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Eastern
Region



Fiscal Year 2007 Monitoring and Evaluation Report



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2007 Monitoring and Evaluation Report

Wayne National Forest

Athens, Gallia, Hocking, Jackson, Lawrence, Monroe, Morgan, Noble,
Perry, Scioto, Vinton and Washington Counties, Ohio

USDA Forest Service
Eastern Region
Milwaukee, Wisconsin
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I. Introduction

Location and History

The Wayne National Forest (WNF), located in 12 counties of southeast Ohio, is the state's only national forest. The Forest's proclamation boundary encompasses approximately 875,000 acres, of which the Forest Service manages over 238,000 acres. The hills of southeast Ohio, the unglaciated region of the state, lie within the Ohio River Basin. Ecologically, this area is considered part of the Southern Unglaciated Allegheny Plateau, which reaches into western Pennsylvania, southeast Ohio, western West Virginia, and eastern Kentucky.

The WNF is situated in the core of the hill country, the most heavily forested part of the state. Just 200 years ago, most Americans viewed this region of the Allegheny Plateau as part of a vast wilderness. It had been inhabited by various Native American cultures for thousands of years prior to the arrival of immigrant settlers in the 18th and 19th centuries. Ongoing research conclusively shows that Native Americans had extensive impacts on their environment, even if those effects are no longer obvious.



Many people still view the Wayne as a remnant of the forest primeval. But the impacts of industry and agriculture over the past 200 years have left indelible marks upon the land. Virtually all the forests that covered Ohio when non-native immigrants arrived were cut for timber and firewood and to make way for farms and settlements. Mining for iron ore, limestone, coal, and clay scarred hillsides and polluted many streams. As factories closed and farms failed in the 1930s, the Forest Service began to acquire and restore what were once dubbed “the lands that nobody wanted.”

Purpose of the Forest Plan

The Monitoring Evaluation Report is an annual requirement associated with the 2006 Land and Resource Management Plan (Forest Plan), which guides all natural resource

management activities for the Wayne National Forest for the next 10 to 15 years. It describes desired resource conditions, resource management practices, levels of resource production and management, and the availability of suitable land for resource management.

The purpose of the Forest Plan is to provide management direction to ensure that ecosystems are capable of providing a sustainable flow of beneficial goods and services to the public. More specifically it establishes:

- How the Forest should look if the Forest Plan is successfully implemented (Goals and Desired Future Conditions)
- Measurable, planned results that contribute to reaching desired conditions (Objectives)
- Required action or resource status designed to meet desired future conditions and objectives (Standards)
- Preferable action used to reach desired future conditions and objectives (Guidelines)
- Management direction to be applied Forest-wide
- Management direction to be applied only to specific management areas
- Monitoring and evaluation requirements
- Designation of land as suitable or not suitable for timber production and other resource management activities

Land use determinations, standards, and guidelines constitute a statement of the Forest Plan's management direction; however, the actual outputs, services, and rates of implementation will depend on annual budgets.

Monitoring Program

Monitoring and evaluation to determine how well the Forest Plan is working is required by National Forest Management Act (NFMA) regulations. Monitoring and evaluation must be designed to answer the following basic questions:

- **Did we do what we said we were going to do?** This question answers how well Forest Plan direction is being implemented. Collected information is compared to objectives, standards, guidelines, and management area direction.
- **Did it work how we said it would?** This question answers whether objectives are achieving goals and how closely standards and guidelines are being applied.
- **Is our understanding and science correct?** This question answers whether the assumptions and predicted effects used to formulate goals and objectives are valid.

The aim of monitoring is adaptive management – the ability to respond to current conditions or make appropriate changes based on new information or technology.

Depending on the answers to the above questions, the Forest Plan may be amended or revised to adapt to new information or changed conditions.

Strategy

Monitoring and evaluation are separate activities. Data and information are collected by various means. Then they are analyzed and interpreted to evaluate the success of Forest Plan implementation. To provide the public with timely, accurate information regarding this process, the Forest releases an annual monitoring and evaluation report.

The monitoring program must be efficient, practical, and affordable, and not duplicate data collection already underway for other purposes. Monitoring tasks are scaled to the Forest Plan, the program, or the project to be monitored. Each of these entails different objectives and requirements. Monitoring is not performed on every single activity, nor does it need to meet the statistical rigor of formal research.

Budgetary constraints will affect the level of monitoring that can be done in a particular fiscal year. If budget levels limit the Forest's ability to perform all monitoring tasks, then those items specifically required by NFMA are given the highest priority.

The components of this monitoring strategy are:

- Monitoring methods
- Monitoring questions related to implementation, attainment, and assumptions
- The annual monitoring plan of operations
- The annual monitoring evaluation report

Table 1.1 Monitoring Strategy

Monitoring Methods	Monitoring Questions	Annual Monitoring Plan	Monitoring and Evaluation Report
Monitoring methods categorize how precisely and reliably monitoring items are measured.	Monitoring questions are developed by an interdisciplinary team to address Forest Plan management goals, objectives, standards, guidelines, assumptions, and science.	The annual monitoring plan of operations identifies which items will be measured and how monitoring questions are to be answered.	The monitoring and evaluation report analyzes and summarizes the monitoring results.

II. Annual Monitoring and Evaluation

Developed by an interdisciplinary team, the annual monitoring and evaluation report summarizes the results of completed monitoring and evaluates the data. Evaluation determines whether observed changes are consistent with the Forest Plan’s desired future conditions, goals, and objectives and if adjustments may be needed. The report also makes recommendations to the Forest Supervisor who will use these findings either to certify the Forest Plan as sufficient for management in the coming year or to decide that a Plan amendment is needed. It is important to note that 2007 is the second year of Monitoring for the 2006 Forest Plan and a more comprehensive evaluation of need for change is published approximately every 5 years.

2 - Watershed Health

Goal 2.1 – Maintain/restore water quality and soil productivity

Restore water quality and soil productivity to improve health of watersheds impaired by past land use practices and mining activities. Manage activities on NFS land to maintain or enhance water quality and soil productivity.

<p>Objective 2.1a: Restore the dimension, pattern, and profile of streams where channel and floodplain morphology has been altered.</p>	<p>Monitoring Work Plan Question #1: How many miles of stream have been treated to restore dimension, pattern and profile?</p>
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Zero miles of stream were stream dimension pattern and profiles were recovered in 2007; however we closed 25 subsidences that were capturing runoff to intermittent and ephemeral streams. The subsidences generally range from 40 to 100 years old, and do not have an established stream bed. The restoration activities have a long-term positive effect on stream morphology (dimension, pattern, and profile). Many streams that are captured by subsidence’s no longer have an established stream bed, as these subsidences are closed and water flow remains on the surface stream morphology begins to recover. Many of our streams are currently in this process of recovery.

<p>Objective 2.1b: Enhance water quality in the Monday Creek, Sunday Creek, Raccoon Creek, Symmes Creek, and Pine Creek watersheds by reducing acid mine discharges and decreasing sediment loads.</p>	<p>Monitoring Work Plan Question #2: How many acid mine discharges have been treated?</p>
	<p>Monitoring Work Plan Question #3: How many subsidence features have been treated?</p>

	<p>Monitoring Work Plan Question #4: What geo chemistry parameters have changed by reducing and/or treating acid mine discharges?</p>
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Twenty-five subsidence features were treated in Fiscal Year (FY) 2007. Eight were in the Lost Run basin, 2 in Snake Hollow, 6 in Monkey Hollow, 6 in the New Straitsville North basin, and 3 at the 216 portal. Below is an example of before, during, and after the closure of the 216 subsidence/portal. The 216-portal opening was capturing approximately 100 acres of drainage area. Visual monitoring during storm events shows that the water now enters a receiving stream and does not enter an underground mine complex.

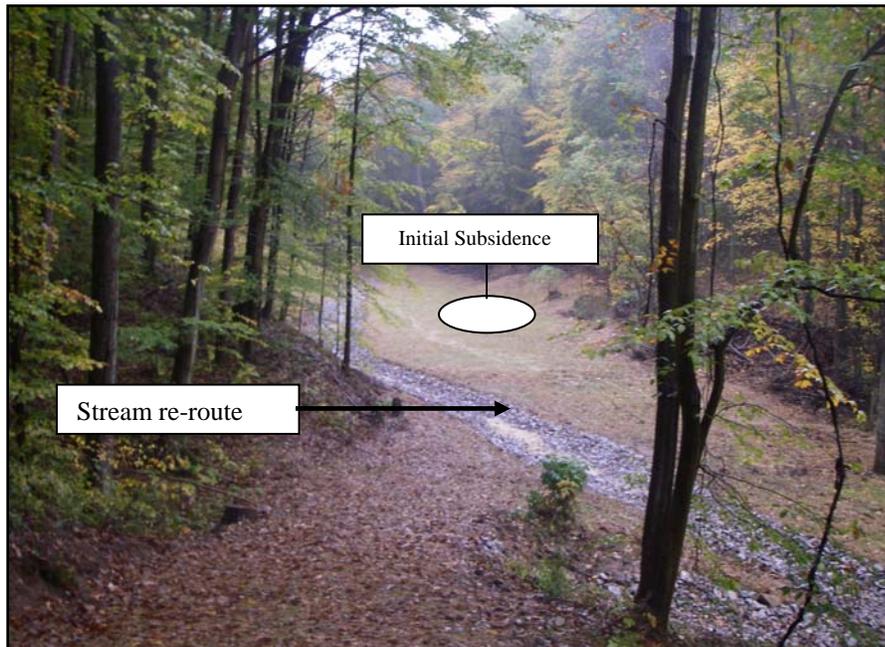
Before Construction



During Construction



After Construction



Monitoring for 2007 includes the Jobs and Essex limestone dosers and two limestone leach beds in the Monday Creek Watershed. The continuation of long-term monitoring at these two doser sites indicates that the treatment is effective in maintaining the current acid load reductions and pH that was reported in FY 2006. Monitoring results and comparisons of water quality data from 2007 do not indicate a change significant enough to modify the existing water quality parameters or graphs for the Jobs Doser or the two limestone leach beds. However, monitoring in FY 2007 did reveal operation and maintenance issues on the Essex doser resulting in changes in water quality and new graphs. The information is shown in the report below.

Essex Doser Project

In 2006, an Aquafix lime doser system was installed to treat acid mine drainage (AMD) contaminated water discharging from the abandoned mine. The Ohio Environmental Protection Agency and Ohio Department of Natural Resources-Division of Mineral Resources Management provided funds for design (\$32,320) and construction (\$287,400) of the treatment system. Construction of the Essex doser was completed in late March of 2006. The doser unit is located adjacent to the Essex tributary, approximately 400 ft from the mine opening. A portion of the water that discharges from the mine opening is diverted to the doser unit through a PVC supply line. Calcium oxide (CaO) material is mixed with the mine drainage, which then flows into a V-notched concrete mixing channel where it is discharged into the Essex tributary.

As a result of problems encountered with material bridging, a monthly sampling plan was not initiated following construction. This hampered efforts to obtain water quality samples representative of sustained or continuous water treatment. These startup issues spanned a period of 6 months, resulting in an additional period of time needed to determine appropriate dosages required to neutralize the Essex discharge at various flow rates and/or attain net alkaline water at the mouth of Middle Fork. A concerted effort was made to obtain water quality data representative of different rates of application, throughout a variety of flow regimes (low, mean and high) for approximately 6 miles downstream.

The doser project was designed and constructed with funds originally intended to complete a passive treatment system in Murray City, adjacent to Snow Fork. The project was stopped unexpectedly, leaving only a year to select an alternate location, as well as design and construct a treatment system. Due to the restricted time frame, extensive baseline sampling was not achieved in Middle Fork. However, long term monitoring has been performed in Snow Fork (downstream of Middle Fork confluence) since 1997. This data serves as pre-construction data and was utilized to determine load reductions, resulting from treatment of the Essex Mine discharge. For the purpose of quantifying treatment results, a mean annual loading reduction method (Stoertz, 2004) was utilized to estimate acid and metal load reductions at sample sites located downstream of the doser.

Stoertz, M.W. & Green D.H., 2004. Mean Annual Acidity Load: A Performance Measure to Evaluate Acid Mine Drainage Remediation. In Ohio department of Natural resources –Division of Mineral Resources Applied Resources Conference. Dec. 8 & 9, 2004 Athens, Ohio 27pp.

Table 2.1 Material Application

Location	Estimated Application Rate lbs/day	Date	Discharge GPM	pH lab	Net Alkalinity mg/l	Net Alkalinity Load lbs/day
Middle Fork Mouth	500	4/5/2006	2,024	6.8	19.1	463
Middle Fork Mouth	500	4/10/2006	4,780	7.2	21.6	1,238
Middle Fork Mouth	1000	9/10/2006	422	6.6	10.4	53
Middle Fork Mouth	750	11/14/2006	1,335	6.7	36.0	577
Middle Fork Mouth	750	3/5/2007	5,202	7.0	35.2	2,200
Middle Fork Mouth	1000	3/7/2007	5,202	7.2	43.5	2,714
Middle Fork Mouth	750	5/7/2007	1,913	7.4	45.1	1,034

Post-construction sampling events were completed at low flow (Sept -06), median flow (Apr-06, Nov-06, May-07) and high flow (Apr-06, Mar-07) utilizing CaO to treat AMD discharging from Essex Mine. One low flow sampling event was completed at a material application rate of 1,000 lbs/day. The alkalinity concentration at the mouth of Middle Fork tributary was 10 mg/l. Net alkaline conditions were maintained to Snow Fork RM 6.5 (upstream of Murray City seeps).

Two high flow sampling events were completed at a material application rate of 500 and 1,000 lbs/day. The alkalinity concentration at the mouth of Middle Fork tributary ranged from 21-43 mg/l. Net alkaline conditions were maintained to Snow Fork RM 6.5 (upstream of Murray City seeps) and during the Apr-06 event, alkalinity was maintained to Snow Fork RM 4.9. However, this was likely the result of dilution caused by surface run off. Similar results at Snow Fork RM 4.9 have not been replicated through additional sampling events.

Median flow sampling events have been completed at a material application rate 500 and 750 lbs/day. The alkalinity concentration at the mouth of Middle Fork tributary ranged from 20-45 mg/l. Net alkaline conditions were maintained to Snow Fork RM 6.2 over three sampling events. Early results indicate that an application rate of 500 to 750 lbs/day at median flow can achieve an average concentration of 8 mg/l of alkalinity at Snow Fork RM 6.2. Based on initial sampling results, the optimum rate of application is estimated to be 750 lbs/day. Dosing continuously at this rate would require a minimum of 150 tons of material per year. Assuming that the current rate of \$150 per ton remains valid, the estimated annual cost for calcium oxide material would be \$22,500.

Table 2.2 Loading and pH Monitoring Results

Summary of loading reductions & pH values resulting from chemical treatment.

Sample Site	Mean Annual Acid Load Reduction lbs/day	Mean Annual Metal Load Reduction lbs/day	pH Range	Net Alkalinity Concentration Range mg/l	Alkalinity Load Range lbs/day
Middle Fork Mouth	562	97	6.5 to 7.4	10 to 45	53 to 2,714
Snow Fork RM 6.2	723	130	4.1 to 6.8	0 to 12	0 to 1,456
Snow Fork RM 4.3	1,164	150	3.6 to 4.7	0	0

Middle Fork

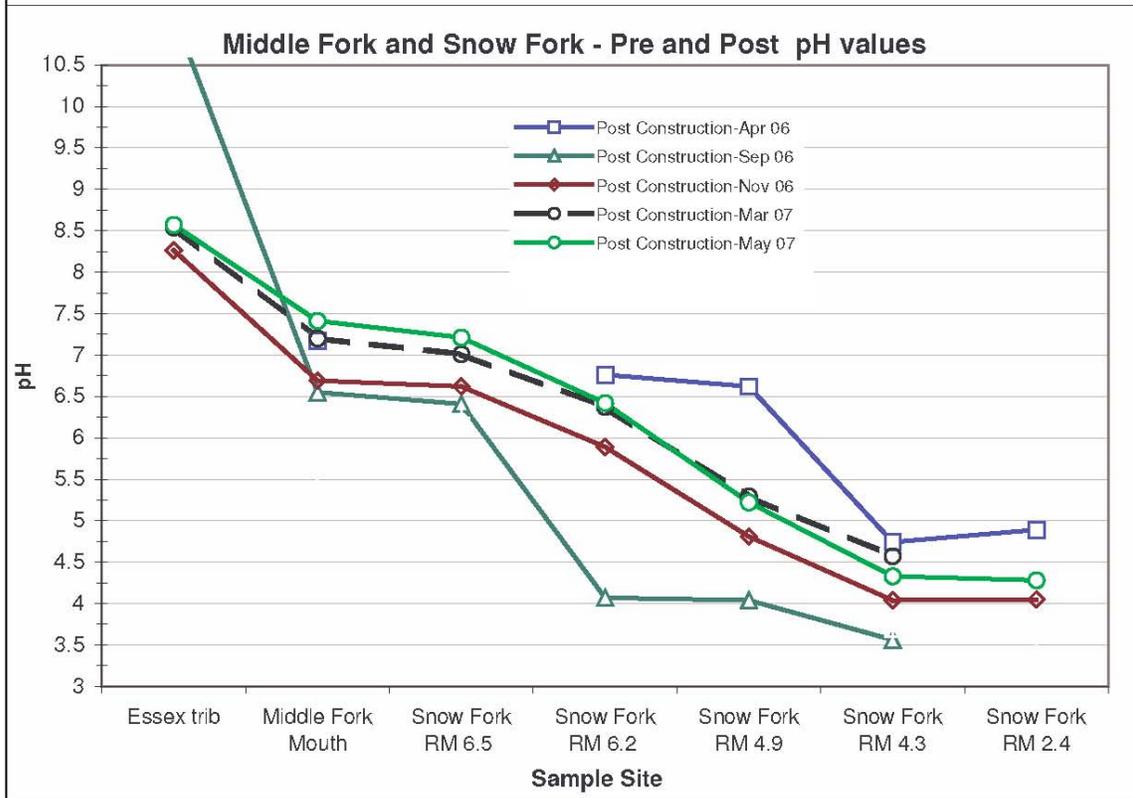
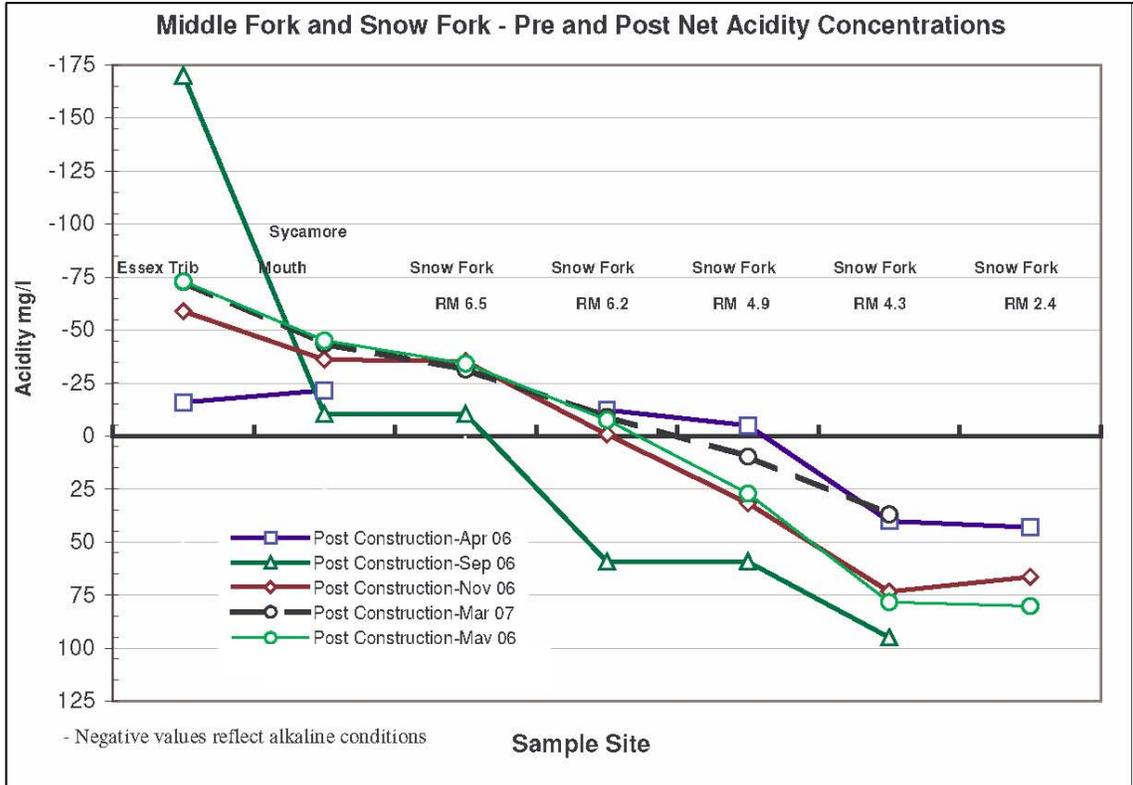
Post construction data shows that water chemistry in Middle Fork has been significantly improved as a result of lime dosing at Essex Mine. The tributary has maintained a pH above 6.0 at all flow rates, retains alkalinity for three miles and contributes net alkaline water to Snow Fork tributary. At the mouth of Middle Fork, total metal concentrations range from 0.3 to 3.84 mg/l, with dissolved Fe and Al concentrations of less than 1 mg/l. The average estimated total metal load reduction has been reduced by 97 lbs per day. Due to high pH levels (7 to 11 SU) achieved downstream of the Essex doser, nearly all iron and aluminum from the Essex Mine is precipitated within two miles of the unit. Several beaver dams located in Middle Fork below the confluence of Essex tributary, have created a series of in-stream settling ponds. These deep pools act to impound sludge (metals and CaO) resulting from water treatment. Significant metal floc accumulation is visible along the entire length of Middle Fork streambed, particularly during lower flows.

Snow Fork

Two miles of Snow Fork have demonstrated some improvement in pH and acidity values. At Snow Fork RM 6.2, the average estimated acid load was reduced by 723 lbs per day and average total metal loads were reduced by 130 lbs per day. At Snow Fork RM 4.3, the average estimated acid load was reduced by 1,164 lbs per day and average total metal loads were reduced by 150 lbs per day. The decrease in loadings reflect the cumulative reductions occurring upstream in Middle Fork, the increased precipitation of metals resulting from contributions of alkaline water at RM 6.8 (Middle Fork and Salem Hollow tributaries), as well as further neutralization of AMD sources located upstream of Murray City. Acid and metal concentrations in Snow Fork fluctuate seasonally due to numerous sources of AMD, which discharge into Snow Fork both upstream and downstream of RM 6.2 and RM 4.3. Approximately 7.5 miles downstream at RM 2.4, water quality parameters demonstrated no significant improvement. At low flow, Snow Fork tributary remains net acidic with pH values less than 4.5 at long term sample stations located downstream of RM 6.5.

The charts below illustrate net acidity and pH trends resulting from stream dosing at Essex Mine. Due to the differences in ranges over diverse flow periods, it is not appropriate to express this data in terms of averages, as it will not reflect true conditions at the sampling locations.

Figure 2.1 Acidity Concentrations



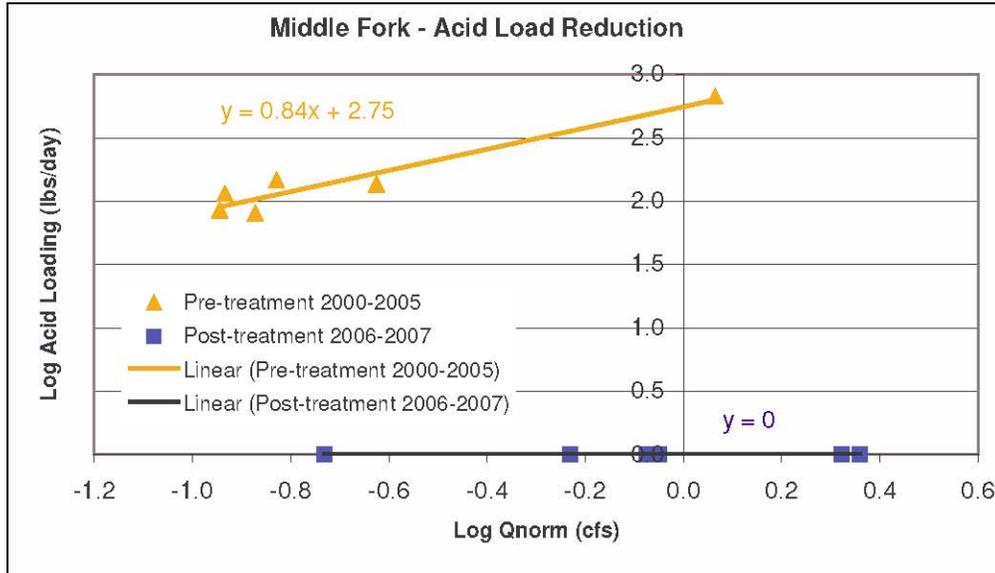
Discussion

In 2006 and 2007, the Essex doser experienced numerous short periods (< 5 days) where the Aquafix unit was not dosing. This was due to decreases in head pressure at low flow, freezing temperatures in late January and February, as well as problems encountered with calcium oxide material. During these periods, downstream pH values decreased, but did not fall below 5 SU at Middle Fork mouth. Other factors that may limit or slow biological recovery include beaver dams, as well as a large diameter culvert located near the mouth of Middle Fork. Biological sampling performed in 2006 indicated that no improvement had occurred in Middle Fork downstream of the Essex doser. Although, none was expected, as the doser had been operational for less than six months. Based on biological sampling results collected at the Jobs doser in Monday Creek, it is unlikely that a diverse aquatic community can be established closer than 1 mile downstream of the doser. Based on that assumption, coupled with post construction water quality data, approximately 2.5 stream miles of Middle Fork could potentially demonstrate biological improvement during the 2007 field season. In May 2007, observations during water monitoring noted minnows present in Middle Fork at RM .4 and 1.5. Downstream of the confluence with Snow Fork tributary, water quality data suggests that .5 miles of Snow Fork (upstream of Murray City) may be adequate to support aquatic biology during all flow conditions.

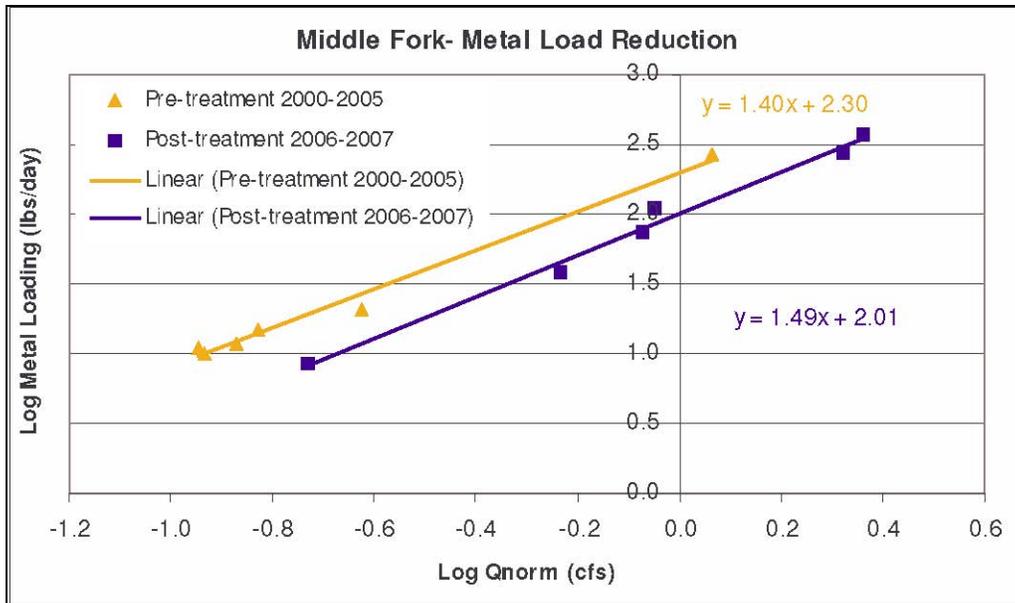
Conclusions

As a result of lime dosing at Essex, pH and net acidity has improved for approximately 5 stream miles. Sycamore Hollow acid contribution to Snow Fork can be neutralized during all flow regimes. The Essex doser cannot supply sufficient amounts of alkalinity to improve Snow Fork water chemistry during periods of low flow. While initial results are encouraging, it is clear that no substantial improvement will occur in Snow Fork tributary, due to the inability to increase pH levels downstream of RM 6.2. Despite the fact that dissolved metal concentrations are generally less than 1 mg/l at the mouth of Middle Fork, metal precipitation is extensive in both Middle Fork and Snow Fork tributaries. At median to low flows, iron floc is likely to be a limiting factor that could hamper biological recovery downstream of the doser. It is clear that additional treatment systems in Snow Fork sub-watershed are necessary to neutralize downstream sources of AMD. It is critical that these systems include elements designed to prevent metals from entering Snow Fork tributary.

**Figure 2.2 Mean Annual Load Reduction Graphs Middle Fork
Acid Reduction = 562 lbs/day**



**Figure 2.3 Middle Fork Metal Reduction = 97 lbs/day Snow Fork
RM 6.2 Acid Reduction = 723 lbs/day**



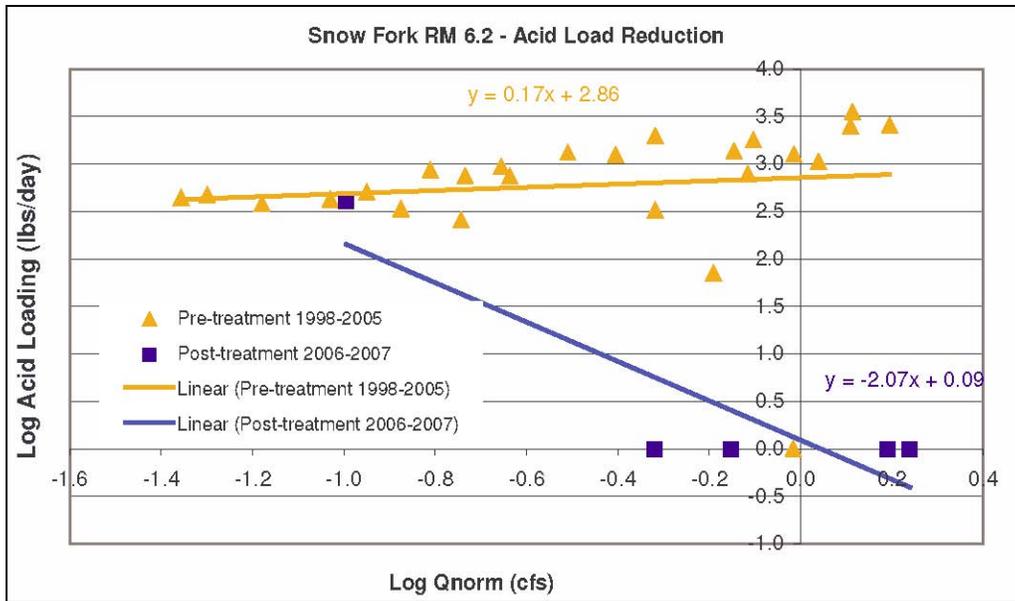
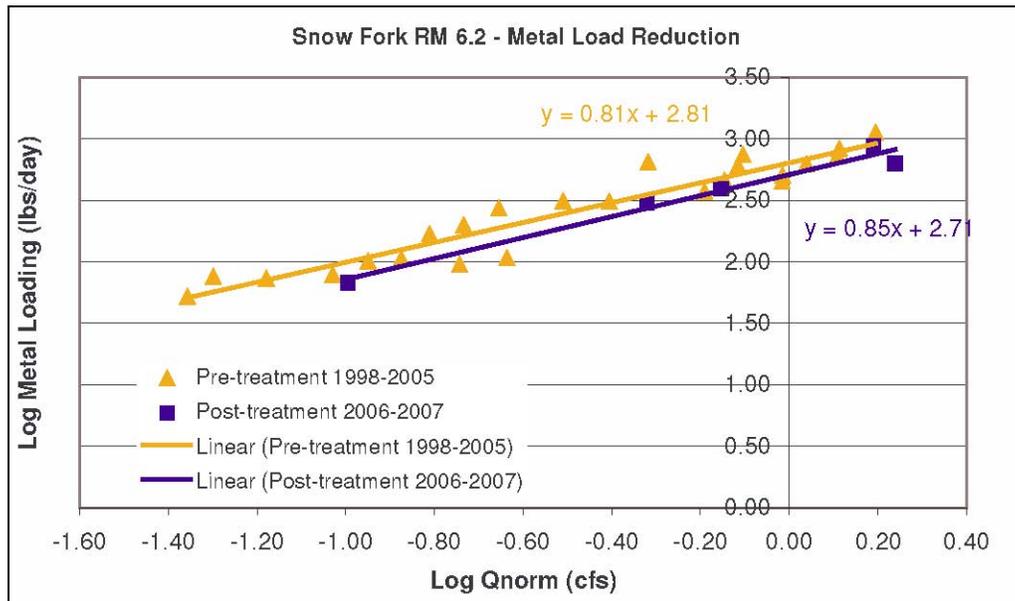


Figure 2.4 Snow Fork RM 6.2 Metal Reduction = 130 lbs/day Snow Fork RM 4.3 Acid Reduction = 1,164 lbs/day



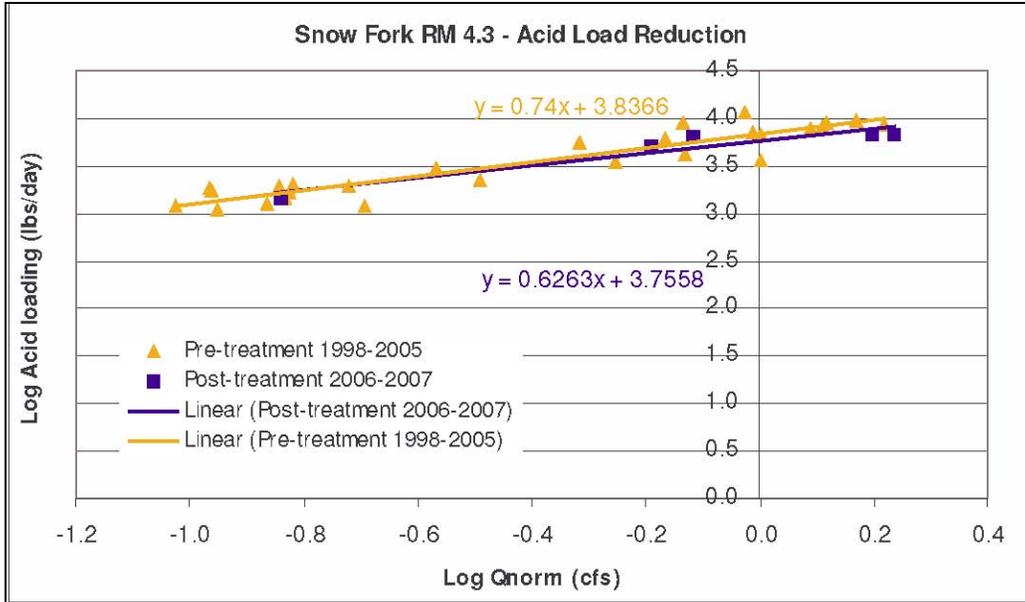


Figure 2.5 Snow Fork RM 4.3 Metal Reduction = 150 lbs/day

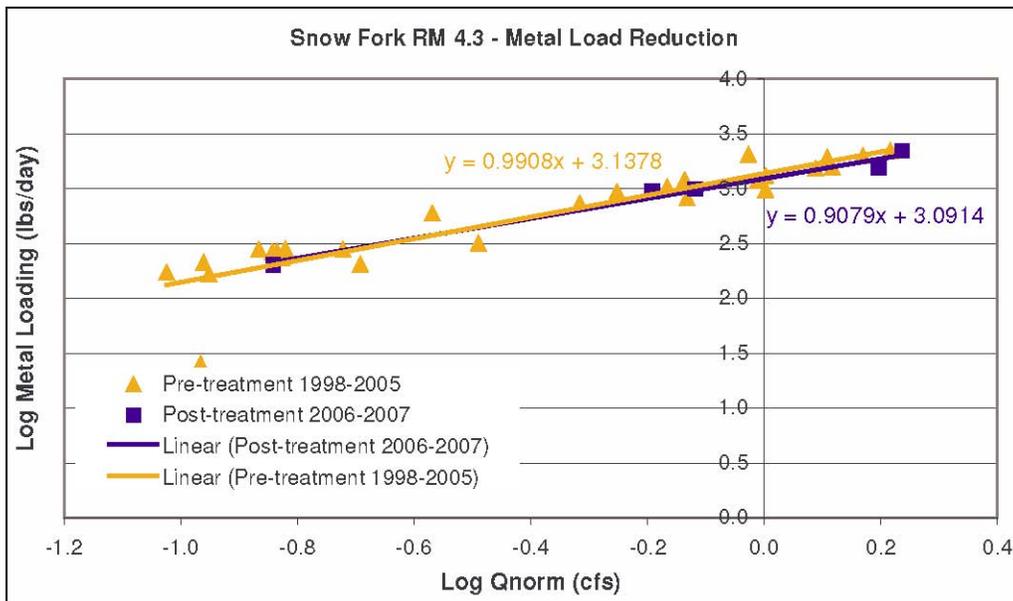
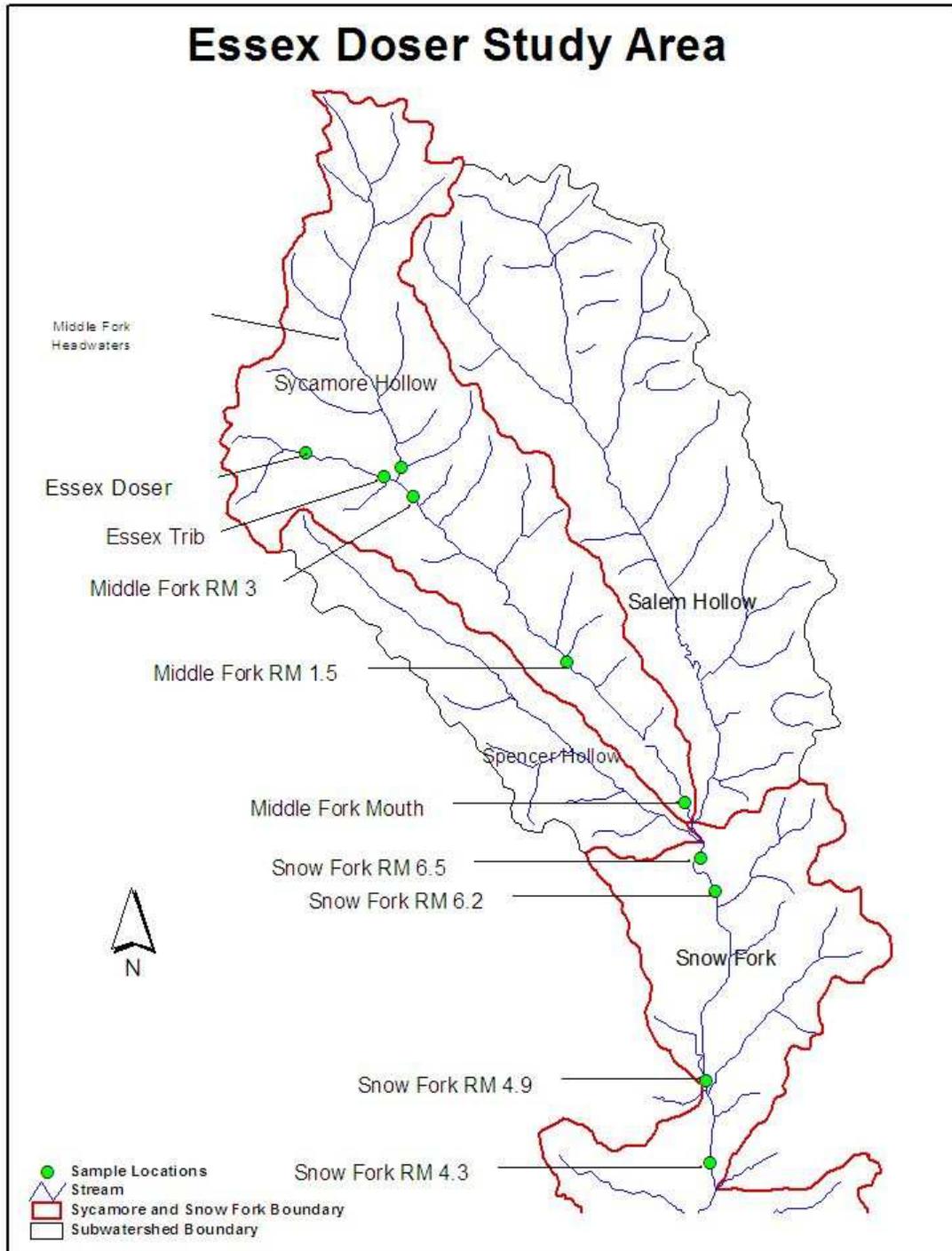


Figure 2.6 Essex Study Area Map



Source: All figures and associated statistics were generated from the Non-Point Source Monitoring Project Website hosted at Ohio University's Voinovich Center.
<http://www.watersheddata.com/>

3 - Aquatic and Riparian Resources

Goal 3.1 – Sustain favorable riparian and aquatic habitat conditions

Stream Habitat

There are a variety of management activities we can do to improve stream habitat, such as reforestation of streamside areas that have been farmed, restoration of wetlands, reduction of sedimentation, or improvement of road-stream crossings to ensure aquatic organism passage. The 2006 Forest Plan guides us to restore or improve 20 miles of stream during the first decade of Forest Plan implementation.

See page # 20 for question (3.1a) #5 under the heading Waterholes and Wetlands

<p>Objective 3.1b: Improve habitat along streams for aquatic and riparian-dependant species.</p>	<p>Monitoring Work Plan Question #6: How many miles of stream were treated to improve or restore habitat for aquatic and riparian-dependant species?</p>
	<p>Monitoring Work Plan Question #6.1: How many permanent long-term aquatic ecological unit monitoring sites were established?</p>

We completed a riparian forest condition survey along the Little Muskingum River. One mile of aquatic habitat for the eastern hellbender, Ohio lamprey, rapids clubtail, and green-faced clubtail was improved by planting trees in a hayfield along the river. From this survey, additional areas will be prioritized for future improvement projects, including more riparian plantings.



Forester Jason Reed, shows a group of scouts the proper method for planting trees at an old hayfield along the Little Muskingum River on the Marietta Unit.

We also worked with employees from Ohio Department of Transportation, Ohio Department of Natural Resources, and the U.S. Fish and Wildlife Service to raise awareness and halt the removal of instream woody debris from the Little Muskingum River by crews funded by the U.S. Department of Labor.

We continued our partnership with The Ohio State University School's of Environment and Natural Resources and Department of Food, Agricultural and Biological Engineering to install long-term aquatic ecological unit monitoring sites. We permanently installed 14 sites across the different management areas in the Little Muskingum River and Symmes Creek watersheds in 2007. Each site was electrofished to assess the fish community, and then cross-section and longitudinal profiles were completed for the sites. A pebble count survey was conducted to assess current sediment characteristics. Because each monitoring site has been permanently marked, we can go back to them in the future and repeat the surveys and determine what, if any, changes have occurred to the physical or biological make-up of the streams.

An Ohio State University post-doctoral student has summarized and evaluated the 2006 field data for 11 sites established last year to establish baseline data to monitor effects of future land use by the Forest Service. Index of Biotic Integrity scores were not significantly different among the sites. However, differences in fish assemblages between the Ironton and Marietta Units were found. Thirteen fish species were unique to the Symmes Creek drainage network (Ironton Unit), while four were unique to Little Muskingum drainage network (Marietta Unit). Unique fish species in Symmes Creek were pool dwellers, and pools were significantly deeper than pools in Little Muskingum. Three darter and one dace species were unique to the Little Muskingum, where the amount of cobble and current velocity were significantly greater than Symmes Creek. Differences in fish assemblages between watersheds may relate to the amount of groundwater flow, as significantly greater abundance of cold-water taxa were found in the Little Muskingum watershed.

<p>Objective 3.1c: Reduce sedimentation and improve passage for aquatic and semi-aquatic organisms at Forest development roads and Forest Service recreation trail crossings.</p>	<p>Monitoring Work Plan Question #6.2: How many crossings were improved?</p>
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We completed an aquatic organism passage inventory for all Forest designated highways, and for roads in specific 6th-level watersheds; more than 300 crossings were evaluated and about 50% were found to be barriers to instream movement of aquatic and semi-aquatic species. With this information, we can prioritize future improvement projects.

The Forest Service and Gallia County Engineer cooperated to improve three road-stream crossings in the Symmes Creek drainage. Culverts were replaced to improve habitat and instream movement for the round hickorynut, lilliput, little spectaclecase, salamander mussel, and their host fishes.

4 - Wildlife and Plants

Goal 4.1 – Sustain Favorable Terrestrial Habitat Conditions

Promote healthy terrestrial ecosystems that sustain a variety of plant and animal communities, including viable populations of native and desired non-native species.

Management Indicator Species (MIS)

Eight bird species were selected as management indicator species in the Forest Plan. These species guided the development of the Forest Plan, possess credible monitoring protocols, and can be effectively and efficiently monitored (see Forest Plan, Appendix C).

Two monitoring strategies are conducted annually to collect population trend information for these species. The Ohio Division of Wildlife conducts a ruffed grouse drumming survey in April where the number of males heard drumming are recorded along specific routes. The Forest Service conducts a breeding bird survey in May and June where all birds observed along specific driving and hiking routes are recorded.

<p>Objective 4.1a: Provide adequate habitat to support viable populations of management indicator species.</p>	<p>Monitoring Work Plan Question #7: Are population trends and habitat trends of management indicators consistent with Forest Plan expectations?</p>
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Pine Warbler, Cerulean Warbler, Worm-eating Warbler, Pileated Woodpecker, Louisiana Waterthrush, Yellow-breasted Chat, Henslow's Sparrow

Trends in population levels of these MIS are shown for two spatial scales, regional and Forest-wide. At the regional level (Ohio Hills Physiographic Region), population trends have been monitored through the North American Breeding Bird Survey since 1966. Table 2.3 displays the 1966-2006 trends for our MIS. The pine warbler has the greatest positive trend over this time period. The worm-eating warbler and pileated woodpecker have slight increasing population trends. The remaining species are in decline, with the Henslow's sparrow decreasing the most.

	Trend Estimate	P Value	Number of Routes	Variance	Average Count
Pine Warbler	7.66	0.16699	11	24.7095	0.11
Cerulean Warbler	-2.28	0.00455	59	0.5960	2.38
Worm-eating Warbler	2.83	0.15516	36	3.7693	0.56
Pileated Woodpecker	1.33	0.22243	65	1.1669	1.96
Louisiana Waterthrush	-0.73	0.60219	49	1.9431	0.91
Yellow-breasted Chat	-3.44	0.00000	67	0.3699	10.03
Henslow's Sparrow	-7.63	0.00194	16	3.8965	0.13

We have conducted an annual breeding bird survey since 2003 on the Wayne National Forest. We record all birds seen and heard at 242 specific points along 23 survey routes. These routes occur in different habitat types (forest, openland, wetland, grassland). All routes are to be sampled twice during May 20-June 20. We also installed additional point count sites in conjunction with Firemon monitoring plots that will be surveyed at regular intervals.

The average number of individuals of each MIS observed per survey is presented in Table 2.2. The average was calculated by taking the total number of individuals observed and dividing that by the number of points on routes where habitat for the species occurs. While there are 23 routes, each MIS is not expected to occur on each route. For example, the Henslow's sparrow is a grassland species. There are two grassland routes, with a total of 42 points (i.e., 21 points, each sampled twice). The total number of Henslow's sparrows observed is divided by 42 to get the average per survey.

With the exception of the pine warbler, population and habitat trends for the other MIS are expected to remain stable or increase on the Wayne National Forest over the long-term (next 100 years). The pine warbler was expected to decline because of increased oak regeneration decreased pine regeneration in existing pine stands. With only four years of data, it is difficult to draw any conclusions of MIS population trends on the Wayne National Forest. Each species experienced fluctuations in abundance during this four year period, which is why long-term monitoring is necessary.

MIS	Number of Routes	2003	2004*	2005	2006	2007
Pine Warbler	13	0.07	0.14	0.1	0.09	0.05
Cerulean Warbler	16	0.27	0.16	0.14	0.18	0.23
Worm-eating Warbler	17	0.14	0.13	0.04	0.09	0.11
Pileated Woodpecker	21	0.14	0.13	0.08	0.09	0.13
Louisiana Waterthrush	14	0.07	0.13	0.04	0.06	0.04
Yellow-breasted Chat	19	0.18	0.34	0.14	0.24	0.26
Henslow's Sparrow	2	0.48	0.23	0.19	0.75	0.40

*The 2004 BBS was conducted only on the Ironton survey routes. Thus, the average reflects only the Ironton routes.

Ruffed Grouse

Habitat and population trends for ruffed grouse are expected to remain stable or increase slightly during the first decade of Forest Plan implementation. This trend estimate was based on the fact that 1,725 acres of early successional forest habitat could be created during this time period.

No early successional forest habitat was created on National Forest System (NFS) lands in 2007. Because of that, the continued decline in grouse population trends would be expected in counties where NFS lands occur. Statewide, the ruffed grouse population trend continues to decline (Figure 7), and overall, populations are low in most of southeast Ohio. Fourteen drumming count routes were surveyed within the Wayne National Forest in 2007, and results show that ruffed grouse population trends vary across the Forest (Table 2.3). As a result of improved habitat conditions for grouse (i.e., an abundance of brushy, new understory growth) from the 2003 ice storm, a boost in grouse populations can be anticipated in the future in the affected counties, including large portions of Gallia, Lawrence, and Scioto counties.

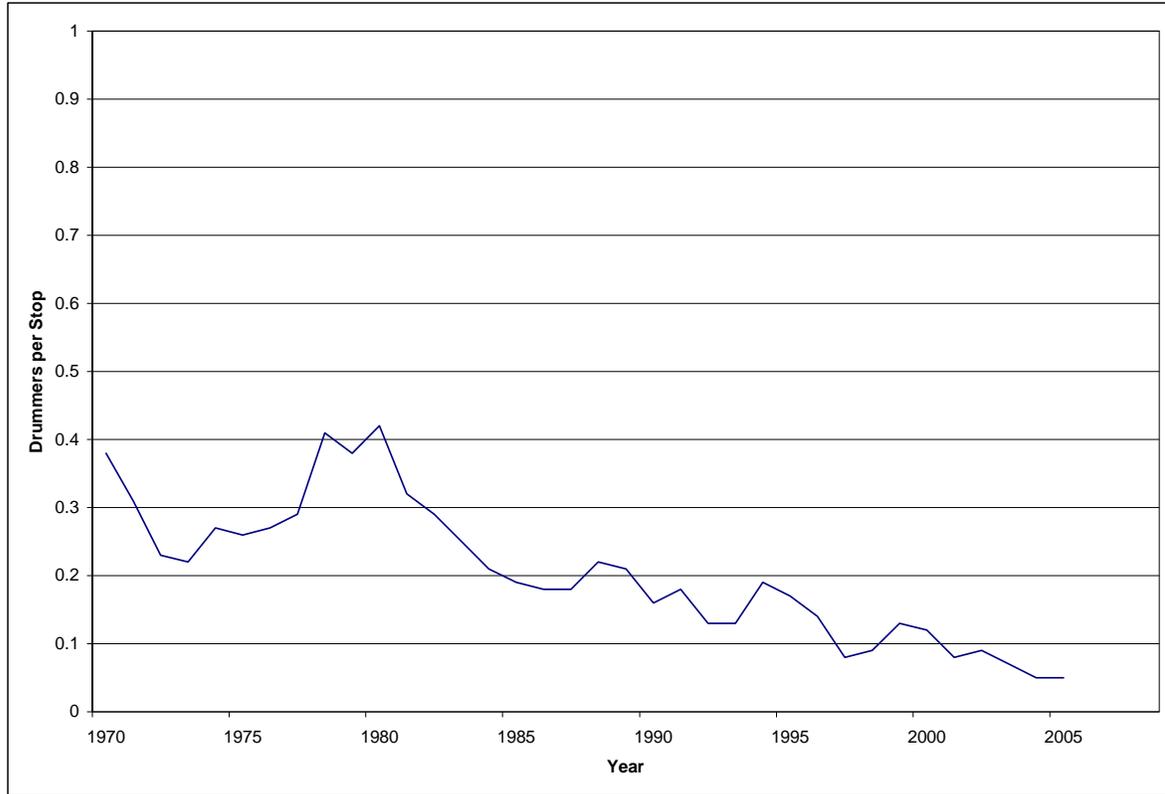


Figure 2.7 Statewide ruffed grouse population trend, 1972-2007 (data courtesy of Ohio Division of Wildlife).

Table 2.5 Average number of drumming male ruffed grouse heard per stop on Wayne National Forest survey routes, 2003-2007.						
County	Route	2003	2004	2005	2006	2007
Athens Unit						
Athens	Big Bailey/Utah Ridge			0.00	0.00	0.05
Hocking	Green/Starr Townships	0.00	0.05	0.00	0.00	0.10
Perry	Monroe Township 1	0.15	0.00	0.15	0.10	0.00
Perry	Monroe Township 2	0.00	0.00	0.00	0.00	0.00
Ironton Unit						
Lawrence	Telegraph Ridge	0.20	0.25	0.05	0.00	0.25
Lawrence	Aid Township	0.05	0.25	0.05	0.05	0.05
Lawrence	Hanging Rock			0.00	0.00	0.00
Scioto	Vernon Township	0.05	0.40	0.40	0.05	0.10
Gallia	Greenfield Township	0.15	0.05	0.15	0.35	0.05
Gallia	Walnut Township	0.35	0.25	0.05	0.25	0.15
Marietta Unit						
Morgan	Union Township	0.15	0.15	0.10	0.00	0.10
Monroe	Graysville	0.30	0.45	0.00	0.20	0.05
Monroe	Antioch	0.45	0.60	0.15	0.20	0.10
Washington	Pine Ridge	0.20	0.20	0.15	0.05	0.25

Oak Regeneration

The oak forest supports numerous plant and animal species. Acorns are a primary food source for many mammals and birds. The structural character of oaks offers feeding opportunities for bark gleaners, and roosting habitat for bats. The oak forest dominates the landscape of the Wayne, but increases in the abundance of shade tolerant species (e.g., red maple) and the invasion of non-native invasive species have raised concern about oak regeneration. Improving conditions for oak regeneration requires active use of management tools, such as timber harvesting, prescribed fire and herbicide application.

The Forest Plan allows us to perform the following activities during the first decade of Forest Plan implementation to regenerate oaks: even-aged timber harvest (1,725 acres); thinning (1,460 acres); crop tree release (2,113 acres); prescribed fire (46,215 acres); and herbicide application (10,994 acres).

<p>Objective 4.1b: Promote restoration and maintenance of the oak-hickory ecosystem by improving conditions for oak regeneration in the HF and HFO management areas.</p>	<p>Monitoring Work Plan Question #8: How many acres were treated to encourage oak regeneration?</p>
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Approximately 109 acres of hardwood forest were thinned on the Ironton District to improve conditions for developing future oak and hickory reproduction. Oaks were planted on approximately 10 acres of a white pine stand previously thinned to encourage establishment of oak in the regenerating hardwoods. Grapevines were controlled on 150 acres of young hardwood stands to improve the health of the trees. There were also a combined total of 563 acres of prescribed burning in the Gore-Greendale project area of the Athens District and in Youngs Branch on the Ironton District that will help with the regeneration of oak-hickory forest.

All-aged Hardwood and Pine/Hardwood Forest Habitat

The North American Landbird Conservation Plan (NALCP) highlights the fact that many declining bird species associated with mature forests require dense understory conditions. The NALCP notes that a decline in disturbance-generated mature forest structure is a key conservation issue in the Eastern Avifaunal Biome. During the first decade of Forest Plan implementation, we may treat up to 14,556 acres of hardwood and mixed hardwood forest with uneven-aged timber harvest methods to create structural diversity. It takes several entries into a stand, over many decades, to reach an all-aged condition.

<p>Objective 4.1c: Encourage the establishment of all-aged hardwood forest and hardwood-pine forest communities with structurally diverse canopy layers to maintain forest health and increase structural diversity.</p>	<p>Monitoring Work Plan Question #9: How many acres of hardwood or hardwood/pine forest communities were treated to encourage the establishment of all-aged conditions?</p>
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The 109 acres of hardwood forest thinning improves structural diversity and helps with

the establishment of all-aged forest conditions. We are continuing to work on implementing the Gore-Greendale Diverse Continuous Forest Project signed last year. We have not implemented timber harvests as of yet, however single-tree and group selection harvests would be implemented on 898 acres. These harvest methods are used to begin the transition from an even-aged stand to an all-aged stand.

Early Successional Forest Habitat

Early successional forest is characterized by high stem densities of shrubs, seedlings, and saplings. Repeated disturbances are required to maintain this habitat in the landscape. About 35% of all vertebrates native to the Wayne use early successional forest habitat during their life cycle. The high density of shrubs, seedlings and saplings provide dense cover and soft mast for these species. The Forest Plan guides us to create approximately 1,725 acres of early successional forest habitat during the first decade of Forest Plan implementation.

<p>Objective 4.1d: Create early successional hardwood or hardwood-pine habitat, interspersed within mid- and late-successional forest habitat to provide breeding habitat for shrubland-dependent species, and to increase production of wildlife foods such as soft and hard mast.</p>	<p>Monitoring Work Plan Question #10: How many acres of early successional forest habitat were created?</p>
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No early successional forest habitat was created in Fiscal Year 2007.

However, some of the land that was purchased from The Nature Conservancy on the Ironton District is in some form or young forest. Approximately 30 acres is young hardwood forest, and much of the rest of the 1,200 acres purchased are reclaimed mine land that has a variety of open and/or young forest and brush.

Pine and Mixed Pine Forest Habitat

Pine is a minor component of the overall forest landscape on the Wayne National Forest. Native pine species include shortleaf pine, pitch pine, and Virginia pine; these species are most often found mixed with hardwoods or occur as small stands. Beginning in the 1930s, white pines were planted to stabilize eroding soils on abandoned farmlands and strip mines. While these white pine plantations occur across the Wayne, only the eastern part of the Marietta unit is on the edge of the native range of the white pine.

We estimated that 200 acres of native pine would be regenerated during the first decade of Forest Plan implementation.

<p>Objective 4.1e: Regenerate existing native pine and pine-hardwood mixed communities.</p>	<p>Monitoring Work Plan Question #11: How many acres of (native) pine or pine-hardwood communities were treated?</p>
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No native pine communities were treated in Fiscal Year 2007.

Grassland Habitat

The Grassland and Forest Mosaic management area is made up of reclaimed mine lands and forest habitat. The reclaimed areas have been planted in a grassy cover, which attracts species like the Henslow’s sparrow, grasshopper sparrow, horned lark, blue grosbeak, and bobwhite quail. Some of the grasslands have been planted with shrubs and trees, but because of poor soils, the trees tend to be stunted and shrubby.

<p>Objective 4.1f: Annually, improve or maintain 5-10 percent of the existing grassland and grassland/shrub habitat acreage in the GFM management area.</p>	<p>Monitoring Work Plan Question #12: How many acres of grassland habitat were improved or maintained?</p>
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Prescribed burning was conducted on 188 acres of reclaimed strip-mine lands (grasslands) to help remove shrubs and trees and keep the areas open. Plans are also being developed to convert fescue to native warm season grasses in several reclaim areas. We conducted field reviews of these areas in support of our open land management review (see following section).



Prescribed fire at a reclaimed strip-mine helps keep the area in open habitat.

Herbaceous-Shrub Habitat

Forest openings are periodically mowed or burned to maintain a mosaic of grasses, forbs, and shrubs. These areas provide food and shelter to many animals, but some of these openings also contain rare plants or plant communities that require open conditions. The Forest Plan guides us to create approximately 500 acres of herbaceous-shrub habitat during the first decade of the planning cycle. It also estimated that 5,000 acres of openings and other herbaceous habitats would be maintained.

<p>Objective 4.1g: Establish and maintain permanent forest openings on a variety of sites, including ridge tops, mid-slope benches, and valley bottoms, preferably where access by machinery is possible.</p>	<p>Monitoring Work Plan Question #13: How many acres of herbaceous or herbaceous-shrub habitat were created?</p>
	<p>Monitoring Work Plan Question #14: How many acres of herbaceous or herbaceous-shrub habitat were maintained?</p>

We did not create any herbaceous or herbaceous-shrub habitat in 2007. We did mow 213 acres of openings to reduce woody encroachment and to maintain the herbaceous-

shrubby composition. Much of this work was done in partnership with the Ohio Division of Wildlife.

Field data collection for an open land management review was completed in 2007. We are evaluating our current forest openings program, and are looking at existing open-land on the Wayne that could be managed to provide quality herbaceous-shrub habitat. These areas include utility rights-of-way, old fields on new acquisitions, and reclaimed mine lands covered in grass. The goal of this review is to identify opportunities to move towards the Forest Plan's desired future condition. Planning for this endeavor is scheduled for 2008.

Waterholes and Wetlands

Upland wildlife species use upland waterholes and wetlands for drinking, feeding and breeding. Such areas are scattered across the Wayne National Forest. The Forest Plan guides us to restore or enhance 150 acres of wetland habitat and create 15 acres of waterhole habitat during the first decade of the planning cycle.

Objective 3.1a: Restore wetland habitat where wetland hydrology, soils, or vegetation have been modified by past land uses.	Monitoring Work Plan Question #5: How many acres of wetland habitat was restored or enhanced?
Objective 4.1h: Construct waterholes and ephemeral wetlands to supplement limited water sources, enhance local biodiversity, and enhance aquatic insect production.	Monitoring Work Plan Question #15: How many waterholes or ephemeral wetlands were constructed or enhanced?

In 2007, we repaired the dam on the restored Cadmus Fork Wetland, a 34-acre wetland in Gallia County (Ironton Ranger District) that was damaged during severe flooding. Evaluations are underway for the analysis on another potential wetland restoration site in Gallia County. We found that the site has good potential for restoration work because (1) it contains soils that are comprised of well drained, deep, silty-clays; (2) burrowing crayfish were present, but their holes did not contain water; (3) buried drainage tiles are a common feature throughout the tract; and (4) silty clays are not underlain by permeable soils.

In 2007, we created three small ephemeral waterholes and 6 simulated road ruts for bats and amphibians (0.1 acre in total) in association with the two watershed restoration projects (Snake Hollow and Lost Run). The intent of these projects was to redirect stream water flow away from entrances to the underground mine complex. We were able to construct the small waterholes in constructed stream channels and in rehabbed access roads in the projects. Frogs and insects were observed using the waterholes soon after completion of the project. We also reinforced or repaired dams on existing ponds in two watershed restoration projects. One was a beaver-created 0.5-acre pond. The beaver dam was replaced to make the pond more permanent (Snake Hollow project). We also repaired a leaking dam on a small pond located on a reclaimed grassland (East Branch project). Both of these ponds are home to an array of wildlife and are used by bats.



Simulated road rut created in a rehabbed, canopy-covered project access road. Ephemeral pools, such as this, are used by bats for drinking and foraging as they fly through an area, as well as by amphibians for breeding purposes.

Artificial Nesting Structures

There are several cavity-dependent species that reside on the Wayne National Forest during some part of the year. Some species, like woodpeckers, excavate cavities for nesting purposes. Other species, like the prothonotary warbler or wood duck, rely on naturally occurring cavities or those that have been excavated previously. There are no quantified objectives in the Forest Plan for the number of structures we should install on the Wayne National Forest during this planning period. However, we often work with volunteer youth groups (e.g., scout groups) to install and maintain various types of wildlife boxes to increase the cavity habitat in certain areas. By doing so, we are also able to introduce young people to our wildlife resources.

Objective 4.1i: Install artificial nesting or roosting structures to supplement natural cavities or snags when they are short in supply or to enhance wildlife-viewing.

Monitoring Work Plan Question #16: How many artificial nesting structures were installed?

Boy Scouts helped construct and install 20 bluebird boxes on the Ironton Ranger District in 2007. We also constructed 5 wood duck boxes and kits for 25 more bluebird boxes that may be put together and installed by Boy Scouts in the future.



Contents of a bluebird box after the nesting season on the Wayne National Forest.

5 - Threatened, Endangered, and Sensitive Species

Goal 5.1 – Recover Federally Listed Threatened and Endangered species

Indiana Bat (Endangered)

According to U. S. Fish and Wildlife Service records, the Indiana bat has now been confirmed in 26 Ohio counties (Figure 2.8). Most of these are summer records; verified winter hibernacula occur in Preble and Lawrence counties.

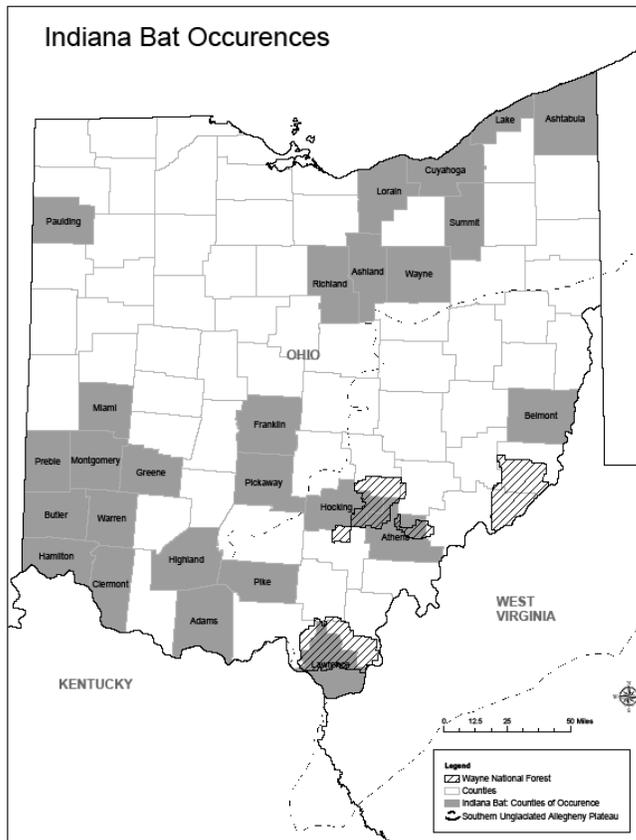


Figure 2.8 Indiana Bat Occurrences by county in Ohio. There were 2 new counties added in 2007 (Franklin and Belmont).

During 2007, Forest Service biologists conducted fall swarming surveys to gain additional knowledge of the distribution of the Indiana bat in the Wayne National Forest and to monitor bat activity at mine openings affected by watershed restoration projects.

A total of 56 open underground mine portals were evaluated on Athens Ranger District by an Ohio University intern student for potential Indiana bat fall swarming and/or winter hibernation habitat. Potentially suitable mines have openings at least one foot in diameter, passages should continue for 100 feet or more and open into the mine workings, and there should be some amount of air flow in or out of the entrance. Thirteen mine openings were surveyed for bats in September 2007. Of these, four were new sites, while nine were openings monitored for post-project bat activity. Four portals were surveyed with a bat detector to determine presence or absence of bats. Nine sites were surveyed with a harp trap, mist net, or both. A total of 220 bats were captured during these surveys, but none were Indiana bats.



Exposed mine openings, such as this, are investigated across the Wayne National Forest to determine if they may provide suitable fall or winter bat habitat. Potentially suitable openings are netted in the fall to determine bat use. However, due to the dangerous nature of abandoned coal mines, we can not enter them to see if bats use them in the winter during hibernation.

We conducted two Indiana bat training sessions for Wayne National Forest employees in 2007, in accordance with our Conservation Plan (Forest Plan, Appendix D). Both sessions were directed at timber markers. The sessions included a classroom presentation about the Indiana bat – its life history and habitat requirements. A field session was included in each training session so that employees could get hands-on experience identifying trees with currently suitable roosting habitat and trees that could serve as future roost trees.



Sarena Selbo and Troy Wilson, endangered species biologists with the U. S. Fish and Wildlife Service, help during the field portion of our timber marker training session. Employees gained experience identifying trees with currently suitable Indiana bat roosting characteristics.

Goal 5.1.1 - Retain or develop Indiana bat roosting and foraging habitat; protect all known Indiana bat hibernacula.

<p>Objective 5.1.1a: If additional Indiana bat hibernacula are discovered on NFS land, install bat-friendly gates to prevent unauthorized entry.</p>	<p>Monitoring Work Plan Question #17: How many acres of potentially suitable Indiana bat habitat were protected or improved?</p>
	<p>Monitoring Work Plan Question #18: How many bat-friendly gates were installed on known Indiana bat hibernacula?</p>

We improved 822 acres of mixed-oak forest in 2007, which may have improved some potentially suitable Indiana bat summer habitat. Of those acres, 109 were thinned in hardwood areas had been affected by the 2003 ice storm. Many trees had broken limbs and damaged crowns. Such trees are potential insect and disease breeding grounds. We thinned these forest stands by taking out some trees that had less than 25% live canopy, which created a slightly more open stand that could benefit foraging bats. Before marking these stands, U. S. Fish and Wildlife Service biologists joined us in the field to help identify “leave trees”, which were trees that possessed currently suitable Indiana bat roosting habitat and trees that could develop into future roost habitat. We also controlled grape vines on 150 acres of young hardwood stands. Reducing grape vines strengthens trees and increases their crown health. Finally, 563 acres were prescribe burned in 2007 in both the Gore-Greendale (Athens unit) and Youngs Branch (Ironton District) project areas. These burns will contribute to the ability to regenerate oaks and hickories by reducing the less fire resistant species and preparing better seedbeds. Oaks and hickories are important habitat components to Indiana bat summer habitat.

We entered the Woody Mine, the priority 3 Indiana bat hibernaculum on the Ironton Ranger District, in January 2007 to conduct a winter census of hibernating Indiana bats. This is done only every other winter to reduce overall disturbance to hibernating bats. Two experts from Kentucky, as well as a biologist from U.S. Fish & Wildlife Service, helped with this year’s census.



U.S. Fish & Wildlife Service staff, as well as a state mine inspector, help Wayne employees count bats in the Wayne’s only known Indiana bat hibernaculum, an abandoned limestone mine on the Ironton Ranger District.

The Indiana bat count in the hibernaculum was 224, down by about 100 bats compared to the 2005 census. However, similar declines were recorded in traditional Kentucky sites as well. Above-normal winter temperatures prevalent through December 2006 may have been to blame, making the traditional hibernation sites temporarily too warm for the species. This may have caused Indiana bats to seek alternative sites for that season. Interestingly, overall numbers of bats in the hibernaculum were up compared to past years. This was mainly due to an increase the number of little brown bats observed, which made up 80% of the total this year, compared to 65% in 2005 and 53% in 2003. This year, in addition to censusing the known Indiana bat hibernaculum, we checked two other openings that are a part of the same mine complex and where Indiana bats were captured during fall swarming surveys in September 2006. No additional Indiana bats were recorded in the other areas explored, but it may be worth rechecking them in colder years. Bats counted in parts of the mine not previously visited accounted for 4% of the bats tallied.

We continued to assess the microclimate of the Woody Mine, the Priority 3 Indiana bat hibernaculum on the Ironton Ranger District. Our biologists entered the mine in August 2007 with an Ohio mine inspector to retrieve the data collected by HOBOS[®] and LogTag[®] dataloggers installed in summers 2005 and 2006, respectively. Three of the LogTag and three of the Hobo loggers recorded temperature successfully in and outside the mine. After experiencing problems with the HOBOS loggers, we wanted to test the LogTags to find out if they would make a suitable alternative datalogger for our use. Unfortunately, we experienced only a 60% success rate (3 out of 5) with the LogTags, and the unit in the Indiana bat room was one of the failures. However, the LogTags did appear able to record relative humidity successfully, which is one of the shortfalls of the HOBOS. The HOBOS had a 75% success rate (3 out of 4) for temperature recording, but humidity recordings still failed. Temperatures recorded by the LogTag and HOBOS dataloggers, in locations where they both recorded successfully (Outside Tree and Entrance), were similar. Discrepancies in maximum, minimum, and average temperatures recorded between the units are likely a result of a smaller dataset collected by the HOBOS. Thus, the LogTags could be a viable alternative to the HOBOS, assuming we can work out downloading problems and get a higher success rate in the future.



Hobo (left) and Logtag (right) dataloggers installed in the hibernaculum.

Table 2.6 and Figure 2.9 below show how the temperature in the mine chamber where Indiana bats hibernate (Indiana Bat Room) compare to temperatures in other portions of the mine (Entrance and Right Passage) and outside the mine (Outside Tree).

Annual	Outside Tree		Entrance		Right Passage	Indiana Bat Room
Datalogger:	HOBO	LogTag	HOBO	LogTag	LogTag	HOBO
Maximum Temperature (F)	94.0	98.4	59.4	62.1	53.2	52.5
Minimum Temperature (F)	-4.4	-4.7	21.6	14.6	33.1	28.5
Mean Temperature (F)	55.3	57.2	45.6	46.6	47.6	44.9
Mid-winter (1 Jan – 31 Mar)						
Maximum Temperature (F)	83.7	95	51.1	53.8	49.5	47.5
Minimum Temperature (F)	-4.4	-4.7	21.6	14.6	33.1	28.5
Mean Temperature (F)	38.7	41.3	37.6	38.5	43.1	39.9

The temperatures inside the mine are expected to remain more stable over the year than the outside ambient temperature, due to the insulating effect of the underground environment. Temperatures in the two chambers inside the mine are very similar; the minor differences could relate to location in the mine and the subsequent air flow, or perhaps slight variations in the accuracy of the dataloggers. The temperature near the entrance of the mine is expected to vary slightly more than deeper, more insulated areas of the mine, while the outside temperature varies with ambient weather conditions. These expectations are born out by data collected on the dataloggers Figures 2.9 and 2.10.

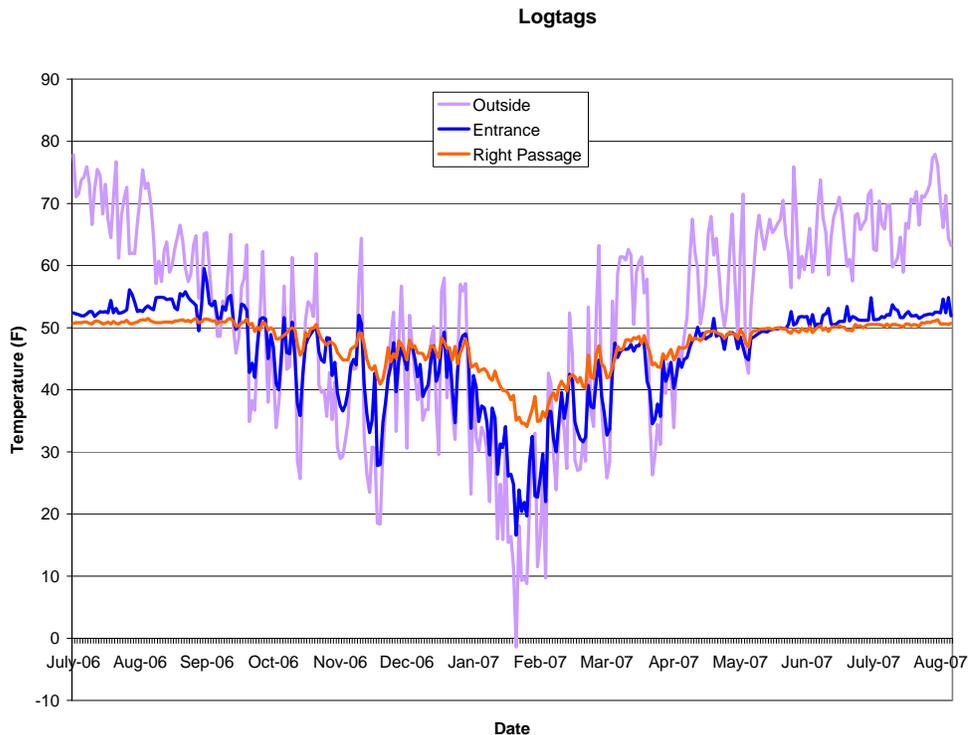


Figure 2.9 Comparison of air temperature recorded by three LogTag® dataloggers, July 2006 – August 2007

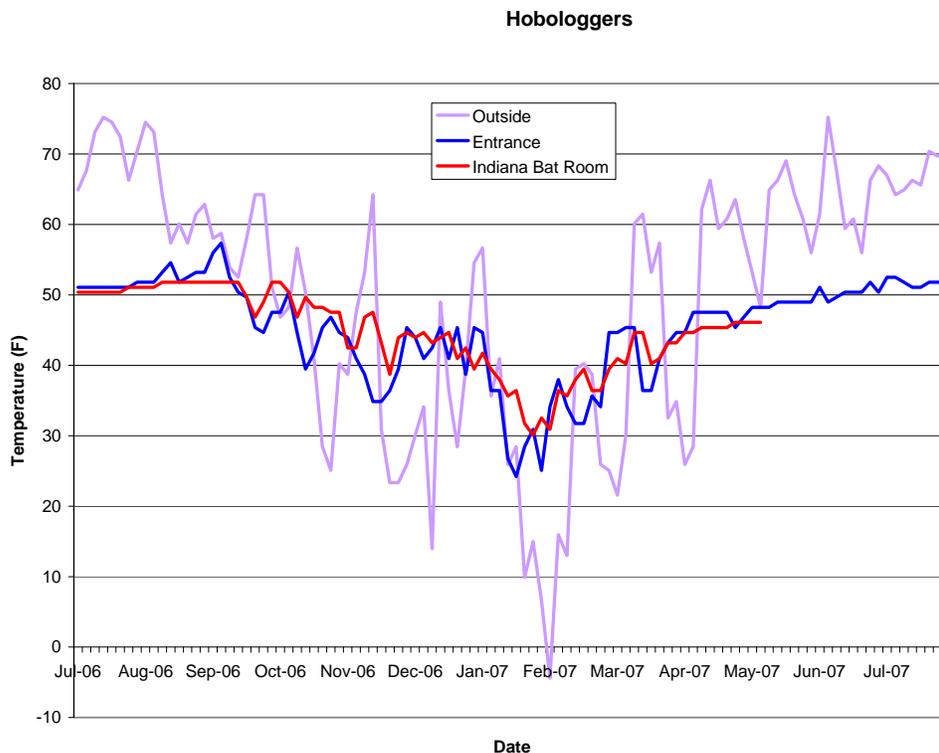


Figure 2.10 Comparison of air temperature recorded by three HOBOLoggers, July 2006 – July 2007

The temperatures from December 1st through March 31st are most important for hibernating bats. Researchers have found that temperatures in most Indiana hibernacula range from about 37°-43°F during these months (Andy King, USFWS, pers. comm.). The mean mid-winter temperature in the Indiana bat room in the Woody Mine was 39.9°F, perfectly in the range for this species. However, the temperatures did drop below the comfort level to 28.5°F during the coldest part of the winter and go above the upper end of the desired range. In contrast to other parts of the mine, the Indiana bat room is consistently cooler, which is important to hibernating Indiana bats; if temperatures rise too much, they wake and use too much of their fat reserves. By the same token, temperatures that are too cold may kill the bats. We are looking at the possibility of altering the mine entrance in such a way to stabilize the inside temperatures further, to make the microenvironment even more suitable for this endangered species.

Each year we are to report on (a) the cumulative incidental take that has occurred to date, (b) the cumulative acreage of specific management activities implemented to date, and (c) the tally of hickory trees removed during implementation of management activities to avoid adverse effects to other resources important to the Indiana bat (see Forest Plan, pages D-10 through D-12). The following is a summary for these monitoring items for the period of 1 October 2006 to 30 September 2007.

Table 2.7 Cumulative total of Incidental Take claimed for the Indiana bat in FY2007.

Incidental Take Activity	Anticipated Level of Activity (during first decade of Forest Plan)	Cumulative Amount Currently Planned	Cumulative Amount Implemented
Permanent Road Construction and Reconstruction (acres)	392	38.88	0.61
Temporary Road Construction (acres)	146	9.03	0
Skid Trails and Landings (acres)	740	199.8	7.0
Utility Corridors (acres)	50	0	0
Firelines (miles)	74	63.56	4.1

Table 2.8 Cumulative Management Activities Implemented under the 2006 Forest Plan.

Activity (acres, unless noted otherwise)	Anticipated Level of Activity (during first decade of Forest Plan)	Cumulative Amount Currently Planned	Cumulative Amount Implemented
Even-aged Hardwood Timber Harvest	1,725	108	
Even-aged Pine Timber Harvest	200		
Uneven-aged Timber Harvest	14,556	3371	
Thinning	1,460	246.4	
Crop Tree Release	2,113	2186	
Grapevine Control	2,683	169	143
Site Prep for Native Pine	200		
Reforestation (planting)	500	24	24
Prescribed Fire – Oak Regeneration	46,215	5583	374
Prescribed Fire – NNIS	200		
Prescribed Fire – Herbaceous Habitat	1,500	5.5	
Prescribed Fire – Hazardous Fuels	21,904		
Fireline Construction	750	61.4	9.5
Herbicide Application – Oak Regeneration	10,994	2224	
Herbicide Application – NNIS	600	560	213
Development of Permanent Forest Openings	500		
Maintenance of Permanent Forest Openings and other Herbaceous Habitats (mechanical)	5,000		
Control of NNIS – Mechanical	1,000	492	202
Control of NNIS – Biological	100	25	
Wetland Restoration & Enhancement	150		
Waterhole Construction	15	6	
Fishing Pond/Lake Construction	15		
Restoration & Improvement of Aquatic/Riparian Habitat (Lentic)	150	1.08	0.22
Restoration & Improvement of Aquatic/Riparian Habitat (Lotic)	20 miles	0.59	0.25
Installation of Bat-friendly Gates	30 gates		
OHV Trail Construction	150	19.3	0.8
Hiking Trail Construction	18	0.4	0.4
Horse Trail Construction	61		
Mountain Bike Trail Construction	36		

Activity (acres, unless noted otherwise)	Anticipated Level of Activity (during first decade of Forest Plan)	Cumulative Amount Currently Planned	Cumulative Amount Implemented
Recreation Facility Construction (including parking lots)	60	16.35	0.75
Temporary Road Construction	146	15.5	0.33
Permanent Road Construction	74	41.14	1.68
Permanent Road Reconstruction	318	1.2	
Road Decommissioning	29		
Skid Trails and Landings	740	202.57	7.0
Surface Coal Mine Activities	1,250		
Reclamation of Depleted or Orphan Wells	70		
Oil and Gas Well Development (Federal leases only)	42		
Utility Corridor Development & Maintenance	50	2.67	1.89
Agricultural Crop Production & Grazing	50		
Treatment of Acid Mine Drainage	270	42.95	16.06
Surface Mine Reclamation	20		
Closure of Open Mine Portal/subsidence	232	7.76	7.76
Stabilization of Disturbed Areas	100	12.48	7.6
Reduction of Hazardous Fuels (mechanical)	10,181		
Land Acquisition	Up to 40,000		714.13
Land Exchange	400		4.36

Hickory Tree Tally

No hickory trees were removed during project implementation in 2007.

Bald Eagle (Threatened)

In 2007, Ohio Division of Wildlife biologists counted 164 bald eagle nests, with 115 of these successful in producing young eagles. Reports from wildlife biologists and volunteer observers indicated that 186 eaglets fledged from nests in 45 Ohio counties. In 2006, a total of 150 nests were located, with 110 of those nests producing 205 eaglets. Seventeen new nests were identified in 14 counties in 2007.

There are currently no active or inactive bald eagle nests within the Wayne National Forest.

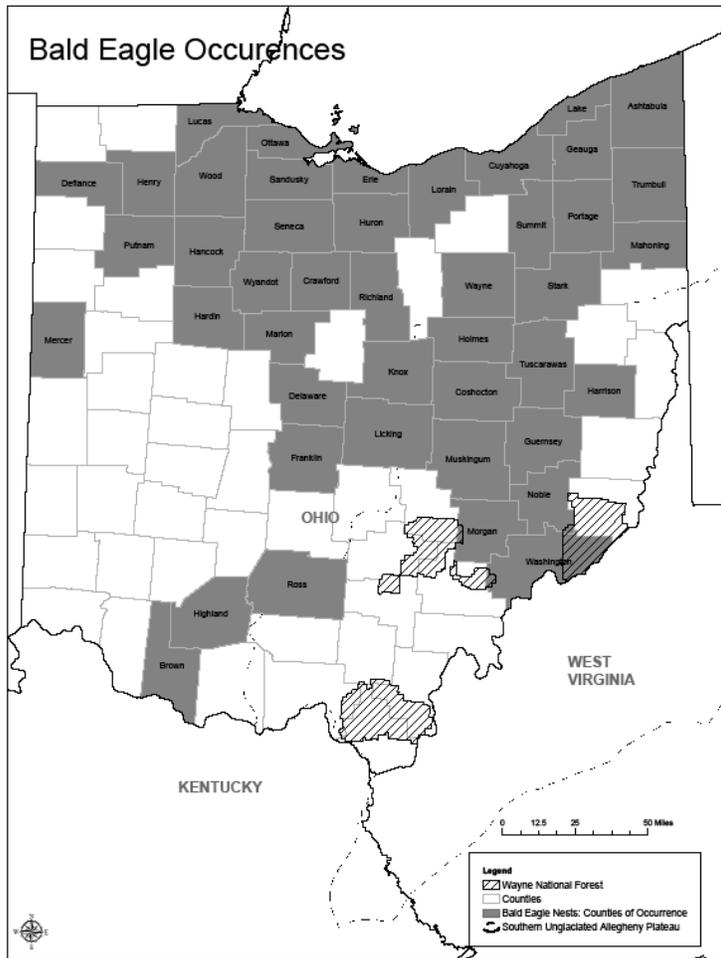


Figure 2.11 The distribution of counties in Ohio with bald eagle nests, 2007. The number of nests increased from 2006 (data courtesy of the U. S. Fish and Wildlife Service). For more information on Ohio’s bald eagles, please see http://www.dnr.state.oh.us/Home/wild_resourcehomepage/ResearchandSurveys/resources/eagleviewmap/BaldEagleResources/tabid/15488/Default.aspx.

Goal 5.1.2 - Protect bald eagle communal night roosts, daytime concentration sites, and occupied breeding territories.

<p>Objective 5.1.2a: Conduct a minimum of three annual winter searches to locate any previously unknown communal night roosts of bald eagle concentrations.</p>	<p>Monitoring Work Plan Question #19: How many mid-winter bald eagle searches were conducted?</p>
	<p>Monitoring Work Plan Question #20: How many bald eagles were observed?</p>

The Ohio Division of Wildlife reported a total of 359 adults and 121 immature eagles were observed statewide during the official two-week mid-winter bald eagle survey from January 2nd - 15th 2007. They were observed in 53 of Ohio’s 88 counties.

Wayne National Forest biologists conducted nine bald eagle searches between November 2006 and March 2007. No bald eagles were observed during any of the searches. However, one adult was observed by a member of the public at Burr Oak Reservoir on March 13th 2007. Several incidental observations of eagles also occurred near the Forest, including one adult seen at a nearby gravel pond, 2 adults at Lake Logan, and one

adult on Broadback Island in the Ohio River.

We also conducted a breeding bird survey along 23 routes in May and June 2007. No eagles were observed along any route during this month-long survey.

American Burying Beetle (Endangered)

Reintroduction efforts are currently underway at the Waterloo Wildlife Research Station (Athens County). Researchers at The Wilds (Muskingum County) are working to refine husbandry techniques in order to build a captive breeding colony. A captive American burying beetle breeding colony is maintained at The Ohio State University for purposes of reintroductions in Ohio.

Goal 5.1.3 - Cooperate in efforts to reintroduce the American burying beetle.

Monitoring Work Plan Question #21: What cooperative efforts were accomplished to achieve the reintroduction of the American burying beetle?

Two potential reintroduction sites for the American burying beetle have been identified on the Athens Ranger District. Pitfall trapping was conducted on three transects at the two sites to assess the pre-existing carrion (or silphid) beetle population. Two other species of carrion beetle were captured in the traps, *Nicrophorus orbicollis* and *N. tomentosus*, but no American burying beetles.

An environmental analysis is currently underway for the reintroduction of the American burying beetle on the Wayne National Forest.



A pitfall trap, like the one above, was used to sample the carrion beetle population at two potential reintroduction sites on the Wayne National Forest. The carrion beetles are attracted to the bait, typically a chunk of putrid chicken. While they are capable of flying, it is difficult for them to take flight once they enter the pitfall trap.

Running Buffalo Clover (Endangered)

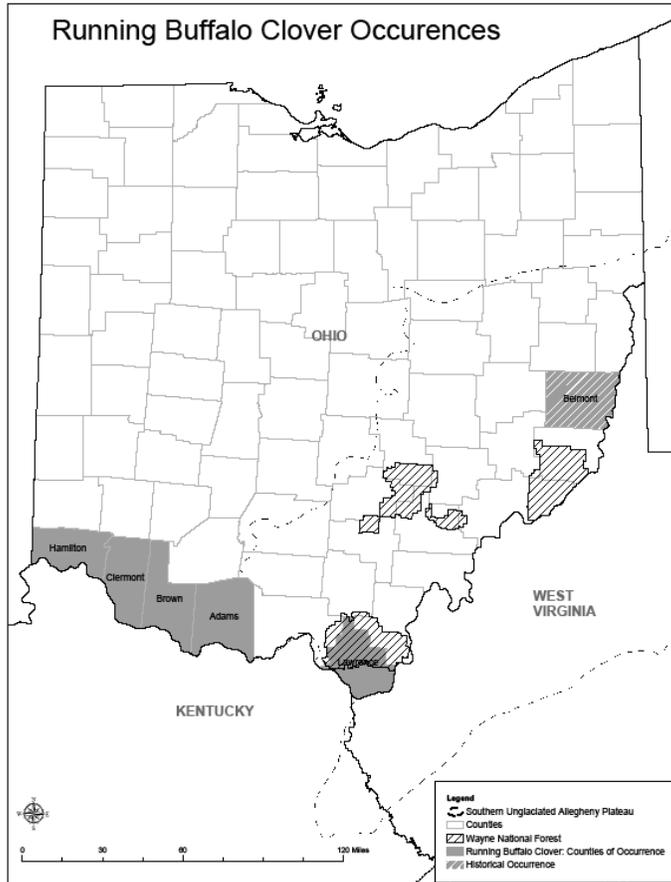


Figure 2.12 Running buffalo clover is currently known in five southern Ohio counties.

Forest Service biologists inventoried a total of 30 acres on the Wayne National Forest in 2007 for running buffalo clover. No additional populations were discovered.

Goal 5.1.4 - Actively manage known populations of running buffalo clover to maintain appropriate habitat conditions.

Objective 5.1.4b: Conduct annual monitoring of known running buffalo clover populations and adjacent areas to identify potential risks or management needs.

Monitoring Work Plan Question #22: Were there any changes to known running buffalo clover populations and were any potential risks identified and mitigated?

Biologists from the Forest Service and U. S. Fish and Wildlife Service monitored the one known running buffalo clover population on the Wayne National Forest on May 23, 2007. We counted 87 stems, 21 of which were in flower. This is a 20% increase over the 69 stems and 17 flowers counted in 2006. After the original discovery of the population, 34 rotted plants were counted; however, the survey was conducted late in the summer and many plants may have been missed due to cover by other vegetation.

The major potential threats to this species at this occupied site include too much sunlight, the non-native and invasive Asiatic stiltgrass, and illegal off-road vehicle traffic.

The Asiatic stiltgrass was mowed in August 2007. It was mowed at a height higher than the running buffalo clover grows to avoid direct impacts to individual plants. The stiltgrass is an annual, and mowing it late in the growing season can eliminate seed production.

With assistance from the U. S, Fish and Wildlife Service, we identified two management actions that could promote conservation of this population of running buffalo clover.

1. Shading trees that were stressed and are not healthy, due the Binion wildfire and 2003 ice storm, were identified. These trees are currently providing the right amount of shade for the running buffalo clover population. However, it was noted that more sunlight will reach the understory as these tree die. Competing vegetation could be cleared around some nearby tree saplings that could serve as potential shade trees in the future.
2. To protect the running buffalo clover from illegal OHV traffic, we could fell individual trees across the illegal trail path so that the off-road vehicles will either backtrack or will go around the running buffalo clover population. The Ironton Ranger District wildlife biologist would need to be involved in the felling of the trees to ensure no impacts occur to potential Indiana bat roost trees. This action was undertaken in 2007, and monitoring confirms that the OHV's are driving around the clover population.



Biologists map and count individual running buffalo clover plants. This population was discovered on the Wayne National Forest in 2005. Our May 2007 monitoring effort suggests that the population increased in size both years since discovery. The filtered light conditions are the key to its survival.

6 - Vegetation

Goal 6.1 – Meet Habitat Needs

Provide forest vegetation characteristics, from understory layers to the tree canopy, that meet the habitat needs of desired native and non-native plant and animal species.

Objective 6.1a: Use all available silvicultural treatments, including pre-commercial and commercial thinning, regeneration harvesting, prescribed fire, shelterwood harvests, site preparation, and improvement cutting to promote the maintenance and restoration of the oak-hickory ecosystem.

Monitoring Work Plan

Question #23: How many acres are being treated with varying management actions that will likely result in the maintenance and restoration of the oak-hickory ecosystem?

In Fiscal Year 2007, grape vines were controlled on 150 acres of young hardwood stands. These areas had high numbers of grape vines in the crowns of the overstory trees. After ensuring that Pigeon Grapes would not be removed, most of the balance of vines were cut at ground level; these vines will likely re-sprout but because they will be in the shade the sprouts will not be able to grow back into the crowns. During grape vine thinning not all of the grapevines are cut. Some remain present to promote diversity and wildlife habitat.

At the Beech Grove project area on the Athens District, oaks were planted on approximately 10 acres of a white pine stand that had been previously thinned through a commercial timber sale. After the thinning, hardwoods are expected to germinate and grow in the understory because of the increased light to the forest floor. However, the amount of oak seedlings was not expected to be high, so oaks were planted to increase the oak component of the future stand.



Oak tree seedling regeneration after the Olive Salvage Timber sale at the Ironton Ranger District.

In addition, see Question # 25 below concerning prescribed fire activities; fire also can maintain and restore the oak-hickory ecosystem.

Objective 6.1b: Use commercial timber sales and stewardship contracts to accomplish wildlife habitat objectives.	Monitoring Work Plan Question #24: How many acres are being treated through commercial timber sale operations and/or stewardship contracts that will likely meet objectives of improving wildlife habitat?
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In Fiscal Year 2007, approximately 109 acres of forest were thinned through commercial timber sales. Included in the objectives of these sales were several short and long term effects that will benefit native wildlife, such as:

- Improve stand conditions to minimize adverse impacts from insects and diseases, especially gypsy moth defoliation.
- Improve conditions for developing future oak and hickory reproduction so that adequate oak and hickory advance reproduction will be present when the hardwood over-story is regenerated.

Goal 6.2 – Improve Fire Regime Condition Class

Reintroduce fire into fire-adapted ecosystems to conserve biodiversity and promote ecosystem structure and function closer to the historic range of variability.

Objective 6.2a: Use prescribed fire to conserve fire-adapted plant and animal biodiversity and to maintain and restore mixed oak and native pine ecosystems.	Monitoring Work Plan Question #25: How many acres are being treated with prescribed fire that will likely conserve fire-adapted plant and animal biodiversity, and to maintain and restore mixed oak and native pine?
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Approximately 563 acres were prescribed burned in FY 2007 at the Gore Greendale project area on Athens District and the Youngs Branch project area on Ironton District. In addition to fuel reduction, these burns promote future oak generation by reducing the less fire resistant species and preparing a better seedbed.

Goal 6.3 – Special Forest Products

Provide opportunities for the collection and use of special forest products. Manage removal of special forest products and monitor this use to sustain viable populations and future yields. Increase public awareness of special forest product harvesting impacts on populations and their ecosystems.

Monitoring Work Plan Question #26: How many permits are issued and what are the reported harvests in each year?
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In Fiscal Year 2007: 80 firewood, 76 root and 12 hay permits were sold on the Forest. A breakdown of the sales per unit follows:

Table 2.9 Forest Product Permits

	Athens	Marietta	Ironton
Wood Permits	56	13	11
Root Permits	24	26	26
Hay Permits	--	6	6

Athens Ranger District sold permits at their two units (Nelsonville and Reno). Ironton Ranger District sold permits at their headquarters in Pedro. Wood and plant/root permits were \$20 per permit.

Changes to the reporting portion of the root permits for FY2007 were made to require permittees return the form with amount of roots harvested by the end of January in order to purchase permits in the following year. However, this was not enforced by the districts and the reported harvests for root permits received were only voluntary ones. These reports are too few to project the overall amount of roots harvested off the Wayne National Forest. Root permits allowed up to 5 dry lbs. of roots, of which up to 1 lb. could be ginseng. Maximum collection for the permits would therefore equate to a maximum of 380 dry lbs. of roots collected, of which up to 76 dry lbs. could be ginseng. District Rangers will need to determine if they want to require reporting in future years.

Wood permits allow up to 2 cords of firewood to be taken. Thus the maximum amount of firewood taken off the Wayne National Forest in FY 2006 was 160 cords.

Hay permits on the two districts were existing permits that were once again collected. There were no new hay permits issued in 2007.

In an effort to understand the impacts of harvesting on wild ginseng, there were 6 permanent monitoring plots installed on the Athens and Marietta units. The plots were measured initially when installed in the early summer and then later in the fall to try and capture impacts of deer grazing. Initial data shows little grazing of ginseng, an unexpected finding. Additional plots and re-measurement of old plots are planned to capture how harvesting impacts ginseng in different Management Areas on the forest.

7 - Forest Health

Goal 7.1 – Protect Vegetation and Wildlife from Insects, Diseases and Wildfire

Limit the effects of insects, diseases, and wildfire on forest vegetation and wildlife to within the range of disturbances that occurred in forest ecosystems prior to the arrival of non-native insects and diseases. Manage non-native invasive species (NNIS) populations using prevention, suppression, and restoration techniques to protect and restore natural communities on the Forest.

<p>Objective-7.1a – Maintain an inventory of NNIS insects and diseases affecting or potentially affecting NFS resources.</p>	<p>Monitoring Work Plan Question #27: How many acres of the Forest are inventoried for NNIS insects and diseases and when was it inventoried?</p>
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<p>Objective-7.1b – Cooperate with the ODNR and the State and Private Forestry Division of the Forest Service to suppress insect populations to:</p> <ul style="list-style-type: none"> • Retard advance of the gypsy moth • Eradicate NNIS species that are present but not yet well established, such as the emerald ash borer • Prevent the spread of non-native species currently lacking natural controls • Protect populations of, or habitat for, endangered, threatened, or sensitive species • Protect rare communities likely to be severely impacted by insect outbreak • Prevent extensive tree mortality or defoliation in developed recreation areas and other areas where maintaining visual quality is a major objective • Prevent spread onto land or into high value areas of the Forest (e.g., rare communities, developed recreation areas) • Prevent the introduction and spread of Sudden Oak Death Syndrome. 	<p>Monitoring Work Plan Question #28: How many NNIS sites were treated and how did the populations respond to treatment?</p>
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Monitoring for any Symptoms of Insect or Disease Activity

In the summer of 2007, in cooperation with the Wayne National Forest staff, the Forest Health Protection (State and Private, Forest Service) staff made aerial surveys of the entire Wayne National Forest to monitor for significant defoliation or disease outbreaks. On the Wayne National Forest, no significant acreages of defoliation were noticed.

Emerald Ash Borer

In 2007 the Wayne National Forest and the Ohio Department of Agriculture cooperated to monitor for the presence of the emerald ash borer on the Wayne National Forest. Approximately 300 “trap trees” were created within the Wayne National Forest; these will be monitored over the next 2 years to attract any beetles that may be in the area, and thus serve as an early warning. Estimates vary of how far an adult borer will fly to find a host; if ½ mile is used as an estimate, then these 300 trees would sample up to 175,000

acres of monitoring. No emerald ash borers have been identified from these trap trees.

Gypsy Moth

As a part of the Slow the Spread of Gypsy Moth program, surveys are conducted to identify populations of Gypsy Moth ahead of the general infestation areas. No national forest land had apparent populations of Gypsy Moth within the Slow the Spread area; therefore there was no need to treat on the Wayne National Forest. Some areas near the Forest were treated in 2007, but all were off the Forest.

Objective 7.1c - Protect the Forest from wildfire by:

- Treating hazardous fuels that present a high risk of wild fire.
- Treating hazardous fuels to move the forest closer to desired fire regime condition class and desired future condition.
- Maintaining areas that are at the desired fire regime condition class

Monitoring Work Plan Question #29:
How many acres of Hazardous fuels were treated?

There were a total of 1,780 acres of hazardous fuels treated in FY 2007.



Thomas Jenkins and Paul Meyer perform firing operations on the Kern-Peabody Prescribed fire.

Goal 7.2 - Control Non-Native Invasive Plants

Manage NNIS populations using prevention, suppression and restoration techniques to protect and restore natural communities. Emphasize prevention of spread and early detection of and rapid response to new infestations. Improve effectiveness of NNIS prevention practices through public and interagency NNIS awareness and education.

<p>Objective 7.2a - Maintain and update an inventory of NNIS plant population on NFS land. Include information on adjacent lands as gathered in cooperation with neighboring landowners.</p>	<p>Monitoring Work Plan Question #30: How many acres of the Forest are inventoried for NNIS plants and when were these inventoried?</p>
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Inventories have been occurring on the Wayne National Forest since 2002. Over 300 acres of new inventory information were gathered in FY2007.

Due to a numbering error on the 2006 monitoring work plan there is not a question #31.

<p>Objective 7.2b Treat and reduce populations of NNIPS with high potential for spread. Implement control treatments of infestation that threaten priority resources. Prioritize treatment areas based on risk of spread, threat to resources, likelihood of successful control/containment and partnerships.</p>	<p>Monitoring Work Plan Question #32: How many NNIS sites were treated and how did the NNIS populations respond to treatment?</p>
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Twenty-six different sites were treated manually, mechanically or chemically. The primary species controlled were: autumn olive, multiflora rose, Japanese stiltgrass, garlic mustard, Japanese knotweed, Oriental bittersweet, tree-of-heaven, princess tree, Japanese barberry and kudzu. A total of 120 core acres were treated with NNIS funds. An additional 519 integrated acres were accomplished through funds from Knutson-Vandenberg (KV) projects and hazardous fuels.

Garlic mustard populations decreased at Paines Crossing Special Area (SA), Wildcat Hollow SA and Little Storms Creek SA. This is partly believed to depend on the biennial nature of the plant that seems to fluxuate on a two-year cycle. However, new populations discovered in the Little Storms Creek SA were denser than populations those that had been treated in the past, indicating that manual treatment over the past several years may indeed be decreasing the species seedbanks and reducing infestation. It is unclear what impacts the droughts of 2005 and 2007 have had on population fluctuations.

Autumn olive controlled on the Ironton district along campgrounds continued for another year. The results are obvious decreases in the density of these plants with each year of treatment.

Kudzu controlled by goats in FY 2005 returned in the same density in FY 2006 from established root systems. These areas were controlled in FY 2006 mechanically, but again re-sprouted in similar densities as before. FY 2007 was the first time that herbicide was applied, 2008 monitoring will aid in determining if this control measure was more effective than the previous method.

Japanese stiltgrass was controlled using both mechanical (weed-eaters) and chemical means. It was found that early mechanical treatments (July/August) were not as effective as later treatments (August/September). This is believed to be because either: (1) early treatment occurs before much of the root reserves are used, and therefore allows resprouting, or (2) removal of the plants are early enough to allow new plants to germinate from the seedbank. All chemical treatments occurred later in the year – they were effective in killing the plants before they went to seed.

Tree of heaven was treated with basal spraying (triclopyr) and injection (glyphosate and imazapyr). Results will not be evident until monitoring in 2008.

Goal 7.3 – Control Non-Native Invasive Species Aquatics

Control NNIS Aquatics populations using prevention, suppression, and restoration techniques to protect and restore natural communities in NFS waters. Emphasize prevention of spread and eradication of small populations/areas of infestation. Improve effectiveness of NNIS prevention practices through public and inter-agency NNIS awareness and education.

Monitoring Work Plan Question #33: How many NNIS awareness and education events were given?

The response below includes all NNIS (plants, insects, aquatic organisms, and disease).

Overall 27 NNIS presentations, displays and outreach activities occurred to educate the public and Forest Service employees on the Wayne National Forest. Eight of the presentations included control efforts by participating groups (elementary and college students, wildflower hike participants) in the programs that counted toward target NNIS control acres. Organizations that received presentations about the treatment of invasives and the Wayne NF control efforts included: Master Gardener and local gardening groups, local landowners, Hocking College Wildlife ecology students, OHV clubs and volunteer OHV patrollers, Army Corps of Engineers, Buckeye Forest Council and Sierra Club.

Displays with informational materials were present at the different district and unit offices during the year, and during the following events: Marietta Earth Day and Rural Action's annual Landowner's conference. New articles about non-native control efforts occurred in local papers for both the Athens and Ironton Ranger Districts. Likewise, write-ups about the Wayne NF's NNIS treatments were published in two newsletters: Midwest Invasive Plant Network and the Ohio Society of American Foresters. Also, an

Athens District employee was part of a local radio discussion about invasives during the National Invasive Awareness week.

Goal 7.4 – Promote Disease-Resistant Species

Re-establish populations of native vegetation (e.g., American chestnut, American elm), as disease resistant varieties become available.

Monitoring Work Plan Question #34 How many acres of native vegetation (e.g., American Chestnut, American Elm), have become re-established?

The Forest did not re-establish any species such as American chestnut in FY 2007. The Forest has started discussions with the American Chestnut Foundation to identify appropriate locations for future plantings to re-introduce the species.

8 - Fire Management

Goal 8.1 Integrated Fire Prevention

Safely implement the fire and fuels program of the Wayne National Forest. Promote State and Federal interagency cooperation in wildland fire and fuels management.

<p>Objective 8.1b – Safely extinguish wildland fires using ground and/or air resources.</p>	<p>Monitoring Work Plan Question #35: Number of wildfires suppressed with no reportable accidents/injuries or damage to private property? Number of acres of private property burned from fires with ignition on Forest Service land?</p>
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In 2007, there were a total of 84 fires that were suppressed with no reportable accidents/injuries. No private property burned from ignitions that occurred on the Wayne National Forest.

<p>Objective 8.1c – Reduce hazardous fuels within communities at risk in cooperation with local, State, and Federal agencies.</p>	<p>Monitoring Work Plan Question #36: Number of acres in WUI treated for hazardous fuels reduction? Number of prescribed burns conducted in cooperation with local, state or other federal agencies?</p>
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All of our lands are within the Wildland Urban Interface, which totaled 1,780 acres for hazardous fuels reduction.

Mechanical treatment totaled 1029 acres. This includes trail clearing and mowing.

- 67 acres in Developed Recreation (DR) Management Area
- 65 acres in Diverse Continuous Forest (DCF) Management Area

- 111 acres in Diverse Continuous Forest with OHV (DCFO) Management Area
- 186 acres in Forest and Shrubland Mosaic(FSM) Management Area
- 51 acres in Future Old Forest (FOF) Management Area
- 178 acres in Historic Forest (HF) Management Area
- 314 acres in Historic Forest with OHV (HFO) Management Area
- 2 acres in River Corridor (RC) Management Area
- 51 acres in Special Area (SA) Management Areas
- 4 acres in Timbre Ridge Lake (TRL) Management Area

There were a total of 3 prescribed burns totaling 751 acres.

- 189 acres in Grassland and Forest Mosaic (GFM)
- 374 acres in Diverse Continuous Forest w/OHV (DCFO)
- 170 acres in Historic Forest w/OHV (HFO)
- 20 acres in Youngs Branch Special Area (SA)

<p>Objective 8.1e – Provide training to local volunteer fire departments in wildland fire suppression.</p>	<p>Monitoring Work Plan Question #37: How many local volunteer fire departments were trained in wildland fire suppression?</p>
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- Aid Township Volunteer Fire Department
- Elizabeth Township Volunteer Fire Department
- Madison Jefferson Township Volunteer Fire Department
- Greenfield Township Volunteer Fire Department
- Lawrence Township Volunteer Fire Department
- The Plains Volunteer Fire Department
- Coolville Volunteer Fire Department
- Albany Volunteer Fire Department
- Nelsonville Fire Department
- Ward Township Volunteer Fire Department
- Starr Township Volunteer Fire Department



Athens and Hocking County volunteer fire departments participating in Basic Wildland Fire Training

Summary

The main focus of the fire program is to give the highest priority to the safety of our employees, cooperators and the public by involving them in trainings and meetings to ensure they are capable and willing if needed to safely extinguish wildland fires.

The Wayne National Forest fire program provides wildland fire suppression training to several local volunteer fire departments. The fire program does not target a specific VFD to involve in training. Most of the VFD's are represented by a member that is hired with the Wayne NF as an AD (Administratively Determined) employee.

10 - Minerals

Provide a supply of mineral commodities for current and future generations, while protecting the long-term health and biological diversity of ecosystems. Facilitate the orderly exploration, development, and production of mineral and energy resources on land open to these activities.

Background

Statutory and regulatory direction divides Federal mineral resources into three categories: locatable, leasable, and saleable. Of these three categories, only leasable and saleable minerals occur on the WNF. The WNF is currently comprised of 239,497 acres of federally owned surface (this includes acreage outside the proclamation boundary) of which about 40 % (96,246 acres) are underlain by minerals fully owned by the Federal government. Reserved and/or outstanding mineral rights wholly or partially encumber the remaining 143,251 acres.

In FY 2007, there were no mineral material sales, no mineral material free use permits issued, and no in-service use of mineral materials from the WNF for road maintenance, etc. This echoes the saleable minerals activity on the WNF for the last decade or so. On

the other hand, the WNF bought on the open market 9,200 tons of aggregate, which was used on the on the Forest for roads and recreation sites.

Oil and gas is the most active leasable program on the WNF. There are currently about 1,250 wells on the forest, only 35% of which are on Federal minerals. There are no Federal coal leases on the WNF, and there has been no demand for Federal coal resources for at least 15 years. There was a 12-hole coal exploration program initiated on private coal rights on the WNF under valid existing rights in FY 2007. The “Reasonably Foreseeable Development Scenario for Oil and Gas”, produced by the Bureau of Land Management (BLM), forecasted the total number of new wells likely to occur on WNF surface over the next 10 years, regardless of mineral ownership (Federal, reserved or outstanding), to be 234 (or about 23 per year). Though oil and gas activity has drastically increased nationwide as the result of increased oil and gas prices, this increase in activity was not reflected on the WNF in FY 2007. This was attributable to a lack of available drilling rigs in this area and trained personnel to operate the rigs.

Numerous statutes, regulations, and executive orders guide Forest Service policy for the exploration and development of mineral resources on National Forest Service (NFS) land, so that mineral resources can be made available while continuing to sustain the land’s productivity for other uses and its capacity to support biodiversity goals. To ensure this, yearly inspections are carried out on active leases. In FY 2007, 366 such inspections were carried out on the WNF.

Goal 10.1 – Provide mineral commodities

Provide a supply of mineral commodities for current and future generations, while protecting the long-term health and biological diversity of ecosystems. Facilitate the orderly exploration, development, and production of mineral and energy resources on land open to these activities.

<p>Objective 10.1a – Coordinate with the Bureau of Land Management to offer leases of federally owned minerals.</p>	<p>Monitoring Work Plan Question #38: Are expressions of interest and lease offers processed in a timely manner?</p>
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Numerous expressions of interest and a few lease offers (totaling about 12,000 acres) have been backlogged since 2003 awaiting the finalization of the Forest Plan EIS. Title work to eliminate this backlog was started in the second quarter of FY 2006, and was about 60% done by the end of FY 2006. In FY 2007, a lot of that title work had to be redone or amended. By the end of FY 2007, all of the title work had been accomplished, and about 90% of the GIS mapping was finished. The remaining backlog will be eliminated, and the available parcels will be offered for lease by the BLM, in FY 2008.

<p>Objective 10.1b – Process plans of operation/applications for permit to drill on Federal leases in a timely manner.</p>	<p>Monitoring Work Plan Question #39: How many plans of operation/applications for permit to drill on Federal leases were processed in a timely manner?</p>
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No Federal plans of operations/applications for permit to drill were received or processed in FY 2007.

Goal 10.2 – Respect owners’ rights and protect surface resources

While respecting privately held mineral rights, negotiate operating terms and conditions and mitigation measures to protect other Forest resources.

<p>Objective 10.2a – Process plans of operation (and applications for major modifications) for privately owned minerals (reserved and outstanding rights) within 60 days.</p>	<p>Monitoring Work Plan Question #40: How many applications were processed within 60 days?</p>
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There were three non-Federal applications on the Marietta Unit in FY 2007, and they were processed within 60 days. There were no non-Federal applications on the Athens Unit or Ironton Unit in FY 2007.

<p>Objective 10.2b – Restore lands disturbed by minerals exploration and production when the minerals activity is completed.</p>	<p>Monitoring Work Plan Question #41: How many mineral activities were adequately restored upon completion?</p>
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Restoration of mineral activities as they relate to oil and gas occurs in stages. Partial restoration includes reclaiming that part of the drill pad not needed once production starts, and reclaiming 24-foot wide pre-drill access roads down to 16-foot wide post-drilling roads. Final restoration happens after a dry hole, or a depleted producing well, is plugged and abandoned.

On the Marietta Unit, 3 wells were partially restored (1 of which is awaiting re-vegetation results), and 0 wells were permanently restored. On the Athens Unit, 3 wells were partially restored (all of which are awaiting re-vegetation results), and 1 well was permanently restored. On the Ironton Unit, 1 well was permanently restored in FY 2007.

<p>Objective 10.2c – Plug wells when production ceases.</p>	<p>Monitoring Work Plan Question #42: How many wells were plugged according to State regulations when production ceased?</p>
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All wells were plugged according to State regulations in FY 2007: 0 on the Marietta Unit, 1 on the Athens Unit, and 1 on the Ironton Unit.

11 - Recreation

Forest Goal 11.2 Provide Safe, Quality Trails

Construct and maintain trails and associated facilities to provide a safe quality experience within the capabilities of the land and appropriate to the management area.

<p>Objective 11.2b – By the end of this planning period, relocate/re-construct five miles of the North Country Trail where the trail is currently located on roads.</p>	<p>Monitoring Work Plan Question #43: How many miles of NCT have been relocated/ reconstructed off existing roads?</p>
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In 2007, with the help of partners and volunteers, the Forest used GPS to inventory all of the North Country Trail (NCT) that lies within WNF lands. As a result, more accurate trail miles were recorded – 19.9 miles (Athens Unit) and 33.3 miles (Marietta Unit) for a Forest total of 53.2 miles.

Through the Wayne, 40 miles of the NCT is off road and 13.2 miles are located on roads. Currently, some trail sections are utilizing easements and right-of-ways for trail passage. We are actively working to relocate trails off roads through land or easement acquisitions.

Though no trails were relocated off roads in 2007, the Forest is working closely with a representative from the North Country Trail Association (NCTA) and local volunteers to identify re-route projects for 2008.



Volunteers GPSing NCT on Marietta Unit

<p>Objective 11.2c – Maintain and administer the Forest’s motorized trail system to provide safe/enjoyable trail riding opportunities and reduce resource impacts?</p>	<p>Monitoring Work Plan Question #44: How many miles of motorized trails have been maintained to standard (annual routine and deferred maintenance)?</p>
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The Forest Plan limits motorized trail recreation to the following management areas: Diverse Continuous Forest w/OHV (DCFO), Forest and Shrubland Mosaic w/OHV (FSMO), and Historic Forest w/OHV (HFO). All motorized trail maintenance or reconstruction work is restricted to these Management Areas (MAs).

In FY2007, the Forest maintained or improved 81 miles of OHV trails to standard. Maintaining a mile of trail to standard means meeting the following three national critical standards:

1. Effects from trail use do not conflict with environmental laws
2. Hazards do not exist on or along the trail
3. When signed as accessible, trails meet current agency policy and accessibility guidelines

Miles of trails meeting standard were calculated by adding the 11 miles “improved to standard” (heavy machine maintenance/reconstruction) and 70 miles “maintained to standard” (routine maintenance). Both manual (trail crew) and machine (contracts) maintenance work were tracked and submitted by each district to obtain the total miles maintained to standard. This total constitutes 67% of the 121 total miles of trails currently on the Wayne. At this pace, the Forest should be able to maintain all of its motorized trail miles on a two-year rotation period. The Forest Plan does not provide a Desired Future Condition attainment target for trail maintenance.

Before

After



Hanging Rock Trail Maintenance

Table 2.10 Motorized trail maintenance

Trail Name (Motorized)	Type of Maintenance	Miles Maintained
Long Ridge OHV Trail System	Heavy maintenance	11 miles
Main Corridor OHV Trail	Routine maintenance	17 miles
Dorr Run/Purdum/1985 OHV Trails	Routine maintenance	15 miles
Snake Hollow OHV Trail	Routine maintenance	2 miles
Pine Creek OHV Trail System	Routine maintenance	20 miles
Hanging Rock OHV Trail System	Routine Maintenance	26 miles
Total		81 miles

<p>Objective 11.2d – Where maintenance methods prove ineffective and monitoring confirms unsafe conditions or unacceptable resource damage, close and rehabilitate and/or re-locate/reconstruct sections of OHV trails.</p>	<p>Monitoring Work Plan Question #45: How many miles of motorized trails have been closed and rehabilitated and/or relocated/ reconstructed due to unsafe conditions or unacceptable resource damage sections from OHV use?</p>
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The Forest reconstructed 10 miles of the Long Ridge OHV trail in FY 2007. The Long Ridge Trail is the only trail on the Wayne that is specifically designed for off-highway motorcycles. Much of the work was contracted and involved repairing deep ruts, mud holes, slips, and rebuilding drainage structures and stream crossings. Federal trail appropriations were leveraged with Recreational Trail Program (RTP) grants and user fees from the Recreation Enhancement Act (REA).

No motorized trails on the Forest were closed due to unsafe conditions or adverse impacts to natural resources.

<p>Objective 11.2e –Reduce and strive to eliminate illegal OHV use by:</p> <ul style="list-style-type: none"> • Prohibiting cross-country travel or riding on undesignated user-created trails. • Prohibit riding on trails designated for other uses. 	<p>Monitoring Work Plan Question #46: Have sections of illegal trails on the Forest been closed and rehabilitated? If so, how many miles and where?</p>
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<ul style="list-style-type: none"> • Riding on designated trails during closed seasons • Closing at least 20 miles illegal OHV trail within the next decade to: <ul style="list-style-type: none"> a) Protect federally listed species b) Protect Regional Forester’s sensitive species c) Improve watershed health 	
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The Ironton District did not close any illegal trails in 2007.

The Athens District closed a total of 5 miles of illegal OHV trails off of the Long Ridge Trail. These illegal trails were blocked with earthen mounds. These closures were completed summer 2007 and were revisited periodically thereafter by trail technicians to monitor closure effectiveness. Monitoring results found little signs of riders riding around the blockades.

The FY 2007 closure figure coupled with FY 2006 bring the two year total to 8 miles or 40% of the Forest Plan goal of closing 20 miles of illegal trails within the next decade. At the current pace, the Forest should be able to meet or exceed the desired future condition (DFC) miles by the end of this planning period.

<p>Objective 11.2f - Maintain the Forest’s non-motorized trail system to provide safe/enjoyable trail hiking, horseback riding, and biking opportunities with minimal resource impacts.</p>	<p>Monitoring Work Plan Question #47: How many miles of non-motorized trails have been maintained/reconstructed to standard?</p>
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In FY-07, the Forest maintained (routine maintenance) 41 miles and improved (heavy maintenance) 9.3 miles of non-motorized trails to standard, totaling 50.3 miles. This constitutes 22% of the 232 total miles of non-motorized trails currently on the Wayne.

At this pace, the Forest should be able to maintain all of its non-motorized trail miles on a four-year rotation period. The Forest Plan does not provide a DFC attainment target for trail maintenance.

Table 2.11 Trail Maintenance

Trail Name and Trail Type (Non-motorized)	Type of Maintenance	Miles Maintained
Ohio View Hiking Trail - Marietta	Routine Maintenance Heavy Maintenance	4 miles 0.5 mile
Ohio View Connector - Marietta	Routine Maintenance Heavy Maintenance	2 miles 0.2 mile
Scenic View Hiking Trail - Marietta	Routine Maintenance Heavy Maintenance	3 miles 1 mile
Scenic View/NCT Trail - Marietta	Routine Maintenance	3.5 miles
North Country Hiking Trail - Marietta	Routine Maintenance Heavy Maintenance	5 miles 2.1 miles
Covered Bridge Hiking Trail - Marietta	Routine Maintenance Heavy Maintenance	4.5 miles 1.2 miles
Lamping Homestead Hiking Trail- Marietta	Heavy Maintenance	0.5 mile
Leith Run Hiking Trail - Marietta	Routine Maintenance	1 mile
Archer's Fork Loop Hiking Trail - Marietta	Heavy Maintenance	0.8 mile
Wildcat Hollow Hiking Trail - Athens	Heavy Maintenance	3 miles
Main Loop Horse Trail - Ironton	Routine Maintenance	5 miles
Kimble Horse Trail	Routine Maintenance	5 miles
Paddle Creek Horse Trail	Routine Maintenance	3 miles
Dean State Connector Horse Trail	Routine Maintenance	5 miles
Total		50.3 miles

<p>Objective 11.2g – Construct new trails during the next 10-15 years within the ranges and densities shown in Table 2-5. (of the Forest Plan pg 2-46)</p>	<p>Monitoring Work Plan Question #48: How many miles of new motorized and non-motorized trails have been constructed?</p>
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Monitoring Question 11.2d is associated with Forest Goal 11.2 of providing safe quality trails for visitors and to Forest Plan Objective 11.2g of constructing new trails during the next 10 to 15 years within the ranges and densities as shown in Table 2 – 5 of the Revised Forest Plan.

In FY 2006, the Ironton District began construction on the new Archery Trail located across from the Lake Vesuvius Boat Launch area within the Developed Recreation management area (DR). The ½-mile hiking trail was 75% completed in 2007. The Wild Turkey Federation was a key partner in this trail project. They contributed \$10,000 toward trail and parking area construction.



Archery Trail under construction

A new 0.6-mile Rutherford Hiking/Interpretive Trail was also constructed in FY 2007. This trail is the first wildlife-viewing trail accessible to persons of all abilities on the Athens Ranger District. The trail was constructed on an abandoned railroad bed.

The new Archery and Rutherford trail moved the Forest 1.1 mile closer toward meeting its 5 to 30-mile projection for new hiking trail within this planning period.

No other new motorized or non-motorized trails were constructed in FY 2007.

12 - Scenery Management

Goal 12.1 – Maintain scenic resources

Maintain or enhance the quality of scenic resources to provide desired landscape character.

Monitoring Work Plan Question #49: Is the Forest being managed in accordance with the assigned SIOs (*Scenic Integrity Objectives*) and scenery guidelines found in the Forest Plan?

A sampling of larger Forest projects is provided to show Scenery Management Goals are implemented on the Wayne National Forest. One project was selected from each district.

Athens District

- Gore-Greendale Diverse Continuous Forest project

Ironton District

- Pine Creek Historic Forest Restoration project

A visual analysis was completed for the Gore-Greendale Diverse Continuous Forest Project and one is being completed for the Pine Creek projects. These analyses included scenery guideline recommendations. As of the date of this report, neither of these projects has been implemented. Hence, no on-the-ground monitoring has begun. Both projects will be monitored in FY 2008 to determine if scenery recommendations were properly applied on-the-ground and whether the scenery guidelines were effective.

13 - Heritage

Goal 13.1 – Identify, Manage Heritage Resources

Provide current and future generations the opportunity to experience and appreciate the Forest’s diversity of human history and the relationship between people and the land.

<p>Objective 13.1c – Reduce the backlog of heritage sites that require formal evaluation for eligibility to the National Register of Historic Places.</p>	<p>Monitoring Work Plan Question #50: How many heritage sites have been evaluated for National Register eligibility?</p>
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One heritage site was evaluated for National Register eligibility in 2007. This was the former site of Center Iron Furnace and the town of Superior located on the Ironton



Ranger District in Lawrence County. The site consists of a historic iron furnace operation that later became a cement manufacturing complex. The Center Furnace stack no longer remains, but was located against a hillside in much the same manner as the other furnaces within the Hanging Rock Iron Region. It was built in 1836 and produced 16 tons of iron daily. At its heyday around 1885, the Center

Furnace company town had grown to approximately 40 homes with as many as 300 to 400 residents and included a school, store, and hotel.

One of its most significant aspects is its association with Nannie Kelly Wright. In 1868 William D. Kelly (co-founder of Ironton) and sons purchased Center Furnace properties and his son Lindsey became its manager. He then married Nannie Honshell in 1879 and she became very involved in the daily operation of the furnace and became known for her business sense. She bought Center Furnace in 1896 from her husband, and assumed full managerial duties upon his death in 1903 making her the only female iron furnace master in the world. After three years Nannie sold the property for \$100,000 which was the largest check ever written in Ironton. This transaction made Nannie the wealthiest woman in southern Ohio.

As the iron furnace industry began to decline, the surrounding area became increasingly utilized for its limestone. As the demand for cement increased over the need for iron, the cement operation at the site expanded into the Superior Portland Cement Company. The cement company town known as Superior grew to a bustling community from the infrastructure of the Center Furnace town.

The Superior Portland Cement plant began operation in 1907, producing 2000 barrels of cement daily and employing 300 people. It changed hands several times and operated until the 1970's.

The Center Furnace/Superior Site is clearly a significant part of local and industrial history and has been determined eligible for the National Register of Historic Places because of its association with the Iron Furnace period, early cement manufacturing, and with Nannie Kelly Wright and the Kelly family.

<p>Objective 13.1d – Develop Management Plans for the long-term preservation of heritage resources that are either listed on or eligible for the National Register of Historic Places.</p>	<p>Monitoring Work Plan Question #51: How many management plans have been developed for heritage sites that are either eligible for or listed on the National Register of Historic Places ?</p>
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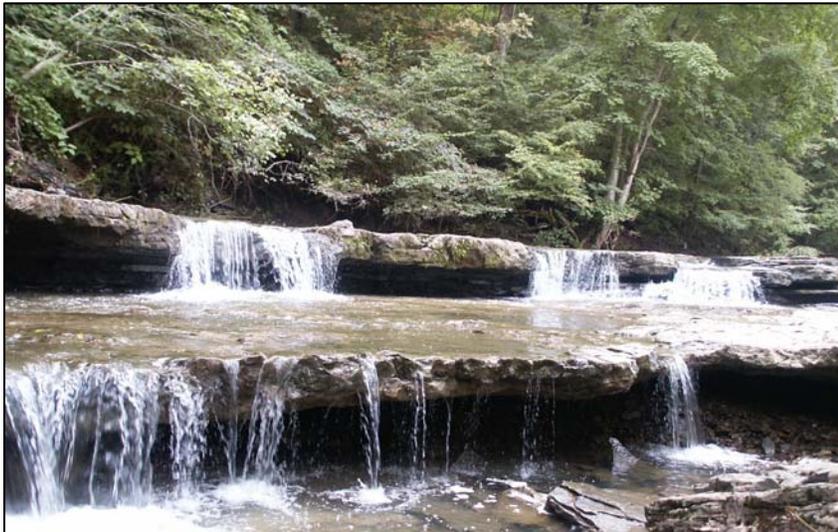
No management plans were developed for any of the 23 priority heritage assets on the Wayne National Forest in FY2007. However, a total of 625 acres was inventoried for

heritage resources and 37 new sites were recorded on Forest Land.

14 - Land Ownership

Goal 14.1 – Consolidate ownership

Adjust land ownership within the Forest proclamation boundary to enhance public benefits and improve management effectiveness.



Land Adjustment and Special Uses

In FY 2007, the Forest received \$982,240 of Land and Water Conservation Funds (L&WCF) to acquire land. There is no guarantee L&WCF monies will be provided to the Forest on an annual basis.

<p>Objective 14.1a – Purchase, exchange, accept donations or convey lands and minerals rights on a willing seller, willing buyer basis.</p>	<p>Monitoring Work Plan Question #52: Does the Forest's land base progress toward consolidation that meets objectives by exchange, purchase or donation?</p>
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The Forest's land base is progressing toward consolidation by land purchase and land exchange. In 2007 the Forest acquired 1,271 acres that improved consolidation. These acquisitions meet the objectives of land purchases, exchanges or donations. Of the 1,271 acres acquired, 28 acres is within the HFO management area, 3 acres are in the Handley Branch SA management area and 1,240 acres are in the Grassland and Forest Mosaic (GFM) management area. The historic Pioneer Iron Furnace Stack, a potential candidate for the National Register of Historic Places is within the land area acquired. No donations were received on the Forest during FY 2007.

<p>Objective 14.1b –Acquire rights of ways or property to improve access to NFS land.</p>	<p>Monitoring Work Plan Question #53: How many miles of right-of-way, or parcels of land have been acquired to facilitate access to NF tracts?</p>
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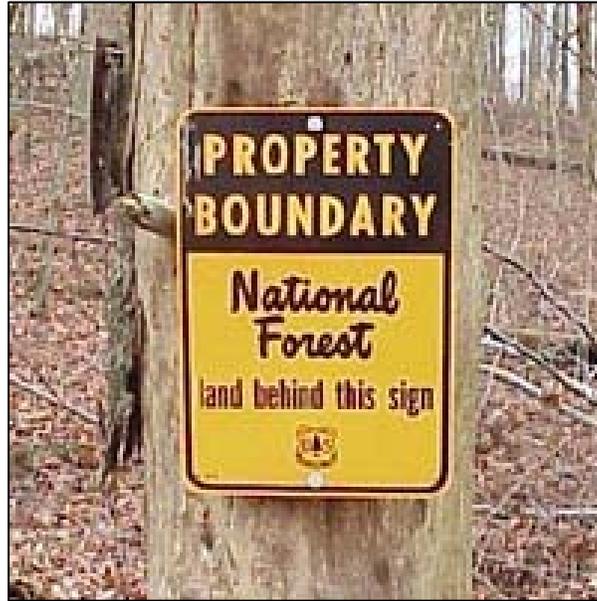
The Forest acquired 6 parcels of land that improved access to existing National Forest lands in FY 2006. The TNC Cambria Purchase Phase II and III (5 parcels), and Thomas Shepherd Tract (1 parcel) purchases provided additional land for consolidation and improved access to existing NFS lands from the public road frontage or right of ways made available by the purchases.

<p>Objective 14.1c – Foster good neighbor relations with local communities.</p>	<p>Monitoring Work Plan Question #54: How many Special Use permits were authorized and re-authorized to allow local community developments on NFS lands?</p>
	<p>Monitoring Work Plan Question #55: How many acres of prime farmland or acres of land with high potential for community development have been purchased?</p>

The Forest issued 22 new special use permits and re-authorized 43 permits that reached expiration. These permits all contribute to community development since private individuals or companies have permits to their property for utilities, access, or land uses. The community benefits by the use of public lands for occupancy since alternatives are not available on private land.

The Forest did not acquire property that contained prime farmland or land with high potential for community development in FY 2007.

Goal 14.2 Maintain Boundary Lines



<p>Objective 14.2a – Survey and post landlines not currently marked. Maintain lines previously marked on a 10-year cycle.</p>	<p>Monitoring Work Plan Question #56: Is the Forest making progress towards the eventual marking and maintaining of the entire perimeter of NFS lands against private property?</p>
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The Forest completed 12 miles of boundary maintenance. The Forest is making progress in marking National Forest property boundaries.

<p>Objective 14.2b – Survey and post landlines not currently marked. Maintain lines previously marked on a 10-year cycle.</p>	<p>Monitoring Work Plan Question #57: Is the Forest making progress towards resolving trespasses as they occur and are discovered?</p>
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The Forest resolved 4 trespasses as they were discovered in FY 2007. The Forest continues to investigate and resolve trespass and encroachments on the Forest as they are discovered.

15 - Special Uses

Goal 15.1 Special Use Authorizations

Allow special uses that enhance or maintain appropriate public access and use.

Authorize special uses that:

- Serve the public
- Promote public health and safety
- Protect the environment
- Cannot be reasonably accommodated on private land



Monitoring Work Plan Question #58: Is the Forest considering and processing reasonable requests for special use authorizations on NFS lands?

The Forest considers special use requests and if deemed an acceptable use, processes the application and issues a permit for special use authorizations on NFS lands. The Forest processed and issued 22 new permits and renewed 43 permits 2007. The Forest implemented the Cost Recovery Program for Special Uses in 2007.

16 – Range

Goal 16.1 – Range Management

Permit livestock grazing to:

- Facilitate land acquisition by permitting current use by livestock
- Contribute to wildlife habitat objectives
- Help control non-native species

Monitoring Work Plan Question #59: How many parcels of land were acquired in the current year that were being grazed by livestock within approximately one year prior to acquisition by the Forest Service? If there are any parcels, how many? And are they still being grazing, or being offered for grazing?

No parcels of land that were acquired in this current year are under a grazing permit.

Monitoring Work Plan Question #60: How many acres were grazed and contributed to wildlife habitat objectives; and how many acres were grazed to control non-native species?

There were 140 acres permitted for grazing. Of these, 0 were grazed for wildlife habitat objectives and 0 were grazed for NNIS control.

17 - Facilities and Transportation System

Goal 17.1 Buildings and Structures

Provide safe, efficient facilities and related structures that meet the needs of Forest visitors.

<p>Objective 17.1a – Conduct detailed inspections of facilities every five years more often if needed.</p>	<p>Monitoring Work Plan Question #61: How many administrative and recreation facilities meet current safety, mission, niche, and use requirements?</p>
<p>Objective 17.1b – Decommission facilities that are no longer needed.</p>	

In FY 2007 the Forest finalized both the recreation site and administrative facility master plans for Regional Office review and acceptance in early FY 2008. In FY 2007 two small buildings at the Marietta office were decommissioned. Decommissioned buildings included a small law enforcement evidence storage building and a paint/general storage

building at the Marietta unit office. Construction of a communications tower at the supervisor’s office was reinitiated and is expected to be complete in early FY 2008.

In FY 2007, 16 facilities were inspected for general maintenance need and we updated our real property and deferred maintenance data base according to the findings.

Goal 17.2 – Safety and Effectiveness of Dams

Maintain dams as safe and effective water storage facilities.

<p>Objective 17.2a – Maintain dams to standard.</p>	<p>Monitoring Work Plan Question #62: How many Forest dams meet current State and Federal regulations with respect to storage capacity, storm routing, spillway capacity, and general dam safety?</p>
<p>Objective 17.2b – Inspect high hazard dams annually.</p>	
<p>Objective 17.2b – Decommission or appropriately dispose of dams no longer needed.</p>	

In FY 2007, three of the four Forest dams that were inventoried met current Federal regulations. The Forest currently has two dams classified by the Ohio Department of Natural Resource, Division of Surface Water, Dam Safety Office as high hazard dams. They are Vesuvius and Timbre Ridge dams located on the Ironton Ranger District. Both were inspected in 2007 by Forest Service Personnel. One deficiency was noted at Timbre Ridge dam.

Currently there is no secondary all-weather route to the dam for emergency equipment and repair in the case of partial dam failure. The only all-weather road would likely be inundated by water in the event of a Probable Maximum Flood (PMF) and the secondary road is not currently passable by highway vehicles. The road could be forced into service by the use of a portable bridge the Forest now has in inventory. Construction equipment could access the site from the secondary road now in place, but some vehicles likely would be delayed until access was improved.

The Forest has 17 dams in our inventory that receive regular and required inspections under our handbook direction. In 2007, 4 were visited by the engineering department for safety reviews, with 2 receiving full engineering inspections. All high hazard dams were inspected. All 17 dams will be inspected in a 5 year cycle, or sooner if indications of deficiencies are noted.

Table 2.12 Dam Inspections

Dams	2006 Inspections	
	Number Receiving Inspections by District	Noted Deficiencies
Athens District - 7	1	0
Ironton District - 10	3	1

Goal 17.3 – Transportation System

In cooperation with local, State, and Federal government agencies, provide a safe, efficient transportation system for moving people, equipment, and forest products.

Objective 17.3a – Reduce sedimentation and improve passage for aquatic and semi-aquatic organisms at Forest development road and forest service recreation trail crossings.	Monitoring Work Plan Question #63: How many stream crossing were inventoried and/or corrected for sedimentation production?
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In FY 2007, an estimated 70 road-stream crossings were inventoried within several 5th level watersheds. Those noted as possible impediments to aquatic organism passage were identified and a record made of their location. None were noted as likely to cause excessive sediment. All identified as likely to impede aquatic passage will be monitored in the future to determine if they need repair, or are producing undue stream sediment load.

The Gallia County Engineer modified three crossing in 2007. Funds provided by Forest Service and Eastern Federal Highway Lands Highway Division of Federal Highway Administration. All the crossings were structurally deficient and needed replacement for the safety of the public. Replacement was completed in June 2007 with engineering input from the Forest's engineering staff to ensure aquatic passage. A monitoring review in September 2007 showed that all were operating as expected. At this time no fish passage concerns were noted for the structures and monitoring will continue.

Table 2.13 Road-Stream crossings inventoried for probable sediment production and aquatic passage

	Sedimentation Production	Aquatic Passage
Athens District - 10 monitored (estimated)	N/A	N/A
Ironton District – 60 monitored (estimated)	no issues of concern noted	Three structures replaced in under Forest Highway Program with Gallia County, Initial monitoring results show no aquatic passage issues.

The Forest and Ohio Department of Transportation applied for funds to replace two structures with serious aquatic passage issues on State Highway 26. Funding was

requested under the Forest Highway Program in FY 2008 and 2009 to complete the project. If these projects are funded in 2008 they will help restore up to 12 miles of streams in the Little Muskingum watershed. The projects are located in Washington and Monroe counties. Two additional projects were requested under the same funding source to buy Right-Of-Way in 2009 to prepare for additional crossing replacements along State Route 26 in future years.

No structures were modified for sediment control in 2007 as a result of monitoring. Future modifications may take place with information gained from this monitoring.

<p>Objective 17.3b – Decommission temporary and system roads when they are no longer needed for administration of the Forest or its resources.</p>	<p>Monitoring Work Plan Question #64: How many miles of roads were evaluated to determine maintenance, storage, or decommission needs?</p>
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In FY 2007 at least 41 system roads or segments of system roads were monitored and evaluated for management or maintenance activities during the year. Of these 41 roads, none were identified as excess or no longer needed for management activities in the future and identified for removal from the system. These 41 roads comprised 46.23 miles of Forest Service System Roads. An number of special use roads and non-system or unauthorized roads were monitored in FY 2007. An estimated 0.6 miles of temporary, unauthorized and special use roads were decommissioned in 2007. Additional miles of non-system roads were identified as needing decommissioning in the future. This process will continue to take place for both system and non-system roads when management activities take place in a given area.

<p>Objective 17.4c – Maintain all roads in a condition that protects the government’s investment. If funds do not allow for regular preventive maintenance, close roads or restrict traffic to protect resources or investment.</p> <p>Objective 17.4d – Maintain at maintenance level 3, or higher, roads intended for passenger vehicles.</p> <p>Objective 17.4e – Maintain at maintenance level 2 roads intended for high clearance vehicles.</p> <p>Objective 17.4f – Maintain at Maintenance Level 1 roads that are closed to public travel.</p>	<p>Monitoring Work Plan Question #65: How many miles of road are maintained to the level of service required, and how often is needed maintenance performed and are the roads environmentally stable?</p>
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In FY 2006 there was 377.5 miles of system roads in the INFRA data base at the end of September 2006. Due to data clean-up and adjustments we now show 363.3 miles of

roads as of the end of September 2007. These changes are due additions and deletions of roads and correction of mileage in the data base to reflect actual length of road segments on the ground. Initially some roads were entered from historic information and in some cases that must be corrected to reflect the actual length on the ground. The table below represents the roads by objective maintenance level. It also depicts the number of miles that meet the objective maintenance level. If a road was not evaluated it can not be assumed to meet or not meet objective maintenance level. Due to this data gap, and estimate of total roads not meeting objective maintenance level can not be determined at this time.

Table 2.14 Road Maintenance

	Total System Miles at Operational Maintenance Level (End of FY)	Roads Receiving Maintenance *** Approx. (Miles)	Roads at Objective Maintenance Level that were inventoried in FY 2007*** (Miles)
Maintenance Level 1 and 2	309.2	48.9	124.7
Maintenance Level 3	28.1	14.3	6
Maintenance Level 4	12.1	11.4	5
Maintenance Level 5	13.9	11.4	8.5
Total Miles	363.3	86	144.2
% of Road at Objective ML as inventoried in FY 2007			24%

*** Estimated from data review and personal observation of engineering staff.

Monitoring of environmental stability was performed on those roads where staff made site visits and problems were noted. Work was scheduled on these roads as funding allows.

Continued use of closed roads by the public continues to damage the road system beyond what funding allows for annual repair. Currently the open roads that receive the most use are receiving the majority of the funding available. System roads that are no longer needed for long term administrative use or pose a hazard to the public/environment will be evaluated for removal with the planning process on a case-by-case basis as problems are discovered.

Maintenance is performed in most cases once a year or less on level 3 and 4 and 5 roads as funds allow, and as needed by assessment on level 1 and 2 roads.

Objective 17.4g – Remove hazard trees along Forest development roads from Sept. 15 through April 15.	Monitoring Work Plan Question #66: Are known hazard trees removed during the appropriate time of year?
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In FY 2007, No (0) hazard trees with Indiana bat roost tree characteristics were removed during the period from April 15th to September 15th of 2007. All hazard trees were removed before April 15th or after September 15th by Forest Service personnel or our contractors along Forest roads.

18 - Public Health and Safety

Goal 18.1 – Law Enforcement

Highly trained, equipped, and visible law enforcement officers and Forest personnel contribute to safe and enjoyable experiences for visitors. Effective law enforcement protects public and employee safety, and public property.

<p>Objective 18.1a - Prevent violations of law through:</p> <ul style="list-style-type: none"> • Education • Information and regulatory signing • Improved facilities • Effective citing and prosecution of violations • Public notice of prosecutions and penalties • Presence of uniformed Forest Service personnel • Working with cooperating agency law enforcement officials at times and locations of heavy public use. 	<p>Monitoring Work Plan Question #67: How many prevention activities were performed?</p>
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The three primary types of preventative actions taken include, but are not limited to, the following:

- Working with various federal, state, and local agencies in a cooperative effort to maximize law enforcement presence
- Patrolling Wayne National Forest roads and trails to ensure compliance with established laws
- Using Forest Protection Officers (FPO's) to patrol high-use areas in order to educate visitors and enforce policy

These activities led to the discovery and eradication of 135 marijuana plants within the proclaimed boundary of the Wayne National Forest at a value of \$163,000

<p>Objective 18.1b - Focus law enforcement efforts on Forest priorities to reduce incidence of:</p> <ul style="list-style-type: none"> • Illegal OHV use • Arson Fires • Trespass and timber theft • Trash dumping 	<p>Monitoring Work Plan Question #68: How many incidences of illegal OHV use, arson fires, trespass and timber theft, and trash dumping were reported?</p>
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Totals are:

- Illegal OHV use: 58
- Arson Fires: 20
- Trespass and timber theft: 4
- Trash dumping: 34

<p>Objective 18.1c – Establish cooperative law enforcement agreements with State and Local agencies. Review and adjust cooperative law enforcement (CLE) agreements every five years. Annually review and adjust operating plans developed under these agreements.</p>	<p>Monitoring Work Plan Question #69: How many agencies does the Forest have agreements with?</p>
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Wayne National Forest has CLE's (Cooperative Law Enforcement Agreement) with seven counties.

- Athens
- Gallia
- Hocking
- Lawrence
- Monroe
- Perry
- Scioto

<p>Objective 18.1d – Report violations of laws and regulations.</p>	<p>Monitoring Work Plan Question #70: How many violations were reported?</p>
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There were 524 violations in FY 2007.

- Warnings: 200
- Incidents: 261
- Mandatory Appearances: 0
- Collateral Fines: 63

Goal 18.2 – Public Health and Pollution Control

Prevent contamination of National Forest soil, water, and air resources. Manage and mitigate known contaminated sites to protect public health and Forest resources.

<p>Objective 18.2a – Ensure that water supplies and wastewater facilities meet relevant state and federal laws.</p>	<p>Monitoring Work Plan Question #71: Were the appropriate water quality tests performed?</p>
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In FY 2007, the Forest operated three collateral transient water systems at four campground areas, Vesuvius Recreation Area (two campgrounds and several day use areas), Leith Run and Burr Oak Campground. These are collateral systems that are served by public water suppliers. Our system is distribution only, no treatment or mass storage takes place at our facilities. Our water suppliers are testing the water for biological contaminants as part of their mandatory testing program with the State of Ohio.

If contaminants are found above the State limits, they will inform us and the appropriate actions can be taken until such time as the contamination has been eradicated.

Waste Water (National Pollutant Discharge Elimination System (NPDES) Permits

The Forest currently has one NPDES Permit (OPN00028) with the State of Ohio. It is associated with the wastewater at the Ironton District Office. The system is a recalcitrating sand filter with Ultra-Violet (UV) polishing.

Visual and olfactory testing is performed weekly and reported monthly. Detailed chemical analysis of the effluent, as per Ohio Environmental Protection Agency (OEPA) requirements, is performed four times each year. Tests were performed on schedule and information reported to EPA as required electronically.

During sampling high levels of major constituents were found. The OEPA was contacted and sent representative. It was found that the samples were taken from a basin before being sent through the UV polisher which significantly affected the results for coliform bacteria and total suspended solids. It was noted that the basin had some particulate matter that had collected at the bottom of the basin that was disturbed with making a grab sample. Since the sample procedure was corrected the several samples have been taken and sent to OEPA for review after the visit. Continued monitoring will take place to confirm that we have corrected the issue. The Forest is planning on constructing a leach field to dispose of the effluent and discontinue the need for the NPDES permit in FY 2008.

Standards and Guidelines Compliance

Did any project require guideline modification or a Forest Plan amendment to modify a standard?

No standards or guidelines in the 2006 Forest Plan were modified in the 2007 fiscal year.

III. Acknowledgment of Contributors

The Wayne National Forest would like to thank all our partners for their contributions to this report. Special thanks to the Ohio Department of Natural Resources for several contributions and Voinovich School of Leadership and Public Affairs for their Non-Point Source monitoring website.

The employees and volunteers of the Wayne National who contribute information to our monitoring efforts are too numerous to list. The primary author of the report is WNF Resource Information Manager, Aaron Burk. The following staff directly contributed the many words, photos, tables, charts and expertise for this effort:

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