compounds are emitted by fires, but they are found in very low concentrations. Compounds of concern would be:

- Carbon monoxide can cause serious health effects, such as dizziness, nausea, and impaired mental functions, but it becomes a matter of concern for people in close proximity to fire (including firefighters). Blood levels of carboxyhemoglobin tend to decline rapidly, to normal levels, after a brief smoke-free period.
- Benzo(a)pyrene, anthracene, benzene, and numerous other components found in smoke can cause headaches, dizziness, nausea, and breathing difficulties. They are of long-term concern because of cancer risks associated with repeated exposure to smoke.
- Acrolein and formaldehyde are eye and upper respiratory irritants to which some segments of the public and firefighters are especially sensitive.

Recreation Opportunities

Affected Environment

Introduction

National Forests provide over 191 million acres of public land within the United States. The Wayne National Forest, the second largest supplier of public recreation lands within the State of Ohio, and the largest in southeast Ohio, with approximately 238,000 acres. The WNF provides a variety of unique natural settings for outdoor recreation and includes a wide array of dispersed and developed recreation opportunities within those settings.

Opportunities that the Wayne is well positioned to provide include: camping, picnicking, swimming, boating/canoeing, fishing, hunting, driving for pleasure, off-highway (OHV) vehicle riding, horseback riding, mountain biking, hiking, wildlife viewing, nature study, gathering forest products, natural, cultural, and historic education and interpretation, etc.

In an effort to find the Forest's recreation niche, the WNF recently examined the variety of recreation opportunities it was currently providing and compared it to opportunities that other Federal, State, local, and private organizations in the southeast Ohio region were offering. As a result, the Wayne identified and selected two recreation opportunities that formed the key components of its recreation niche. They include: OHV trail riding and interpreting of heritage/cultural sites. These two activities are what the Wayne is best positioned to provide. This does not imply that

the Forest would stop providing other recreational opportunities. However, by clearly identifying what unique forms of recreation the WNF is best suited to provide, we can ensure that the opportunities which give the forest identity and value are sustained.

Discussion related to OHV opportunities is found in the Recreational OHV Use section of this Final EIS. Heritage and cultural interpretation is discussed in the Heritage section of this document.

Market Area

Market areas are established for National Forests to better evaluate public demand for recreation opportunities. In the Recreation Feasibility Study completed for the WNF in 2003, researchers defined the Forest's market area as within two-hours drive (approximately 100-mile radius) of the recreation site. A two-hour driving distance from one of the units of WNF includes much of Ohio and parts of West Virginia and Kentucky. The four urban areas that lie within this circumference and that were examined in the Recreation Feasibility Study are Columbus, Cincinnati, and Cleveland, Ohio, and Charleston, West Virginia (SRG, 2002).

Opportunities for outdoor recreation are not limited to the National Forest within the market area. Other lands such as Army Corp of Engineers, State forests, parks, and wildlife management areas, private industries and organizations, and municipalities also serve to connect and expand the range of recreation opportunities.

The Ohio Department of Natural Resources (ODNR), the largest supplier of public recreation lands in the State, manages approximately 387,000 acres of State parks and forests distributed throughout Ohio. A majority of those lands are available for public recreation (SRG, 2002). Many of the State parks offer highly developed overnight lodging facilities, water-based recreation opportunities such as swimming, fishing, boating, and water skiing, including dispersed recreation. In contrast, many recreation opportunities offered on a majority of private industry and organization lands are dispersed forms of recreation such as hunting, nature-viewing, hiking, and other non-motorized trail use.

Recreation Supply

Recreation Opportunity Spectrum (ROS)

Recreation opportunities can be analyzed according to the types of recreation experiences available. The Recreation Opportunity Spectrum (ROS) is used as a framework for establishing recreation setting and capacity for each of the Forest's management areas. ROS classes represent a spectrum of settings that provides visitors with an array of experiences. These experiences range from a high probability of solitude and recreational challenge to a very social experience where recreational challenge is relatively minor. The differing acreage available for the various ROS experiences can be used to compare the proposed alternatives. (See the Glossary for a description of each ROS objective.)

ROS is used in two different contexts: either as an inventory tool or a management objective. As an inventory tool, ROS is used to describe the existing array of recreation settings. This application describes the existing recreation opportunities or condition on the Forest and is referred to as the ROS inventory. ROS is also used is to describe a set of recreation management objectives or desired future recreation settings, which are referred to as ROS class objectives. (See the Glossary for a description of ROS class objective.)

To help set the stage for discussion of the existing (inventoried) and desired future (proposed objective) ROS opportunities, it is important to examine the 1988 Forest Plan's ROS projections.

Implementing management activities prescribed in the 1988 Plan would not produce Primitive (P) or Urban (U) ROS acres. However, approximately 4,000 acres of Rural (R), 26,800 acres of Semi-primitive Non-motorized, 68,800 of Roaded Natural Non-motorized (RNNM), 77,200 acres of Roaded Natural (RN) and 4,000 acres of Rural (R) settings are projected. RNNM areas were areas with moderate to high road density but where motorized forms of recreation were not allowed (Management Areas 2.2 and 3.3). When the 1988 Forest Plan was being developed (1988), the Forest was trying to define areas for OHV recreation. RNNM areas were established to help the public understand where OHVs were and were not allowed (even if an area contained high a number of roads).

The 2004 ROS inventory combined RNNM with RN areas for two reasons:

- A clear OHV management footprint is now clearly defined on the forest and is generally understood by the public so there is no longer a need to set aside RNNM areas and
- Travel routes in RNNM and RN areas have been essentially managed the same – roads within both ROS areas have been closed

to motorized use if there was not a need to keep them open. This is not likely to change in the Revised Forest Plan.

The 2004 ROS inventory identified three ROS settings on the WNF. They range from those that provide visitors with opportunities for solitude in an environment with limited evidence of human impacts to intensely social settings in highly developed environments. These ROS settings include: Roaded Natural, Rural, and Urban. Neither Primitive nor Semi-primitive Non-motorized characteristics were then found on the Forest. Table 3 - 43 compares the 1988 ROS inventory and the 2004 (existing) ROS inventory acreage.

Table 3 - 43. Comparison of 1988 Forest Plan ROS projections and 2004 ROS inventory.

ROS Objectives	1988 ROS Inventory Est. Acres	2004 ROS Inventory Est. Acres	2004 ROS % of Total Forest Acres
Primitive	0	0	0
Semi-primitive Non-motorized	26,800	0	0
Semi-primitive Motorized	0	0	0
Roaded Natural Non-motorized	68,800	0	0
Roaded Natural	77,200	144,470	61
Rural	4,000	91,881	38
Urban	0	1,702	1
Total	176,800	238,053	100 %

Source: WNF ROS Inventory from GIS, 2004 and Forest Plan DEIS, 1988

Compared to the 1988 ROS inventory, the existing inventory shows a shift in acres and percentages toward more developed ROS objectives. The Forest trend continues to show no acres for Primitive and SPNM, while the RNNM areas have shifted toward RN. Additionally, an estimated 91,881 acres of RN has shifted toward the Rural ROS objective while approximately 1,702 acres have shifted toward the Urban ROS objective. Some reasons for the shift toward the more developed ROS objectives may be the acquisition of lands that contained more developments such as roads and/or the ROS inventory criteria used for the 1988 Forest Plan may have differed slightly from the 2004 ROS inventory. Thus, the result of this analysis does support the public's claim for the need for more Primitive or SPNM areas.

Also in 2004, the WNF evaluated its land to determine if any area met the national criteria for Roadless/Wilderness areas. (See Appendix C for a complete discussion of the Forest's Roadless/Wilderness evaluation and results). Roadless/Wilderness areas have similar characteristics found in Primitive and SPNM ROS objectives. However, no areas on the Forest were found to meet roadless or wilderness definitions.

Developed Recreation

The Forest provides for a mix of developed recreation facilities such as campgrounds, picnic areas, beaches, boat launches, interpretive sites, and observation sites. Table 3 - 44 displays the total number of developed recreation sites available on each Ranger District.

Table 3 - 44. Summary of developed recreation sites on the WNF.

Ranger Districts	Total # of Tent Camp Units	# Group Camp Units	# RV Camp Units	# of Single Picnic sites	# of Family Picnic sites	Picnic Shelters	Swim Sites	Boat Launch	Canoe Launch	Observation Sites	Interpretive Sites
Athens	74	3	45	6	4	5	0	2	3	0	2
Ironton	81	1	46	3	3	3	1	2	0	1	1
Totals	**155**	**4**	**91**	**9**	**7**	**8**	**1**	**4**	**3**	**1**	**3**

Source: WNF District Offices and Infra Database

Lake Vesuvius and Leith Run recreation areas were developed to be all-inclusive recreation destinations. These highly accessible recreation areas typically receive the highest concentrated recreation use on the Forest, especially during the summer recreation season. Both recreation areas are predominantly operated by concessionaires.

Smaller, less developed campgrounds can be found throughout the Athens District, primarily on the Marietta Unit along the Covered Bridge Scenic Byway (State Highway 26).

Dispersed Recreation

As developed campgrounds fill up on weekends during the summer, visitors are displaced, often to dispersed recreation areas. Many other visitors choose a dispersed setting for their desired activities or experiences. They include areas of concentrated use to semi-primitive areas relatively void of human sounds or influences. The general emphasis for dispersed recreation sites on the Forest is to maintain a natural appearance. Some specific dispersed activities include driving for pleasure, OHV riding, horseback riding, hiking, wildlife viewing, nature study, gathering forest products, hunting, canoeing, fishing, etc.

Dispersed recreation sites contribute approximately 295,778 or 30 percent of the Forest's total Persons at one Time (PAOTs). This value, however, does not include the number of visitors that may participate in such activities as hunting, fishing, gathering forest products, wildlife viewing, pleasure driving, or other dispersed recreation activities.

Trail riding, especially off-highway vehicle riding, is becoming one of the more popular dispersed recreation activities on the Wayne. Of the 349

miles of trails on the Forest, approximately 288 miles of trails were developed to accommodate multiple user groups. These trails are designated as OHV/mountain bike/hiking, equestrian/mountain bike/hiking, equestrian/hiking, or mountain bike/hiking. Table 3 - 45 displays the miles of trail available by each trail use type.

Table 3 - 45. Miles of WNF trails by administrative units.

Units	Hiking	Equestrian	Mountain Bike	ATV/OHM	Total Miles
Athens Totals	129.4[1]	19.4	70.0[2]	70.0	129.4[1]
Marietta Totals	90.7[1]	12.3	90.7[3]	0	90.7[1]
Ironton Totals	129.0[1]	42.7	46.0[2]	46.0	129.0[1]
Forest Totals	**349.1**	**74.4**	**206.7**	**116.0**	**349.1**

[1] Trail miles may be shared with mountain biking, ATV/OHM, and/or equestrian use.

[2] Trail miles shared with ATV/OHM use.

[3] Trail miles shared with hiking.

Source: WNF District Offices and Infra Database

Motorized Trails

See "Recreational OHV Use" section in this Final EIS.

Non-motorized Trails

Mountain bike and horseback riding accounted for less than five percent of trail use on the Wayne between 1998 and 2003. Trail use information related to hiking is unknown because the Forest does not charge fees for this activity. However, based upon the 2002 WNF Recreation Feasibility Study, the need for additional equestrian trails (19.4%), hiking trails (17.3%), and mountain biking trails (13.3%) were among the top six requests from local and statewide users. Additionally, one of the top issues discussed the March, 2003, Ohio Trails Partnership (OTP) Symposium was the need for Federal and State agencies as well as local governments to provide more non-motorized trail opportunities. OTP is a statewide consortium of equestrian, hiking, and mountain bike enthusiasts that promotes opportunities for non-motorized trail use.

Other Dispersed Recreation

According to ODNR's record of annual license sales, the demand for fishing and hunting licenses has gradually declined over the last decade. For the twelve counties surrounding the Wayne, fishing license sales experienced a drop of 23 percent, while hunting license sales dropped 5.8 percent between 1988 and 2000.

Recreation Demand

Recreation demand is a complex relationship between people's desires and preferences, availability of time, price, and availability of facilities. The evaluation of current and future demand for recreation on the WNF is based on recent surveys that identify and quantify:

- Estimated number of current recreation visits to the WNF.
- Current participation rates for recreation activities within the forest market area.
- Future recreation demand/trend based on projected population growth.

Current WNF Recreation Visits

The 2003 National Visitor Use Monitoring (NVUM) effort by the Forest Service has provided baselines for estimating current use of recreation sites on the Wayne. (See Table 3 - 46) These numbers account only for people visiting developed or dispersed sites for the purpose of engaging in a recreation activity. They do not include the millions of people that simply drive through the Forest.

Table 3 - 46. Annual WNF recreation use estimate.

Visit Type	# of Visits	80 % Confidence Interval
Recreation Site Visits[1]	598,626	15.9
National Forest Visits[2]	548,409	15.4

Source: WNF National Visitor Use Monitoring Report, 2003

[1] Recreation Site Visits – As visitors were visiting the WNF, some visited more than one recreation site while on the Forest. The total reflects these multiple site visits.

[2] National Forest Visits – Estimated number of visits to the WNF Day Use Developed Sites (DUDS), Overnight Use Developed Sites (OUDS), and General Forest Areas (GFA) in 2003.

Recreation use on the WNF for fiscal year 2003 at the 80 percent confidence level was 548,409 National Forest visits +/- 15.4 percent. There were 598,626 site visits, an average of 1.06 site visits per national forest visit. (Note**:** Several major recreation facilities and activities on the Forest were impacted by the draining and reconstruction of Lake Vesuvius and closure of its surrounding recreation areas for the past three recreation seasons.) These major forest areas were not open to the public during the survey year resulting in recreational use that was lower than usual. (NVUM, 2003)

The Forest sold approximately 43 mountain bike trail permits and 257 horse trail permits during the 2003 trail season, which accounts for one and two percent of total permit sales respectively. There is no charge for hiking on the Wayne, and therefore, visitor use information related to this activity is not available.

Recreation Activities' Participation Rates

Both long and short-term past trends point to continued growth in outdoor recreation across all segments of the population, some more than others. (Ken Cordell – Outdoor Recreation Participation Trends Website, Ch. 4, 2003) Many studies have shown that this upward trend can be directly or indirectly attributed to several factors. These factors may include but are not limited to growth in the national, regional, and local population; a shift in the population's age (i.e., Baby Boomers getting older with more free time to recreate); the greater need to spend quality time with family and/or get away from job-related demands and stress; and more people achieving higher levels of education which translates to jobs with higher income and more disposable income to spend on recreation activities.

Results of the 1994 National Survey on Recreation and the Environment (NSRE) show that 94.5 percent of Americans 16 years of age or older participated in at least one or more forms of outdoor recreation. That is almost 19 out of 20 people or approximately 189 million participants nationwide. (K. Cordell – Outdoor Recreation in the United States: Results Website, Ch. 2, 2003)

Table 3 - 47. Comparing local, State, regional, and national outdoor recreation trends by percentage of population.

Recreation Activities	Area Rec Users [g](2002)	Regional Midwest NSRE (1994/95)	National NSRE (2000)	National NSRE (1995)	National NSRE (1983)	% of National Change [f]83'-2000
Nature Viewing/Sightseeing	79	NA	38.2/108.6	54.1/113.4	21.2 / 81.3	+80.2% / +33.6%
Hiking	70	68.2	69.8	47.8	24.7	+ 182.6 %
Picnicking	64	52.2	118.3	98.3	84.8	+ 39.5 %
Swim/ Beach	59	53.4	94.8	78.1	56.5	+ 67.8 %
Visit Historical Site	53	43.9	46.3	44.1	NA	NA
Jogging	42	23.9	NA	26.2	NA	NA
Lodge	36	NA	NA	NA	NA	NA
Boating	35	31.8	76.7	58.1	49.5	+ 54.9%
Fishing	33	31.5	67.9	57.8	60.1	+ 12.9 %
Tent Camping	27	21.7a	25.8	28.0	17.7	+ 45.8 %
Tour Bike	24	31.4b	39.7c	3.2c	NA	NA
Off Road Vehicle	18	12.6	35.0	27.9	19.4	+ 80.4 %
Recreational Vehicle	14	NA	NA	8.6	NA	NA
Mountain Bike	13	NA	21.5	28.6	NA	NA
Hunt/Trap	12	11.3	20.9	18.6	21.2	- 1.4 %
Shooting	12	NA	NA	NA	NA	NA
Horseback Riding	10	6.8	23.1	14.3	15.9	+ 45.3 %
Backpacking	9	5.4	27.9	15.2	8.8	+ 217.1 %
Rock Climbing	5	3.3	NA	3.7	NA	NA

Source: Information in columns 1-3 came from SRG Wayne National Forest Recreation Feasibility Study; Information in columns 4-6 came from Ken Cordell's book – "Footprints on the Land", p. 218.

[a] Numbers in the tent category for regional and national data refer to developed camping, which may include campers in recreational vehicles.

[b] Numbers for tour biking regionally refer to all biking and may include mountain biking.

[c] Numbers for tour biking in NSRE 2000 refer to long distance biking.

[d] Numbers for tour biking in refer to all biking and may include mountain biking.

[e] Number for mountain biking in NSRE 94/95 refer to all biking and may include mountain biking.

[f] Percentage of change is from National NSRE 1983 to National NSRE 2000.

[g] Area recreation users represent the four urban areas surveyed in the SRG's 2002 WNF Recreation Feasibility Report.

According to the Forest's 2003 NVUM report, participation rates for three of the top seven outdoor recreation activities on WNF essentially supports the regional and national trends as shown in Table 3 - 47. They include: viewing nature and wildlife, OHV use, and hiking. The other top visitor activities were relaxing, picnicking, driving for pleasure, and fishing. (See Table 3 - 48) Forest visitors participating in many of these popular recreation activities favor doing them in the more natural and remote settings that can be found in Roaded Natural and Semi-primitive Non-motorized ROS objective. (Note: The results of the NVUM activity analysis DO NOT identify the types of activities visitors would like to have offered on the national forests. It also does not tell us about displaced

forest visitors – those who no longer visit the Forest because the activities they desire are not offered.)

Table 3 - 48. WNF activity participation and primary activity.

Activity	% Participating	% as Primary Activity
Developed Camping	4.8	1.2
Primitive Camping	5.7	0.3
Backpacking	3.7	2.9
Resort Use	0.2	0
Picnicking	14.4	6.0
Viewing Natural Features	68.0	0.4
Visiting Historic Sites	3.8	0
Nature Center Activities	3.3	0.1
Nature Study	6.5	0
Relaxing	62.3	5.0
Fishing	21.7	18.5
Hunting	5.2	4.7
OHV Use	54.9	50.9
Driving for Pleasure	14.4	3.8
Snowmobiling	0	0
Motorized Water Activities	0.1	0.1
Other Motorized Activity	0.2	0
Hiking / Walking	20.4	5.1
Horseback Riding	1.2	1.0
Bicycling	1.2	0.8
Non-motorized Water	0.4	0
Downhill Skiing	0	0
Cross-country Skiing	0	0
Other Non-motorized	1.9	0.7
Gathering Forest Products	2.9	0
Viewing Wildlife	68.2	<.1

Source**:** WNF National Visitor Use Monitoring Report, 2003

Note: The "Primary Activity" column totals more than 100% because some visitors chose more than one primary activity.

Projected Population Growth

Population trends for southeast Ohio and the 12 counties surrounding the WNF for the previous decade (1990-2000) show mixed results. Hocking, Vinton, and Noble counties sustained both the most annual increases and the highest percentage change for population increase. (See Table 3 - 49) In contrast, Monroe and Scioto Counties had a population decline for the same period. However, the overall population for the 12-county area showed a slight increase of 15,595 persons, which is below the State average growth rate of 4.6 percent (SRG, 2002).

Table 3 - 49. Population trends for the 12 counties surrounding the WNF.

Athens Area	Total Population & Percent Change			
County	**1990**	**2000**	**1990-2000 Pop. Change**	**1990-2000 % Change**
Athens	59,549	62,223	2,674	4.50%
Hocking	25,533	28,241	2,708	10.61%
Morgan	14,194	14,897	703	5.00%
Perry	31,557	34,078	2,521	8.00%
Vinton	11,098	12,806	1,708	15.40%
Total	141,931	152,245	10,314	7.27%
Marietta Area	**Total Population & Percent Change**			
County	**1990**	**2000**	**1990-2000 Pop. Change**	**1990-2000 % Change**
Monroe	15,497	15,180	-317	-2.05%
Noble	11,336	14,058	2,722	24.01%
Washington	62,254	63,251	997	1.60%
Total	89,057	92,489	3,402	3.82%
Ironton Area	**Total Population & Percent Change**			
County	**1990**	**2000**	**1990-2000 Pop. Change**	**1990-2000 % Change**
Gallia	30,954	31,069	115	0.37%
Lawrence	61,834	62,319	485	0.78%
Scioto	80,327	79,195	-1,132	-1.41%
Jackson	30,230	32,641	2,411	7.98%
Total	203,345	205,224	1,879	.92%

Source: WNF Recreation Feasibility Study, 2002

Recreation Trends

Developed Recreation

Developed recreation is expected to receive a 16 percent increase in visitor growth by the next decade. Based on the 2002 WNF Recreation Feasibility Study, camping received the third highest number of responses asking the Forest to consider expanding. Not only are campers demanding more campsites, those using developed campgrounds are demanding campsite amenities, such as improved RV pads, electricity, and sewer hookups (NOI Comment Analysis 2002 and SRG 2002). Users have also expressed the need for more parking areas, interpretative facilities, and informative brochures, maps, and signs (SRG 2002). Historically, camping facilities located near large bodies of water or scenic vistas are favored over any other sites.

Visitors participating in developed recreation activities generally prefer developed facilities in natural settings, which may be found in Urban and Rural ROS objectives.

Dispersed Recreation

The demand for dispersed forms of recreation on the Forest is equivalent to or higher than that of developed recreation, depending on the activity. Dispersed recreation is expected to receive a 10 percent increase in visitor growth by the next decade. According to the latest national, regional, and local recreation studies, demand for such activities as wildlife/nature viewing, hiking, OHV riding, horseback riding, mountain bike riding, primitive camping, visiting historic and other interpretive sites, and driving for pleasure will continue to increase.

Visitors participating in many of these dispersed recreation activities generally prefer more natural settings that can be found in Roaded Natural, Semi-primitive, and Primitive ROS classes.

Environmental Consequences

Analysis Area

The analysis area includes all WNF land. This area represents Forest land where recreation resources exist, as well as land where those resources could receive impacts from management activities.

Effects Common to All Alternatives

Recreation Opportunity Spectrum (ROS)

To repeat, ROS is generally used in two different contexts – either as an inventory tool or a management objective. As an inventory tool, ROS is used to describe the existing array of recreation settings. This application describes the existing recreation opportunities or condition on the Forest and is referred to as the ROS inventory. The second way ROS is used is to describe a set of recreation management objectives or desired future recreation settings, which is referred to as ROS class objectives. (See the Glossary for a description of each ROS class objective.)

The Forest desires to provide a wide range of quality outdoor recreation opportunities that responds to public needs/demands, fulfills its recreation niche, and stays within the capabilities of the land. This desire is reflected across all proposed alternatives, including the “no action” alternative.

The general themes developed for Alternatives A through F emphasize various resource management objectives. Each alternative prescribes a different set of management activities and land allocations to meet those objectives. These land management prescriptions provide the parameters needed for redefining the current ROS distribution and the level of recreation facility development.

For each alternative, management activities would strive to meet its assigned ROS objectives. Generally, these activities may move an area

toward a lesser developed ROS objective, but not a more developed objective. For example, an area classified as RN may move toward SPNM, but not toward the Rural ROS.

Table 3 - 50. ROS setting objectives by alternatives (Acres and % of Forest).

ROS Objective	2004 ROS Inventory Acres (%)	ROS Acreage Allocation and Percent of Forest Inventory by Alternatives Acres / %						
		Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. E Modified	Alt. F
Semi-primitive Non-motorized	0	18,470 (8%)	9,603 (4%)	24,445 (10%)	9,589 (4%)	14,292 (6%)	17,274 (7%)	27,122 (11%)
Roaded Natural	144,470 (61%)	217,744 (91%)	226,611 (95%)	209,530 (88%)	224,386 (94%)	219,683 (92%)	216,701 (91%)	206,853 (87%)
Rural	91,881 (38%)	1,839 (1%)	1,839 (1%)	4,078 (2%)	4,078 (2%)	4,078 (2%)	4,078 (2%)	4,078 (2%)
Urban	1,702 (1%)	0 / 0 %	0 / 0 %	0 / 0 %	0 / 0 %	0 / 0 %	0 / 0 %	0 / 0 %

Source: WNF ROS Inventory, 2004

No areas on the WNF can be classified as ROS Primitive as it is currently defined (See ROS User's Guide). Table 3 - 50 show all alternatives shifting acres of existing Urban (U) and Rural (R) ROS settings toward the ROS objectives Roaded Natural (RN) and Semi-primitive Non-motorized (SPNM). Although the acre change varies for each ROS setting (except the Urban setting), these changes are relatively small across all alternatives. No alternatives would have an Urban ROS objective. The ROS acreage allocation for Alternative E Modified changed slightly from Alternative E. Roaded Natural acres decreased by one percent while SPNM acres increased by one percent in Alternative E Modified from Alternative E. All other ROS acres remain unchanged. These changes were directly resulted from the shift in the boundaries and subsequently the acres (2,982 acres) of the Forest and Shrubland Mosaic to the Future Old Forest Management Area.

Approximately 98 percent of the Forest's existing Rural ROS acres would move toward the RN ROS objective. The RN ROS objective has the highest ROS percentage across all alternatives. Though the existing ROS inventory did not result in any SPNM areas, this ROS objective would see an increase across all alternatives, with the highest increase under Alternative F (27,122 acres). To be able to move an area toward or retain SPNM "remote" character, the Forest's existing low-service roads would have to be closed to motorized use, new roads would not remain open for general public use, and SPNM recreation activities such as hiking, backpacking, horseback riding, mountain biking, wildlife viewing, and primitive camping would be emphasized.

The Rural and SPNM ROS were specifically assigned to Forest areas to be managed with a recreation emphasis. The Rural ROS objective was assigned to management areas containing highly developed recreation sites, such as the Lake Vesuvius and Leith Run recreation areas. Conversely, management areas with the SPNM ROS objective emphasize recreation activities and opportunities in more natural remote settings, such as the Future Old Forest (FOF) and the Timbre Ridge Lake (TRL) Management Areas.

Finally, ROS acres, as well as other recreation factors, were used to determine the Forest's maximum reasonable capacity of across the range of alternatives. The results from the assessment show no alternatives to likely exceed the Forest's recreation capacity.

Table 3 - 51. Forest Acres Allocated for Developed and Dispersed Recreation, Carrying Capacity, and Constructed Recreation Facilities by Alternatives.

Management Activity	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. E Modified	Alt. F
Land Allocated for Developed Recreation Development (acres)	1,839	1,839	4,078	4,078	4,078	4,078	4,078
Land Allocated for Dispersed Recreation Development (acres)	236,214	236,214	233,975	233,975	233,975	233,975	233,975
Reasonable Maximum Carrying Capacity (Recreation Visitor Days)	1,026,328	1,050,889	1,011,591	1,052,742	1,039,714	1,039,714	1,004,176
Number of Recreation Facilities Constructed (i.e. Campgrounds)	1 to 5	1 to 5	1 to 5	1 to 5	1 to 5	1 to 5	1 to 5

Source: WNF GIS and recreation project file, 2004

Developed Recreation

Developed areas, such as campgrounds, picnic sites, and swim beaches are dedicated to and managed primarily for high visitor interaction and usually include constructed facilities. All alternatives emphasize offering developed sites with varying levels of development – from highly accessible recreation facilities with modern amenities such as electricity and showers to less developed sites with natural surfaces and little or no facilities.

Regardless of alternatives, all sites would be maintained to meet health and safety standards, protect natural resources, increase accessibility, and be cost effective to operate and maintain. Emphasis would also be placed on reducing the Forest's deferred maintenance backlog, upgrading existing facilities, and altering or decommissioning less valued sites before considering new development. Generally, improvements are made for site and resource protection, however, visitor comfort and convenience would also be considered. Any facility upgrade or new construction would be developed at a level appropriate for the desired ROS setting. Each

alternative proposes only a moderate increase in new facility development due the reality of limited budgets.

Dispersed Recreation

All alternatives provide areas for visitors to enjoy various forms of dispersed recreation. Dispersed sites support recreation activities that are generally found in the undeveloped areas of the Forest such as hunting, nature study, hiking, and primitive camping. These activities require little or no visitor interaction or constructed facilities with the exception of designated trails. Management activities generally can affect dispersed recreation more than developed recreation because developed recreation areas are dedicated primarily to recreation use, while dispersed recreation areas are shared with other and sometimes competing resource benefits, such as wildlife habitat improvement or mineral development.

One of the more popular dispersed recreation pursuits on the Wayne is trail riding, particularly motorized trails. Effects of the alternatives on motorized trail use will be discussed in detail under the Recreational OHV Use section of this chapter. The following paragraphs will focus on effects of alternatives on non-motorized trails and other dispersed recreation activities.

Based upon comments received from public scoping and local recreation surveys, the demand for additional miles of non-motorized trails was clearly evident. The 1988 Forest Plan projections for new equestrian and hiking trails have not been met. Mountain bike use was not addressed and therefore no miles were planned for this activity in the 1998 Plan. The sport was relatively new when the 1988 Plan was written. If Alternative A (continuance of the 1988 plan) is selected, it would include a mileage range of 15 to 30 new miles of new mountain bike trail construction. Moreover, all alternatives would have the same mileage range for this trail type. (See Table 3 - 52 for range of miles of new trail construction.)

The lack of adequate miles of ATV/OHM, equestrian, mountain bike and hiking trails would be addressed by any, all, or a combination of:

- Constructing additional new trails
- Sharing compatible uses on existing trails
- Converting existing low use level roads or user-developed trails to system trails
- Relocating trails off existing roads.

Where possible, trails would be connected to provide for longer continuous trails. Additionally, some camping areas may be constructed to accommodate the demands associated with popular trail activities, such as ATV/OHM and horseback riding. Similar to develop recreation

developments, the level or miles of new trail construction will be proportionate to the availability of funds and resources.

Table 3 - 52. New Non-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 Hiking Trail Construction (mileage range)	5 to 14	5 to 14	5 to 30	5 to 30	5 to 30	5 to 30	5 to 30
New Non-motorized Trail Constr. (Density Range - miles/sq.mi)	1.5 to 4.5	1.5 to 4.5	Up to 2.5	Up to 2.5	Up to 2.5	Up to 2.5	Up to 2.5
New Equestrian Trail Constr. (mileage range)	5 to 30	5 to 30	5 to 50	5 to 50	5 to 50	5 to 50	5 to 50
New Mtn. Bike Trail Constr. (mileage range)	15 to 30	15 to 30	15 to 30	15 to 30	15 to 30	15 to 30	15 to 30
Equestrian Cross-country Use	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
Mtn. Bike Cross-country Use	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited
Hiking Cross-country Use	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed

Source: WNF Recreation Project File, 2004

Also common to all alternatives is the desire to reduce the amount of cross-country travel from such uses as ATV/OHM, horseback, and mountain bike riding. Limiting these activities to designated trails minimizes adverse effects to soils, water quality, aquatic wildlife habitat, vegetation, and aesthetics. Unmanaged user-developed trails and concentrated use area (CUAs) would be assessed for their impacts to resources and usability. User-developed trails and sites found to be environmentally sound and economically viable may be managed to standard and incorporated into the Forest's existing system of trails and recreation sites. All other user-developed trails and CUAs would be closed and rehabilitated as funding permits. Due to the relatively low impact of hiking on the natural resources, this activity is permitted in most areas of the Forest, except where signed "closed to foot travel". This would apply to all alternatives, including the "no action" alternative.

Opportunities for other dispersed recreation such as fishing, canoeing/boating, camping, backpacking, viewing wildlife, and visiting historic sites would remain relatively the same as what is currently provided.

With respect to hunting, all alternatives would feature an increase in general big game (deer and turkey) and small game (rabbit, squirrel,

grouse, and quail) habitat over 1988 Forest Plan direction. Management activities in Alternative B (160,488 acres) would see the greatest increase in big and small game habitat in the Forest Shrubland Mosaic (FSM) Management Areas (with OHV and without OHVs). Besides Alternative A, Alternative C has the smallest increase in big and small game habitat with 22,946 acres in the FSM and FSMOHV management areas. Alternatives D, E, E Modified, and F round out the acreage but would provide between 35,000 and 58,000 acres of big and small game habitat. Alternative B would provide the best opportunity hunting for big and small game species.

Direct and Indirect Effects – Recreation Opportunity Spectrum (ROS)

This section discusses the different direct and indirect effects among the range of alternatives as it relates to ROS allocation and the variety of developed and dispersed recreation opportunities. The changes discussed in this section may not be immediately evident and may take 10 or 20 years before noticeable results may be observed.

Alternatives A and B

Alternative A represents 1988 Forest Plan management objectives and would provide a baseline for evaluating other alternatives. This alternative focuses more on providing mature forested landscape with little or no provision for early successional habitat. Alternative A provides relatively little area for expansion of highly developed recreation. Approximately 1,839 acres (less than 1%) of the Forest is allocated for Rural ROS and none for Urban ROS. Alternative A would move all existing Urban ROS acres and most of the existing Rural ROS acres toward RN and SPNM ROS. This translates to Alternative A being able to provide a larger area for those visitors seeking a remote natural setting or backcountry experience and less positive for those seeking a more developed setting and motorized access. This alternative would provide the third highest acreage for a SPNM experience. Only Alternatives C or F would offer more.

Conversely, Alternative B would emphasize a mosaic of early successional forest landscape. Alternative B is similar to Alternative A in that the acres allocated for the Rural ROS objective would be the same (1,839 acres). However, Alternative B would offer slightly less acres for Semi-primitive Non-motorized (-8,867 acres) and equally more Roaded Natural (+8,867 acres) settings than Alternative A. As a result, visitors would have less area to enjoy a primitive or backcountry experience.

Alternatives C and F

Alternatives C through F are same with respect to the number of acres they would allocate for the Urban (no acres) and Rural ROS objectives (4,078 acres). The acres of Rural ROS called for in each of these

alternatives are essentially double what would be provided under Alternatives A or B. Though relatively small when compared to the total Forest land base, these ROS acres would offer the most potential for expanding and improving highly developed recreation sites. New recreation facilities would be constructed primarily in response to demonstrated public need, however. Existing sites could be enhanced and reconstructed to standard. The Forest would strive to continue to offer a broad range of developed day and overnight use sites within this area. New developed recreation sites to support associated dispersed recreation opportunities would be considered. Sites at varying development levels would be provided. Some existing sites could be upgraded to a higher development level if a need was demonstrated.

Alternatives C and F would allocate approximately 24,445 acres and 27,122 acres respectively toward the SPNM objective in three separate sections of the Future Old Forest (FOF) Management Area plus 796 acres in the Timbre Ridge Lake (TRL) Management Area. No vegetation management except for that needed to protect public health and safety, or to protect private property, would occur. Opportunities to close low-service Forest roads in the FOF Management Areas would be given serious consideration. New roads in this area would not remain open for general public use. The Forest would manage these FOF areas toward a mature, natural appearing forest, thus providing visitors with areas where they can experience remoteness, solitude, and high level of challenge. Non-motorized recreation activities such as hunting, fishing, boating, hiking, mountain biking, horseback riding, and wildlife viewing would be common. Recreation sites that encourage the study and enjoyment of nature and scenery, interpret unique historical or biological communities, or promote the use of the National Scenic North Country Trail would be given priority. Recreation sites at lower development levels would have precedence, but sites at higher development levels would also be considered if there is a high public demand. All recreation sites would be constructed or reconstructed to compliment the natural setting and meet the SPNM ROS objective.

Alternatives C and F also would provide essentially the same RN ROS acres (approximately 209,530 and 206,853 acres, respectively). Visitors recreating in the RN areas would continue to experience some sense of remoteness, independence, and closeness to nature but not at the same level as found in SPNM areas. Visitors would typically find more evidence of human activity, motorized use, and facility development in RN areas. Recreation site development would continue on an as needed basis but at a higher development level than what may be found in SPNM areas.

Alternatives D, E, and E Modified

Like Alternatives C and F, Alternatives D and E and E Modified would provide the same acreage allocation for Urban and Rural ROS. Unlike Alternatives C and F, Alternatives D, E, and E Modified would increase the number of RN acres and proportionately decreases the number of SPNM acres. (See Table 3 - 50) Actually, Alternative D is closer to Alternative B, while Alternative E and E Modified is more nearly resembles Alternative A with respect to the number of acres they would allocate for RN and SPNM. Thus, the net recreation effects of RN and SPNM allocation for Alternatives B and D are similar while Alternatives A and E and E Modified are similar. (See Alternatives A and B in this section for a description of recreation effects.)

Developed Recreation

Alternatives A through F

The lands around the Forest's highly developed recreation areas such as Lake Vesuvius, Leith Run/Capitol Christmas Tree Complex, Burr Oak Cove Campground, and Lamping Homestead were included to allow more opportunities for future expansion. These areas are all within the Developed Recreation Management Area (DR) which would be managed mainly for a variety of developed and some dispersed non-motorized recreation opportunities. Vegetation management would occur only to protect or enhance the recreational facilities and natural settings.

There are no considerable differences across the range of alternatives in the type of recreation opportunities and experiences the Forest would offer. Each alternative proposes only moderate increases in new developed recreation facilities. The number and level of new facility development would directly depend upon public demand, availability of funding, and the ROS objective. The only noticeable difference among the alternatives is the acre allocation for future developed recreation expansion. Alternatives A and B would provide approximately 1,839 acres each, while Alternatives C, D, E, E Modified, and F would provide approximately 4,078 acres each.

All alternatives will emphasize reducing the number of low use recreation sites and facilities and maintaining or upgrading existing facilities to meet public health, safety, and accessibility standards, to provide site and resource protection, as well as meet visitor expectations.

Dispersed Recreation

Alternatives A and B

When compared to motorized trail use on the Forest, non-motorized trail use appears small. However, the demand for more non-motorized trails is increasing among this group of users. Alternatives A and B projections for

new equestrian trail construction range from 5 to 30 miles, while new hiking trail construction would be between 5 and 14 miles by the end of the next decade. These projections were derived from the 1988 Forest Plan. The 1988 Plan also provided a trail density of 1.5 to 4.5 miles/sq. mile for equestrian and hiking trails. Thus, the result would be the potential for up to 95 total miles (sum of existing and new trails) of trails for each trail activity. (See Table 3 - 52)

The mileage range and density for non-motorized trail use within Alternatives A and B would be within the acceptable limits of the land due to the relatively large land base available for non-motorized trail construction.

Management activities in Alternative A would provide no real increase in big or small game habitat, while Alternative B would provide the greatest habitat increase of any alternatives with 160,488 acres. The emphasis of Alternative B is providing a mosaic of early successional habitat patches of various sizes interspersed throughout a predominately forested landscape. The Forest would contain mixed hardwood forest communities over 100 years old, permanent herbaceous forest openings, ponds and wetlands to enhance wildlife and visual diversity. Trees greater than 120 years old may occur throughout the area as individuals or groups. Game species associated with shrub and seedling/sapling forest habitats such as deer, turkey, and rabbits would flourish. Game species associated with more mature hardwood forests like squirrel and grouse would thrive. Under Alternative B, there would be no increase in acres of grassland from current levels, but early successional habitat would be greater than in the other alternatives. Thus, compared with other alternatives, Alternative B would generally offer hunters the greatest opportunity for hunting big and small game species.

Alternatives C through F

Alternatives C, D, E, E Modified, or F would provide the same total trail density, but within each alternative, the mileage range among the different trail types would vary slightly.

Alternatives C, D, E, E Modified, or F would provide 20 more miles of new equestrian trails and 16 more miles of new hiking trails than either Alternatives A or B. Mountain bike trails miles would remain the same across all alternatives.

Compared to motorized trails, noticeably fewer miles of new trail would be constructed for equestrian, hiking, and mountain bike use due to current and historic use from these activities. For Alternatives C through F, the proposed range of new trail construction for each trail activity would be:

- Equestrian (5 to 50 miles)
- Mountain biking (5 to 30 miles)

- Hiking (5 to 30 miles).

The trail density would be set at 2.5 miles/sq. mile for each trail activity across Alternatives A through F.

The mileage range and density for non-motorized trail use is well within the acceptable limits of the land due to the relatively large area available for non-motorized recreation opportunities. Furthermore, the miles of new trails proposed coupled with the mileage of existing trails should fulfill the need of this user group in the next decade.

The miles of new trail construction, whether motorized or non-motorized, will be directly dependent upon the availability of contiguous and suitable land, internal and external funding (i.e., appropriations, recreation fees, and grants), and partnership and volunteer contributions, as well as other environmental, social, and political factors.

Second only to Alternative A, Alternative C would increase big and small game habitat the least, with 22,946 acres in the FSM and FSM/O Management Areas. Alternatives D, E, E Modified, and F round out the acreage but would provide increases ranging from 35,000 and 58,000 acres of big and small game habitat. Alternatives C through F would moderately increase big and small game hunting opportunities.

Cumulative Effects

To adequately discuss the cumulative effects to the Forest's recreation program, activities on adjacent non-Federal lands must be taken into account. Unlike many of the nation's larger national forests, in which the land base is mostly contiguous, the WNF is significantly fragmented by private and State land. Thus, any activities on adjacent lands will very likely affect the recreation opportunities, settings, and experiences found on the Forest.

The private lands surrounding the Wayne are gradually losing their preferred settings and access for nature-based recreation. This trend can be traced to agricultural, mineral, and urban/suburban development. Furthermore, as more private lands are posted to prevent public access or are leased to hunting clubs, public lands may be among the few remaining areas where recreationists can pursue certain kinds of outdoor activity. Additionally, the WNF is one of the few large public land bases in Ohio that visitors may visit to experience solitude, closeness to nature, and semi-primitive settings. The Forest also provides a sense of place and beauty for local residents as they identify with and enjoy its natural landscapes and historic features. Because of these and other factors, the WNF is considered an important national treasure and is highly valued for the recreational opportunities it provides. If the Forest retains this character, visitor use and recreation demands will almost certainly increase over the next decade and beyond.

Providing outdoor recreation opportunities in Ohio requires involvement and collaboration between Federal, State, and local governments, as well as from private recreation associations, clubs, and businesses. Individually, each entity fulfills a unique niche. Together, they play an important role in providing a wide spectrum of recreation opportunities for the public.

Federal agencies such as the Forest Service generally manage for outdoor recreation opportunities that require large land bases, for example, hiking, backpacking, trail riding, hunting, primitive camping, etc. National Forest System lands are well suited to support long trails, recreation sites with few amenities, sites with scenic vistas, and backcountry recreation. The State also provides recreation opportunities that require large land bases, but invests heavily in water-based recreation and lodges. Local governments tend to focus on providing highly developed indoor and outdoor facilities, such as community centers and parks and hardened hike/bike trails. The private sector largely focuses on theme parks or providing recreation support facilities, such as specialty shops, bed & breakfast inns, and restaurants.

Because each entity offers its own unique recreation opportunities and settings, they complement each other by giving visitors an array of recreation opportunities from which to choose. Thus, the WNF will continue to attract a select group of visitors that desires to recreate in a large natural setting with some sense of remoteness and solitude and/or a high level of challenge.

Many communities are beginning to see the benefits of visitors coming to the Forest and are encouraging tourism centered on the WNF to stimulate their economies. This is evident from the growing interest of local businesses, trail associations/club, and community leaders in having the Forest's trail system linked to their town or place of business.

Recreation supply and demand will invariably shift with time. As demand exceeds supply, conflicts among user groups will become greater, the visitor's recreation experience will be reduced, illegal trail use will escalate, and impacts to natural and visual resources will rise.

The Wayne's capability to fulfill the public's recreation expectations is limited by a number of factors. Much of the Forest has been affected by human activities in one form or the other. Additionally, the Forest's scattered land ownership pattern, the difficulty in reducing the high density of public roads, and the increasing competition from Forest users for the same lands are just some of the factors that may limit the Forest's ability to provide for large Primitive/Semi-primitive areas, thus making it difficult for visitors to "get away" and seek solitude.

These and other limiting factors suggest the appropriate recreation niche for the Forest. Based on this niche the Forest can direct its budget,

resources, and efforts toward providing a set of recreation opportunities that best fulfills its particular role. Other Federal, State, and local agencies and private organizations can then concentrate on providing other types of recreational opportunities. This approach would help the Forest devote resources to the recreation opportunities for which it is best suited, provide better customer service, and ensure a higher level of user satisfaction. Such a strategy would also allow the Forest to find and develop strong working partnerships to help meet the growing recreation demands of its constituents.

Summary

All alternatives would provide a range of recreation opportunities, settings, and experiences, and would meet the public's recreation needs in differing ways.

Alternative F would provide the greatest opportunity for future Semi-primitive recreation in the Future Old Forest and Timbre Ridge Lake management areas while also providing high opportunities for developed recreation expansion by enlarging the Developed Recreation Management Area. The second highest opportunity for SPNM recreation would come under Alternative C followed by Alternatives A, E, E Modified, B, and D, respectively.

Alternatives A or B would each allocate the same acreage for developed recreation. Alternatives C through F would allocate more than twice the acreage to developed recreation as Alternatives 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.

With respect to hunting opportunities, Alternative A would provide no real increase in new big or small game habitat, while Alternative B would offer the greatest potential to increase big and small game habitat (except for quail) of any alternative. Alternatives C through F would provide a moderate increase in big and small game hunting opportunities.

Recreational OHV Use

Public opinion about recreational off-highway vehicle (OHV) use on the Wayne National Forest spans a broad spectrum – from an insistence that OHV riding be prohibited on the Forest to a strong desire that the Forest Service maximize its opportunities to construct more OHV trails or routes.

The Forest Service has determined that OHV riding is a legitimate use on NFS lands, and the WNF has a well established system of designated all-terrain vehicle (ATV) and off-highway motorcycle (OHM) trails. Currently, the Forest has no designated trail system for four-wheel drive (4WD) and similar high-clearance vehicles.

This discussion of resource effects takes into account the environmental impacts on the WNF related to OHV use on proposed designated trails and cross-country travel. Discussions of these effects are included in the various resource sections of this Final EIS. They are also part of project-level analysis.

This section discusses direct and indirect social effects such as, use trends and demands, use conflicts and compatibility, and illegal trail activity, as well as the fiscal effects of constructing and maintaining new motorized trails on the Forest. Discussions of cumulative social effects consider the opportunities for OHV use on other land ownerships within and near the Forest's proclamation boundary and/or within the State of Ohio. Discussions of cumulative fiscal effects consider the opportunities for obtaining outside sources of funding through partnerships, grants, and volunteers to help offset costs associated with ATV/OHM trail construction and maintenance.

For the purpose of this analysis, the following definitions for the various types of recreational motorized vehicles are given to provide clarification during the discussion of the affected environment and environmental effects.

- Off-highway vehicle (OHV) – Includes ATVs, OHMs, 4WDs, SUVs, dune buggies, mini-bikes, go-carts, Gators®, and similar high-clearance vehicles designed to travel off maintained roads.
- All-terrain vehicle (ATV) – Motorized flotation-tired vehicle, with three to six low-pressure tires, generally 50 inches wide or less, straddled by the rider, and designed to travel off maintained roads.
- Off-highway motorcycle (OHM) – Motorcycle designed generally for use off maintained roads and commonly referred to as a "dirt bike" or designed for use off or on maintained roads such as a "dual sport bike".
- Four-wheel Drive (4WD) – Licensed high-clearance all-wheel drive vehicles capable of on or off-highway travel.

- Sport utility vehicle (SUV) – Licensed two or all-wheel drive, high-clearance vehicles capable of on or off-highway travel.

OHV INDICATOR 1 – Miles of new motorized trail construction

The first indicator addresses the demand for additional designated ATV and OHM trails on the WNF. The effects of the alternatives on new motorized trails are based on the maximum miles of additional designated ATV/OHM trails each alternative could potentially provide. All alternatives, including the "no-action" alternative, would provide for motorized trail use and opportunities to construct new trails.

OHV INDICATOR 2 – Construction and maintenance cost of providing more OHV opportunities on the Forest

The second indicator addresses the financial costs of constructing and maintaining existing as well as new trails on the WNF. The effects of the alternatives on the cost of constructing and maintaining new motorized trails are based on the maximum miles of additional designated ATV/OHM trails each alternative could potentially provide. All alternatives, including the "no-action" alternative, would provide for the construction of new motorized trails.

Affected Environment

Introduction

The Wayne's motorized trail system is a highly popular attraction for ATV and OHM enthusiasts. It is one of a few areas in Ohio or the Midwest region where riders may come to enjoy their sport. Motorized trail riders from as far as Indiana, Michigan, Pennsylvania, West Virginia, and Kentucky come annually to ride. For this reason, the WNF has identified providing motorized trail opportunities as one of the key elements that form its recreation niche.

However, as will be discussed, the OHV use is likely to continue increasing. Thus, managing OHV use will continue to be an issue and a challenge for the WNF, just as it has become a national issue for the Forest Service. Unmanaged recreation, especially the undesirable impacts from unmanaged OHV use, has been identified by the Chief of the Forest Service as one of the key threats facing the national forests and grasslands. Concerns have been expressed over the amount of unplanned roads and trails, erosion, lack of quality OHV recreation opportunities, degradation of water quality, and destruction of habitat from unmanaged OHV activity.

Market Area

Market areas are established for national forests to better evaluate public demand for recreation opportunities. In the Recreation Feasibility Study completed for the WNF in 2003, researchers defined the Forest's market

area as within two-hours drive (approximately 100-mile radius) of the recreation site. A two-hour driving distance from one of the units of WNF includes much of Ohio and parts of West Virginia and Kentucky. The four urban areas that lie within this circumference and that were examined in the Recreation Feasibility Study are Columbus, Cincinnati, and Cleveland, Ohio, and Charleston, West Virginia (SRG, 2002).

Opportunities for outdoor recreation are not limited to the national forest within the market area. Other lands such as Army Corp of Engineers, State forests, parks, and wildlife management areas, private industries and organizations, and local municipalities also serve to connect and expand the range of recreation opportunities.

The Ohio Department of Natural Resources (ODNR), the largest supplier of public recreation lands in the State, manages approximately 387,000 acres of State parks and forests distributed throughout Ohio. A majority of those lands are available for public recreation (SRG, 2002). Many of the State parks offer highly developed overnight lodging facilities, water-based recreation opportunities such as swimming, fishing, boating, and water skiing, including dispersed recreation. In contrast, many recreation opportunities offered on a majority of private industry and organization lands are dispersed forms of recreation such as hunting, nature-viewing, hiking, and other non-motorized trail use.

Recreation Supply

The Midwest region contains only a handful of large areas designated for motorized recreation. Some of these areas include the Hatfield-McCoy Trail (WV), the Allegheny National Forest (PA), Huron Manistee National Forest (MI), and the Daniel Boone National Forest (KY). Of the six motorized trail systems in Ohio, three are found on the WNF. The 1988 Forest Plan designated two management areas (2.3 and 3.2 MA) for motorized OHV recreation. Within these management areas, the Forest Service has constructed approximately 116 miles of OHV trails, compared to 43 miles managed by the State of Ohio. This situation creates a high demand for the Wayne's motorized trail system both now and into the future.

OHMs and ATVs 50 inches wide or less are permitted on designated motorized trails only. With the exception of dual sport motorcycles, all street legal or licensed 4WDs and SUVs are limited to open roads only (maintenance level [ML] 2 roads or higher). Cross-country travel by motorized vehicles is prohibited on the Forest.

Recreation Demand/Trend

Two decades of national recreation studies have shown off-road driving to be one of the fastest growing outdoor activities. During a 17-year period (1983-2000), this sport has increased by 80.4 percent. A second indicator

of the increasing trend of motorized vehicle use can be seen in State registration figures. From 1998 to November 2002, the registration of ATVs has almost doubled. (See Table 3 - 53)

Table 3 - 53. ATV and OHM registrations statewide in Ohio for the last five calendar years.

Type of Registrations	CY1998	CY1999	CY2000	CY2001	CY2002[3]
ATV in-state[1]	7,014	8,712	11,839	12,518	13,350
OHM in state[1]	2,495	2,201	2,141	2,341	2,629
ATV Non-resident[2]	N/A	N/A	136	97	128
OHM Non-resident[2]	N/A	N/A	31	21	51

Source: Ohio's Bureau of Motor Vehicles

[1] Ohio's in-State registrations are good for 3-year periods of time.

[2] 30-day non-resident placards (permits). Ohio began to issue these in February, 2000; therefore, CY-2000 non-resident is only for 11 months.

[3] CY-2002 includes Jan 1, 2002 through Nov 30, 2002.

State and national OHV sales from 1995 through 2001 also support the increasing trend for this type of motorized sport. (Table 3 - 54) 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 ATVs to 5th in this same time period.

Table 3 - 54. Off-highway Vehicle State and National Trends in Retail Sales.

Ohio New Retail Sales	Dual-Sport Motorcycles	ATVs	Total
1995	3,964	9,495	13,459
2001	10,045	28,901	38,946
% of Change	**153.4%**	**204.4%**	**189.4%**
US New Retail Sales	**Dual-Sport Motorcycles**	**ATVs**	**Total**
1995	90,679	277,787	368,466
2001	270,209	729,054	999,263
% of Change	**198%**	**162.5%**	**171.2%**

Source: Motorcycle Industry Council

Similar to national and regional trends, motorized trail use on the Wayne is increasing annually. This is reflected by the increasing number of OHV sales, State all-purpose vehicle (APV) registrations, and the number of recreation visits and revenues collected from motorized trail permit sales on the Forest. OHV riding accounts for more than 90 percent of trail permits sold on the Forest.

In 2003, over 16,800 motorized trail permits were sold on the Forest through the Fee Demo Program. Forest trail permit sales for 2004 are expected to meet or exceed 2003 sales.

Environmental Effects

Analysis Area

The analysis area includes WNF lands within the OHV management areas. They are: Diverse Continuous Forest with OHV (DCFO), Forest and Shrubland Mosaic Forest with OHV (FSMO), and Historic Forest with OHV (HFO). These areas represent Forest land where recreational motorized trail riding is permitted, as well as adjacent lands where management activities may impact that sport.

Effects Common to All Alternatives

General Resource Protection Measures

Adverse effects from motorized vehicle use would be mitigated by implementing appropriate Forest-wide standards and guides, Best Management Practice (BMP) techniques, or through proper trail design. Additionally, by applying effective education and enforcement programs, the Forest would help increase public understanding and compliance of its OHV policies, thus reducing impacts to natural resources.

OHV Use Policy to be Applied Across All Alternatives

No alternatives would permit OHV use off designated motorized trails or routes. Additionally, these recreational vehicles are not permitted on Forest system roads, except where roads serve as trail connectors. These road crossings would be appropriately signed to allow such use. Trails are designed for OHMs and ATVs 50 inches wide or less. Trails are open for use only from mid-April through mid-December.

Construction of new motorized trails and associated facilities would be limited to only the Diverse Continuous Forest with OHV, the Forest and Shrubland Mosaic with OHV, and Historic Forest with OHV management areas. All of these management areas were assigned the Roaded Natural (RN) ROS objective. (See Recreational Opportunities and Settings section for a description of this ROS objective.)

All alternatives allow some non-motorized uses on motorized trails, such as mountain biking and hiking, though these user groups typically do not like to share trails with OHV riders. Horseback riding is not permitted on the motorized trail system for safety and compatibility reasons.

Opportunities to provide designated 4WD roads or trails would be limited across all alternatives. Any proposal to close low-maintenance system roads and designate them for high-clearance vehicle use would be

considered on a case-by-case basis. However, no routes or areas on the Forest have been designated for 4WD or high-clearance vehicle use.

Social Effects

A positive effect from motorized recreation is that it provides pleasure to a large segment of the population. Some of these visitors may include people with a physical disability or the elderly who may perhaps not be able to enjoy the outdoors otherwise. Motorized vehicles also provide visitors easy access to remote areas of the Forest; allow them to experience more of the Forest by covering more area; provide them an opportunity to build close family ties; and provide deer hunters with a convenient way to transport game out of the woods.

Motorized recreation also contributes to a community's economic welfare. On the Wayne, local vendors benefit by selling Forest trail permits. Not only do they receive revenue from the direct sale of trail permits, they also gain additional business from the sale of food, gas, and supplies to visitors. Additional revenues are generated from visitors lodging and eating at local hotels and restaurants.

However, negative social effects may also result from motorized recreation. A principal effect is the displacement of some non-motorized users seeking solitude such as hikers, mountain bikers, backpackers, primitive campers, bird watchers, and even some hunters. This is generally attributed to factors as loud noise, exhaust emissions, and the high rate of speed from these recreational motor vehicles.

To help absorb displaced non-motorized users, the Wayne limited motorized trail use to a few management areas that cover approximately 19 percent of the Forest. The remaining 81 percent is open to non-motorized recreation use.

Also, accelerated motorized recreation use could strain the Forest's limited law enforcement program. Heavily used areas require more routine patrol, and create an uneven distribution of law enforcement officers (LEO) across the Forest. Less used recreation areas would lack the enforcement oversight they deserve, and therefore, may experience more vandalism or visitor non-compliance.

This effect would be mitigated through the use of more Forest protection officers (FPO) and developing partnerships with State and local law enforcement to assist in patrolling the Forest's motorized trail system.

Natural Resource Effects

This section briefly discusses the general effects of natural resources from motorized recreation use. A detailed discussion of effects would be found under each applicable resource section of this Final EIS or during site-specific project level analysis.

The degree of natural resource impacts from motorized trail use is proportionate to the level and intensity of use and/or to the level at which the trail was constructed and maintained. In other words, the more use a trail receives and the harder a trail is ridden, the higher the probability of negative effects on resources from use if the trail was poorly designed, constructed, and maintained.

Regardless of which alternative is selected, some illegal OHV use can be expected to occur. Though the Forest currently provides a system of designated trails for motorized use, illegal off-trail riding continues. Illegal off-trail riding has created many user-developed routes on the Forest. Some contributing factors for this illegal activity are:

- Trail demand is greater than the current supply
- Existing trails do not provide the challenge some riders are seeking
- Lack of Law Enforcement Officers to patrol trails
- No established trail patrol program to educate/inform riders of Forest OHV policies and to routinely monitor or patrol trails
- Lack of adequate signing or marking of existing designated trails.

Though many user-developed routes may be found on the Forest, they are not condoned. However, some user-developed trails could be considered for system trail designation if they are well located and could be easily incorporated into the existing designated trail system. Many user-developed trails are causing adverse effects to natural resources and pose a risk to rider safety. When user-developed trails are identified and cannot be reasonably incorporated into the existing designated trail system, they will be closed and rehabilitated. Certainly, the miles of user-developed trails the Forest could incorporate or rehabilitate/close in a given year is dependent on its budgetary and personnel capabilities.

Without routine trail monitoring, maintenance, and/or rehabilitation, adverse effects to soils, water quality, aquatic habitat, wildlife habitat, vegetation, and scenic resources would inevitably occur.

INDICATOR 1 – Miles of New Motorized Trail Construction

Direct and Indirect Effects

This section discusses the different direct and indirect effects among the range of alternatives as it relates to the development of new ATV and OHM trails. It is important to note that the changes discussed in this section may not be immediately evident and may take 10 or more years before noticeable results may be observed.

The demand for a longer motorized trail system will continue to be voiced by the Forest's largest group of trail users – its OHV constituents. If the

Wayne provided the miles of motorized trails needed to meet public demand, this group maintains, the expansion would reduce trail overcrowding, lower maintenance costs, minimize illegal off-trail activity and resource impacts, while increasing rider safety and enjoyment.

All alternatives would provide for additional ATV and OHM trails. Table 3 - 55 displays the projected mileage range for new OHV trail construction and Forest total when completed.

Table 3 - 55. 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 OHV Trail Construction (Density Range - miles/sq.mi)	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 OHV 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 OHV 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

Source: WNF Recreation Project File, 2004

Unlike non-motorized trails which could be developed over most of the Forest, motorized trail development is confined only to the management areas open to OHV use. For this reason, trail density is applied differently for motorized trails when compared to non-motorized trails. Density for motorized trails is applied within the OHV management areas while non-motorized trails are applied on a site-specific basis.

Alternatives A and B

Alternatives A and B each propose to construct between 109 and 184 miles of new OHV trails. These new miles added to the existing 116 miles would give the Forest a minimum of 225 miles and a potential maximum of 300 miles of designated motorized trails. This is equivalent to a density of 3.2 to 6.4 miles per square miles when completed. This is the projected total in the 1988 Forest Plan (Alternative A).

The WNF could meet public demand if the 300-mile maximum was constructed. However, that amount would likely exceed the land's acceptable limit for trail construction.

Alternatives C, E, and E Modified

The existing designated trail system was mapped along with any potentially new trails (within environmental and management area constraints) to determine the land's maximum acceptable trail density. The result of the mapping and trail assessment showed the existing density at approximately 1.0 mile/sq. mile. This total, coupled with the additional

miles of new trails that could be potentially developed, produced a new trail density at approximately 2.0 miles/sq. mile.

This figure, however, does not take into account any low-level system roads or user-developed trails that could be converted to system trails. If these factors were considered, the density would be moderately higher.

Alternatives C and E propose to construct between 21 and 124 new miles of trails. If added to the existing 116 miles, it would give the Forest a minimum of 137 miles and a potential maximum of 240 miles of designated motorized trails. This is equivalent to a density of 2.0 to 3.5 miles per square miles when completed. Alternative E Modified proposes to construct between 50 up to 124 new miles of trails. If added to the existing 116 miles, it would give the Forest a minimum of 166 miles and a potential maximum of 240 miles of designated motorized trails. This is equivalent to a density of 2.4 to 3.5 miles per square miles when completed. The 240 miles is the maximum threshold at which the land is thought to be capable of sustaining OHV use within the Forest's OHV management areas.

Alternatives C through F would provide 60 miles less of new trails than Alternatives A or B, if the maximum miles were constructed.

The Forest may fall short in meeting public expectation and demand if Alternatives C, E, or E Modified is selected. Nonetheless, the trail density would remain within the land's maximum acceptable limit for trail construction.

Alternative D

In an effort to provide a reasonable range of new motorized trail construction miles across the alternatives, the Forest generated different mileage thresholds (maximums) for Alternatives D and F.

Alternative D would construct between 21 and 154 new miles of trails. If added to the existing 116 miles, it would give the Forest a minimum of 137 miles and a potential maximum of 270 miles of designated motorized trails. This is equivalent to a density of 2.0 to 3.9 miles per square miles when completed. Alternative D would provide 30 miles or 10 percent less of new trails than Alternatives A or B; 30 miles more than Alternatives C or E; and 63 miles more than Alternative F.

Alternative F

Under Alternative F, between 21 and 91 new miles of trails could be constructed. If added to the existing 116 miles, it would give the Forest a minimum of 137 miles and a potential maximum of 207 miles of designated motorized trails. This is equivalent to a density of 2.0 to 3.0 miles per square miles when completed. Alternative F would provide the least new miles of trail than any other alternative – approximately 93 miles

or 31 percent less than Alternatives A or B; 63 miles less than Alternative D; and 33 miles less than Alternatives C or E .

Mileage estimates for Alternative F were derived from motorized trail mileage outputs from the 1994 Trail Master Plan developed by trail advocates. To obtain a more accurate picture of the proposed trail density at the time the Trail Master Plan was being developed, the Forest used the total projected miles of new motorized trail construction in the Trail Master Plan and calculated with the 1993 WNF acres allocated for that use. This density was used proportionately to adjust the new projected miles based on 2004 acres within the OHV management areas.

Cumulative Effects

Cumulative effects for OHV trails include what other suppliers in the vicinity (within 2 to 3 hours drive) of the WNF are currently providing and what they are planning to provide within the next decade (10 - 15 years). Table 3 - 56 displays the existing, planned, and total projected OHV trail miles of area motorized trail providers.

Table 3 - 56. Existing, planned, and total projected OHV trail mileage of local motorized trail providers.

Area Motorized Trail Providers	Existing Trails	Planned Trails	Total Projected
Hatfield McCoy Trail System (WV)	500 miles	Up to 1500 miles	Up to 2000 miles
Daniel Boone N.F. (KY)	150 miles	Up to 173 miles	Up to 323 miles
Dept. of Natural Resources (OH)	43 miles	Unknown *	43 miles
TOTAL	**693 miles**	**Up to 1,673 miles**	**2,323 potential miles**

Source: Hatfield McCoy and ODNR website and Daniel Boone National Forest Revised Forest Plan's Record of Decision, August 2004

* At the time of this analysis, ODNR had not determined whether to construct new motorized trails on State land. A decision is pending.

If future demands follow existing trends, the Forest would be in a better position to meet demands if Alternative A or B were selected, assuming that additional lands were acquired within the OHV management areas to construct the maximum 184 miles of new trails. It is further assumed that other motorized trail providers would continue to construct and complete the miles they planned.

INDICATOR 2 – Construction and maintenance cost of providing more OHV opportunities on the Forest

One of the main factors limiting the Wayne's ability to provide additional motorized recreation opportunities is the lack of adequate funds to construct new trails and maintain existing trails to standard. Much of the Forest's 116-mile OHV trail system was constructed in the early 1990s was funded from appropriations specially earmarked by Congress. Since

then, a majority of the Forest's trail appropriations were designated for trail maintenance.

Currently, it costs the Forest an average of $22,000 to construct a mile of motorized trail and $3,500 annually to maintain it. It should be noted that these are baseline costs used for alternative comparison. They do not include the cost of NEPA analysis or construction/maintenance costs associated with trail facilities such as bridges, restroom facilities, parking areas, camping areas, and signs. These and other variables (environmental, topography, weather, etc.) may affect overall project cost.

Direct and Indirect Effects

The following section discusses the direct and indirect effects of the alternatives in relation to the financial costs of constructing and maintaining additional motorized trails. Due to the variables addressed in the previous section, only costs associated with constructing and maintaining the trail tread are discussed.

Table 3 - 57. Estimated construction and caintenance costs of new OHV miles by alternative.

Management Activity	Alt. A	Alt. B	Alt. C	Alt. D	Alt. E	Alt. E Modified	Alt F.
Cost of New OHV Trail Construction ($22,000/mile)	$4,048,000	$4,048,000	$2,728,000	$3,388,000	$2,728,000	$2,728,000	$2,002,000
Cost of Maintaining New OHV Trails ($3,500/mile)	$664,000	$664,000	$434,000	$539,000	$434,000	$434,000	$318,500
Total	**$4,712,000**	**$4,712,000**	**$3,162,000**	**$3,927,000**	**$3,162,000**	**$3,162,000**	**$2,320,500**

Source: WNF Recreation Project File, 2004

Alternatives A and B

Up to 184 miles of new OHV trails could be constructed under either Alternatives A or B. Using the 2004 cost estimate ($22,000/mile), construction of the maximum trails miles would cost $4,048,000, the highest cost of any of the alternatives.

Maintaining a fully expanded trail system would cost $664,000 annually, the highest cost of any of the alternatives. This cost is calculated using 2004 values, i.e., $3,500/mile.

Also, costs for construction and maintenance can be expected to increase 3 percent annually.

Alternatives C, E, and E Modified

Alternatives C, E, and E Modified would both call for up to 124 miles of new OHV trail construct. Using the 2004 cost estimate ($22,000/mile), construction of the maximum miles of trails would cost $2,728,000. This would be $1,320,000 less than Alternative A or B, $660,000 less than Alternative D, but $726,000 more than Alternative F.

Maintaining a fully expanded trail system would cost $434,000 annually, $230,000 less than Alternatives A or B, $105,000 less than Alternative D, and $115,500 more than Alternative F. These costs are calculated using 2004 values, i.e., $3,500/mile.

Also, costs for construction and maintenance can be expected to increase 3 percent annually.

Alternative D

Up to 154 miles of new OHV trails could be constructed under Alternative D. Using the 2004 cost estimate value ($22,000/mile), construction of the maximum trail miles would cost $3,388,000. This is $660,000 less than Alternatives A or B, but $660,000 more than Alternatives C, E, or E Modified, and $1,386,000 more than Alternative F.

Maintaining a fully expanded trail system would cost $539,000 annually, $125,000 less than Alternatives A or B, but $105,000 more than Alternative D and $220,500 more than Alternative F. These costs are calculated using 2004 values, i.e., $3,500/mile.

Also, costs for construction and maintenance can be expected to increase 3 percent annually.

Alternative F

Up to 91 miles of new OHV trails could be constructed under Alternative F. Using the 2004 cost estimate value ($22,000/mile), construction of the maximum trail miles would cost $2,002,000. This is $2,046,000 less than Alternatives A or B, $726,000 less than Alternatives C or E, and $1,386,000 less than Alternative D.

Maintaining a fully expanded trail system would cost $318,500, the lowest maintenance cost of any of the alternatives. This is $345,500 less than Alternatives A or B, $115,500 less than Alternatives C, E, or E Modified, and $220,500 less than Alternative D. These costs are calculated using 2004 values, i.e., $3,500/mile.

Also, costs for construction and maintenance can be expected to increase 3 percent annually.

Cumulative Effects

The cumulative effects of all alternatives as they relate to the cost of constructing and maintaining OHV trails include other sources of funding or assistance the Forest could generate or receive.

The Forest receives between $300,000 and $400,000 from Congress annually for trails.

This falls short of what is needed to maintain trails to standard or construct new trails. Thus, the Forest depends heavily on alternate sources of funding, such as Fee Demo (FD) revenues, Recreational Trail Program (RTP) Grants, and in-kind assistance from local trail partners and volunteers to help leverage the Forest's annual trail budget.

Since its 1998 inception, the Forest's Fee Demo program has collected over $700,000 from the sale of trail permits. Much of these funds have been directed toward trail maintenance. Additionally, the Forest has received a considerable amount of grant funding from the Recreational Trail Program. To date, approximately $571,000 has been awarded to the Forest for motorized trail work. A large portion of this money has been directed toward reducing the trail maintenance backlog.

Summary

Alternatives A or B would have the potential to provide the most new miles of motorized trails than any of the alternatives and would, thus, best meet user demand. However, the additional miles proposed in these two alternatives may exceed the reasonable carrying capacity of the current land base designated for motorized recreation use.

Though Alternatives C, E, or E Modified would provide fewer new miles of motorized trails than Alternative A or B, it would not exceed the reasonable carrying capacity of the current land base designated for motorized recreation use. The additional trail miles under Alternatives C or E may not meet user expectations or demand.

Alternative D would provide 30 fewer miles of new trails than Alternative A or B but 30 more miles than Alternatives C,E, or E Modified. Total trail miles proposed under Alternative D would exceed the reasonable carrying capacity of the current land base designated for motorized recreation use. The additional trail miles under Alternative D may not meet user expectations or demand.

Alternative F would provide the least miles of new motorized trail of any alternatives. Total trail miles proposed for Alternative F would not exceed the reasonable carrying capacity of the current land base designated for motorized recreation use. However, the additional trail miles under Alternative F may not meet user expectations or demand.

Alternatives A and B each propose the most miles of new trail construction and, therefore, would each also have the highest associated construction and maintenance costs of any of the alternatives. Conversely, Alternative F proposes the least miles of new trail construction and would have the least associated construction and maintenance costs. All other alternatives would have costs that fall between Alternatives A and F. However, regardless which alternative is chosen, because of the relatively high cost of constructing and maintaining a mile of motorized trail, coupled with the limited funds in the Forest's annual budget for trail maintenance, the Forest Service would not be able to construct or maintain the additional trails needed to meet projections without receiving additional funding and/or assistance from outside sources.

Scenic Quality

Visitors are generally attracted to the Forest not only for the many recreational opportunities it offers, but also to enjoy the natural scenic beauty of its landscape. Managing scenic resources may also help enhance the local community's tourism and economic development, as well as strengthens its sense of pride and place.

The Wayne's scenic resources are affected when management activities alter the natural appearance of the landscape. To help define the acceptable degree of deviations caused by management activities in the landscape, the WNF has assigned Scenic Integrity Objectives (SIOs) to all its lands.

Scenic Quality Indicator 1 – Scenic Integrity Objective Distribution Among Alternatives

This indicator is an objective measurement of the Forest's landscape and is used to compare the relative importance each alternative would place on scenery. An area's scenic integrity is its state of naturalness, or conversely, the state of disturbance created by human activities or alteration. It is a measure of the degree to which a landscape is usually perceived to be "complete".

Affected Environment

Existing Landscape Character Description

Most of the land that is now the WNF had once been cleared for timber or agricultural purposes or mined for coal and other minerals. With the onset of the Great Depression in the 1930s, much of this land was abandoned; a good deal of it was to suffer severe erosion. In 1934, the Ohio legislature

passed a bill enabling the Federal government to purchase the land in Southeast Ohio that now forms the Wayne National Forest.

Today, Southeast Ohio is a land of visual contrast. There are areas of significant natural beauty and cultural history. The highly dissected landscape is highlighted by rolling, forested hills, striking rock bluffs and shelters, and caves of sandstone and shale. A network of winding streams and rivers runs through deep valleys. Artificial lakes are remnants of past strip mining. The natural-appearing landscape, covered predominantly by an oak-hickory forest with scattered pines, is interspersed with private farms and pastureland that gives it a rural feel. Cultural features such as historic barns, log structures, iron furnaces, covered bridges, and mineral developments also contribute to the landscape character. These contrast with areas of significant environmental abuse, such as abandoned mines, acid seeps, roadside trash dumps, and the effects of illegal motor vehicle use.

The vast majority of the WNF supports a deciduous forest canopy; however, some temporary openings have been created by timber harvests, mineral development, or natural events such as ice storms or insect infestations. Such openings can appear visually out of place in a heavily forested setting, particularly in the first year following their creation. But, they do contribute spatial diversity and opportunities for viewing a progression of successional vegetation stages.

Existing Scenic Quality

The scenic resources of the Forest are currently managed in accordance with the Wayne's 1988 Land and Resources Management Plan. Scenic resources are managed according to Visual Quality Objectives (VQOs) determined by the Visual Management System (VMS). VQOs define different levels of acceptable alteration of scenic resources. The Forest identified four of five possible objectives in the 1988 Forest Plan. They include Preservation, Retention, Partial Retention, and Modification. (See Glossary for description of Visual Quality Objectives.)

The Forest Service analyzed and generated the existing scenic condition acreage data (see Table 3 - 58). Analysis revealed that most WNF lands have surpassed the requirements for the Modification VQO or met the Partial Retention VQO, which indicates the overall scenic resources of the Wayne are in good or excellent condition. This was due to the relatively few timber harvesting or prescribed burning activities that have occurred on the Forest in the previous decade.

Many of the Retention areas on the Forest can be found on the west side of the Ironton Unit along the State Highway 93 corridor and Lake Vesuvius Recreation Area, on the northeast section of the Athens Unit around the Burr Oak Lake Recreation Area, and the southeast section of the Marietta

Unit along the west edge of Ohio River around the town of Newport, Ohio.

The Partial Retention and Modification areas are generally distributed throughout the remaining areas on the Forest.

Table 3 - 58. Existing scenic condition acres and percent of the Forest under 1988 Forest Plan direction (VQO).

Visual Quality Objectives	Forest Acres	% of Forest
Retention (R)	119,395	50%
Partial Retention (PR)	115,718	49%
Modification (M)	2,940	1%
Total	**238,053**	**100%**

Source: WNF Project File

Though timber harvesting or prescribed burning may have occurred infrequently on the Forest during the previous decade, there have been other management activities or natural occurrences that have had an impact on the landscape. These activities or events include oil and gas exploration and development, road and trail construction, wildlife habitat improvement, minor insect infestations, and an ice storm. Management activities and insect infestations had relatively minor impacts on the Forest landscape, especially major natural disturbances.

An example of a large natural disturbance is the large ice storm of February 2003 that somewhat altered the generally closed-canopy forest aspect on the Ironton District. The storm affected, to varying degrees, an estimated 40,000-acre swath of trees across the district (east to west), nearly twice that amount on adjacent private land.

Because of the Forest's fragmented land base, the casual observer may be unable to distinguish whether scenery-altering activities have occurred on private land or NFS land. Activities such as land clearing for agricultural, urban, and mineral development on private land have caused noticeable changes in the landscape.

VMS/SMS Crosswalk

All WNF lands have been re-inventoried to comply with the new Scenery Management System (SMS), which replaced the VMS in 1995. For Forest Plan revision purposes, Scenic Integrity Objectives (SIOs) were established for each management area using the Scenery Management System. (See Table 3 - 60 for results of the Forest's SMS inventory)

SMS provides an overall framework for the orderly inventory, analysis, and management of scenery. SMS responds to the deficiencies of, builds

on, and validates original VMS inventories. Additionally, SMS provides more accurate scenery-related information and better reflects the social and ecological changes that have occurred since the previous Forest Plan revision.

The system applies to all land administrated by the Forest and to all management activities, including timber harvesting, road and trail construction, stream improvements, wildlife habitat improvement, mineral developments, utility line construction, recreation developments, and fire management.

The crosswalk between Visual Quality Objectives (Visual Management System) and Scenic Integrity Objectives (Scenery Management System) is shown in Table 3 - 59. For a detailed discussion of the cross-walk between the VMS and SMS system, refer to Agricultural Handbook 701, Landscape Aesthetics–A Handbook for Scenery Management.

Table 3 - 59. Cross-walk of VMS and SMS Objectives.

Visual Quality Objective (VQO)	Appearance To Casual Observer	Scenic Integrity Objective (SIO)
Preservation (P)	Unaltered	Very High (VH)
Retention (R)	Appears Unaltered	High (H)
Partial Retention (PR)	Slightly Altered	Moderate (M)
Modification (M)	Moderately Altered	Low (L)
Maximum Modification (MM)	Heavily Altered	Very Low (VL)

Source: Landscape Aesthetics, A Handbook for Scenery Management, Agricultural Handbook 701.

SIOs define the different levels of acceptable alteration to scenic resources to help the Forest achieve desired scenic conditions. These objectives range from Very High (unaltered) to Very Low (heavily altered) as displayed in Table 3 - 59.

Environmental Consequences

Effects Common to All Alternatives

All alternatives would manage for a range of diverse landscapes and natural-appearing settings. The range of Forest landscapes would include areas with high scenic integrity displaying little or no evidence of management activities, to landscapes with lower scenic integrity where evidence of management activities are dominant. Regardless of the alternative selected, standards and guidelines would be developed to minimize the effects of management activities on scenic resources. For instance, in each alternative, flowering trees and shrubs (dogwood, redbud, etc.) would be left in regeneration harvest areas. These and other management activities would not reduce the scenic integrity below the assigned scenic objective for a given area. All alternatives would strive to create a natural-appearing landscape on the Wayne.

Direct and Indirect Effects

INDICATOR 1 – SIO Distribution Among Alternatives.

Scenic integrity objectives were assigned to each inventoried scenic classes in accordance with the proposed management areas and alternatives characteristic themes. (See Glossary for a description of scenic class.) For instance, a High SIO would generally be assigned to a Concern Level 1 or 2 areas or travel corridors, where scenery is an important part of the visitor's experience, such as the North Country National Scenic Trail. Management activities within these areas would not be readily apparent.

All lands on the Wayne were assigned one of three objectives for scenic integrity. They include the High, Moderate, and Low SIO. Very High and Very Low SIOs are not part of the scenery objectives in this analysis.) See Glossary for description of Scenic Integrity Objectives.) Table 3 - 60 displays the acre and Forest percentage distribution of SIOs for each alternative.

Table 3 - 60. Scenic Integrity Objective by alternative (Acres and % of Forest).

Scenic Integrity Objectives	Alt. A (acres / %)	Alt. B (acres / %)	Alt. C (acres / %)	Alt. D (acres / %)	Alt. E (acres / %)	Alt. E Modified (acres / %)	Alt. F (acres / %)
High	63,693 (27%)	63,693 (27%)	71,147 (30%)	68,615 (29%)	71,147 (30%)	72,033 (30%)	79,337 (33%)
Moderate	166,164 (70%)	166,164 (70%)	158,709 (67%)	161,241 (68%)	158,709 (67%)	157,823 (67%)	150,519 (64%)
Low	8,156 (3%)	8,156 (3%)	8,156 (3%)	8,156 (3%)	8,156 (3%)	8,156 (3%)	8,156 (3%)

Source: WNF Project File and Landscape Aesthetics, A Handbook for Scenery Management, Agricultural Handbook 701.

Alternatives A and B

Alternatives A and B are similar in that the number of acres or percent of the Forest allocated to High (27%), Medium (70%), and Low (3 %) scenic integrity objectives are same and they both propose less intensive vegetation management. Under Alternative A, management activities would continue under 1988 Forest Plan direction. The Forest landscape would progressively move toward a more mature forest setting compared to what is seen today. No even-aged and minimal un-even aged vegetation management would occur in Alternative A. Conversely, Alternative B would allow for both even-aged and uneven-aged vegetation management, though less intense when compared to Alternatives C, D, E, E Modified, and F. Alternative B would place more emphasis on providing more early-successional habitat and setting. More small (2 to 30 acres) openings and younger stands of trees would be apparent under Alternative B, though still not as prevalent as could be found under Alternatives C through F.

Other human-induced activities, such as mineral development, road and trail construction, recreation area expansion, prescribed burning, and utility corridor and other special-use related facilities improvement would be readily evident in the Forest landscape. These activities may or may not emulate ecological processes, but all would be mitigated to protect or enhance scenic resources.

Eight percent of the Forest would be managed for semi-primitive non-motorized recreation opportunities under Alternative A, while Alternative B would offer half as much for SPNM recreation (4%). The level of scenic quality over the next decade for either Alternative A or B would remain the same or moderately increase.

Alternatives C through E Modified

Alternatives C, D, E, and E Modified are similar in that the number of acres or percent of the Forest allocated to High (29-30%), Medium (67-68%), and Low (3 %) scenic integrity objectives are the same and all propose more intensive vegetation management than Alternatives A or B. The Forest landscape would contain extensive tracts of mature all-aged forest with a generally closed, but uneven forest canopy. A mosaic of different-aged forest patches would be well-distributed across the Forest landscape.

Three times as many acres of uneven-aged harvest are proposed in Alternatives C through E Modified than under Alternatives A or B. Half as as many acres of even-aged harvest would occur in Alternative B.

Effects from all other management activities would be similar to those found under Alternatives A and B. These activities may or may not emulate ecological processes, but all would be mitigated to protect or enhance scenic resources.

Alternative C would provide 10 percent of the Forest for semi-primitive non-motorized recreation, while Alternatives D, E, and E Modified would offer 4 and 6 percent respectively, for SPNM recreation. Though more openings in the Forest landscape would be evident, by implementing the appropriate mitigation measures, the level of scenic quality over the next two decades for Alternatives C, D, E, or E Modified should not diminish.

Alternative F

Compared to all other alternatives, Alternative F would allocate the highest percentage of the Forest to the High (33%) scenic integrity objective with the Moderate SIO at 64 percent and the Low SIO is at 3 percent. The greatest concentration of the High SIO would be found in the Future Old Forest (FOF) and Future Old Forest with Mineral Activity (FOFMA) Management Areas. The FOF Management Area would contain most of the semi-primitive non-motorized recreation opportunities while

both FOF and FOFMA is where visitors may experience more park-like stands of large, old trees.

The ratio (5:1) of uneven-aged to even-aged regeneration harvests is similar to Alternatives C through E but is managed at a less intensive level. A majority of the uneven-aged harvest areas are distributed across the Diverse Continuous Forest (DCF), Diverse Continuous Forest with OHV (DCFO), Historic Forest (HF), and Historic Forest with OHV (HFO) Management Areas while the even-aged harvest areas are primarily concentrated in the Forest and Shrubland Mosaic (FSM) Management Area. These areas are where most of the Moderate and Low SIOs are found.

Direct and Indirect Effects

Scenery Indicator 2 – Forest Landscape Description by Alternatives.

Alternative A

This alternative would continue management under the 1988 Forest Plan as amended. It would emphasize providing a continuous canopy forest containing mature mixed hardwoods of various ages. Approximately 84 percent of the Forest would be managed using the uneven-aged regeneration method. No early successional habitat (i.e., no even-aged timber harvest) would occur, except through new land acquisition or natural disturbances (i.e., insect infestations, ice storms, tornados, etc.).

The Forest would gradually transition from a predominantly oak-hickory forest type to more shade tolerant species, such as red maple and beech. Visitors would not begin to see a notable change in the Forest landscape for another 75 to 100 years. This alternative would use a mix of vegetation management tools including commercial timber harvests, prescribed fire, and pesticides (herbicides, insecticides, etc.) to help maintain and restore the mixed oak ecosystem. As the forest matures, some large oaks and hickories will eventually die out and create natural openings in the forest canopy.

Approximately 8 percent of the Forest would be managed to mimic a park-like stand of large, old trees with little understory vegetation in the Future Old Forest Management Area. Grasslands would not be a component of the Forest under this alternative.

Alternative B

The Forest would be managed to provide a mosaic of early successional habitat patches of various sizes interspersed throughout a predominately forested landscape. The Forest would also contain scattered mid- and late-successional forest communities, as well as permanent forest openings containing herbaceous vegetation. Species associated with shrub and seedling/sapling forest habitats would flourish and contribute to overall

landscape biological diversity and conservation needs. This mosaic of successional habitat would make up approximately 67 percent of the Forest's vegetative component and would be maintained with extensive use of even-aged silvicultural management systems. In addition, there would be an increase in prescribed burning and pre-commercial thinning.

Compared to Alternative A, which proposes no even-aged regeneration, Alternative B would provide for the highest acres of even-aged regeneration methods. This would favor oaks as well as other fire tolerant and shade intolerant species. The mix of forest communities would generally consist of oaks and hickories in the uplands and on xeric sites (south aspect slopes) and yellow poplar, beech, maples, oaks, hickories, and other mesic species favoring moist sites (north aspect slopes and coves). Native pine communities containing white, shortleaf, pitch, and/or Virginia pine would also occur in portions of this area.

Vegetation management by even-aged regeneration methods would in the first five years would create openings 5 to 30 acres in size. Ten to 15 years after the regeneration cut, visitors would not be able to see through these areas. Foot travel through these harvest areas would be most difficult. In the following 50 years, as more shade tolerant or faster growing tree species begin to compete for space, these areas would revert to more open mixed hardwood forests with moderate vegetation cover in the understory.

A small portion of the Forest (17%) would be managed to maintain a mature forest canopy with a moderately open understory. As in Alternative A, eight percent of the Forest would be managed for old forest communities and no areas would be managed to provide large blocks of grassland.

Alternative C

This alternative emphasizes restoring and maintaining the mixed oak ecosystem through uneven-aged silvicultural systems, commercial thinnings, and prescribed burning. Much of the Forest (67%) would be managed to provide extensive tracts of mature all-aged forest with a generally closed, but uneven forest canopy. Managing a majority of the Forest with uneven-aged techniques may tend to move the Wayne away from its current and historic character of oak-hickory to more of a maple-beech dominated forest. However, this change would be gradual and not noticeable for another 75 to 100 years or more. Visitors would see similar forest conditions as found in Alternative A, except to a lesser degree because less uneven-aged management would occur. Alternative C proposes 2½ times the acres of uneven-aged harvests as Alternative A, the highest of any alternative.

A portion of each district would also provide a mosaic of well-dispersed, different-aged forest habitat using even-aged regeneration methods (10%). Views of the Forest would commonly include a greater diversity in

vertical structure with an increased presence of ground and shrub-like vegetation.

Alternative C would provide for a slight increase (10%) in the old, large forest component (FOF Management Area) than compared to Alternatives A or B.

Another goal of Alternative C would be to provide an area for visitors to experience what the Forest was like prior to European settlement. This was predominantly a forest containing a nearly continuous oak-hickory forest canopy with a lower mixture of related central hardwoods and scattered pine. Under Alternative C, approximately eight percent of the Forest would be allocated to be managed as "Historic Forest".

Approximately two percent of the Forest would be managed to provide grassland habitat for species dependant on that ecosystem.

Alternative D

Forest conditions would be similar to what would be found under Alternative C, except less of the Forest (47%) would be managed to provide extensive tracts of mature all-aged forest with a generally closed, but uneven forest canopy. A higher portion (18%) of the Forest would provide a mosaic of well-dispersed, different-aged early-successional forest habitat than compared to Alternative C.

Nearly twice as much area (14%) of the Forest would be managed for the "Historic Forest" mixed oak ecosystem than under Alternative C. The amount of land allocated for grasslands would same as under Alternative C , while land managed for old forest ecosystems would be the same as under Alternative A (8%).

Alternatives E and E Modified

Forest conditions would be similar to what would be found under Alternatives C or D, except less of the Forest (32 %) would be managed to provide extensive tracts of mature all-aged forest with a generally closed, but uneven forest canopy. A higher portion (24%) of the Forest would provide a mosaic of well-dispersed, different-aged early-successional forest habitat than compared to Alternatives C or D.

More areas of the Forest (20%) would be managed for the "Historic Forest" mixed oak ecosystem than under Alternatives C or D. The amount of land allocated for grassland and old forest ecosystems would be the same as provided by Alternative C.

Alternative F

Forest conditions would be similar to what can be found in Alternative E, except more of the Forest (23%) would be managed for large, old trees in the Future Old Forest and Future Old Forest with Mineral Activity

Management Areas. Views of the forest would have a natural, park-like appearance with less ground or shrub vegetation in the understory and scattered standing dead and fallen trees.

Same as Alternative C, 20 percent of the WNF would be managed for "Historic Forest" mixed oak ecosystem and 2 percent for native grasslands.

Cumulative Effects

The cumulative effects of the alternatives on scenic resources do not only include land within the Forest's administrative boundaries, but also encompasses adjacent private and State lands.

In areas of interspersed ownership within National Forest System land, there is potential for combined effects from activities on NFS and other land ownerships. Due to the WNF's mosaic and complex ownership patterns, management activities occurring on non-NFS lands that do not blend into the landscape can have an adverse affect on the Forest's scenic resources. While most public land management agencies and commercial forest management corporations follow their own set of guidelines for managing scenic resources, no mandatory scenic quality guidelines that apply to private lands. Recognizing that timber harvests may be higher on non-NFS land, their potential negative cumulative effects may be compounded when combined with the effects that would result from Alternatives C, D, E, E Modified, or F, which propose more vegetation management/timber harvests.

Additionally, continued clearing of forested private lands for agricultural or residential development would have a negative affect on the scenic quality of adjacent WNF landscapes. However, if structures or other developments are designed to blend into the landscape, the scenic effect can be minimal.

The 2006 Forest Plan would implement SIOs consistent with the theme and emphasis of the selected alternative. Meeting the SIOs would not only help enhance the Forest's scenic landscape, but also help attract more visitors to the area and benefit the local tourism industry.

Summary

Alternatives A and B would assign the High SIO to the least land area (63,693 acres), while Alternative F would assign the High SIO to the most acres (79,337). Most of these high SIO areas would be found in the Future Old Forest, Future Old Forest with Mineral Activity, Developed Recreation, Timbre Ridge Lake, and Special Areas Management Areas. Most of these areas have the highest concentration of land allocated for developed recreation or semi-primitive recreation opportunities. Concern

Level 1 and 2 areas – developed recreation sites, the North Country Trail, or highly traveled corridors – also would be given the highest consideration for scenic quality.

Management activities proposed under Alternatives A (no action) would provide the same results in the Forest landscape as the existing scenic condition. Alternatives B through F propose more vegetation management and prescribed burn activities than the 1988 Forest Plan. All other management activities (i.e., mineral activity, watershed restoration, etc.) would essentially remain the same across all action alternatives. Management activities with potential to cause visual deviations from a natural-appearing landscape would be mitigated by varying their size, shape, texture, location, and frequency. Many of these activities would cause minor, short-term visual impacts. Most openings created by regeneration harvests would be designed to resemble small natural disturbances. The long-term impacts to the Forest landscape from these activities would not likely be significant because the management intensity is low and widely distributed across the Forest. Urban/suburban development and agricultural activities on private lands adjacent to the Forest would more likely have a greater impact on the WNF landscape.

Lands

Affected Environment

Background

Discussions between the State Forester of Ohio and the Chief of the Forest Service regarding the possibility of establishing a national forest in Ohio began in 1919. The Forest Service noted that there was a considerable area of “rough” land near the Ohio River that would fit the criteria set forth under the Weeks Act. After initial reconnaissance, the State and the Forest Service agreed that, because Ohio had such a small amount of available “idle and waste lands”, such lands should be designated State Forests and Parks.

No further consideration of a Federal Purchase Unit occurred until the early part of President Franklin Roosevelt’s Administration. The decline in several southeastern Ohio natural resource-based industries, combined with the Great Depression, caused many people to migrate out of the region. People were abandoning the land in record numbers, leaving much of it cutover, mined out, and eroding. Many farms offered at auction for