

A variety of wildlife habitat is provided with emphasis on habitat for species dependent on large oak and hickory trees and a near-continuous canopy. The open nature of the forest and the hard mast produced by the oaks and hickories would provide habitat for many animals.

Moderate amounts of non-motorized recreation opportunities are provided. These include viewing wildlife and scenery, hunting, horseback riding, fishing, trapping, and hiking. In some areas, trails may provide access for non-motorized activities.

Historic Forest with Off-Highway Vehicles

This management area emphasizes providing trails for motorized recreation and the restoration and maintenance of the mixed oak ecosystem through a combination of mostly uneven-aged timber harvest and frequent prescribed fire. Vegetation conditions and management are similar to the Historic Forest MA.

Motorized recreation opportunities are also emphasized. Off-highway vehicle trails are developed and maintained to provide safe trail riding. Moderate amounts of non-motorized recreation are also available. Hiking, horse, and mountain bike trails may be created to connect an existing trail system as long as they do not interfere with the OHV trails.

Forest and Shrubland Mosaic

Patches of various sized early successional habitat are distributed throughout a forested landscape. Shrub and seedling/sapling forest habitats, along with associated species, flourish and contribute to overall landscape biodiversity and conservation. As shrub and seedling/sapling forest habitats grow into stands of pole-sized trees, new shrub and seedling/sapling forest habitat are created by even-aged timber harvest.

The mix of forest communities runs from oak and hickory in the uplands and on drier hillsides to yellow poplar, beech, maples, oaks, hickories, and other mesic species on moist slopes and in bottomlands. Native pine communities occur in portions of this area.

Prescribed fire plays a role in the maintenance of some forest communities and species, ensuring the continued presence of fire-adapted ecosystems.

Trails for hiking, mountain biking, and horseback riding may be provided. Hiking, mountain biking, horseback riding, hunting, fishing, viewing scenery and wildlife, and gathering forest products are examples of recreational activities that may occur in these areas.

Forest and Shrubland Mosaic with Off-Highway Vehicles

This management area emphasizes trails for motorized recreation as well as early successional habitat interspersed throughout a forested landscape. Vegetation conditions and management are similar to the Forest and Shrubland Mosaic MA.

Motorized recreation opportunities are also emphasized. Off-highway vehicle trails are developed and maintained to provide safe trail riding. Moderate amounts of non-motorized recreation are available as well. Hiking, horse, and mountain bike trails may be created to connect to an existing trail system as long as they do not interfere with OHV trails. No new non-motorized trail system would be constructed.

Grassland-Forest Mosaic

This management area emphasizes habitat for grassland-dependent wildlife species on reclaimed coalmine lands. Dispersed, non-motorized recreation opportunities are offered in this management area.

A mosaic of large grassland areas edged with shrub and various-aged forest habitat is provided. Recurrent application of prescribed fire and mowing retards succession to shrubs and trees, promotes growth of grasses and forbs and a diversity of grassland habitats. This provides habitat for grassland-dependent species such as Henslow's sparrow and bobwhite quail.

The forested areas surrounding these grasslands are managed as a mosaic of early successional habitat patches of various sizes that intersperse the predominately forested landscape. To replace areas growing out of this habitat condition, new early successional forest habitat is created using predominately even-age timber management. This provides habitat for shrubland-dependent species such as the prairie warbler and yellow-breasted chat.

Hiking, mountain biking, horseback riding, hunting, fishing, viewing scenery and wildlife, and berry picking are examples of the recreational activities that occur in these areas.

Future Old Forest

Mostly old forest that changes only as a result of natural disturbances and natural succession characterizes this management area. These areas offer Forest visitors opportunities to experience solitude and closeness to nature.

Natural processes will eventually change the forest composition of this management area. Over time, shade-tolerant/fire-intolerant tree species, such as maple and beech, will dominate the understory and canopy. Conversely, the amount of oaks and hickories will decline. Rare communities and associated species not dependent on disturbances will continue to exist, but disturbance-dependent communities will generally decline across this management area.

Terrestrial wildlife associated with this area includes area-sensitive forest interior species such as the worm-eating warbler, Louisiana waterthrush,

cerulean warbler, and wood thrush as well as species sensitive to human disturbance such as black bear.

Forest Service roads will be closed and decommissioned where they are no longer needed, except for access to private oil and gas developments or similar specific uses. Use of roads that access privately held sub-surface rights or existing Federal leases are restricted to only those users or their agents to access, develop, or maintain their property.

In some portions of the area, trails provide access for hiking, horseback riding, viewing wildlife and scenery, fishing, and other non-motorized forms of recreation. Interaction among users is low to moderate. There is subtle evidence of other users except in the vicinity of oil and gas developments. The target recreation experience is semi-primitive, non-motorized.

Future Old Forest with Mineral Activity

This management area is located on the Marietta Unit of the Athens Ranger District. Similar to the Future Old Forest (FOF) Management Area, a primarily custodial regime of vegetation management is implemented. This will promote mostly old forest that changes only as a result of natural disturbance and succession and will provide opportunities for relatively primitive recreation experiences.

Unlike the FOF Management Area, surface occupancy of Federal oil and gas leases are permitted here. Many oil and gas wells are already present within this management area, both on lands in private surface ownership and on National Forest System land where the subsurface minerals are privately owned (outstanding and reserved rights).

River Corridor

This management area emphasizes retaining, restoring, and enhancing the inherent ecological processes and functions associated with riverine systems. Management will protect or enhance the scenic quality of these areas to provide high-quality recreation opportunities. This management area includes linear-shaped corridors along Symmes Creek, the Hocking River, the Little Muskingum River, and the Ohio River.

National Forest System land along streams and rivers is predominantly forested; however, some floodplain wetlands or herbaceous-shrub communities may occur. Vegetative conditions are maintained over time using mostly uneven-aged techniques.

The floodplains function as storage areas for floodwaters, sources of organic matter for the streams and rivers, and habitat for riparian wildlife. Aquatic communities are maintained or are returning to their historic compositions and distributions. Aquatic habitat conditions contribute to

the conservation of species that reside in these mainstem streams and rivers.

Roads within and on the perimeter of this management area are used for a variety of recreation activities. In some areas, boat ramps provide access for motorized and non-motorized boating. Viewing scenery and wildlife, fishing, hunting, trapping, canoeing, hiking, picnicking, and camping are key recreation activities. Trails in this management area are open only to non-motorized use.

Developed Recreation

This management area emphasizes management of existing recreation facilities and the future needs of the highly developed sites that serve large numbers of people. This management area includes both existing and potential developed recreation sites and vicinities on the Forest.

The landscape in and around these developed recreation areas varies from park-like to mature forest. Waterbodies are often associated with these areas. A variety of native wildlife is present, ranging from species accustomed to campgrounds and high human use to those that inhabit mature forest habitats. Ponds and lakes in developed recreation areas generally contain game fish such as largemouth bass, bluegill, and channel catfish. A variety of wildlife and nature viewing opportunities are available within and near developed recreation sites.

Roads and trails provide access within the more developed areas. Trails lead to lakesides, riverbanks, and undeveloped areas. Roads and trails accommodate the high-density recreation use and related activities associated with the area.

Facilities include campgrounds, picnic areas, boat ramps, interpretive sites, overlooks, swimming areas, and trailheads. Universal access is available to some existing and all newly constructed facilities and structures. Recreation sites are clean, safe, and well-maintained.

Because of this area’s high public use and visibility and the major public investment in its facilities and structures, priority is given to acquisition of private in-holdings and subsurface mineral rights. Such acquisition consolidates National Forest System surface and subsurface ownership.

Timbre Ridge Lake

This management area is located in eastern Lawrence County on the Ironton Ranger District. Timbre Ridge Lake provides quality fishing opportunities in a natural setting. Boating is limited to small watercraft powered manually or by electric motors. In addition to fishing, visitors may participate in low-impact, dispersed recreational activities, such as hiking, mountain biking, backcountry camping, hunting, wildlife viewing, and picnicking.

Water quality in Timbre Ridge Lake and its feeder streams contributes to the recreational fishing experience. Water quality parameters meet or exceed State standards throughout the life of the Forest Plan.

Recreation facilities intended for use by low numbers of people are present but do not diminish the scenic value of the area. Universal access is provided to some existing and all newly constructed facilities and structures. Natural site characteristics dominate the development. Rustic facilities of informal design are available.

Road access to the boat launch facility, the dam, and to private land in-holdings is maintained. Secondary emergency road access to the dam is also maintained.

The landscape around the lake is mostly a closed-canopy hardwood forest, with especially colorful views in the spring and fall. Over time, the forest will change as a result of natural succession and disturbances (similar to the Future Old Forest MA).

Special Areas

This management area emphasizes the preservation, management, and study of unique natural areas. These areas are regionally or locally significant and have been formally designated upon recommendation by a review committee and approval by the Regional Forester.

These areas meet one or more of the following criteria:

- They are representative of unique geological, ecological, cultural or other scientific values
- They are appropriate areas for scientific research
- They have potential to be a regional or national landmark based on natural or cultural values.

Areas allocated to this management area are scattered throughout the WNF. Sizes vary, ranging from a few acres to several hundred acres. These areas are individually unique and generally not connected to each other.

All activities in these areas are to be consistent with the protection or maintenance of the unique characteristics for which an area was designated (e.g., protecting and perpetuating populations of rare plants or communities).

Recreation activities are also limited to those consistent with the purpose for which an area was designated. A system of hiking trails may provide access for administrative and recreational purposes.

Research Natural Areas

Research Natural Areas (RNA) are nationally significant areas with unique ecosystems deemed worthy of preservation for scientific purposes. Research is conducted in these areas to better understand their natural processes.

RNAs must meet one or more of the following criteria:

- Contribute to the protection of diversity of vegetation communities and wildlife habitat
- Typify important forest, shrubland, grassland, alpine, aquatic, and geologic types
- Represent special or unique characteristics of scientific interest and importance
- Help fulfill legal requirements, such as providing habitat for endangered species
- Protect or maintain special aquatic, geologic or potential natural vegetation and faunal communities or protects cultural resources.

Candidate Areas

This management area emphasizes the preservation of potential RNAs and special areas. Management is directed at protecting the potentially unique characteristics of an area until it can be studied for designation as a Research Natural Area or Special Area. Management activities are limited to those necessary for maintaining public health and safety or for treating non-native invasive species.

Alternatives Considered in Detail

Alternative A

Alternative A, the no-action alternative, reflects 1988 Forest-wide direction, including the 13 amendments made to that plan. It meets the

1982 Planning regulations (36 CFR 219.12(f) (7); 1982 Planning Rule) and NEPA requirement that a no-action alternative be considered. 'No action' means that current management allocations, activities, and management direction found in the existing Forest Plan, as amended would continue. Output levels have been recalculated for this alternative to comply with new information, in particular, new scientific and inventory data.

Alternative A would emphasize providing habitat for species dependent on mature forest. Timber harvest would be limited to thinning and selection, totaling an average of 500 acres per year. No habitat for early-successional dependent species would be created through even-aged regeneration harvests. No surface occupancy requirements would be maintained for the Future Old Forest management areas on the Marietta, Athens and Ironton units of the Forest. The Developed Recreation Management Area would apply to only the Vesuvius area of the Ironton Ranger District, and the Leith Run and Lamping Homestead on the Marietta unit. Maximum potential OHV trail construction objectives would remain at the same level as the 1988 Forest Plan.

Alternative B

This alternative was designed to provide early-successional habitat by allowing an increase in even-aged timber harvest. About 67 percent of the Forest would be allocated to management areas with an emphasis on early successional habitat.

Alternative B would also emphasize providing more opportunities for oil and gas development by allocating fewer acres to management areas with the No Surface Occupancy stipulation for Federal leases on the Marietta unit.

The Developed Recreation Management Area would apply to only the Vesuvius area of the Ironton Ranger District, and the Leith Run and Lamping Homestead areas on the Marietta unit. Maximum potential OHV trail construction objectives would remain at the same level as the 1988 Forest Plan.

Alternative C

Alternative C would emphasize providing diverse wildlife habitats, especially extensive tracts of mature forest. Habitat for early successional-dependent species would be provided at about the minimum level estimated to provide for their viability on the Forest. Habitat for grassland dependent species would also be provided in Alternative C, as well as alternatives D, E, E Modified, and F. This alternative would provide a modest amount of management for restoration and maintenance of the

mixed oak ecosystem using the Historic Forest Management Area prescription on one area of the Ironton Ranger District.

Alternative C would be relatively restrictive regarding oil and gas development. The sizes of the Future Old Forest Management Areas are increased on all three units to provide larger semi-primitive non-motorized areas. The Future Old Forest area on the Marietta unit would continue to have a no surface occupancy restriction.

Alternative C includes the Burr Oak Campground on the Athens unit as part of the Developed Recreation Management Area. Maximum potential OHV trail construction objectives would be lowered from the 1988 Forest Plan levels to reflect the mileages that could be developed within acceptable environmental limits.

Alternative D

Alternative D would emphasize diverse wildlife habitats, including extensive tracts of mature forest. It would also provide a moderate amount (greater than Alternative C) of early successional habitat and management for restoration and maintenance of the mixed oak ecosystem. Two areas of the Ironton Ranger District would be managed using the Historic Forest management prescription.

Alternative D would also provide more opportunities for oil and gas development by allocating fewer acres to management areas with the No Surface Occupancy stipulation for Federal leases. In particular, under Alternative D, surface occupancy on Federal oil and gas leases would be permitted within the Future Old Forest with Mineral Activity Management Area on the Marietta Unit. The Future Old Forest Management Areas on the Ironton and Athens units would remain the same as they are under the 1988 Forest Plan.

Alternative D allocates the existing main developed recreation sites on all three units to the Developed Recreation Management Area. The Future Old Forest with Mineral Activity Management Area on the Marietta Unit recognizes that the oil and gas development and maintenance precludes this area from offering a semi-primitive non-motorized recreation experience. Maximum potential OHV trail construction objectives would be between that of Alternatives A and B, and that of Alternative C.

Alternative E

The emphasis of Alternative E is diverse wildlife habitats, including extensive tracts of mature forest. It would provide more early-successional habitat than Alternatives A, C, D, and F. Alternative E and F would provide the most management for restoration and maintenance of the mixed oak ecosystem using the Historic Forest Management Area prescription on both the Athens and Ironton units.

Alternative E would also provide more opportunities for oil and gas development compared with Alternative A, but less than Alternative D. This would be accomplished by allocating fewer acres to management areas with no surface occupancy on the Marietta unit (using Future Old Forest with Mineral Activity Management Area rather than the Future Old Forest Management Area). The Marietta unit is the part of the Forest that has historically been the most productive for oil and gas leasing and development.

Alternative E allocates the existing main developed recreation sites on all three units to the Developed Recreation Management Area. The Future Old Forest with Mineral Activity Management Area on the Marietta Unit recognizes that the oil and gas development and maintenance precludes this area from offering a semi-primitive non-motorized recreation experience. Maximum potential OHV trail construction objectives would be less than the 1988 Forest Plan levels to reflect the mileages that could be developed within acceptable environmental limits.

Alternative E Modified – Selected Alternative

Alternative E-Modified was developed in response to comments received on the Draft EIS and Proposed Revised Forest Plan. Alternative E Modified adjusts the preferred alternative for the DEIS using selected elements from other alternatives. The emphasis and theme for Alternative E Modified are essentially the same as Alternative E with a few changes. The main changes, described earlier in this Record of Decision, include:

- Additional land allocated to the Future Old Forest management prescription on three sides of the Morgan Sister's Woods Special Area on the Ironton Ranger District. This change also increases the acreage with a no surface occupancy minerals restriction;
- Management area allocations changed in the vicinity of the approved Nelsonville Bypass;
- Update the Monitoring and Evaluation chapter of the revised plan;
- Some clarifications and editorial changes to goals, objectives, standards and guidelines; and
- Increase the lower limit for the range of potential OHV trail construction objectives.

Alternative F

Within the overall objective of providing diverse wildlife habitats, Alternative F would emphasize unmanaged mature forest habitat and semi-primitive non-motorized recreation. Alternatives E and F would provide the most management for restoration and maintenance of the

mixed oak ecosystem using the Historic Forest Management Area prescription on both the Athens and Ironton units.

Alternative F includes the same no surface occupancy on the Marietta unit (using Future Old Forest with Mineral Activity Management Area rather than the Future Old Forest Management Area), but on a much larger area. On the Athens and Ironton units, the Future Old Forest Management area would be expanded over Alternative E making more land covered by the No Surface Occupancy stipulation.

Alternative F would include the largest allocation of any of the alternatives to the Future Old Forest and the Future Old Forest with Minerals Activity management areas. It also covers all of the developed recreation areas the same as Alternatives C, D, E and E Modified.

Comparison of Alternatives

Management Area Allocations

Table 2 - 3. Management Area Allocations by Alternative.

	A (No Action)	B	C	D	E	E Modified Selected	F
Candidate Areas	981	981	981	981	981	981	981
Developed Recreation	1,839	1,839	4,078	4,078	4,078	4,078	4,078
Diverse Continuous Forest	155,408	12,079	98,292	83,405	55,089	55,267	45,971
Diverse Continuous Forest with OHVs	45,010	27,851	43,901	29,846	22,278	22,953	22,278
Forest and Shrubland Mosaic	0	143,329	22,946	45,536	57,562	54,580	35,779
Forest and Shrubland Mosaic with OHVs	0	17,159	0	0	0	0	0
Future Old Forest	18,470	9,603	23,649	8,793	13,496	16,478	26,326
Future Old Forest with Mineral Activity	0	8,867	0	10,154	10,154	10,154	28,225
Grassland and Forest Mosaic	0	0	5,334	5,334	5,334	5,334	5,334
Historic Forest	0	0	17,869	17,869	26,456	26,278	26,456
Historic Forest with OHVs	0	0	0	14,054	21,622	20,947	21,622
Research Natural Areas	117	117	117	117	117	117	117
River Corridors	8,682	8,682	12,544	12,544	12,544	12,544	12,544
Special Areas	7,546	7,546	7,546	7,546	7,546	7,546	7,546
Timbre Ridge Lake	0	0	796	796	796	796	796
Total	238,053	238,053	238,053	238,053	238,053	238,053	238,053

Estimated Management Activities/Outputs

The projected management activities in

Table 2 - **4** were used to estimate the effects of the alternatives. These effects are summarized in this chapter, and discussed in detail in Chapter 3.

Table 2 - 4. Upper limits of projected outputs for management activities for the first decade.

Vegetation & Habitat Management							
Mgmt. Activity	**A**	**B**	**C**	**D**	**E**	**E_{Mod}**	**F**
Even-aged Hardwood Timber Harvest (acres)	0	5,960	1,630	1,780	1,820	1,725	1,370
Even-aged Pine Timber Harvest (acres)	0	200	200	200	200	200	200
Uneven-aged Timber Harvest (acres)	5,000	5,000	16,120	15,470	14,590	14,556	13,500
Commercial Thinning (acres)	0	0	940	1,230	1,540	1,460	970
Crop Tree Release (acres)	1,150	3,250	3,239	2,786	2,142	2,113	1,719
Grape Vine Control (acres)	1,500	3,720	4,148	3,544	2,711	2,683	2,212
Site Prep for Native Pine (acres)	200	200	200	200	200	200	200
Reforestation (acres) (planting)	500	500	500	500	500	500	500
Prescribed Fire for Oak Regeneration (acres)*	6,764	12,214	35,725	40,599	46,611	46,215	44,537
Herbicide Application for Oak Regeneration (acres)	800	4,376	7,236	9,005	11,155	10,994	10,846
Development of Permanent Forest Openings (acres)	500	500	500	500	500	500	500
Maintenance of Permanent Forest Openings and other Herbaceous Habitats (acres)	6,500	6,500	6,500	6,500	6,500	6,500	6,500
Control of Non-Native Invasive Species (acres)	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Installation of Bat-Friendly Gates on Mines (gates)	30	30	30	30	30	30	30
Recreation & Facilities Management							
Mgmt. Activity	**A**	**B**	**C**	**D**	**E**	**E_{Mod}**	**F**
OHV Trail	184 mi (223 ac)	184 mi (223 ac)	124 mi (150 ac)	154 mi (187 ac)	124 mi (150 ac)	124 mi (150 ac)	91mi (110 ac)
Hiking Trail Construction	14 mi (8.5 ac)	14 mi (8.5 ac)	30 mi (18 ac)	30 mi (18 ac)	30 mi (18 ac)	30 mi (18 ac)	30 mi (18 ac)
Horse Trail Construction	30 mi (36 ac)	30 mi (36 ac)	50 mi (61 ac)	50 mi (61 ac)	50 mi (61 ac)	50 mi (61 ac)	50 mi (61 ac)
Mountain Bike Trail	30 mi (36 ac)	30 mi (36 ac)	30 mi (36 ac)	30 mi (36 ac)	30 mi (36 ac)	30 mi (36 ac)	30 mi (36 ac)
Recreation Facility and	60	60	60	60	60	60	60

Parking Lot Construction (Acres)							
Transportation Management							
Mgmt. Activity	**A**	**B**	**C**	**D**	**E**	**E_{Mod}**	**F**
Temporary Road Construction	41 mi (118 ac)	45 mi (130 ac)	50 mi (146 ac)	50 mi (146 ac)	50 mi (145 ac)	50 mi (146 ac)	48 mi (140 ac)
Permanent Road Construction	17 mi (52 ac)	22 mi (68 ac)	24 mi (74 ac)	24 mi (74 ac)	24 mi (74 ac)	24 mi (74 ac)	23 mi (71 ac)
Permanent Road Reconstruction	47 mi (145 ac)	73 mi (223 ac)	104 mi (320 ac)	103 mi (317 ac)	101 mi (311 ac)	103 mi (318 ac)	93 mi (284 ac)
Road Decommissioning	10 mi (29 ac)	10 mi (29 ac)	10 mi (29 ac)	10 mi (29 ac)	10 mi (29 ac)	10 mi (29 ac)	10 mi (29 ac)
Energy Minerals Management							
Mgmt. Activity	**A**	**B**	**C**	**D**	**E**	**E_{Mod}**	**F**
Surface Coal Mining Activities (acres)**	1,250	1,250	1,250	1,250	1,250	1,250	1,250
Reclamation of Depleted or Orphan Wells	128 wells (70 ac)	128 wells (70 ac)	128 wells (70 ac)	128 wells (70 ac)	128 wells (70 ac)	128 wells (70 ac)	128 wells (70 ac)
Oil & Gas Well Development	234 wells (121 ac)	234 wells (121 ac)	234 wells (121 ac)	234 wells (121 ac)	234 wells (121 ac)	234 wells (121 ac)	234 wells (121 ac)
Watershed Management							
Mgmt. Activity	**A**	**B**	**C**	**D**	**E**	**E_{Mod}**	**F**
Treatment of AMD (acres)	270	270	270	270	270	270	270
Surface Mine Reclamation (acres)	20	20	20	20	20	20	20
Closure of Open Mine Portal/Subsidence (acres)	232	232	232	232	232	232	232
Fire Management							
Mgmt. Activity	**A**	**B**	**C**	**D**	**E**	**E_{Mod}**	**F**
Reduction of Hazardous Fuels – Prescribed Fire (acres)	61,355	55,905	32,394	27,520	21,508	21,904	23,582
Reduction of Hazardous Fuels – Mechanical (acres)	10,181	10,181	10,181	10,181	10,181	10,181	10,181

Economic Effects							
	A	B	C	D	E	E_{Mod}	F
Labor Income by Program							
Recreation ($MM)	$3.9	$4.0	$3.8	$4.0	$3.9	$3.9	$3.8
Wildlife and Fish ($MM)	$1.6	$1.6	$1.5	$1.6	$1.6	$1.6	$1.5
Grazing ($MM)	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Timber ($MM)	$1.1	$4.4	$5.6	$5.7	$5.8	$5.7	$4.7
Minerals ($MM)	$2.6	$2.6	$2.6	$2.6	$2.6	$2.6	$2.5
Payments to States/Counties ($MM)	$0.1	$0.2	$0.2	$0.3	$0.2	$0.2	$0.2
Forest Service Expenditures ($MM)	$7.3	$7.8	$7.8	$7.9	$7.9	$7.9	$7.8
Total Forest Management ($MM)	$16.5	$20.7	$21.6	$22.1	$22.0	$27.0	$20.6
Percent Change from Current	---	25.8%	31.0%	34.2%	33.8%	33.8%	25.4%
Suitable Timber Lands and Allowable Sale Quantity							
	A	B	C	D	E	E_{Mod}	F
Acres Suitable for Timber Production	$33.10	$41.558	$43.410	$44.542	$44.338	161,752	$41.354
Average Annual Allowable Sale Quantity (ASQ) in First Decade (MMBF)	2.0	8.4	8.7	9.0	8.4	8.3	7.2
Average Annual ASQ over 15 Decades (MMBF)	4.8	20.1	14.2	14.4	14.2	14.0	11.3

*A portion of these prescribed fire projections include acres that are burned twice in one decade.

** Assumes owners of valid existing rights to surface mine coal will exercise those rights.

How the Alternatives Address the Issues

The alternatives considered in detail vary in how they address some facets of the issues, but some issues or parts of issues are addressed the same way in all the alternatives. Table 2 - 5 summarizes which aspects of the alternatives are the same and where they vary. The details of the updated direction listed in Table 2 - 5 can be found in Chapters 2 and 3 of the Revised Forest Plan.

Table 2 - 5. Summary of How Alternatives Address the Issues.

Alternative Components by Issue	Varies by Alternative	Same for All Alternatives
Watershed Protection		
Update direction for abandoned mined lands restoration		X
Update direction for protection of riparian areas		X
Vegetation Management		
Desired future conditions regarding extent and location of forest-type and grasslands, age-class distribution, and canopy closure	X	
Areas allocated to even-aged management, uneven-aged management and no timber management	X	
Update direction and treatment objectives for the maintenance and restoration of the mixed oak ecosystem	X	
Update direction for the control of non-native invasive species		X
Projected levels of vegetation treatments	X	
Recreation Management		
Areas allocated to all-terrain vehicle (ATV) and off-highway motorcycle (OHM) trails	X	
Mileages of trail construction	X	
Areas with semi-primitive non-motorized recreation experience objective	X	
Land Ownership		
Update direction to provide for growth and development of communities within the proclamation boundary		X
Minerals		
Management areas with no surface occupancy (NSO) stipulation	X	
Provide direction for determining NSO stipulation for specific tracts within management areas that generally do permit surface occupancy		X
Remove analysis process discussion of Amendment 8		X
Update direction for surface management of lands with underlying reserved and outstanding minerals rights		X
Update direction for management of coal resources		X
Roadless Areas, Wilderness, and Wild and Scenic Rivers		
No areas recommended for wilderness designation		X
No river segments recommended for Wild, Scenic or Recreation River designation		X

Issue 1 – Watershed and Riparian Protection

Portions of 31 fifth-level watersheds occur within the Wayne National Forest proclamation boundary. Currently, only 22 of the fifth-level watersheds include National Forest System land (Table 2 - 6), but ownership patterns could change in the future with the continuation of the Forest's land acquisition program. National Forest ownership determines the degree of influence Forest Service resource management could have in any particular watershed.

Table 2 - 6. Comparison of NFS ownership among the 5th level watersheds and the relative degree of influence Forest Service management activities could have on 5th level watershed integrity.

	Percent NFS ownership in 5th level watersheds					
	0	0-10	10-20	20-30	30-40	40-50
Number of 5th level watersheds	9	11	5	3	2	1
Degree of influence	N/A	Low	Low	Moderate	Moderate	High

Within the WNF are over 200 miles of perennial stream with National Forest ownership on one or both banks. State and Forest Service assessments indicate that only 11 percent met State water quality standards. Forty-eight percent were impaired and 41 percent had not been assessed by the Ohio EPA or the Forest Service. Impairment is caused by two primary sources: agriculture and abandoned mine lands. Impairment for the Marietta Unit is primarily due to nutrients, siltation, and flow alteration due to non-irrigated crop production, pasture lands, and onsite wastewater systems (septic tanks). The impairment on the Athens and Ironton units is primarily due to acidity, metals, and sedimentation from previous mining. Current data are insufficient to quantify water quality conditions for intermittent and ephemeral stream miles.

Acid mine drainage is considered to be the most significant non-point source pollutant in northern Appalachia. Most of the mining on what is now the WNF occurred on the Athens Unit. The Athens Unit has three major watersheds impaired by acid mine drainage: Monday Creek, Sunday Creek, and Raccoon Creek.

The acreage of ground disturbing activities that could occur on NFS land during the first decade of the 2006 Plan would vary little between alternatives. The amount of potential soil erosion and sediment transport that could occur during the first decade would also vary little between alternatives. Less than one percent of the cumulative effects analysis area would likely be affected by ground-disturbing activities on NFS land. The implementation of Forest-wide standards and guidelines are designed to minimize direct, indirect, and cumulative effects to watershed integrity. Furthermore, some activities that may be implemented could result in short-term disturbance but provide significant long-term benefits. For

example, abandoned mine land restoration may disturb localized areas for a brief period but could result in the restoration of habitable aquatic habitat for fish, mussels, and other aquatic invertebrates.

Plant and Animal Habitat

The Wayne National Forest lies within the Southern Unglaciated Allegheny Plateau Ecological Section (Section 221E), which covers parts of Kentucky, Ohio, Pennsylvania, and West Virginia. The Southern Unglaciated Allegheny Plateau can be further subdivided into smaller ecological units, called Subsections – three of which contain the WNF: the Ohio Valley Lowlands, the East Hocking Plateau, and the West Hocking Plateau (Table 2 - 7).

Table 2 - 7. Ecological patterns of the three ecological subsections that contain the WNF.

	Ohio Valley Lowlands Subsection (221Ec)	East Hocking Plateau Subsection (221Ed)	West Hocking Plateau Subsection (221Ef)
General Description	Rugged, wooded, and, commonly, too steep to be farmed. High gradient streams without acidity problems are characteristic and have developed on the underlying Permian shale, sandstone, and coal; on shale, the streams are often ephemeral and without large riffle-inhabiting fish populations.	Rounded hills and ridges that are generally less rugged than 221Ec, but are still steep. Gas wells, coal mining, and reclaimed land are locally extensive and associated stream degradation is common. Forests occupy steeper areas; dairy, livestock, and general farms also occur.	The ridges are forested while its floodplains and broad, clay-filled, flat-bottomed, preglacial valleys are used for general farms. Characterized by extensive bituminous coal mining (especially in the north) and associated stream degradation. Originally, the hill slopes had mixed oak forests, while the broad, Teays-age valleys supported mixed mesophytic forests.
Physiography	Unglaciated, except in the extreme west and northeast. Highly dissected plateau with rounded hills, ridges, landslips. Steep slopes of high relief along the Ohio River. Stream flow can be low in the summer.	Unglaciated. Dissected plateau, rounded hills and ridges, narrow valleys, steep slopes of high relief. Landslips. Some streams impacted by acid mine drainage.	Unglaciated, except in the extreme northwest. Dissected plateau with broad, flat-bottomed, hanging, pre-glacial valleys. Stream degradation associated with coal mining.
Natural Vegetation	Mostly mixed oak forest; with mixed mesophytic forest, oak-sugar maple forest; beech forest in broad valleys in Meigs and Athens counties.	Mixed mesophytic forest and mixed oak forest; beech forest in wide valleys of certain counties.	Extensive mixed oak forest on hill slopes. Teays-age valleys support mixed mesophytic forests. Beech forests in the wide valleys of the Hocking River system.

Source: U. S. Environmental Protection Agency (no date)

The National Forest Management Act (NFMA) requires the Forest Service to "provide for diversity of plant and animal communities". The 1982 regulations implementing the NFMA require National Forests to provide habitat in order to "maintain viable populations of existing native and desired non-native vertebrate species in the planning area." Additional direction extends this mandate to include vascular plants.

Over 300 aquatic and terrestrial vertebrate species, in addition to countless invertebrates, and over 2,000 plant species are known to inhabit the Forest sometime during their life cycles. Species viability evaluations conducted as part of the Forest Plan revision demonstrated that habitat diversity is the key to conservation of these plants and animals.

Existing terrestrial habitat composition on NFS land within the proclamation boundary is dominated by hardwood forest, most less than 100 years old. At the time of the earliest land surveys, primarily mixed oak-hickory forests covered the area that is now the WNF. On wetter sites, mixed hardwood and beech forest communities occurred naturally. Some pine was found on some ridges.

Mixed oak and oak-hickory communities still dominate the WNF landscape. However, decreased fire occurrence over the last century has contributed to an increase in shade-tolerant species in the forest understory and midstory and to a concern about maintenance of the oak component across the landscape in the future. Oak communities support numerous plant and animal species, and their potential decline raises concerns about how changes in forest composition will affect species over time.

Table 2 - 8 provides an overview of trends for indicator species and habitats that could be expected to occur under each alternative after a 100 year period of Forest Plan implementation. Key results include:

- Oak-hickory is expected to decline from present levels in all alternatives. Many species rely on these tree species for food and shelter. Historic Forest management prescriptions and even-aged management will help retain oak-hickory in the landscape.
- Abundance of pine in the landscape was naturally low, but has increased with the planting efforts started by the CCC in the 1930s. Pine is expected to decline in all alternatives or convert to mixed-pine hardwood stands. Therefore, the pine warbler could experience population declines on NFS land under all alternatives.
- Species that depend on early successional habitat, such as the yellow-breasted chat and ruffed grouse, are likely to experience drastic population declines after the first decade under Alternative A because it would not create any early successional forest habitat. Alternative C would provide what is considered to be the minimum amount of early successional habitat necessary to conserve these species on NFS land. Alternatives B and D through F would provide increased levels of this habitat.
- Habitat quantity and quality for interior forest species, such as the cerulean warbler, worm-eating warbler, pileated woodpecker, and Louisiana waterthrush, would be higher in Alternatives C through F than in Alternatives A or B. Any of alternatives should result in an increase of mature forest habitat, but the combination of

management prescriptions in Alternatives C through F would provide more diverse mature forest structure and composition.

- Alternatives C through F would allocate areas of reclaimed strip-mined land to provide habitat for grassland-dependent species, such as the Henslow's sparrow. Its populations could decline or disappear from NFS land in Alternatives A and B.

Table 2 - 8. Summary of key habitat indicators.

Issue Indicator	Amount or Trend* Estimate (after 100 years)	A	B	C	D	E	E Modified	F
Oak-hickory Forest	Amount (acres)	18,088	41,082	40,201	49,040	62,118	60,169	57,823
	Trend	↓↓↓	↓↓	↓↓	↓↓	↓	↓	↓
Pine Forest: Pine Warbler	Amount (acres)	13,193	13,193	11,871	11,699	10,574	10,461	7,770
	Habitat and Population Trends	↓	↓	↓↓	↓↓	↓↓	↓	↓↓↓
Early successional forest: Yellow-breasted Chat Ruffed Grouse	Habitat Amount (acres)	**	13,308	11,224	13,434	13,520	12,820	9,664
	Habitat and Population Trends	↓↓↓	– or ↑	↓	– or ↑	– or ↑	– or ↑	↓↓
Mature Forest Habitat: Cerulean Warbler Worm-eating Warbler Pileated Woodpecker	Habitat Amount (acres)	238,053	186,896	196,305	195,110	192,645	193,358	206,776
	Population Trend	– or ↑	– or ↓	– or ↑	– or ↑	– or ↑	– or ↑	– or ↑
Mature Riparian Forest Habitat: Louisiana Waterthrush	Habitat amount (acres)	29,623	29,623	29,623	29,623	29,623	29,623	29,623
	Population Trend	– or ↑	– or ↓	– or ↑	– or ↑	– or ↑	– or ↑	– or ↑
Grassland Habitat: Henslow's Sparrow	Habitat Amount (acres)	973	973	2,134	2,134	2,134	2,134	2,134
	Trend in population	– or↓	– or↓	– or↑	– or↑	– or↑	– or↑	– or↑
NFS lands allocated to management areas that allow timber harvesting	Amount (acres)	210,939	210,939	205,760	210,462	205,759	202,777	174,858
NFS lands allocated to management areas that allow prescribed fire	Amount (acres)	210,939	210,939	205,760	210,462	205,759	202,777	174,858

* Estimates of population trends for management indicator species are based on habitat trends on the WNF, and do not take into account how environmental conditions or factors related to wintering habitat could affect their population trends.

**No even-aged management prescribed; therefore pine would disappear over time on WNF.

↓ Slight decline from present levels; ↓↓ Moderate decline from present levels; ↓↓↓ Major decline from present levels

– Stable or no change from present levels

↑ Slight increase from present levels; ↑↑ Moderate increase from present levels; ↑↑↑ Major increase from present levels

Issue 3 - Recreation

The WNF is the second largest supplier of public recreation lands (approximately 238,000 acres) within Ohio, and the largest in the southeastern part of the State. The WNF provides a variety of unique natural settings for outdoor recreation and a wide array of dispersed and developed recreation opportunities within those settings.

All alternatives would provide a range of recreation opportunities, settings, and experiences. The alternatives vary within a relatively narrow range in how they would meet the demand for recreation on public land (Table 2 - 9).

Alternative F would provide the greatest opportunity for future semi-primitive recreation. The second highest opportunity for SPNM recreation would occur under Alternative C, followed by Alternatives E Modified, A, E, B, and D, respectively.

Alternatives A and B would allocate the same acreage for developed recreation. Alternatives C through F would allocate more than twice the acreage to developed recreation as Alternative A or B. Additionally, fewer miles of horseback riding and hiking trails would be constructed in Alternatives A and B compared to Alternatives C through F.

Table 2 - 9. Recreation Opportunity Spectrum (ROS) Setting Objectives by Alternative.

		ROS Objectives by Alternative (Percent of Forest)						
ROS Objective	2004 ROS Inventory (%)	A	B	C	D	E	E Modified	F
Semi-primitive Non-motorized	0	8	4	10	4	6	7	11
Roaded Natural	60	91	95	88	94	92	91	87
Rural	39	1	1	2	2	2	2	2
Urban	1	0	0	0	0	0	0	0

Two decades of national recreation studies have shown off-road driving to be one of the fastest growing outdoor activities. From 1983 to 2000 this sport has increased by 80 percent. From 1998 to November 2002 the registration of OHVs in Ohio has almost doubled. Ohio has maintained a ranking of 5th in the nation for retail sales of motorcycles from 1995 to 2001, but moved from 12th in the nation in sales of OHVs to 5th during the same period.

Table 2 - 10. New Motorized Trail Density, New Construction Miles, and Cross-country Travel by Alternatives.

Management Activity	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. E Modified	Alt F.
New ATV/OHM Trail Construction (Density Range - miles/mi^2)	3.2 to 6.4	3.2 to 6.4	2.0 to 3.5	2.0 to 3.9	2.0 to 3.5	2.4 to 3.5	2.0 to 3.0
New ATV/OHM Trail Construction (mileage range)	109 to 184	109 to 184	21 to 124	21 to 154	21 to 124	50 to 124	21 to 91
Total ATV/OHM Mileage Range (existing + planned)	225 to 300	225 to 300	137 to 240	137 to 270	137 to 240	137 to 240	137 to 207
OHV Cross-country Use	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited

Land Ownership

Since the Consent Act (for land acquisition for a national forest) was signed by the State of Ohio in 1934, the Forest Service has acquired 238,053 acres (as of May 9, 2003) within the proclamation boundary, which totals 832,147 acres. Despite an active land acquisition program, the Wayne still has one of the most fragmented ownership patterns of any national forest: currently 24 percent National Forest System ownership within the Marietta Unit; 27 percent within the Athens Unit; 33 percent within the Ironton District; or about 28 percent for the entire Forest. The proclamation boundary includes portions of 12 counties (Table 2 - 11).

Table 2 - 11. Wayne National Forest Acreage in the Twelve Counties, 2003.

County	WNF Acres	Proclamation Acres	Total Acres in County	FS as % of County
Athens	18,721	81,213	322,560	5.8
Gallia	17,907	106,017	286,075	6.3
Hocking	25,741	59,174	269,440	9.6
Jackson	1,650	7,440	265,792	0.6
Lawrence	70,765	157,766	291,520	24.3
Monroe	24,424	142,854	291,200	8.4
Morgan	3,354	7,637	269,440	1.2
Noble	715	5,531	254,976	0.3
Perry	22,336	79,798	262,080	8.5
Scioto	11,707	32,438	391,040	3
Vinton	1,901	27,239	263,040	0.7
Washington	38,832	126,883	410,240	9.5
Total	**238,053**	**833,990**	**3,577,403**	**6.6**

The Wayne's land acquisition program has been the subject of some opposition, based on concerns that National Forest System ownership may discourage residential and industrial development and shrink the local property tax base. Federal lands cannot be developed for residential or industrial purposes, and they are exempt from State and local taxes.

These concerns resulted in a moratorium (included in the 1995 appropriations bill for the U.S. Dept. of Interior and Related Agencies) on the purchase of land by the WNF within Lawrence, Washington, Monroe, and Gallia Counties. However, that language was removed in the Fiscal Year 2000 appropriations bill. The Ohio legislature has also considered action on this issue. A bill introduced in 1999 to amend the State's consent law passed in the Ohio House of Representatives in November 2000. It did not come to a vote in the Senate.

To assess the impacts of National Forest System ownership on local tax revenues, it is necessary to understand not only the tax-exempt nature of Federal lands, but also the Federal payments to local governments that arise from Federal land located in their jurisdictions. These Federal payments must be compared with property tax revenues that would be expected if the land were privately owned and considered within the context of other sources of local government funding.

The presence of the Wayne, with its ongoing land acquisition program, does not appear to negatively impact economic development in the 12 counties. Substantial quantities of land remain undeveloped. The properties enrolled in current agricultural use valuation (CAUV) ranges from 19.9 percent to 49.7 percent of the land base in these counties (Table 2 - 12).

Similarly, when all relevant information is considered, analysis suggests that National Forest lands do not negatively affect the local tax base. The five-year average for combined Federal payments to the counties was $2.79 per acre (Table 2 - 14) Indirect tax revenue from forest visitors is estimated at an additional $1.90 per acre annually. Combined, the estimated total of $4.69 per acre (Table 2 - 14) exceeds estimates for CAUV rates in all the sample taxing districts that contain WNF land (Table 2 - 13). While providing this revenue, the National Forests do not require the same level of county services as privately owned lands. Several studies show that open and forested lands typically require only about 37 cents in services for every dollar raised in revenue. Residential development, which is most likely in the rural inholdings within the Wayne, typically requires about $1.16 in county services for every $1 in tax revenue contributed.

Table 2 - 12. CAUV Enrolled Acreage in the 12 Counties of the WNF, 2001.

County	WNF Acres	WNF % of County	Total acres in County	CAUV Acres	CAUV % of County
Athens	18,365	5.6%	322,560	92,143	28.6
Gallia	16,954	5.9%	286,075	136,953	47.9
Hocking	24,151	8.9%	269,440	54,728	20.3
Jackson	1,701	0.6%	265,792	69,616	26.2
Lawrence	68,843	23.6%	291,520	110,006	37.7
Monroe	24,137	8.2%	291,200	146,607	50.3
Morgan	3,328	1.2%	269,440	133,567	49.6
Noble	694	0.2%	254,976	93,980	36.9
Perry	22,257	8.4%	262,080	102,124	39.0
Scioto	11,625	2.9%	391,040	183,580	46.9
Vinton	1,869	0.7%	263,040	62,776	23.9
Washington	39,002	9.5%	410,240	169,293	41.3
Total	232,926	6.5%	3,577,403	1,355,373	37.9

Source: Ohio Department of Taxation.
http://www.state.oh.us/tax/Publications/Tax_Data_Series/PD32/pd32cy01.htm (accessed 9/30/03)

Table 2 - 13. Sample of Tax Revenue Generated by CAUV Lands in Southeast Ohio.

County	Township	School District	CAU Value of Land*	CAU Value	Millage	Tax Revenue	CAUV Acres	$ Per Acre
Hocking	Ward	N-Y SD	$978,620	$342,530	44.475300	$15,234.00	8,091.94	$1.88
Gallia	Walnut	Symmes Valley	$327,200	$114,500	35.897604	$4,110.28	1,569.56	$2.62
Lawrence	Symmes	Symmes Valley	$791,930	$277,450	34.890104	$9,680.26	5,540.38	$1.74
Lawrence	Lawrence	Rock Hill	$131,610	$46,140	30.562669	$1,410.16	824.76	$1.71
Lawrence	Windsor	Symmes Valley	$2,625,730	$919,880	35.151149	$32,334.84	15,767.00	$2.05
Monroe	Graysville	Switzerland	$53,160	$18,610	32.674180	$608.00	358.00	$1.78
Noble	Elk	Switzerland	$634,380	$222,160	51.000000	$11,330.16	4,014.54	$2.82
Vinton	Knox	Alexander	$16,670	$5,840	41.046792	$239.72	161.00	$1.48

*Based on Auditor Reports of Abstract Values of Land Trust According to its CAU Values, 2000.

Table 2 - 14. All Forest-related Federal Payments to the 12 Counties.

Source	1997	1998	1999	2000	2001
Payment in Lieu of Taxes (PILT)	$141,106	$150,237	$156,524	$168,320	$237,758
Revenue Sharing	$16,380	$13,663	$22,984	-$3,116	$40,419
Mineral Royalties	$19,209	$14,853	$16,914	$15,858	$23,193
Coop LE	$35,000	$49,000	$36,500	$32,800	$32,500
Forest Highways	$586,856	0	$250,123	$507,304	$550,000
Road Projects	0	0	0	0	$49,698
Fire Equip Rentals	$10,000	$10,000	$10,000	$10,000	$10,000
Totals	**$808,551**	**$237,753**	**$493,045**	**$731,166**	**$943,567**
Forest Acres	227,128	228,401	229,654	231,290	232,926
Average per acre	$3.56	$1.04	$2.15	$3.16	$4.05

Five-year average payment per acre: $2.79

Minerals

Oil and Gas

The Appalachian Basin, which includes the Ohio counties covered by the WNF, gave birth to the world's oil industry and is one of the oldest commercially producing provinces in North America. Ohio's oil and gas industry dates back to the mid-1800s, with production in 1860 from the first commercial oil well in Washington County. The first production of natural gas followed in 1884. Since then, Ohio has ranked in the top half of all states that produce oil and gas. Ohio ranks fourth nationally in the total number of wells drilled (269,790 as of 2001), exceeded only by Texas, Oklahoma, and Pennsylvania.

Virtually all of the production on the WNF comes from wells owned by independent producers, many of which are small, family-owned businesses. Research completed by the Ohio Department of Natural Resources (ODNR), Divisions of Mineral Resources Management and Geological Survey, indicates that Ohio has significant remaining producible oil and gas reserves (OOGA, 2002 and ODNR, 2003).

Surface and mineral ownership on the WNF is intermixed and complex. Minerals underlying NFS land may be Federally or privately owned, or a combination of both (Table 2 - 15). Federal mineral rights are those that have been acquired by the Federal government through purchase, exchange, or donation. Private minerals are divided into reserved and outstanding rights. Reserved minerals are mineral rights retained by the seller when the surface is sold. Outstanding minerals are mineral rights retained by a third party prior to transfer of the surface.

Table 2 - 15. Wayne National Forest surface/mineral ownership.

Ownership			Marietta Unit (acres)	Athens Unit (acres)	Ironton District (acres)	Forest Totals (acres)
Federal Surface	Federal Minerals	100% minerals Unencumbered	8,507	10,382	43,491	62,380
		100% minerals with deed lease[1]	8,760	8,069	17,037	33,866
		Total Federal Minerals	**17,267**	**18,451**	**60,528**	**96,246**
	Private Minerals[2]	Reserved Minerals	4,384	5,663	9,182	19,229
		Outstanding Minerals	7,622	12,468	11,000	31,090
		Combination[3]	34,725	36,565	21,642	92,932
		Total Private Minerals	**46,731**	**54,696**	**41,824**	**143,251**
Total Federal Surface			**63,998**	**73,147**	**102,352**	**239,497**
Private Surface	**Federal Minerals**		7	116	708	831
	Private Minerals		204,053	195,682	214,273	614,008
Total Private Surface			**204,060**	**195,798**	**214,981**	**614,839**
Total Acres within the WNF			**268,058**	**268,945**	**317,333**	**854,336**

[1] Most of these leases appear to be inactive and/or may have expired, but their legal status is currently unknown.

[2] Reserved, Outstanding, and Combination minerals may not all be 100% private minerals. Partial Federal interests may exist as well.

[3] Combination indicates a parcel with two or more outstanding, reserved or deed lease rights.

Seventy-two percent of the land within the Forest's proclamation boundary is privately owned. Sixty percent of the Federally owned surface has privately owned minerals beneath it.

Federally owned minerals constitute about 40 percent of the mineral ownership on the WNF. This represents the only class of mineral estate for which the Forest Service can decide whether to make the surface available for oil and gas development. The responsibility for managing Federal leasable mineral resources is shared by the Forest Service and the U.S. Department of the Interior's Bureau of Land Management (BLM). The BLM has a major role in issuing licenses, permits, and leases for Federal minerals and in supervising associated operations.

With growing national demand for energy has driven up prices that producers receive at the wellhead. This has increased interest in drilling wells on the WNF's Federally owned surface. Based on a BLM survey of local oil and gas producers, a forecast of the total number of new wells and associated surface disturbance likely to occur on the Forest's Federal surface over the next 10 years is shown in Table 2 - 16.

Table 2 - 16. Forecasted Federal oil and gas operations over next 10 years.

Oil and Gas Activity	Athens Unit	Marietta Unit	Ironton Unit	Forest Wide
Number of new wells drilled	24	110	100	234
Miles of new access road needed	5	21	19	45
Total acres of surface disturbed by oil & gas drilling activity before reclamation	27	135	110	272
Total acres of surface needed to support drilled wells that are completed for production (excess disturbance reclaimed)	11	59	51	121
Number of depleted wells plugged	82	26	0	108
Total acres reclaimed by plugging depleted wells	45.1	14.3	0	59.4

No Surface Occupancy

For oil and gas, the Forest Plan makes two decisions:

- Availability of lands for future leasing.
- Which lease terms and stipulations to apply to tracts of Federally owned minerals that the Forest consents to lease.

The first decision was made in Amendment 8 to the 1988 Forest Plan. Adopted in 1992, the amendment made all Federally owned minerals on the Forest available for leasing. None of the alternatives considered in detail would modify that decision.

The key stipulation addressed in the Forest Plan is the no surface occupancy (NSO) stipulation, which prohibits use or occupancy of the land surface for oil and gas exploration and development. The 2006 Forest Plan would apply NSO in two ways:

- NSO is applied to certain management areas (MA NSO).
- NSO is applied Forest-wide, where specific conditions (e.g. steep slopes) or resources occur (FW NSO).

Minerals underlying an NSO surface may be extracted by directional drilling. Directionally drilled wells are more expensive to drill and maintain, and their economic life is shorter than vertical wells. Also, they may not be appropriate for shallower oil and gas reservoirs. NSO lands may be developed by adjacent vertical wells on private minerals with spacing units that include Federal acreage; otherwise, the NSO designation on the WNF has the same effect as that of a “no leasing” designation.

Surface acreage with the management area NSO stipulation would vary by alternative, from a low of 20,086 acres (Alternative B) to a high of 39,844 acres (Alternative F). This represents 8 percent to 17 percent of WNF surface ownership, leaving 83 percent to 92 percent of the Forest’s surface ownership available for both private and Federal oil and gas development.

Table 2 - 17 shows how the NSO stipulation would affect the availability of Federally owned oil and gas.

Table 2 - 17. Effects of MA NSO and FW NSO on availability of Federal oil/gas.

	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. E_{Mod}	Alt. F
MA NSO acres underlain by Federal oil and gas ownership	14,269	10,668	18,237	12,091	14,077	15,160	18,544
Percent of Federal oil & gas affected by MA NSO	14%	10%	17%	12%	13%	14%	18%
Percent of WNF surface	6%	5%	8%	5%	6%	6%	8%
FW NSO acres	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Percent of Federal oil & gas affected by FW NSO	2%	2%	2%	2%	2%	2%	2%
Percent of WNF surface	1%	1%	1%	1%	1%	1%	1%
Acres of Federal oil & gas available for leasing	88,586	92,187	84,618	90,764	88,778	87,695	84,311
Percent of total Federal oil & gas	84%	88%	81%	86%	85%	84%	80%
Percent of WNF surface available for Federal O&G leasing	37%	39%	36%	38%	37%	37%	35%

Coal

Coal is Ohio's most valuable single mineral resource. Since 1800, a total of 3.63 billion tons of bituminous coal have been mined in Ohio. Production peaked in 1970 at 55 million tons. Coal production in 2001 totaled 25.8 million tons, 48.6 percent of which was recovered from 102 surface mines with 51.4 percent from 10 underground mines.

USDI's Office of Surface Mining has the authority to regulate coal mining operations, and the Interior Department's agencies cooperate with the Forest Service to ensure that impacts upon surface resources are mitigated and affected land is reclaimed.

The Surface Mining Control and Reclamation Act of 1977, as amended, prohibits surface (strip) mining of coal (subject to valid existing rights and certain exceptions) on any Federal lands within the boundaries of any National Forest east of the 100th meridian. There are currently no leases of Federally owned coal on the Wayne.