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Forest Service

Eastern  
Region



# Fiscal Year 2012 Monitoring and Evaluation Report



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# 2012 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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**Responsible Official**

Kathleen Atkinson, Regional Forester  
626 E. Wisconsin Ave. Suite 800  
Milwaukee, WI 53202  
414-297-3600

**For further information contact**

Nicole Stump, GIS Specialist and  
Acting Forest Monitoring &  
Evaluation Coordinator, Wayne  
National Forest  
13700 Highway 33  
Nelsonville, OH 45764-9880  
740-753-0101

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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 241,191 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 WNF 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 informs 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. A comprehensive summary monitoring and evaluation report is available for fiscal years 2006-2011, representing six years of implementing the 2006 Forest Plan.

### 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 National Forest System land to maintain or enhance water quality and soil productivity.

<p><b>Objective 2.1a:</b> Restore the dimension, pattern, and profile of streams where channel and floodplain morphology has been altered.</p>	<p><b>Monitoring Work Plan Question #1:</b> How many miles of stream have been treated to restore dimension, pattern and profile?</p>
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There was approximately 1 mile of stream morphology (dimension, pattern and profile) restored in Fiscal Year (FY) 2012. This was accomplished by opening 5 blocked drainages and allowing a stream to flow on the surface in the naturally occurring stream bed. Approximately 260 feet of rock-lined linear channels and 4 limestone leach beds were constructed, one limestone leach bed was reconstructed and approximately 13 acres of the Athens District were reclaimed. These restoration activities have a long-term positive effect on restoring stream morphology as subsidences are closed, blocked drainages are opened, portals are closed and water flows back on the surface, re-establishing the geomorphology that once existed before disturbance occurred. Stream morphology will recover at a more rapid rate where the water is turned back into the existing channel vs. streams that have been obliterated by mining activities. Most streams on the WNF are currently in the process of recovery, but it may take many years before the streams stabilize and begin to meander and adjust to their appropriate depth to width ratios based on their drainage area size. In some cases where a straight-line rock channel is constructed to move water off the site, the morphology may never return to pre-mining conditions.

<p><b>Objective 2.1b:</b> 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><b>Monitoring Work Plan Question #2:</b> How many acid mine discharges have been treated?</p>
	<p><b>Monitoring Work Plan Question #3:</b> How many subsidence features have been treated?</p>
	<p><b>Monitoring Work Plan Question #4:</b> What geochemistry parameters have changed by reducing and/or treating acid mine discharges?</p>
	<p><b>Monitoring Work Plan Question #4.1:</b> How many miles of stream have free-flowing water where surface flow was restricted?</p>

Two acid mine drainage sites in the Monday Creek Watershed were treated by constructing four steel slag leach beds, reconstructing an existing successive alkalinity production system (SAPS) and constructing seven check dams. The goal is to reduce acid loading to the main stem of Monday Creek by implementing a variety of restoration techniques.

In FY2012, six subsidences that were capturing runoff to perennial, intermittent, and ephemeral streams were closed.

Restoration efforts in the Monday Creek Watershed have created a net decrease in acidity. Based on long-term monitoring data from partners and the Non-Point Source database at <http://www.watersheddata.com>, pH and net acidity has improved for approximately 23-25 stream miles in the main stem of Monday Creek. Additionally, monitoring indicated an overall improvement in water quality in the main stem of the Monday Creek Watershed. In 1995 biological and physical monitoring revealed that the stream was devoid of any aquatic species. The pH ranged from 2.0 – to – 3.5 for the entire 27 miles. In 2012, the Monday Creek Restoration Project (MCRP) completed a comprehensive monitoring plan for the entire 27 miles. The results showed that 24 species of fish now exist in waters that have a pH of 6.6, and the pH has been maintained at that level for the last 3-5 years. Although there are still several reaches within the 27 mile main stem that are still acidic, the partnership has a 5-year Program of Work that will address those problem areas. Approximately 50% of the Monday Creek stream is nearing attainment of warmwater habitat (WWH) as designated by the Ohio Environmental Protection Agency (OEPA). At the inception of this long endeavor to bring life back into the main stem of Monday Creek, 10 long-term monitoring stations were permanently placed strategically along the stream. After 12 years or more of collecting this data, it was document in a report titled “*WQ Analysis Report, January – June, 2012*”. This data can be reviewed at <http://www.watersheddata.com>. A hard-copy

report is available upon request from the WNF headquarters.

Implementation of restoration projects mentioned above has resulted in approximately 2 miles of free flowing water that was once blocked in the Monday Creek Watershed.

### Conclusion

Based on monitoring conducted in FY2012, all treatment systems implemented appeared to be working as designed. During the first year most systems work as designed, however, in 2-3 years some drop-off in the data may be observed. However, this is anticipated and in most cases the systems will adjust to attain some steady-state balance and still meet the intended objectives for that particular site. Follow-up monitoring of system performance will be conducted.

## 3 - Aquatic and Riparian Resources

### Goal 3.1 – Sustain favorable riparian and aquatic habitat conditions

#### Stream Habitat

There are a variety of management activities that 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 18 for question (3.1a) #5 under the heading Waterholes and Wetlands*

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

A total of 3 miles of riparian habitat were improved in 2012. The riparian areas along 1.5 miles of Little Storms Creek (Ironton District) and 0.5 mile along Eels Run (Athens District) were protected by controlling non-native invasive plant species, such as garlic mustard, Japanese knotweed, and Japanese stiltgrass. These non-natives spread into the riparian area on Forest Service lands from private lands located upstream. Non-native invasive plants crowd out native grasses, shrubs and trees in the riparian area. A healthy riparian area is essential to ensure healthy aquatic ecosystems. These efforts were accomplished through the hard work of employees and volunteers. Additionally,

obstructions were removed from 1 mile of the Little Muskingum River (Marietta Unit) in an effort by a Department of Labor job corps to reduce flooding issues and stream bank erosion.

There were no long-term aquatic ecological monitoring sites established by the WNF in FY2012. Previously established sites have been permanently marked, so 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.

**Objective 3.1c:** Reduce sedimentation and improve passage for aquatic and semi-aquatic organisms at Forest development roads and Forest Service recreation trail crossings.

**Monitoring Work Plan Question #6.2:**  
How many crossings were improved?

In 2012, 8 stream crossings were finished and at least one Off Road Vehicle (ORV) bridge is still underway on the Ironton District. The Archer's Fork culvert replacement project (Figure 2.1) along Archer's Fork, a major tributary of the Little Muskingum River (Marietta Unit), has been completed by the Washington County Engineer's office through a partnership using Forest Service Highway Trust for Aquatic Passage (HTAP) funds and the US Fish and Wildlife Service (USFWS) Partners for Fish and Wildlife Program. Replacement of the structure improved aquatic passage to approximately 9.2 miles of perennial stream and additional miles of intermittent stream. This project on T-414 was reported in the 2011 monitoring report as under construction. Six new ORV trail bridges were completed on the Athens District, and one was replaced in Ironton. The new trail bridges address stream damage associated with ORV riders avoiding old, narrow bridges and riding through creeks instead. Additionally, these new bridges now can accommodate trail maintenance equipment that previously had to traverse creeks to reach the trails.

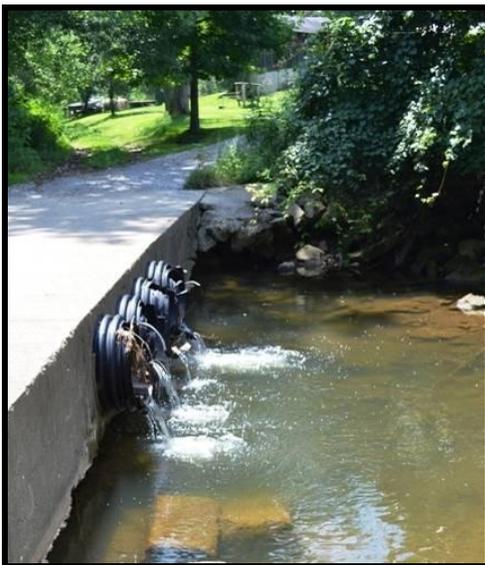


Figure 2.1 Before and after photos of Archer's Fork aquatic organism passage bridge replacement.

## 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, and 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. A third monitoring strategy is employed every few years to assess birds at random sampling points established for the Ironton District in two general areas: Historic Forest with OHV (HFO) (Pine Creek) and Forest Shrubland Mosaic (FSM) (Buckeye) management areas.

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

The annual breeding bird survey (BBS) has been conducted since 2003 on the WNF. All birds seen and heard at 241 points along 24 survey transects (mainly along roads and trails) are recorded. These routes occur in different habitat types (forest, openland, wetland, grassland). All routes are sampled twice during the period of May 20 to June 20. The number of routes reported increased because the Big Bailey route is now counted as two separate routes (Big Bailey- "Coal Run" and "Utah Ridge"), since all points cannot be efficiently surveyed together within the allotted survey period.

Total observations included 5,753 individual birds, comprising 103 species during the 2012 breeding bird survey (excluding the new Cambria Tract route, for consistency). The ten most common species recorded across the WNF were the Eastern Towhee, Red-eyed Vireo, Ovenbird, Indigo Bunting, Wood Thrush, Northern Cardinal, American Crow, Acadian Flycatcher, Hooded Warbler, and Tufted Titmouse. The top-ten species are rather consistent, usually only varying by a species or two and by the order in which they appear year-to-year.

In 2011, a new route was created on a recently acquired parcel of reclaimed surface mine called Cambria Tract (Ironton District), just north of Brady Run (10 points – combination walking and driving points). The BBS points were established to monitor Henslow's Sparrow specifically but also Yellow-breasted Chat and other grassland birds not included on our MIS list. This BBS route will be used to help us monitor and assess the need for, and results of, management actions at this site and will be conducted in the same manner as the BBS described above. However, the results will not be included in the regular BBS analysis. Inclusion of this route to the existing BBS routes after nearly 10 years of monitoring will skew trend analysis, because some species are plentiful here while others are scarce, due to available habitat.

Additionally, 67 random bird sampling points were established in FY2009 on the Ironton District in the Pine Creek project area (HFO management area; n=41) and in FY2010 in the proposed Buckeye project area (FSM management area; n=26). All points are sampled one time during the period of May 20 to June 20, in which all birds seen and heard are recorded in distinct time bands and distance bands. Data were collected in 2009, 2010 and 2012. These points require several years of data collection before any trends can be determined. However, during the 2012 survey season for both groups of random points combined, total observations included 915 individual birds, comprising 40 species.

With the exception of the pine warbler, population and habitat trends for the other MIS are projected to remain stable or increase on the WNF over the long-term (next 100 years). The pine warbler was expected to decline because an increase in oak regeneration called for in the Forest Plan would decrease pine regeneration in existing pine stands, especially white pine. Based on annual Breeding Bird Survey transect data from the WNF (Figure 2.2), the MIS species trends appear relatively stable (Louisiana Waterthrush, Pileated Woodpecker, and Pine Warbler) or slightly increasing (Worm-eating Warbler and Yellow-breasted Chat) over the last 10 years, with small fluctuations, except for Cerulean Warbler and Henslow's Sparrow (see below).

As described in the six-year summary report last year, **Cerulean Warbler** trends will mirror trends for quantity and quality of mature forest habitat as well as the availability of early successional habitat to some extent. Thus far, the WNF has not reached the full potential intended in the Forest Plan to create and maintain suitable habitat for this species (through timber harvest, prescribed fire and other methods). Thus, conditions have not changed much across the WNF, and the trend observed here is similar to the declines documented elsewhere in the state and across this species' range, as reported by the North American Breeding Bird Survey.

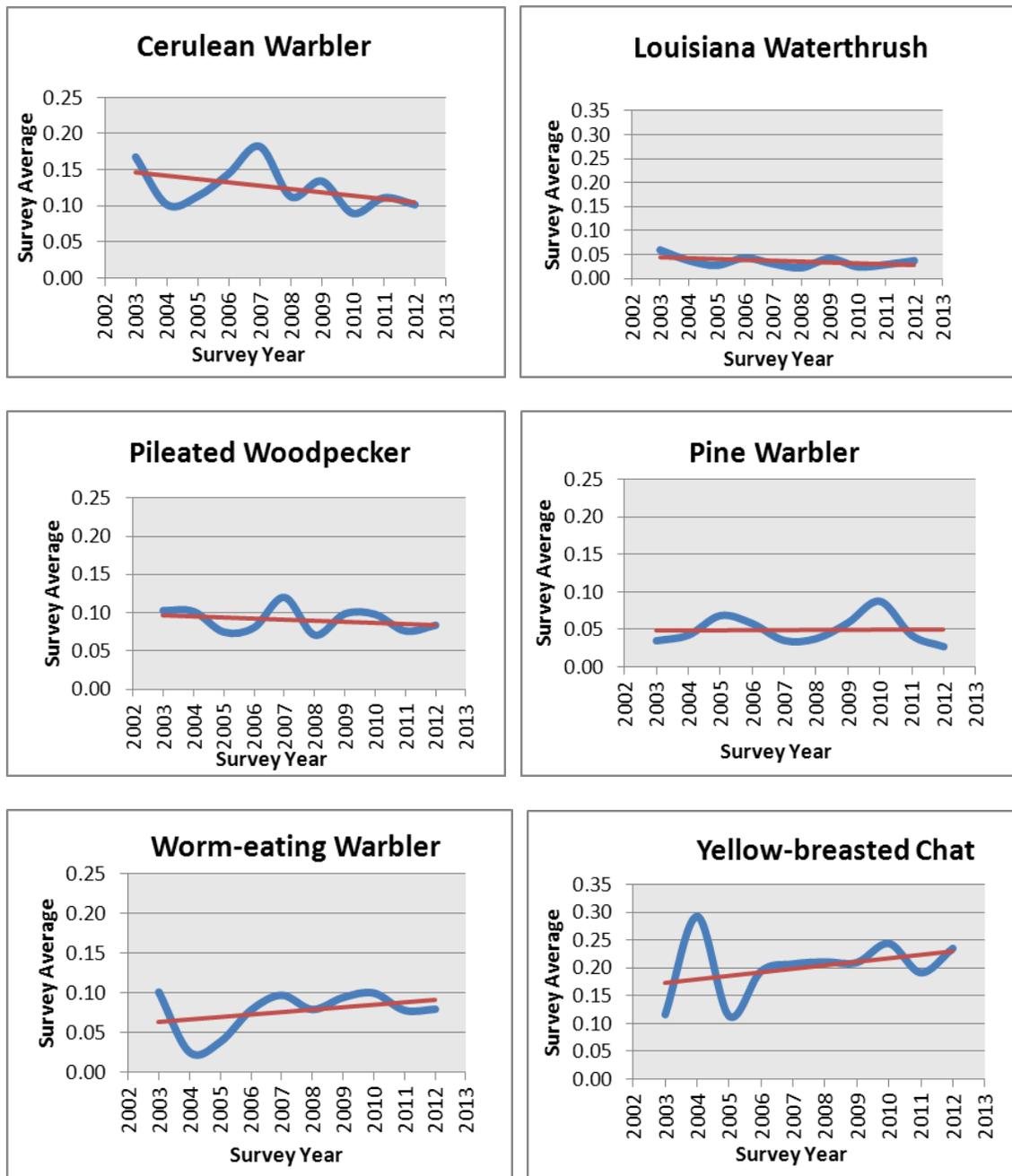
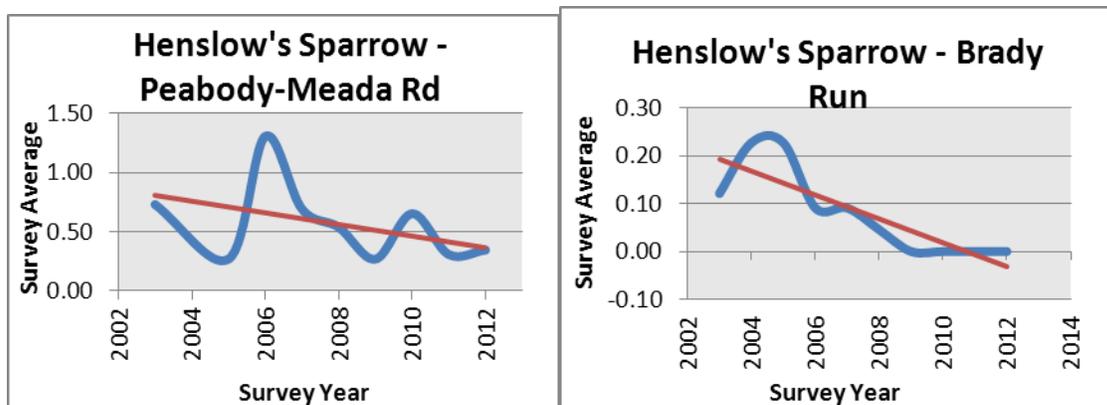


Figure 2.2 Trend charts for Management Indicator Species on the WNF based on Breeding Bird Survey transects completed 2003-2012.

**Henslow's Sparrows** are locally common in suitable habitat on the WNF, which consists of reclaimed surface mine grassland areas of sufficient size (area sensitive species), which are limited across the WNF. Two grassland transects (out of a total of 24 transects) were originally set up specifically to help monitor this species: Peabody-Meada Road (Athens District; combination walking and driving points) and Brady Run (Ironton District; all walking points). Cambria Tract (combination walking and driving points) is now also available to monitor this species. Since Henslow's Sparrows are only found

along a few transects, trend data using Forest-wide counts in mostly unsuitable habitat can be confusing or misleading. Furthermore, each of these reclaimed surface mine grassland areas are different from each other, based on age and reclamation methods. Inclusion of data from the new transect (where Henslow's Sparrows are currently fairly numerous) in a grassland-only trend chart skews the data of the original 2 transects, changing a declining trend into an apparently increasing trend. Thus, it may be wise to look at each grassland route separately to see where trends indicate a need for Henslow's Sparrow habitat improvement work.

- The Peabody-Meada Road** points are exhibiting some decline in Henslow's Sparrow (Figure 2.3), probably due to two reasons: woody encroachment in nesting areas that Henslow's Sparrows do not tolerate well (Peabody), and a prescribed burn followed by a vegetation take-over by woody lespedeza (Meada Road). Work has been underway to improve the Peabody grassland area by removing and treating autumn olive, an encroaching non-native shrub. Additionally, two small plots (7 ac.) of fescue conversion to native grassland species have also been completed. A prescribed burn was carried out along the Meada Road unit in spring 2007 (201 ac.; Unit 1-E). Historically, Henslow's Sparrows were present here but not in the numbers observed on Peabody, which is perhaps due to the grassland area along Meada Road being a bit narrower and smaller than Peabody. Henslow's Sparrows require an accumulation of multiple years of grass thatch for nesting, which the burn removed; thus, for a couple of years following a burn, breeding Henslow's would not be expected. However, the fire effectively eliminated the fescue and encroaching trees and shrubs, but it had unintended consequences, which allowed the woody lespedeza that was present but not dominant to thrive after the fire, and lespedeza does not provide the necessary thatch for nest-building. Treatments of mowing and herbiciding the lespedeza have begun this year but will likely require 2-3 years minimum to eradicate it, followed by native species plantings. In general, there appears to be a transition period from the time of treatment/disturbance to the grassland to when the sparrows will again use the habitat, so we are anticipating increased detections of this species in upcoming years along this transect.



Figures 2.3 and 2.4. Trend charts for Henslow's Sparrow, an MIS on the WNF, based on Breeding Bird Survey transects completed 2003-2012 at Peabody-Meada Road and Brady Run, respectively.

- **The Brady Run** transect peaked in 2004 with a total of five Henslow's Sparrow observations (Figure 2.4), despite the fact that 8 of 11 points are located in grassland habitat. No Henslow's Sparrows have been detected during surveys since 2008. Satellite imagery (Google Earth) from 2012, as compared to older imagery or aerial photos, shows that portions of the open habitat have been steadily declining and growing in with trees/shrubs. In fact, the reclamation used here included much tree planting in rows and strips, and these areas appear to be expanding over time (i.e., woody encroachment). Interestingly, the largest open areas (less than or equal to about 10 ac.) available at Brady Run that have a point count (#24, 27, 31, and 32) rarely got detections, even though they appear to be the most suitable sites, since Henslow's are area sensitive (requiring at least 30 ac. openings, if not larger). A closer inspection of the larger openings may reveal woody shrub encroachment that cannot be seen on the imagery. (An error was included in the *2006-2011 Fiscal Years Summary Monitoring and Evaluation Report*: the work reported for Brady Run was actually completed on the Cambria Tract, just to the north, including cutting and spraying autumn olive stumps on 62 ac.)
- **On the Cambria Tract** bird surveys were conducted twice in 2012 but only once in 2011. Henslow's Sparrows (and other grassland and shrub species, including the Yellow-breasted Chat) are relatively common throughout the area. There were a total of 28 species detected with 243 individual observations. The top five species detected (in descending order) were Field Sparrow, Prairie Warbler, Yellow-breasted Chat, Henslow's Sparrow, and Indigo Bunting. There were 20 Henslow's detected at 7 of 10 points in two visits. It will take several years of visits to accumulate sufficient data to present trend maps for this site. The Cambria Tract includes more extensive open grassland areas than do either Brady Run or Peabody. The open grassland portion of the parcel is approximately 490 acres, and another 500 acres were planted successfully in a hybrid pine by the prior owner, Mead/Westvaco paper company. All of the grassland area was ripped into deep furrows to prepare for mechanical planting of trees, but it was not completed. In 2008, the Forest Service partnered with The Ruffed Grouse Society to begin to eliminate autumn olive and worked with the Ohio Division of Wildlife to convert 25 acres of non-native fescue fields to native warm season grasses in three areas. Timing for seeding was inopportune (i.e., drought) and resulted in limited germination, and the conversion was considered unsuccessful. In Fall 2012, 22 acres were mowed or sprayed for conversion, with the intent to spray again and seed in FY2013.

### Ruffed Grouse

Habitat and population trends for ruffed grouse are projected 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.

Approximately 103.6 acres of early successional forest habitat was created on the WNF in 2012. This consisted of two projects, one being the Tornado Salvage sale which resulted in 99 acres, and the other being the Pancake road white pine unit of 4.6 acres. Data for 2012 ruffed grouse drumming routes on the WNF collected by the Ohio Division of Wildlife and WNF biologists indicate the abundance of drumming males decreased from the previous year, although it has been suggested that survey results could have been low due to the mild winter conditions and early spring (i.e., surveys conducted during the normal survey period were too late to record grouse this year).

### Oak-Hickory Forest Habitat

Oak and hickory are considered keystone species in the central hardwood region. A number of species are dependent upon mast production, highly diverse herb layer, bark characteristics, and other structural characteristics of oak and hickory species.

<p><b>Objective 4.1b:</b> Promote restoration and maintenance of the oak-hickory ecosystem by improving conditions for oak regeneration in the HF and HFO management areas.</p>	<p><b>Monitoring Work Plan Question #8:</b> How many acres were treated to encourage oak regeneration?</p>
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There were 158 acres of mixed-oak stands improved through commercial thinning/single-tree selection harvest. The treatment objectives were to improve stand conditions to minimize adverse impacts from insects and disease (especially gypsy moth), and to improve conditions for developing future oak and hickory reproduction so these species will be present when the hardwood over-story is regenerated.

Due to stand damage from a tornado the previous year, 99 acres were treated by salvage logging in which only dead or damaged trees were harvested. The resulting treatment resembled a clearcut with reserves, creating conditions favorable to oak regeneration.

Approximately 1,038 acres of mid-canopy control and crop tree release were completed as part of non-commercial timber stand improvement work to reduce competing species.

1828 acres were treated with prescribed burns.

1178 acres of non-native plant species were treated by a combination of mechanical and chemical methods to contribute to their eradication from the treated area. These treatments favor oak regeneration by removing unnatural competition for light, moisture and soil minerals.

### 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, the WNF 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><b>Objective 4.1c:</b> 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><b>Monitoring Work Plan</b>  <b>Question #9:</b> 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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There were 158 acres of hardwood thinning/selection harvest completed to improve structural diversity and help with the establishment of all-aged forest conditions. Approximately 1,038 acres of mid-canopy control and crop tree release were completed as part of non-commercial timber stand improvement work to reduce competing species and 1828 acres were treated with prescribed burns.

### 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 WNF 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><b>Objective 4.1d:</b> 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><b>Monitoring Work Plan</b>  <b>Question #10:</b> How many acres of early successional forest habitat were created?</p>
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99 acres were treated by salvage logging, in which only dead or damaged trees were harvested, due to stand damage from a tornado the previous year. The resulting treatment resembled a clearcut with reserves, resulting in early successional habitat.

### 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 WNF, only the eastern part of the Marietta Unit is on the edge of the native range of the white pine.

Pine is a minor component of the overall forest landscape on the WNF. 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.

Eastern white pine also occurs naturally on parts of the WNF, mostly on the Marietta Unit. Beginning in the 1930s, white pines were planted across the Forest to stabilize eroding soils on abandoned farmlands and strip mines. While the species is considered native to the WNF and surrounding areas, these single-species plantations are mostly composed of off-site stock and do not closely resemble how white pine would occur naturally in mostly mixed stands.

The WNF estimates that 200 acres of native pine may be regenerated during the first decade of Forest Plan implementation.

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

### Grassland Habitat

The Grassland and Forest Mosaic (GFM) management area is made up of reclaimed surface minelands and forest habitat. The larger reclaimed areas that were planted in a grassy cover attract species like the Henslow's sparrow, grasshopper sparrow, blue grosbeak, and bobwhite quail. Some of the grasslands have been planted with trees, but because of poor soils, the trees are stunted and shrubby.

<b>Objective 4.1f:</b> Annually, improve or maintain 5-10 percent of the existing grassland and grassland/shrub habitat acreage in the GFM management area.	<b>Monitoring Work Plan Question #12:</b> How many acres of grassland habitat were improved or maintained?
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In 2012, 60 acres of grassland habitat were improved. Work has been underway to improve the Peabody grassland area of the Athens District for Henslow's Sparrow, a Regional Forester Sensitive Species (RFSS), by first mechanically removing autumn olive, an encroaching non-native shrub, and then following up with a herbicide treatment to prevent resprouting. Two small plots (7 ac) of fescue conversion to warm season grasses have also been completed. Various methods are being tested, including one or more of the following treatments: mowing, rock-raking, disking, and herbicide application. After treatments, seeds of native grassland plants were spread by hand. Initial monitoring in late fall 2012 (visual assessment only) showed some success with various sprouts of planted species, as well as remnant grasses and forbs likely still present in the seed bank or were unaffected by the herbicide (e.g., brome grass) and pioneer species that arrived on their own (e.g., ragweed, several goldenrod species). Future monitoring will determine success at eliminating fescue and lespedeza and the permanence of the introduced desirable species. On the Meada Rd grassland, 31 acres of

lespedeza were mowed and treated twice with herbicides. Follow-up herbiciding and planting will be required for successful non-native invasive species (NNIS) eradication. Additionally at Cambria Tract on the Ironton District, 22 acres were mowed or sprayed for fescue conversion, with the intent to spray again and seed in FY2013.

### Herbaceous or 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. Forest Plan direction is to create approximately 500 acres of herbaceous-shrub habitat during the first decade of the planning cycle. An Openlands Assessment was completed in 2010. Through this assessment process, all existing openings were mapped across the WNF and categorized by type. The four categories are early successional, reclaimed grasslands, artificial, and oak barrens. From the assessment, existing openland habitat on the WNF totals approximately 6,650 acres, including grasslands (discussed above), which is approximately 31% of this total. On September 30, 2011 a decision memo was signed approving the Forest-wide maintenance of 2,466 acres of existing wildlife openings through mechanical methods (addresses early successional category).

<p><b>Objective 4.1g:</b> 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><b>Monitoring Work Plan Question #13:</b> How many acres of herbaceous or herbaceous-shrub habitat were created?</p>
	<p><b>Monitoring Work Plan Question #14:</b> How many acres of herbaceous or herbaceous-shrub habitat were maintained?</p>

In 2012, no new acres of herbaceous or herbaceous-shrub habitat were created.

There were 349 acres of openings maintained by mechanical means to reduce woody encroachment and to retain the herbaceous-shrubby composition (Figures 2.5-2.7). This work was completed with the assistance of the National Wild Turkey Federation (NWTF). In 2011, funds were obtained through the state superfund and matching funds through the National Forest Foundation for maintenance activities in 2012. A total of \$60,000 in partnership funds were utilized for openland maintenance. The NWTF contracted out the work to be accomplished on the WNF. Also, US Forest Service National Fish and Wildlife Foundation (NFWF) funds were increased from the Regional Office to the WNF in FY2012; some of these funds were utilized to address openland maintenance issues. Hazardous Fuels Reduction (WFHF) funds were also utilized to jointly accomplish goals. Funds obtained in 2012 have been obligated within contacts and agreements to accomplish approximately 909 acres in FY2013. The Openlands Assessment specified an annual needed for maintenance of 650-870 acres to keep up with current openland needs. Table 2.1 displays the amount of maintenance accomplished by year.

**Table 2.1 Openland Maintenance**

Year	Acres Treated *
2006	343
2007	213
2008	187
2009	210
2010	151
2011	388
2012	349
2013	Estimated 909



**Figure 2.5** An armored John Deere Tractor and Brush Hog used for heavy-duty maintenance needs.



**Figure 2.6** A JCB Masticator used to reduce woody encroachment in openings.



**Figure 2.7** An area treated near the Hocking River depicts maintenance of opening habitat while retaining a hardwood thicket.

### **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?

### Wetlands

A total of 9 acres of wetland were enhanced on the Athens District. Efforts at Greendale Wetland (8 ac.) included non-native invasive species removal, tree and shrub planting (including a swamp white oak), native seeding (swamp milkweed), and prothonotary warbler and wood duck nest box installation. Non-natives were also removed on 1 acre at Rutherford Wetland.

### Ponds or Lakes



**Figure 2.8** Christmas trees are bundled, tied to cinder blocks, and dropped to the bottom of a pond or lake to create fish habitat.

A total of 6.7 acres of pond or lake habitat was improved in 2012. Christmas trees attached to cinderblocks were dropped in 2 lakes to improve fish habitat. Upstream Rock Run (1.7 ac) is a new 3 acre lake in a watershed restoration project area on the Athens District (Figure 2.8). Timbre Ridge Lake (4 ac) is a large recreational lake on the Ironton District. The dam at Frogwood Pond (Athens District) was being rutted and eroded by unwanted vehicle access. A new dam barrier was erected and trash cleaned up for a one acre pond improvement. Additionally, Ohio Division of Wildlife stocked several

ponds across the WNF with fish, Upstream Rock Run (358 largemouth bass) on Athens District and ponds at Hanging Rock (531 channel catfish), Lake Vesuvius (2650 rainbow trout, 2653 channel catfish), and Timbre Ridge Lake (1008 rainbow trout, 2469 channel catfish) on Ironton District.

### Waterholes or Ephemeral Wetlands

The Hibernaculum Area Foraging Enhancement project constructed 5 small waterholes (0.5 acre) for bats and amphibians along an old Forest Service road near the Indiana bat hibernaculum on the Ironton District.

### Artificial Nesting Structures

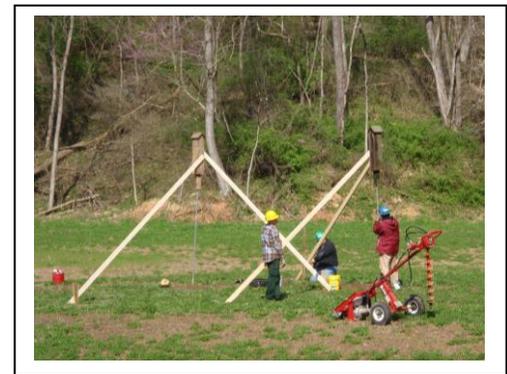
There are several cavity-dependent species that reside on the WNF during some part of the year. Some species, like woodpeckers, excavate cavities for nesting purposes. Other species, like the prothonotary warbler or wood duck, rely on naturally occurring cavities or those that have been excavated previously. There are no quantified objectives in the Forest Plan for the number of structures to install on the WNF during this planning period. However, work often occurs 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, kids are provided the opportunity to be outdoors and learn about 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?

In 2012, a total of 17 nesting or roosting structures for wildlife were installed across the WNF. Five rocket-style bat boxes (Figure 2.9 and 1 blue bird box were installed at the Upstream Rock Run watershed reclamation project site on the Athens District. Three Wood Duck and 4 Prothonotary Warbler/ Bluebird boxes were installed at Greendale Wetland as part of a larger wetland restoration effort that included non-native invasive species removal, shrub plantings, and native seeding. Two large maternity-style bat boxes were installed under a bridge along the new Nelsonville Bypass highway through the Dorr Run area of the Athens District (Figure 2.10). These were funded by the Regional Office with earmarked funds for improvement of bat habitat due to white-nose syndrome. Four large-sized boxes were constructed with these funds; two are yet to be installed along the bypass highway at the wildlife box culvert bridge. Jim Batey from Hocking College was contracted to construct the four bat boxes. Two back-to-back classic maternity-style bat houses were installed in May below the Lake Vesuvius dam on the Ironton District as an Eagle Scout project (Figure 2.11). The Lake Vesuvius area has a history of providing successful artificial bat roosting structures, providing habitat for species such as the northern bat (*Myotis septentrionalis*).



**Figure 2.9.** Rocket-style bat boxes, like these installed in the Upstream Rock Run project area, are designed to simulate habitat used by bark-roosting bats.



**Figure 2.11** These 2 back-to-back bat boxes below the dam at Lake Vesuvius (Ironton Ranger District), resulting from an Eagle Scout project, were occupied by at least 30 bats within 3 months of installation.



**Figure 2.10** Two maternity-style bat boxes, large enough to require placement with a crane, were installed side-by-side under a highway bridge as part of wildlife mitigation measures. The inset shows the boxes from the ground looking up under the overpass bridge.

## 5 – Endangered, Threatened and Sensitive Species

### Goal 5.1 – Recover Federally Listed Threatened and Endangered species

#### Indiana Bat (Endangered)

Indiana bats were listed as a federally endangered species in 1967. This species is present on the WNF year round. Inventory and monitoring efforts have been conducted on the WNF since 1997, when Indiana bats were first documented here. A variety of monitoring efforts for Indiana bats are undertaken annually or as needed. Certain prescriptions for Management Areas in the Forest Plan were developed, in part, to provide habitat conditions beneficial for Indiana bats, especially these areas: Diverse Continuous Forest (DCF), DCF with OHV use (DCFO), Historic Forest (HF), and HF with OHV use (see Forest Plan, Appendix D). In accordance with the Conservation Plan for federally listed species (Forest Plan, Appendix D), the WNF is responsible for a number of activities to conserve and protect Indiana bats and their habitat. These activities include: provide administrative, technical, and project-specific information to USFWS, conduct inventory, analysis, and monitoring in cooperation with partners, provide education and awareness training about biology and habitat requirements to key employees, require adherence to specific standards and guidelines for all projects, and as a measure of the progression of activities covered under the Forest Plan, monitor the cumulative acreage of specific management activities implemented under the Forest Plan along with Indiana bat populations and habitat use on the WNF. The following is a description of those activities:



**Small Indiana bat (*Myotis sodalis*) cluster during hibernation in the Lawrence County abandoned limestone mine.**

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

<p><b>Objective 5.1.1a:</b> If additional Indiana bat hibernacula are discovered on NFS land, install bat-friendly gates to prevent unauthorized entry.</p>	<p><b>Monitoring Work Plan Question #17:</b> How many acres of potentially suitable Indiana bat habitat were protected or improved?</p>
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In 2012, a total of 3,030.6 acres of potentially suitable Indiana bat habitat was improved through the use of various timber harvest and timber stand improvement techniques, prescribed fire, and wildlife projects.

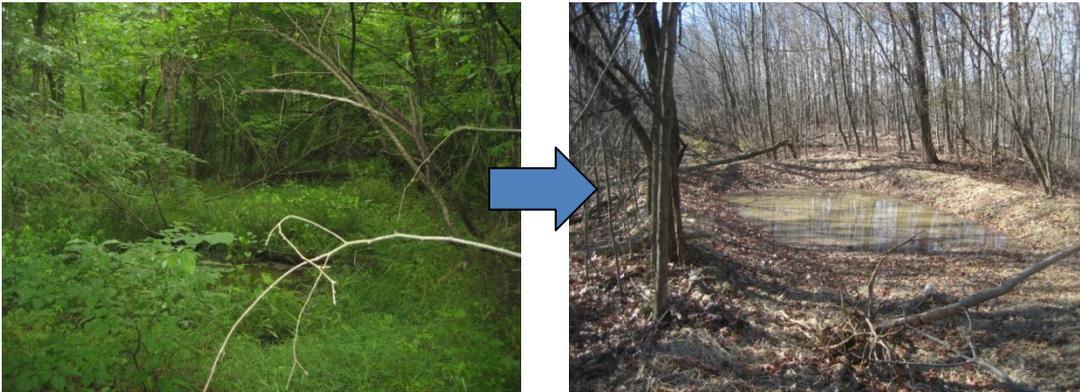
1,828 acres were treated with prescribed fire to improve oak-hickory forest habitat, which, in turn, improves Indiana bat habitat. On the Ironton District, a combined 1,724 acres were burned in the Pine Creek area (HF Management Area) and the smaller Darby Creek burn unit (DCFO Management Area). On the Athens District, 104 acres in the Gore-Greendale project area (DCFO Management Area) were burned.

Additionally in 2012, there were 158 acres of mixed-oak stands improved through commercial thinning/single-tree selection harvest. The treatment objectives were to improve stand conditions to minimize adverse impacts from insects and disease, and to improve conditions for developing future oak and hickory reproduction so these species will be present when the hardwood over-story is regenerated. Providing future oak-hickory forest ensures long-term habitat suitability for Indiana bats. Thinning also improves short-term habitat conditions by opening up the forest stand, allowing more light penetration, reducing structural clutter, and increasing individual tree growth.

Timber stand improvement, including mid-canopy removal (or control) and crop tree release, on 1,038 acres has a primary objective to aid in oak and hickory forest restoration. Mid-canopy removal mainly involves removal of non-commercial-sized (3-8" dbh) oak competitors, such as maple to improve oak and hickory mid- and overstory growth. Crop tree release improves stands by entering 20-30 year old stands and releasing oak and hickory saplings by killing competing vegetation. These are both long-term improvements to Indiana bat habitat by providing for future preferred oak and hickory habitat.

A small stand of white pine (4.6 acres) was clearcut along an Athens unit road (Pancake Road, York Township) to allow more light to reach the road surface during freezing weather for public safety. It will be allowed to regenerate to native hardwoods and, over the long term, will provide suitable Indiana bat habitat.

Lastly, the Hibernaculum Area Foraging Enhancement project enhanced 2.0 acres near the known Indiana bat hibernaculum on the Ironton District. This project was specially funded through a competitive Regional Office grant earmarked for White-nose Syndrome and bat habitat improvement projects. The WNF created 5 small waterholes (~0.1 ac each) and re-established 1 mile (1.5 ac) of flyway corridor for bats along an old, overgrown road (Figure 2.12-2.14). These actions provide enhanced drinking, foraging, and commuting opportunities to bats in the vicinity of the hibernaculum, while also reducing illegal off-road vehicle traffic along the old road.



**Figure 2.12** Before and after photos from the Hibernaculum Area Foraging Enhancement project area. The first photo shows a small, existing, ephemeral pool that was essentially inaccessible to bats due to the small size and overgrown surrounding vegetation. The improvements made the waterhole larger and deeper, and connected it to the flyway corridor, giving bats better access.



**Figure 2.13** Before and after photos from the Hibernaculum Area Foraging Enhancement project area. The first photo shows an overgrown, wet area that did not reliably hold water. The improvements made the waterhole larger, more permanent and connected it to the flyway corridor, giving bats suitable access to a new drinking and foraging resource.



**Figure 2.14** Representative before and after photos from the Hibernaculum Area Foraging Enhancement project area. The first photo depicts an old, structurally cluttered roadbed through which bats would have had difficulty navigating. The second photo depicts improved connectivity along the road corridor, providing bats better access to drinking and foraging resources and a canopy-covered commuting route.

<b>Objective 5.1.1a:</b> If additional Indiana bat hibernacula are discovered on NFS land, install bat-friendly gates to prevent unauthorized entry.	<b>Monitoring Work Plan Question #18:</b> How many bat-friendly gates were installed on known Indiana bat hibernacula?
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The Forest Plan states 20-30 bat-friendly gates will be installed on open underground mine portals during the first decade of implementation. There have not been any new Indiana bat hibernacula identified; therefore no bat-friendly gates were installed on known Indiana bat hibernacula or any other mine openings in FY 2012. The only known Indiana bat hibernaculum was gated (2 side-by-side openings) in 2001. Various other non-Indiana bat mines have been closed with bat-friendly gates on both Districts since 2001.

### Fall Swarming Surveys/Monitoring

Due to White-Nose Syndrome (WNS) concerns of handling bats that may have been migrating and swarming at various mines and caves, surveys were restricted to detector and observation-only surveys this year. This level of effort is sufficient to document the degree of bat use of mine openings, but it cannot determine individual species use. Bat species documented using abandoned mine openings for fall swarming on the WNF include (in order of past prevalence) little brown bats, tri-colored bats, northern bats, Indiana bats, evening bats, and red bats.

Wayne National Forest biologists conduct fall swarming surveys for pre-project monitoring of mine openings and to continue long-term monitoring of bat activity at mine openings affected by watershed restoration projects. Twelve mine openings on the Athens District were actively monitored (presence/absence surveys using ultrasonic detectors) in September 2012; 6 were pre-project monitoring and 6 were post-project evaluations. Five mine openings in the Bessie Sale Area of the Gore-Greendale project were considered for closure or gating in a separate mine safety closure project that overlaps with timber harvest units. One opening in particular (WAPR1068) has been monitored occasionally since 2005 in conjunction with the proposed vegetation management project. No Indiana bats have been recorded here, but it has the 2<sup>nd</sup> highest fall swarming bat activity level of all coal mines inspected on the Athens District. The unit adjacent to the opening was not harvested due to logistical problems associated with existing mine features (e.g., strip ponds), but now that nearby harvesting has been completed, it will be interesting to continue monitoring this location to determine if any changes in bat activities occur. This location has been proposed for bat-friendly gate installation. Another opening located in the Sand Run area (WAPR0257) that has only been evaluated for 2 years shows the highest swarming activity levels of all monitored openings, but bats were not captured to determine species use. This site has not yet been evaluated for a project but would be an excellent candidate for a bat-friendly gate.

## Hibernaculum Monitoring

### Census/ WNS Surveillance

A biennial census for Indiana bats was conducted on 19 January 2012 at an abandoned limestone mine (“Woody”) located in the Ironton District of the WNF, Lawrence County, Ohio. Of 2,351 total bats counted, 277 were Indiana bats, which is similar to previous mid-winter counts (Table 2.2).

**Table 2.2 Midwinter Bat Census Results**

Midwinter (15 Jan to 15 Feb) bat census results (individuals counted) since 2003 for Lawrence County mine ("Woody"), an abandoned limestone mine on the Ironton District of the WNF.							
Count By Year	<i>Myotis lucifugus</i> Little brown	<i>Myotis sodalis</i> Indiana	<i>Perimyotis subflavus</i> Tri-colored	<i>Eptesicus fuscus</i> Big brown	<i>Myotis septentrionalis</i> Northern	Flying/Unidentified	TOTAL BATS
2003	299	208	38	5	0	13	<b>563</b>
2005	704	333	40	6	3	3	<b>1089</b>
2007 <sup>1</sup>	1344	224	99	6	11	0	<b>1684</b>
2009 <sup>2</sup>	593	254	129	3	2	0	<b>981</b>
2011	916	276	134	3	1	4	<b>1334</b>
2012	1753	277	214	11	24	72 <sup>3</sup>	<b>2351</b>
<sup>1</sup> Census areas were expanded from previous years; more bats in more areas were counted, especially Little Brown Bats. <sup>2</sup> First year individual bats were tallied in Areas 5A / 5B, which boosted Tri-colored Bat counts. <sup>3</sup> Unidentified in 2012 were mainly Little Brown Bats and Tri-colored Bats observed from a distance, such that species confirmation could not be made for certain.							

Effects of WNS included a general shift in roosting location for many species as well as an overall boosted bat count, potentially resulting from the propensity of affected bats to move towards the entrance, where they consequently can be better seen. One banded Indiana bat from a Pickaway, OH maternity colony and 4 banded little brown bats originally banded at this location were recovered. A follow-up survey was conducted on 3/16/12 to compare the numbers and species of bats present during the mid-winter count period and late winter to help determine potential rates of mortality or other effects resulting from the invasion of *Geomyces destructans*, the fungus responsible for WNS. Typically at this time of year, bats are still in full hibernation in Ohio, but only 499 total bats were counted. Many of these exhibited signs of fungus, poor body condition, and/or stressed hanging positions (Figure 2.15). Only 10 bat carcasses were found, including one Indiana bat. However, despite no other obvious mortality, approximately 79% of bats counted in January, including all but 4 Indiana bats, were no longer present (Table 2.3). Although the mild winter weather and substantial rain experienced in winter 2011-2012 is a somewhat confounding factor, it is believed that these bats likely emerged early

from hibernation due to effects from WNS. This is based on several factors, including the poor condition of most bats, a comparison with previous years (pre-WNS and early-WNS) that show bats at this site would normally still be in full hibernation in mid- to late-March, as well as a report that all bats, including Indiana bats were still hibernating, despite the mild weather, in the Natural Bridge State Park area of Kentucky (Powell County) the day previous to this visit. This area is still considered WNS-free and is about 70 miles south of the Lawrence County mine. It is unknown if the bats may have survived an early departure from hibernation this year, due to the mild weather and likely availability of insect prey. Thus, the percent change in the table below should be interpreted carefully at this time. It may or may not represent mortality, due to the confounding factors mentioned above. It does show that a majority of bats exited the hibernaculum prematurely, compared to previous years.

**Table 2.3 Comparison of mid-winter & mid-March bat census results for confirmed White Notes Syndrome positive bat hibernaculum**

Comparison of mid-winter (1/19/2012) and mid-March (3/16/2012) bat census results for a confirmed White-Nose Syndrome positive bat hibernaculum (limestone mine) on the Ironton District of the WNF, in Lawrence County, Ohio. The percent change is presented purely for informational purposes and does not necessarily represent bat mortality.			
	JAN 2012	MAR 2012	% Change
Little Brown Bat	1753	377	-78.5
Indiana Bat	277	4	-99.9
Tri-colored Bat	214	106	-50.5
Big Brown Bat	11	0	-100
Northern Bat	24	11	-54.2
Unidentified/Flying	72*	0	
Totals	2351	499	-78.8
*Unidentified were mainly Little Brown Bats and Tri-colored Bats observed from a distance, such that species confirmation could not be made for certain.			



**Figure 2.15 Small cluster of Little Brown Bats exhibiting obvious signs of *Geomyces destructans*, the fungus responsible for White-nose Syndrome, during a March 2012 visit to the hibernaculum.**

### Datalogger Monitoring

Dataloggers to monitor temperature year round were installed in the Indiana bat hibernaculum (Woody Mine) in 2004 and 2006. The purpose for such monitoring is to determine correlations between temperature and bat use of certain areas, including temperature ranges available and rates of fluctuation. Sudden changes in temperatures could also indicate alterations in the mine environment, such as a collapse that changes internal air flow patterns, which, in turn, could change where bats choose to hibernate.

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. This is important to bats during winter to provide semi-stable cold temperatures to facilitate hibernation. Under normal circumstances, most species do not hibernate near the entrance, due to greater temperature fluctuations associated with the

proximity to the outside. WNS has, however, substantially changed the roosting behavior of resident bats, and these loggers will perhaps facilitate understanding the dynamics of the change.

We monitor 5 locations at the hibernaculum site: 1 site is outside on a tree beyond the influence of airflow from the mine opening, and 4 sites are inside the mine, including near the entrance (experiences larger temperature fluctuations), in the Indiana Bat Room (typically the coldest and most stable temperatures), in the main mine passage (“Right Passage”) away from the influence of the entrance, and inside of a dead-end room called the Brick Room. In some years, we have experienced logger failure; thus, 2 types of loggers (Hobo and Logtag) are now used to help ensure successful data collection in each area, but total logger failure still occurs occasionally. Biologists entered the mine in August 2012 with an Ohio mine inspector to retrieve the data collected on dataloggers throughout the past year (see Table 2.4).

**Table 2.4 Annual and mid-winter temperatures for 2011-2012**

<b>Table 2.4</b> Annual and mid-winter temperatures for 2011-2012 recorded on dataloggers at various locations at the Lawrence County Mine, a hibernaculum for five species of bats, on the Ironton District of the WNF.						
		<b>Entrance</b>	<b>Indiana Bat Room</b>	<b>Right Passage</b>	<b>Brick Room</b>	<b>Outside</b>
ANNUAL	Max T (°F)	63.0	55.8	52.6	51.3	94.7
	Min T (°F)	24.8	36.3	38.5	46.9	15.0
	Mean T (°F)	47.0	47.6	48.5	49.8	55.6
MID-WINTER (1 Dec - 31 Mar)	Max T (°F)	55.2	48.0	50.1	50.2	88.7
	Min T (°F)	24.8	36.3	38.5	46.9	15.0
	Mean T (°F)	40.7	43.1	44.8	48.7	42.6

### Acoustic Monitoring

One acoustic driving route was set up in 2009 on each unit of the WNF to inventory all bat species and their relative abundance along pre-determined transect routes during the summer maternity season. A second route was added to each unit in 2010 for a total of six 30-mile transects Forest-wide. These survey efforts are intended to establish a baseline dataset for assessment of two recent sources of mortality to bats: (1) White-Nose Syndrome and (2) wind energy development. The current collection of data will be compared to data collected in the future to help determine if population declines are occurring. Since WNS arrived to the WNF in 2011, declines in susceptible bat populations are anticipated. Similarly, tree bat (primarily red, hoary and silver-haired bats) populations are experiencing relatively intense mortality at some wind-power sites. Currently, the population size of these species and the ability of these populations to sustain an increased rate of mortality is unknown. A multi-regional effort to collect this data will help answer related questions. At this time, data analysis is preliminary. The Echoclass ID program is currently unable to distinguish the bat calls to the species level.

The next version of the program should address known issues, and we are awaiting the final analysis. Six routes were run a total of 20 times during the summer maternity season and 18 times during the later summer/fall migration season for a total of 38 runs in 2012. Hundreds of bat calls from as many as 9 species were recorded each night. Bats on the WNF include: Indiana bat, little brown bat, northern long-eared bat, tri-colored bat, big brown bat, red bat, hoary bat, silver-haired bat, and evening bat.

### Education and Awareness Training

Indiana bat training sessions to teach key WNF employees about Indiana bat biology and habitat requirements have been presented periodically in accordance with our Conservation Plan (Forest Plan, Appendix D). These training sessions are designed to teach field-going employees, such as fire fighters, timber markers, special use, engineering, and recreation technicians, etc., about Indiana bats, so that they can help biologists manage and conserve bats and their habitats in the course of their regular work. One training session was held in 2012 for Ironton District staff.

### Hickory Tree Tally

Hickory trees are preferred Indiana bat roost trees. Therefore, removal is closely monitored and only approved when necessary to protect human safety or to avoid adverse impacts to steep slopes, erodible soils, floodplains or wetlands. A total of 3 hickory trees were removed in FY2012, two in the Gore-Greendale and one in the Buckhorn timber project areas. Two were to avoid steep slopes for skid trail construction (one in Kacklemacher sale area) and the other was to avoid erodible soils to connect up to an existing old road and avoid a drainage crossing in the School House sale area.

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

<b>Objective 5.2.1a:</b> Conduct a minimum of three annual winter searches to locate any previously unknown communal night roosts of bald eagle concentrations.	<b>Monitoring Work Plan Question #19:</b> How many mid-winter bald eagle searches were conducted?
	<b>Monitoring Work Plan Question #20:</b> How many bald eagles were observed?

Wayne National Forest biologists conducted 5 bald eagle searches during the winter months at Burr Oak Reservoir (4 searches at multiple established points; Athens District) and one at Timbre Ridge Lake (Ironton District). No bald eagles were observed during any of the searches. Two immature Eagles were observed on the Athens District and one adult (13 Feb) at Superior Wetland on the Ironton District. Additionally, a pair established a nest in 2011 inside the city limits of Logan within 8 miles of the WNF. In 2012, 3 young were observed at this nest.

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

#### American Burying Beetle (Endangered)

The American Burying Beetle (ABB) was listed as a federally endangered species on

July 13, 1989. The ABB was once a component of Ohio's ecosystem. Carrion-feeding beetles, such as the ABB, are an important group of scavengers that help to recycle decaying materials back into the ecosystem. No wild populations of the ABB are currently known to exist in the state. The last known capture of ABB in the wild in Ohio was in 1974 in the neighboring Hocking Hills area of southeast Ohio.

One of the goals in the Ohio Department of Natural Resources, Division of Wildlife (ODNR-DOW) ABB Conservation Plan is to establish a self-sustaining viable population of the ABB within Ohio. The WNF was identified as a potential release site for assisting the ODNR in attaining their population goals. Surveys of soil types and vegetation indicated that the WNF contained land with the right combination of conditions for a high probability of a successful reintroduction.

Thus, the WNF agreed to work cooperatively on this effort through direction in the 2006 Forest Plan by participating in a 5-year reintroduction project starting in 2008. The WNF, in conjunction with the ODNR-DOW, The Ohio State University, and the US Fish and Wildlife Service, has begun to re-introduce this endangered beetle in two locations on NFS lands in Perry and Athens Counties, Ohio and one on private land in Athens County. Additional partners include the Cincinnati Zoo, The Wilds, and a number of individual volunteers.

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

The year 2012 was the last of the five-year project. This effort is contributing to the recovery of the species in Ohio. The Wilds reared and supplied 100 pairs of ABBs were placed at one site on the Athens District. Two weeks after the reintroduction efforts, the Cincinnati Zoo representative came back to help monitor the adults for larvae production and was able to collect 20 larvae to return to the rearing facility at the zoo. A WNF biologist was also able to lend her expertise to The Wilds and assist with their 2012 reintroduction program.

### Running Buffalo Clover (Endangered)

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

<p><b>Objective 5.1.4b:</b> Conduct annual monitoring of known running buffalo clover populations and adjacent areas to identify potential risks or management needs.</p>	<p><b>Monitoring Work Plan Question #22:</b> Were there any changes to known running buffalo clover populations and were any potential risks identified and mitigated?</p>
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WNF and USFWS personnel monitored the running buffalo clover (RBC) population on May 16, 2012. We counted 208 rooted crowns, 30 of which were in flower. The

population of rooted crowns was similar to the 2011 count. The number of flowering stems recorded increased by 10 from 2011. Many of the flowers were desiccated and only a few were still in full bloom. Like the rest of the southern Ohio flora, RBC seemed to be a couple of weeks ahead in development due to the abnormally warm winter and spring. Compared to previous years (Table 1), the population has remained fairly stable. More flowers were observed this year, but this is most likely due to the earlier observation date.

**Notes on items discussed in the field:**

- The area is becoming a little too shady. Girdling one of the smaller, nearby trees may help improve habitat. The tree was girdled in August 2011.
- Japanese stiltgrass treatment on the patch was conducted this summer. Half of the Japanese stiltgrass patch was hand pulled and the other half was mowed at the height of the RBC in August 2011.
- We continue to control garlic mustard and Japanese stiltgrass along illegal All-Terrain Vehicle (ATV) trails and in areas around the RBC patch.

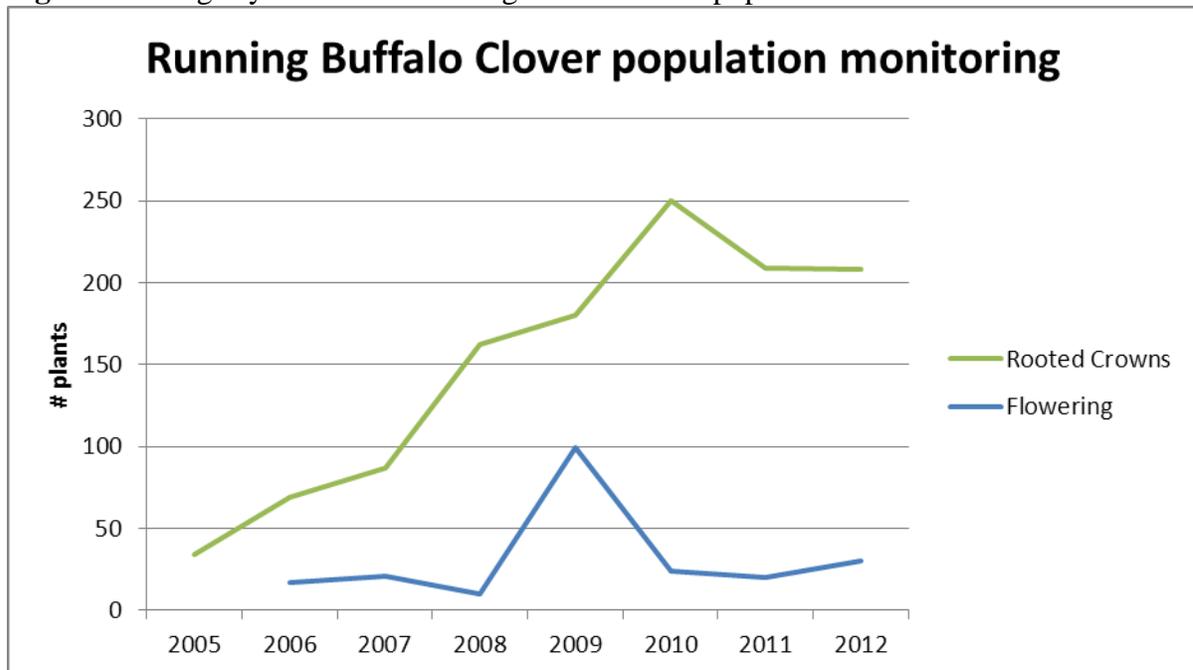
Over the past eight years, the Wayne National Forest and U.S. Fish and Wildlife Service personnel have monitored the running buffalo clover population (Table 2.5). The population was first discovered in 2005 along an illegal ATV trail when personnel were assessing the impacts of the Binion wildfire that had burned the area.

Management actions to help the clover have been developed with the assistance of the U.S. Fish and Wildlife Service. Management actions included:

- Mowing or hand-pulling of Japanese stiltgrass: 2007-2011
- Surveys for additional populations of clover nearby know patch: 2007-2011
- Felling of trees across illegal ATV trail to protect population: 2007
- Clearing of thick brush understory: 2008
- Planting of tree seedlings to replace dying overstory trees: 2008
- Control garlic mustard, Japanese stiltgrass and tree-of-heaven along ATV trail that leads to clover patch: 2009-2012
- Clearing of vegetation around planted seedlings: 2010
- Additional 3 walnut trees planted: 2010
- Girdling of small nearby trees that were providing too much shade: 2011-2012
- Shrub removal to increase light penetration to forest floor: 2012
- Compare methods of Japanese stiltgrass removal on RBC numbers: 2012

**Table 2.5 Running Buffalo Clover Monitoring Results from 2005-2012**

Year	2005	2006	2007	2008	2009	2010	2011	2012
Rooted Crowns	34	69	87	162	180	250	209	208
Flowering	N/A	17	21	10	99	24	20	30
Date Monitored	N/A	5/24/2006	5/23/2007	5/15/2008	5/18/2009	5/19/2010	6/17/2011	5/16/2012

**Figure 2.16** Eight-year trend of running buffalo clover population on the WNF.

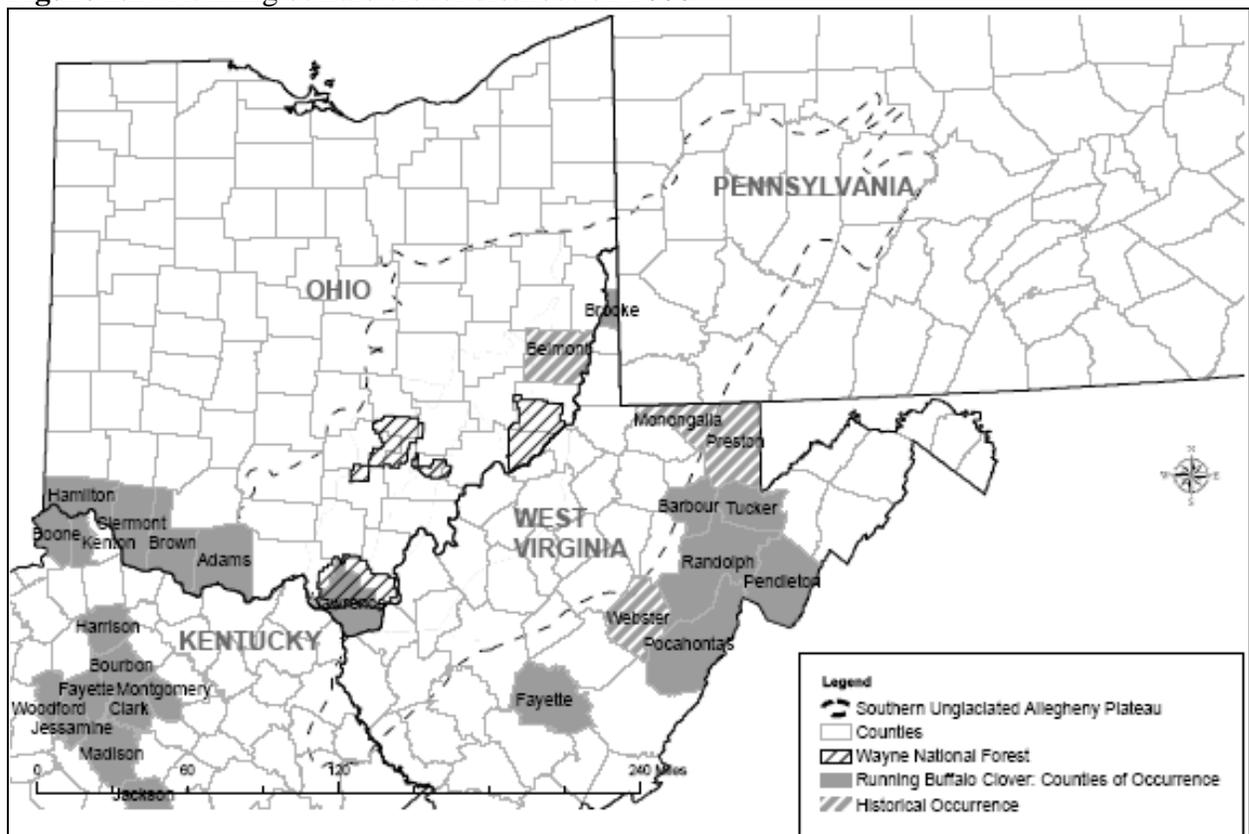
Overall, the one known population of running buffalo clover on the Wayne National Forest has increased since its discovery in 2005 (Figure 2.16). The disturbance from the Binion wildfire may have provided the initial disturbance that this species likes. Careful maintenance of Japanese stiltgrass within the clover population has decreased competition and likely helped with the clover's increase in numbers. Careful monitoring and maintenance of shade levels provided by nearby trees (removal of those over-shading and planting of seedlings to replace dying overstory) have also probably helped the population. The spike of flowering individuals in 2009 is not explained, but could be correlated to any of several environmental factors: light levels reaching the forest floor, temperature and moisture levels, disturbance activities, or perhaps a stress that the population responded to by high reproductive efforts.

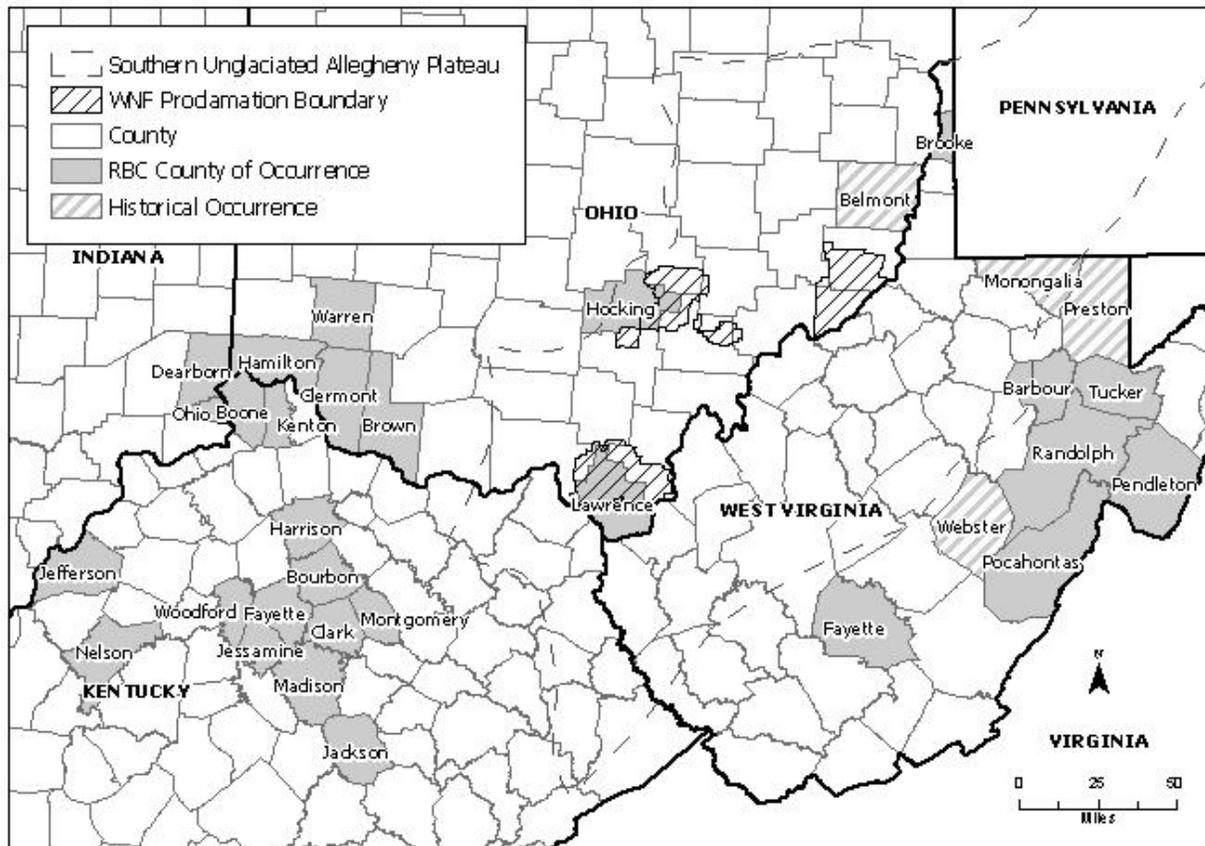
In 2012, the WNF began comparing the efficacy of weed-eating and hand pulling control methods of Japanese stiltgrass around the RBC. The western portion of the trail was controlled with a weed-eater and the eastern portion was hand-pulled. Sampling results from this year revealed that the hand-pulled section had a higher concentration of RBC

(153 rooting nodes), however, there was less shade and more dappled sunlight in this section, which could account for higher population density. Finally, a new patch of RBC has colonized under a nearby redbud on the weed-eater treatment side. A few sumac and spicebush branches were removed from this area to enhance light conditions. In addition, WNF seasonal technicians re-visited the RBC patch, on August 22, 2012, to remove (hand-pull) the Japanese stiltgrass from the entire RBC corridor.

The Wayne National Forest plans to continue monitoring efforts with the U.S. Fish and Wildlife Service to follow this population and any new populations that may be discovered. Future efforts of management will continue to be discussed and decided upon with input from the U.S. Fish and Wildlife Service. As distribution of running buffalo clover increases in Ohio and neighboring states (see Figures 2.17 and 2.18), it may be down-listed to “threatened” and efforts for transplanting or seeding may be considered.

**Figure 2.17** Running buffalo clover distribution 2006.



**Figure 2.18** Running buffalo clover distribution in 2012.

## 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?

There were 158 acres of mixed-oak stands improved through commercial thinning/single-tree selection harvest. The treatment objectives were to improve stand conditions to minimize adverse impacts from insects and disease (especially gypsy moth), and to

improve conditions for developing future oak and hickory reproduction so these species will be present when the hardwood over-story is regenerated.

Due to stand damage from a tornado the previous year, 99 acres were treated by salvage logging in which only dead or damaged trees were harvested. The resulting treatment resembled a clearcut with reserves, creating conditions favorable to oak regeneration.

Approximately 1,038 acres of mid-canopy control and crop tree release were completed as part of non-commercial timber stand improvement work to reduce competing species.

1828 acres were treated with prescribed burns.

1178 acres of non-native plant species were treated by a combination of mechanical and chemical methods to contribute to their eradication from the treated area. These treatments favor oak regeneration by removing unnatural competition for light, moisture and soil minerals.

<b>Objective 6.1b:</b> Use commercial timber sales and stewardship contracts to accomplish wildlife habitat objectives.	<b>Monitoring Work Plan Question #24:</b> 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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There were 158 acres of mixed-oak stands improved through commercial thinning/single-tree selection harvest. The treatment objectives were to improve stand conditions to minimize adverse impacts from insects and disease (especially gypsy moth), and to improve conditions for developing future oak and hickory reproduction so these species will be present when the hardwood over-story is regenerated. 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 disease, especially gypsy moth defoliation.
- Improve conditions for developing future oak and hickory reproduction.

Due to stand damage from a tornado the previous year, 99 acres were treated by salvage logging in which only dead or damaged trees were harvested. The resulting treatment resembled a clearcut with reserves, resulting in conditions favorable to oak regeneration.

### 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.

<b>Objective 6.2a:</b> Use prescribed fire to conserve fire-adapted plant and animal biodiversity and to maintain and restore mixed oak and native pine ecosystems.	<b>Monitoring Work Plan Question #25:</b> 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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1828 acres were treated with prescribed burns.

### 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.

<b>Monitoring Work Plan Question #26:</b> How many permits are issued and what are the reported harvests in each year?
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The Athens District sold permits at their two offices (Nelsonville and Reno). Ironton District sold permits at their office in Pedro. Wood and plant/root permits were \$20 per permit.

In FY2012: 128 firewood and 41 root permits were sold on the WNF. A breakdown of the sales per Unit follows:

**Table 2.6 Forest Product Permits**

	Athens	Marietta	Ironton
<b>Firewood Permits</b>	72	22	32
<b>Root Permits</b>	24	13	4

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 FY2012 was 252 cords. The amount of permits sold was two less than in 2011.

Root permits allow up to 5 wet lbs. of roots to be collected of which up to 1 lb. (95 plants) can be ginseng. At total of 41 permits were sold, so maximum collection for the permits would therefore equate to 205 wet lbs. of roots collected, of which up to 41 wet lbs. (approximately 14 dry lbs.) could be ginseng (3,895 plants). The amount of permits sold was down by 28 permits from 2011, and down 50 permits from 2010. The strong enforcement of returning previous year's permits with collection information is suspected for the reduction in permit purchases\*\*.

The new rules for root collection instituted in 2010 included:

- Instead of 1 lb. green weight of ginseng, permit allows collection of 95 plants of ginseng (equal to 1 lb. green weight – for LEO enforcement) per root permit.
- Harvesters must keep whole plants intact until they have been taken off of Forest Service land (so LEO can enforce 5 yr. old, three prong rule).

Emphasis points when selling root permits:

- All seeds from ginseng plants are to be planted 1 inch deep on site where the plant is dug. Do not harvest ginseng plants with green seeds, you must wait until the seeds are ripe (red) to harvest.
- Collection of ginseng is only allowed from September 1 – December 31 (State law).
- Root permits are for collection on Forest Service lands only, it is the responsibility of permittee to ensure they are on FS lands. Federal ownership maps are included with permits along with NO COLLECTION zones. Permittees can also buy topographic maps of different areas on the Forest.
- Root permits are for the Unit they are purchased on ONLY. There is ONLY 1 permit/person/year.
- Permittee must record all plant collections on front of permit, in INK, at time of harvest. **\*\*The permit MUST be returned within 45 days after permit expires to purchase a permit in following year.**

In an effort to understand the impacts of harvesting on wild ginseng, long-term monitoring was continued on the 14 existing plots on Wayne National Forest (4 Ironton, 3 Marietta, 7 Athens). The plots were measured in early summer and again later in the fall to capture any impacts from deer browse. Additional plots and continued re-measurement of current plots are planned for the future to better understand how harvesting impacts ginseng viability on the WNF. The plots will be monitored each year, however approximately 10 years of data is required to analyze population trends. 2012 was the fifth year of monitoring for the oldest of the ginseng plots. The Wayne National Forest is working with the Ohio Department of Natural Resources and Monongahela National Forest to maintain similar protocols so that future analyses could include monitoring efforts from all three entities to better understand ginseng population trends at a regional scale.

## 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 WNF.

<b>Objective-7.1a</b> – Maintain an inventory of NNIS insects and diseases affecting or potentially affecting NFS resources.	<b>Monitoring Work Plan Question #27:</b> How many acres of the Forest are inventoried for NNIS insects and diseases and when was it inventoried?
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The Ohio Department of Agriculture annually monitors for the presence of Gypsy Moth on the Wayne National Forest. Traps are deployed across the WNF and southeast Ohio in areas where Gypsy Moth are not yet known to exist. The traps are installed in spring and monitored during summer and fall months. A high concentration of Gypsy Moth was discovered in Athens and Hocking Counties in the Union Furnace area in FY2012.

The Wayne National Forest and the US Forest Service State and Private Forestry Forest Health Protection office in Morgantown, WV cooperated to monitor for the presence of Southern Pine Beetle (SPB). SPB traps were placed in likely pine stands on the Marietta, Athens and Ironton Units during the spring flight season. Because of the current outbreak of SPB in New Jersey in forest conditions very similar to southeast Ohio, monitoring on the WNF was deemed appropriate. A single SPB was collected in the traps in FY2012. This single individual was considered to represent a very low endemic level of SPB in the area.

Emerald Ash Borer (EAB) is no longer monitored by the Ohio Department of Agriculture (ODA) as in previous years. ODA considered EAB so widespread that it discontinued its monitoring program and declared the entire State of Ohio to be infested for practical purposes.

The Ohio Department of Agriculture and Ohio Department of Natural Resources conducted surveys for Hemlock Woolly Adelgid (HWA) throughout Ohio in FY2012, including a few known hemlock stands in and around the Wayne National Forest. HWA was not found on National Forest System lands, however, infestations were confirmed in Washington and Meigs County. Ohio regulations restrict the transportation of any hemlock plant material from known infested counties to non-infested counties in Ohio; the quarantine is enforced by the ODA's Plant Health Division.

<p><b>Objective-7.1b</b> – 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"> <li>• Retard advance of the gypsy moth</li> <li>• Eradicate NNIS species that are present but not yet well established, such as the emerald ash borer</li> <li>• Prevent the spread of non-native species currently lacking natural controls</li> <li>• Protect populations of, or habitat for, endangered,</li> </ul>	<p><b>Monitoring Work Plan Question #28:</b> How many NNIS sites were treated and how did the populations respond to treatment?</p>
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<p>threatened, or sensitive species</p> <ul style="list-style-type: none"> <li>• Protect rare communities likely to be severely impacted by insect outbreak</li> <li>• Prevent extensive tree mortality or defoliation in developed recreation areas and other areas where maintaining visual quality is a major objective</li> <li>• Prevent spread onto land or into high value areas of the Forest (e.g., rare communities, developed recreation areas)</li> <li>• Prevent the introduction and spread of Sudden Oak Death Syndrome</li> </ul>	
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1178 acres of non-native plant species were treated by a combination of mechanical and chemical methods to contribute to their eradication from the treated area. Treated populations will mostly die following chemical or mechanical treatments. However, seeds may remain viable in the soil for several years so many sites must be re-treated in successive years for effective eradication. Primary species of concern in FY2012 were Japanese stiltgrass and tree-of-heaven.

In FY2012 the WNF, in cooperation with the Ohio Department of Agriculture and US Forest Service Forest Health Protection, allowed for the treatment of approximately 459 acres of the Athens District with a mating disruptant. The treatment was a single aerial application of an insect pheromone mating disruptant which saturated the area with the female gypsy moth pheromone. This pheromone reduces successful mating by confusing the male moths, so that they cannot find female moths. The treatment occurred in late May of 2012 and will be followed by monitoring in 2013. The mating disruptant is species-specific. The purpose of this project was to reduce the impacts of gypsy moths locally by effectively disrupting mating, thereby causing reduced future numbers of the pest. On a large-scale front, the purpose of the project was to slow the spread of the gypsy moth by treating populations on the leading edge of the species' known range.

The Union Furnace Gypsy Moth outbreak is currently under analysis for treatment using pheromone mating disruptant.

<p><b>Objective 7.1c</b> - Protect the Forest from wildfire by:</p> <ul style="list-style-type: none"> <li>• Treating hazardous fuels that present a high risk of wildfire.</li> <li>• Treating hazardous fuels to move the Forest closer to desired fire regime condition class and desired future condition.</li> <li>• Maintaining areas that are at the desired fire regime condition class</li> </ul>	<p><b>Monitoring Work Plan Question #29:</b> How many acres of hazardous fuels were treated?</p>
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There were a total of 4,125.5 acres of hazardous fuels treated in FY2012.

### 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, early detection and rapid response to new infestations. Improve effectiveness of NNIS prevention practices through public and interagency NNIS awareness and education.

<p><b>Objective 7.2a</b> - Maintain and update an inventory of NNIS plant populations on NFS land. Include information on adjacent lands as gathered in cooperation with neighboring landowners.</p>	<p><b>Monitoring Work Plan Question #30:</b> 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. In FY2012, 1,744 acres were mapped.

*Due to a numbering error on the 2010 monitoring work plan there is not a question #31.*

<p><b>Objective 7.2b</b> Treat and reduce populations of NNIS 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><b>Monitoring Work Plan Question #32:</b> How many NNIS sites were treated and how did the NNIS populations respond to treatment?</p>
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Over forty different sites, 1,889 acres in total, were treated manually, mechanically or chemically for invasive species in 2012 (Table 2.7). Plant species controlled included: autumn olive, bush honeysuckle, garlic mustard, Japanese honeysuckle, Japanese hops, Japanese knotweed, Japanese stiltgrass, kudzu, multiflora rose, Oriental bittersweet, princess tree and tree-of-heaven. Some observations of these treatments are listed below.

**Table 2.7 FY2012 NNIS treatments by Management Area**

MANAGEMENT AREA	ACRES TREATED	INVASIVE SPECIES CONTROLLED
Developed Recreation	9.6	Garlic mustard, Japanese knotweed, Japanese stiltgrass

Diverse Continuous Forest w/ OHV	464.7	Autumn olive, garlic mustard, honeysuckles (shrub & vine), Japanese knotweed, Japanese stiltgrass, multiflora rose, oriental bittersweet, tree-of-heaven
Forest Shrubland Mosaic	130.1	Garlic mustard, Japanese stiltgrass, kudzu, tree-of-heaven
Grassland Forest Mosaic	185	Autumn olive, lespedeza
Historic Forest	82.9	Autumn olive, Japanese knotweed, Japanese stiltgrass
Historic Forest w/ OHV	403.5	Garlic mustard, Japanese stiltgrass
River Corridor	5.5	Garlic mustard
Special Areas	608.51	Garlic mustard, Japanese hops, Japanese knotweed, princess tree, multiflora rose
<b>Total NNIS Acres Treated</b>	<b>1889.81</b>	

Treatments of tree-of-heaven and princess tree seem to be successful, with little to no root sprouting; however, we are seeing a lot of seedling recruitment in these treated areas, especially where prescribed burns were implemented.

Last year it seemed as though garlic mustard populations were declining, especially in areas that had been treated for a number of years, however, this year garlic mustard was

very prevalent across the Ironton District. Population increases may be a result of the biennial life-cycle of garlic mustard, however there is evidence that it may also reproduce annually. Another explanation could be that the mild winter allowed for a longer growing period, reduced plant mortality and a subsequent increase in flower and fruit production.

Japanese stiltgrass and small carpgrass treatments have been mildly effective. In fact, these species appear to be increasing in most areas. The one exception is the treatment of Japanese stiltgrass along the Bailey prescribed burn firelines (Athens District) that has been on-going for five years. Populations at the Bailey site have been reduced by up to 90% over time. This observation could mean that five years may be the minimum number of years of treatment to begin to deplete Japanese stiltgrass seedbanks.

Lespedeza treatments were attempted in reclaimed mine areas for the first time on the Wayne National Forest in 2012. Treatment was comprised of early mowing in the spring, herbicide treatment in early summer and a second herbicide treatment when remaining plants flowered. Treatment seems to have been 50% effective. Reasons for this lower than desired success level are unknown, but could be due to any of a number of factors, including: herbicide drift due to winds, missed spots due to difficulty of broadcast spraying, herbicide interactions with dye, phenology and physiology of lespedeza. Treatments and monitoring will continue in the future to remove this species from reclaim areas in order to convert them to native forbs and grasses that would increase biodiversity for openland dependent birds and wildlife.

Kudzu treatments (Ironton District) from earlier in fiscal year 2012 (October 2011) seem to be successful in reducing vigor; however a new, rather large patch was identified this summer, near the original infestation. In future years, kudzu will most likely require biannual treatment and a greater emphasis on early detection and rapid response to decrease or eliminate further spread.

In some areas where NNIS plants have been successfully treated and almost eradicated, other undesirable plant species are beginning to colonize. For example, garlic mustard and Japanese knotweed have been treated for several years at Little Storms Creek Special Area (Ironton District). The treatments have been very successful and only an occasional individual of either species can be found, however Japanese hop and silktree are colonizing in the niche left by garlic mustard and Japanese knotweed.

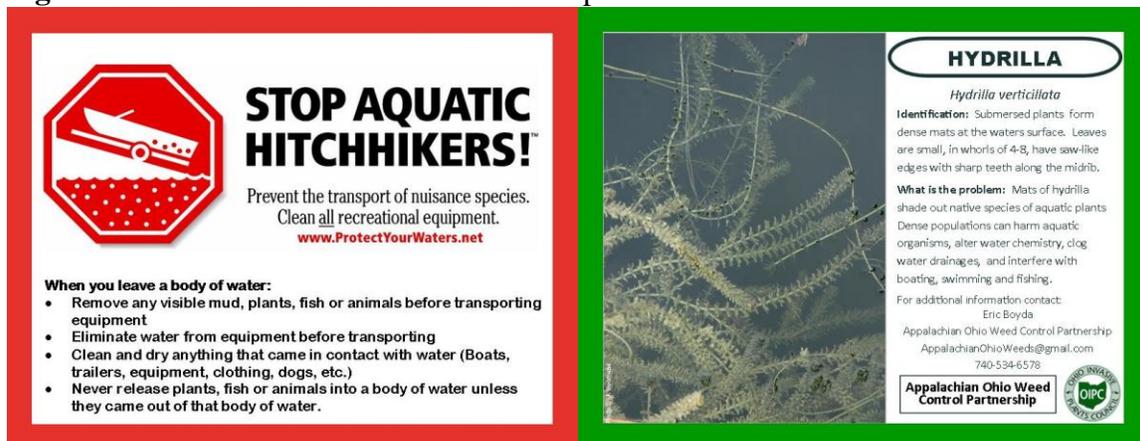
### **Goal 7.3 – Control Non-Native Invasive Species Aquatics**

Control aquatic NNIS populations using prevention, suppression and restoration techniques to protect and restore natural communities in National Forest 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.

Mapping efforts in 2010 along the Ohio River and tributaries (see 2010 Monitoring

report) by the Central Hardwoods Invasive Plant Network (CHIP-N) found populations of the invasive aquatic plant, hydrilla, in the Ohio River. In response, the CHIP-N partners discussed next steps to deal with hydrilla. Hydrilla and boat cleaning postcards funded through Ohio Invasive Plant Council (OIPC) and Ohio Division of Wildlife were developed in partnership with the Appalachian Ohio Weed Control Partnership (AOWCP) and handed out at events and offices frequented by boaters near the Ohio River (see Figure 2.19). CHIP-N worked with the AOWCP to submit a grant proposal to the Ohio River Basin Fish Habitat Partnership (ORBFHP), which was awarded in late 2012. The funds from the ORBFHP will fund the production of additional postcards and will also be used by the AOWCP to bring together state partners and authorities to develop an out-year plan on how to control hydrilla populations in the Ohio River and its tributaries, while avoiding spread and negative impacts to rare mussel populations. While funding does not exist for hydrilla control presently, it was clear during the discussions with partners that there was not agreement on what control method should be used. A grant proposal was written to include public outreach and awareness about hydrilla, and to facilitate partner meetings to create state control protocols in the event funding for hydrilla control is available in the future.

**Figure 2.19** Front and back of informational postcards.



**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).*

Ten different presentations, displays and outreach activities were conducted to educate the public, partner agencies and Forest Service employees about non-native invasive species (NNIS). Some of the presentations included control efforts by participating groups (college students, volunteers). A very important partner in many of these events was Eric Boyda, the coordinator for the AOWCP, a newly formed Cooperative Weed Management Area that includes 16 counties of Southeast Ohio.

Informational displays and/or hand-outs were present at all Wayne National Forest offices during the year, and at the following events:

1. An invasive plant workshop for right-of-way managers was put on in cooperation with the AOWCP and the Ohio State University (OSU) Extension. Training included identification, ecology and control of invasive plants commonly found along road and utility corridor right-of-ways. Participants in the training included: American Electric Power (AEP), Buckeye Rural, Columbia Gas, Ohio Department of Transportation (ODOT), and Lawrence County Engineers.
2. A garlic mustard pull event was coordinated with the Lawrence County Juvenile Center by AOWCP and included 7 volunteers from the Center. Plans are to expand the project event in the future to include more participants in 2013.
3. The 4<sup>th</sup> Annual Garlic Mustard Pulling Contest for Wayne National Forest employees.
4. Restoration of the Greendale Wetland (Athens District) through the removal of NNIS and native plantings was done with Hocking College interns under the supervision of the AOWCP. A total of 300 hours were tallied removing bush honeysuckle, multiflora rose, autumn olive, Japanese honeysuckle, Japanese stiltgrass and other invasive along the edges of the wetland. Restoration included planting native forbs, shrubs and trees, as well as native seed to replace the invasives. Eric Boyda, AOWCP, worked with the students and taught them about invasive plant identification, ecology and control.
5. A National Public Lands Day event was held at the Greendale Wetland in September to continue the efforts of the Hocking College interns. Volunteers were recruited for the event and contributed 60 hours of invasive control and native plantings. Partners for this event included the Monday Creek Restoration Group, AOWCP and Ohio Certified Volunteer Naturalists (OCVN). Partners worked alongside volunteers and taught participants about invasive species and their impacts to local ecosystems.
6. A basic NNIS program was put on at Lake Snowden to educate local landowners about invasives and their control. After a couple presentations, participants walked the property to learn to identify some of the invasives and had a demonstration of different equipment used by the Wayne National Forest to control them. Partners in the event included: the OSU Extension, Ohio Division of Forestry, Hocking College and AOWCP.
7. A tree-of-heaven workshop was put on for public land managers to understand the impacts of vegetation management on the species. The afternoon involved a field tour to Tar Hollow State Forest to look at tree-of-heaven in areas that had experienced timber harvests and/or prescribed burns in the past. The US Forest Service Northern Research Station organized the event with help from Wayne National Forest, AOWCP, the OSU Extension and Ohio Division of Forestry)
8. A presentation on NNIS was given to the new incoming class of Athens County Master Gardeners. The information was presented to 14 new Master Gardeners and 3 current Master Gardeners.
9. The Ironton District Botanist answered questions about NNIS at three of the Ironton-in-Bloom seminar series that were coordinated by the AOWCP.
10. Hydrilla/boat cleaning informational postcards were available to visitors of the Marietta Office (see Aquatic Invasive species section, above).



*Eric Boyda (AOWCP coordinator) teaches a Wayne National Forest volunteer how to identify invasive shrubs.*

*Volunteer removes invasive vines from a tree at Greendale Wetland (Athens District).*

## 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?

American chestnut trees provided by United States Forest Service Northern Research Station and the American Chestnut Foundation were planted on 2 acres in FY2012, in the Upstream Rock Run project area (Athens District). The plantation has not been inspected for survival, so it should not be considered re-established at this time. Formal stocking surveys have not been completed on any of the previous years' American chestnut plantations, so there is no concrete data to verify re-establishment. Informal monitoring indicates that chestnut seedling survival ranges from about 50% to 80% after the first year. Long-term re-establishment cannot be predicted at this time.

## 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.

<b>Objective 8.1b</b> – Safely extinguish wildland fires using ground and/or air resources.	<b>Monitoring Work Plan Question #35:</b> 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?
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In FY2012, there were 20 fires (165.65 acres) that were suppressed with no reportable accidents/injuries. No private property structures, improvements or infrastructure was damaged from ignitions that occurred on the Wayne National Forest. 0.65 acres of private property were burned from fires starting on Forest Service land.

<b>Objective 8.1c</b> – Reduce hazardous fuels within communities at risk in cooperation with local, State, and Federal agencies.	<b>Monitoring Work Plan Question #36:</b> Number of acres in WUI treated for hazardous fuels reduction? Number of prescribed burns conducted in cooperation with local, State or other Federal agencies?
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Approximately 95 % of the Wayne National Forest lands are within the Wildland Urban Interface (WUI), and hazardous fuels were reduced on a total of 1,828 acres. Hazardous fuels treatment activities improve/alter/modify or mitigate the fuel towards a historical Fire Regime Condition Class. These activities include, but are not limited to, primary direct fuels removal through mechanical means, maintenance of wildlife openings; non-native invasive species control activity, recreational trail clearing, and oak-hickory restoration activity. Other private party activities that mitigate or reduce hazardous fuels are utility line rights-of-way maintenance.

Those acres that were mechanically treated in FY2012 reducing or modifying hazardous fuels totaled 2,295.5 acres.

- 195.4 acres in Developed Recreation (DR) Management Area
- 232.4 acres in Diverse Continuous Forest (DCF) Management Area
- 191.5 acres in Diverse Continuous Forest with OHV (DCFO) Management Area
- 393.2 acres in Forest and Shrubland Mosaic (FSM) Management Area
- 5 acres in Special Area (SA) Management Area
- 256 acres in Historic Forest (HF) Management Area
- 25.4 acres in Grassland and Forest Mosaic (GFM) Management Area
- 2,444.6 acres in Historic Forest with OHV (HFO) Management Area
- 99 acres in Future Old Forest (FOF) Management Area
- 25 acres in Future Old Forest with Mineral Activity (FOFM) Management Area
- 256 acres in River Corridor (RC) Management Area

<b>Objective 8.1e</b> – Provide training to local volunteer fire departments in wildland fire suppression.	<b>Monitoring Work Plan Question #37:</b> How many local volunteer fire departments were trained in wildland fire suppression?
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The Wayne National Forest provided training to the following 4 fire departments during FY2012: Gallipolis, Hamilton, Madison-Jefferson and South Webster.

## 10 - Minerals

### 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 241,191 acres of federally owned surface (this includes acreage outside the proclamation boundary) of which about 41 % (98,858 acres) are underlain by minerals fully owned by the Federal government. Private minerals are classed as Reserved or Outstanding mineral rights wholly or partially and encumber the remaining 142,333 acres.

In FY2012, 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. No gravel pits were developed on the WNF in FY2012.



*Typical Pump Jack-Oil and Gas Operations—Washington County, OH, WNF*

Oil and gas is the most active leasable program on the WNF. There are currently 1,271 wells on the WNF, about 35% of which are on Federal minerals. (This is a change from

1,284 in FY2011 by 13 wells plugged and 1 new well drilled in FY2012).

The “Reasonably Foreseeable Development Scenario (RFDS) for Oil and Gas”, produced by the Bureau of Land Management (BLM) in 2004, forecasted the total number of new wells likely to occur on WNF surface over a 10 year period (2006-2016), regardless of mineral ownership (Federal, reserved or outstanding), to be 234 (or about 23 per year). BLM provided a revised RFDS in FY2012 to address the potential of Horizontal Drilling on the WNF. This was for the Review of New Information (RONI) and Supplemental Information Report (SIR) and the potential number of wells and possible surface impacts from them are deemed to be within the analysis of the prior RFDS.

BLM stated a possible scenario that 13 horizontal wells could be developed on the WNF for the remainder of the planning period. The report stated 3 on the Athens Unit, 10 on the Marietta Unit and none on the Ironton Unit. During FY2012 there was an increase interest in the potential for developing the Utica and Marcellus Shale in southeastern Ohio. The ODNR Division of Mineral Resources Management (DMRM) stated an increase in applications and permits for horizontal drilling in Ohio. No State applications from private mineral owners or federal lease holders have been submitted to Ohio for the WNF in FY2012. 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 FY2012. There has been an uptick in leasing of oil and gas rights in the area due to speculation of the Utica and Marcellus Shale potential in this part of Ohio. No proposals or Application for Permit to Drill (APD)’s for horizontal drilling operations were received on the WNF in FY2012.

Numerous statutes, regulations and Executive Orders guide Forest Service policy for the exploration and development of mineral resources on National Forest System (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 FY2012, 304 inspections were carried out on the WNF.

There were no Federal coal leases on the WNF in FY2012. Buckingham Coal Company of Corning, Ohio has submitted a Lease by Application (LBA) request to BLM for seven parcels totaling 425 acres of federal coal in the Perry and Morgan County area of the WNF. The BLM is requesting the WNF for consent to lease the Federal coal to be removed by underground mining methods. The WNF began working on this process toward the end of FY2012. Buckingham Coal Company also requested an exploration permit in Perry County on NFS lands in FY2012 in order to obtain a core drilling permit for private coal reserve exploration. This core drilling proposal is north of the Federal coal lease proposal.

### Partners – Mineral Operations

The Wayne National Forest works with State and Federal agencies to manage private and public mineral resources underlying the Wayne National Forest. The Ohio Division of

Mineral Resource Management (DMRM) provides inspection, permitting and enforcement actions in concert with the Forest Service on National Forest System land regarding private minerals and federally owned mineral estates. The Eastern States Office of the BLM of the United States Department of the Interior coordinates with the surface managing agency, which is the Forest Service when federally owned minerals are being leased on National Forest lands. A BLM Eastern States Office Petroleum Engineer position is seated at the Marietta Office. A one day meeting was held on June 12, 2012 and hosted by the minerals staff of the Wayne National Forest. It was attended by mineral staff from the WNF, ODNR DMRM and the Eastern States Office of the BLM. Representatives of the American Petroleum Institute (API), Ohio EPA-Logan Office and Chesapeake Energy Corporation provided presentations. There were 15 in attendance and one person attended via video conference. The topics pertained to oil and gas inspection and enforcement of State and Federal laws, well plugging, information sharing between agencies, and recent changes in State laws that pertain to oil and gas administration. A key topic for this session was horizontal drilling and high volume fracturing in southeast Ohio.

In FY2012, the WNF updated the Wayne National Forest internet web page regarding the Administration of Minerals on the WNF and provided Frequently Asked Questions. This is a source of information for the public to better understand minerals management 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><b>Objective 10.1a</b> – Coordinate with the Bureau of Land Management to offer leases of federally owned minerals.</p>	<p><b>Monitoring Work Plan Question #38:</b> Are expressions of interest and lease offers processed in a timely manner?</p>
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In FY2012, a lease package was submitted to the Regional Office for review and submission to the BLM for a December 2011 lease sale. The WNF submitted 3,302.37 acres of federally owned oil and gas in Perry, Athens and Gallia County, Ohio for possible lease parcels in the December sale. By letter of November 14, 2011, the WNF Forest Supervisor and the Eastern Regional Forester notified BLM to withdrawal these parcels from the December sale. A Review of New Information and Supplemental Information Report were prepared to address issues and concerns related to leasing of federal oil and gas. The WNF Forest Supervisor desired to review new information related to the potential resource impacts related to Horizontal Drilling and high volume fracturing. The RONI and SIR were presented to the public in June 2012. An open house was held in June 2012 at the Supervisor's Office and involved the Forest Service, BLM, ODNR and Ohio-EPA. There is some public controversy over horizontal drilling on NFS land. No additional EOI's were submitted to the WNF in FY2012.

<b>Objective 10.1b</b> – Process plans of operation/applications for permit to drill on Federal leases in a timely manner.	<b>Monitoring Work Plan Question #39:</b> How many plans of operation/applications for permit to drill on Federal leases were processed in a timely manner?
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One Federal application for a permit to drill was processed in FY2012 (KenOil). The Hite #1 well is on the Athens District in Perry County and is a conventional vertical well. This APD was processed in a timely manner, but was delayed slightly due to the Forest Keepers vs. Tidwell lawsuit. The BLM and KenOil were aware of the delay. The Athens District Ranger signed a Decision Memo on June 29, 2012 for the approval of the Surface Use Plan of Operations for the BLM Lease for the Hite #1 well.

### Goal 10.2 – Respect owners’ rights and protect surface resources

Mineral operations occur on Wayne National Forest with respect to privately held mineral rights and administer the rights of the surface owner, the USA. The Forest Service shall negotiate operating terms and conditions and mitigation measures to protect Forest resources while meeting the requirements of domestic energy production and the mission of minerals management on NFS lands.

<b>Objective 10.2a</b> – Process plans of operation (and applications for major modifications) for privately owned minerals (reserved and outstanding rights) within 60 days.	<b>Monitoring Work Plan Question #40:</b> How many applications were processed within 60 days?
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There were no non-Federal applications or proposals received on the Wayne National Forest for the development of private mineral operations in FY2012.



*Typical Tank Battery-Oil and Gas Operations-WNF*

**Objective 10.2b** – Restore lands disturbed by minerals exploration and production when the minerals activity is completed.

**Monitoring Work Plan Question #41:**  
How many mineral activities were adequately restored upon completion?

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.

Thirteen wells were plugged upon completion of operations by the operator. Twelve were on the Athens District and one was on the Ironton District.

An abandoned mine shaft was fenced off on the Ironton District in the Brushy Fork area. This was a public safety issue. The shaft was near the ATV trail and is full of water.

**Objective 10.2c** – Plug wells when production ceases.

**Monitoring Work Plan Question #42:**  
How many wells were plugged according to State regulations when production ceased?

A total of 17 wells were plugged in accordance with Ohio regulations in FY2012: 12 on the Athens District and 5 on the Ironton District. Thirteen of the seventeen were

completion of operations and plugged by the operator. Four of the seventeen wells plugged were abandoned wells at Ironton using a Cost Share Agreement of Funds between the Forest Service and ODNR. These four wells were within high public use recreation areas of the Hanging Rock ATV area and the Lake Vesuvius Recreation Area.



*Nucorp Energy Well, a Cost Share project with FS/ODNR-Ironton District-Hanging Rock Area  
-Completed June 2012*

## 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.

**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.

**Monitoring Work Plan Question #43:**  
How many miles of NCT have been relocated/ reconstructed off existing roads?

None of the North Country Trail (NCT) on the Wayne National Forest was relocated off of roads in FY2012. The WNF relies heavily on partners and volunteers and the Youth Conservation Corp (YCC) to help maintain the NCT. Volunteer groups such as the River Valley Mountain Bike Association (RVMB) and the Buckeye Trail Association, along with the YCC trail crew, brushed and cleared downed trees on 61 miles of the NCT in FY2012. Volunteers contributed approximately 872 work hours on the NCT in FY2012.



*Marietta YCC Crew assisting chainsaw crew with removal of downed trees on the NCT, following the late June wind storm.*



*Walking sections of the NCT and reviewing proposed NCT reroute with Andrew Bashaw (NCTA, Regional Coordinator), and Jeff McCusker (NPS NCT Manager).*

The Athens District collaborated with the North Country Trail Association (NCTA) for the purpose of submitting a Paul Sarbanes Transit-In-Parks grant proposal. If awarded, the grant proposal would provide funding to complete National Environmental Policy Act (NEPA) surveys for 42 miles of proposed trail reroutes aimed at placing the NCT in the forest and off of roads.

<p><b>Objective 11.2c</b> – Maintain and administer the Forest’s trail system to provide safe/enjoyable trail riding opportunities and reduce resource impacts?</p>	<p><b>Monitoring Work Plan Question #44:</b> How many miles of motorized trails have been maintained to standard (annual routine and deferred maintenance)?</p>
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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.

The Forest Plan limits motorized trail recreation to the following management areas: Diverse Continuous Forest w/OHV (DCFO) and Historic Forest w/OHV (HFO). All motorized trail maintenance or reconstruction work is restricted to these Management Areas.

National trail performance measure definitions have recently changed. They include:

- **Miles Maintained** (TL-MAINT-STD) – is defined as the miles of national forest system trails (NFST) on which at least one maintenance task is performed to standard during the fiscal year. This measure includes annual maintenance and deferred maintenance (repair, replace and decommission).
- **Miles Meeting Standard** (TL-SYS-STD) – is defined as the total NFST miles that meet Trail National Quality Standards consistent with the maintenance cycle identified for the trail. Trail-specific maintenance cycles are identified on Trail Management Objectives (TMOs) and in INFRA.
- **Miles Improved** (TL-IMP-STD) – is defined as the miles of NFST improved or constructed to standard. This measure includes trail alteration, expansion or new construction.

A total of 216.82 miles of trails met national maintenance standards on the WNF in FY2012. Of this total, 97.73 miles were Off-Highway Vehicles (OHV) trails, which is approximately 73% of the total motorized trails currently on the Wayne National Forest.

### Athens District

In FY2012, the Athens District accomplished 30.42 “miles maintained” and 38.32 “miles meeting standard” of OHV trails. Appropriated funds were leveraged with trail grants, user fees and partner/volunteer contributions to complete trail maintenance projects. Heavy trail maintenance work was generally completed by contractors or force account, while light maintenance was completed with the help of partners and volunteers.

**Table 2.8: Athens District Motorized Trail Maintenance**

TRAIL NAME	ACCOMPLISHED BY	TRAIL MEETING STD	TRAIL MAINTAINED
LONG RIDGE CONNECTOR B	FORCE ACCOUNT		0.2
LONG RIDGE - CAWTHORN TRAIL	FORCE ACCOUNT		2.18
KENNY WILLIAMS CONNECTOR	FORCE ACCOUNT	0.85	
LONG RIDGE - MISSING CRK LOOP	FORCE ACCOUNT		1.32
INNER DORR - TIMBER ROAD TRAIL	FORCE ACCOUNT	0.76	
MAIN CORRIDOR	FORCE ACCOUNT	16.46	
INNER DORR - CCC #2 TRAIL	FORCE ACCOUNT		1.57
LONG RIDGE - ORBISTON CONN.	FORCE ACCOUNT	0.9	
INNER DORR - PARAMOUNT LOOP	FORCE ACCOUNT	0.71	
DORR RUN SHORT CONNECTOR	FORCE ACCOUNT	0.16	
LONG RIDGE CONNECTOR A	FORCE ACCOUNT		0.36
PURDUM	FORCE ACCOUNT	3.5	
INNER DORR - PURDUM LOOP CONN.	FORCE ACCOUNT	0.23	
INNER DORR - 1985 LOOP TRAIL	FORCE ACCOUNT	1.6	
LONG RIDGE - ORBISTON LOOP	FORCE ACCOUNT		1.57
INNER DORR - CENTRAL LOOP CONN	FORCE ACCOUNT	0.12	
LONG RIDGE - SUNDAY TRAIL	FORCE ACCOUNT	1.2	
DORR RUN LOOP	FORCE ACCOUNT		14.5

SNAKE HOLLOW	FORCE ACCOUNT	2.3	
CAMP OHIO CONNECTOR	FORCE ACCOUNT	1.66	
INNER DORR - PARAMOUNT LOOP N.	FORCE ACCOUNT	1.43	
INNER DORR-1985 LOOP TRAIL W.	FORCE ACCOUNT	0.9	
LONG RIDGE	FORCE ACCOUNT		3.75
LONG RIDGE- ROCKING HORSE LOOP	FORCE ACCOUNT		0.79
NEW STRAITSVILLE LOOP	FORCE ACCOUNT	3	
NEW STRAITSVILLE CONNECTOR	FORCE ACCOUNT	0.69	
INNER DORR - MINE SHAFT TRAIL	FORCE ACCOUNT		1
SNAKE HOLLOW EAST	FORCE ACCOUNT	0.3	
INNER DORR-TRAILHEAD #2 ACCESS	FORCE ACCOUNT	0.04	
INNER DORR - PARAMOUNT LOOP S.	FORCE ACCOUNT	1.51	
INNER DORR - BOWL TRAIL	PARTNER		3.18
<b>TOTAL</b>	<b>--</b>	<b>38.32</b>	<b>30.42</b>



*(Before Photo)*



*(After Photo)*

*Purdum OHV Trail clearing after damage from wind storm*



*OHV Trail bridge construction*

### **Ironton District**

In FY2012, the Ironton District accomplished 59.41 “miles maintained” and 59.41 “miles meeting standard” of OHV trails. Appropriated funds were leveraged with trail grants, user fees and partner/volunteer contributions to complete trail maintenance projects. Heavy trail maintenance work was generally completed by contractors or force account, while light maintenance was completed with the help of partners and volunteers.

**Table 2.9: Ironton District Motorized Trail Maintenance**

TRAIL NAME	ACCOMPLISHED BY	TRAIL MEETING STD	TRAIL MAINTAINED
IR_HR_COPPERHEAD ATV	FORCE ACCOUNT	3	
IR_PC_LYRA ATV	FORCE ACCOUNT	5	
IR_S_BEAR TOP ATV	FORCE ACCOUNT		2.44
IR_HR_HIGH KNOB	FORCE ACCOUNT		1
IR_HR_COPPERHEAD ATV	FORCE ACCOUNT		3
IR_HR_POWERLINE ATV	FORCE ACCOUNT	4.5	
IR_HR_OAK SPUR ATV	FORCE ACCOUNT		1
IR_PC_TELEGRAPH ATV	FORCE ACCOUNT	6.35	
IR_HR_OAK SPUR ATV	FORCE ACCOUNT	1	
IR_S_BEAR CLAW ATV	FORCE ACCOUNT		1.79
IR_HR_LAKEVIEW ATV	FORCE ACCOUNT	2	
IR_PC_LYRA ATV	FORCE ACCOUNT		5
IR_HR_GAS WELL CONNECTOR	FORCE ACCOUNT		0.28
IR_PC_TELEGRAPH ATV	FORCE ACCOUNT		6.35
IR_HR_SAWMILL ATV	FORCE ACCOUNT		0.67
IR_S_CLAW TO WOLCOTT ATV	FORCE ACCOUNT	0.73	

IR_HR_GAS WELL CONNECTOR	FORCE ACCOUNT	0.28	
IR_HR_POWERLINE ATV	FORCE ACCOUNT		4.5
IR_HR_HANGING ROCK LOOP ATV	FORCE ACCOUNT		13
IR_HR_PINE CUTOFF ATV	FORCE ACCOUNT		0.5
IR_HR_HIGH KNOB	FORCE ACCOUNT	1	
IR_HR_HANGING ROCK ATV TH CON	FORCE ACCOUNT		0.08
IR_S_GRIZZLY TO TRAILHEAD ATV	FORCE ACCOUNT		1.66
IR_S_BEAR CLAW ATV	FORCE ACCOUNT	1.79	
IR_PC_WOLCOTT ATV	FORCE ACCOUNT	8	
IR_PC_WOLCOTT LOOP ATV	FORCE ACCOUNT	1	
IR_HR_GAS WELL ATV LOOP	FORCE ACCOUNT	1.8	
IR_S_SUPERIOR ATV	FORCE ACCOUNT		4.59
IR_HR_LAKEVIEW ATV	FORCE ACCOUNT		2
IR_HR_HANGING ROCK ATV TH CON	FORCE ACCOUNT	0.08	
IR_S_GRIZZLY TO TRAILHEAD ATV	FORCE ACCOUNT	1.66	
IR_PC_WOLCOTT LOOP ATV	FORCE ACCOUNT		1
IR_HR_HANGING ROCK LOOP ATV	FORCE ACCOUNT	13	
IR_HR_PINE CUTOFF ATV	FORCE ACCOUNT	0.5	
IR_S_CLAW TO WOLCOTT ATV	FORCE ACCOUNT		0.73
IR_HR_SAWMILL ATV	FORCE ACCOUNT	0.67	
IR_HR_GAS WELL ATV LOOP	FORCE ACCOUNT		1.8
IR_S_SUPERIOR ATV	FORCE ACCOUNT	4.59	
IR_PC_WOLCOTT ATV	FORCE ACCOUNT		8
IR_S_BEAR TOP ATV	FORCE ACCOUNT	2.44	
<b>TOTAL</b>	<b>--</b>	<b>59.41</b>	<b>59.41</b>

**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 ATV/OHV trails.

**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?

In June 2012, the WNF experienced a wind storm event that caused significant tree blowdown across the area. This caused the WNF to temporarily close the designated trails for up to a month until crews could go in and clear the trails.

**Objective 11.2e** –Reduce and strive to eliminate illegal ATV/OHV use by:

- Prohibiting cross-country travel or riding

**Monitoring Work Plan Question #46:**  
Have sections of illegal trails on the Forest been closed and rehabilitated? If so, how

<p>on undesignated user-created trails.</p> <ul style="list-style-type: none"> <li>• Prohibit riding on trails designated for other uses.</li> <li>• Riding on designated trails during closed seasons</li> <li>• Closing at least 20 miles of illegal OHV trail within the next decade to:             <ol style="list-style-type: none"> <li>a) Protect federally listed species</li> <li>b) Protect Regional Forester's sensitive species</li> <li>c) Improve watershed health</li> </ol> </li> </ul>	<p>many miles and where?</p>
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No funding was allocated for closing unauthorized trails in FY2012. As a result, no unauthorized trails were intentionally closed or blocked. An indirect benefit from the tree blowdown that resulted as part of the June 2012 windstorm event was the blockage of numerous unauthorized trails. No official inventory was completed to determine the miles of unauthorized trails closed as a result of fallen trees from the wind event.

<p><b>Objective 11.2f</b> - 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><b>Monitoring Work Plan Question #47:</b> How many miles of non-motorized trails have been maintained/reconstructed to standard?</p>
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Non-motorized trails include all hiking, biking and horse trails. Most of these trails are multi-use (shared) trails. A total of 216.82 miles of trails met national maintenance standards on the WNF in FY2012. Of this total, 119.09 miles were non-motorized trails, which is approximately 33% of the total non-motorized trails currently on the WNF.

### **Athens District**

In FY2012, the Athens District accomplished 48.25 "miles maintained" and 63.04 "miles meeting standard" of non-motorized trails. Appropriated funds were leveraged with trail grants, user fees and partner/volunteer contributions to complete trail maintenance projects. Heavy trail maintenance work was generally completed by contractors or force account, while light maintenance was completed with the help of partners and volunteers.

*(Before Photo)**(After Photo)**Stone Church Horse Trail Maintenance***Table 2.10: Athens District Non-Motorized Trail Maintenance**

TRAIL NAME	ACCOMPLISHED BY	TRAIL MEETING STD	TRAIL MAINTAINED
LEITH RUN GAZEBO TRAIL	FORCE ACCOUNT	0.5	
NORTH COUNTRY TRAIL - MARIETTA	FORCE ACCOUNT	7.7	
NORTH COUNTRY TRAIL - ATHENS	FORCE ACCOUNT	10.34	
SAND RUN	FORCE ACCOUNT	0.25	
OHIO VIEW - NCT CONNECTOR	FORCE ACCOUNT	3.5	
COVERED BRIDGE	FORCE ACCOUNT	5	
WILDCAT HOLLOW HIKING TRAIL	FORCE ACCOUNT	15	
OHIO VIEW TRAIL	FORCE ACCOUNT	7	
COVERED BRIDGE - NCT CONNECTOR	FORCE ACCOUNT	3	
LAKEVIEW	FORCE ACCOUNT	1	
ARCHERS FORK	FORCE ACCOUNT	9.5	
LAMPING HOMESTEAD	FORCE ACCOUNT		5
UTAH	FORCE ACCOUNT	0.25	
STONE CHURCH	CONTRACT		2
STONE CHURCH	FORCE ACCOUNT		20.5
STONE CHURCH CONNECTOR	FORCE ACCOUNT		0.85
KINDERHOOK HORSE TRAIL	VOLUNTEER		19.9
<b>TOTAL</b>	--	<b>63.04</b>	<b>48.25</b>

**Ironton District**

In FY2012, the Ironton District accomplished 57.05 “miles maintained” and 56.05 “miles meeting standard” of OHV trails. Appropriated funds were leveraged with trail grants, user fees and partner/volunteer contributions to complete trail maintenance projects.

Heavy trail maintenance work was generally completed by contractors or force account, while light maintenance was completed with the help of partners and volunteers.

**Table 2.11: Ironton District Non-Motorized Trail Maintenance**

TRAIL NAME	ACCOMPLISHED BY	TRAIL MEETING STD	TRAIL MAINTAINED
IR_VLONGBOW ARCHERY TRAIL	FORCE ACCOUNT	0.5	
IR_V_ROCK HOUSE TR	FORCE ACCOUNT		0.75
IR_VLONGBOW ARCHERY TRAIL	FORCE ACCOUNT		0.5
IR_V_ROCK HOUSE TR	FORCE ACCOUNT	0.75	
IR_V_ADDIS MINE HIKE	FORCE ACCOUNT		1
IR_V_ADDIS MINE HIKE	FORCE ACCOUNT	1	
IR_V_WHISKEY RUN HIKE	FORCE ACCOUNT		1
IR_V_LAKESHORE HIKING	FORCE ACCOUNT	8	
IR_V_LAKESHORE HIKING	FORCE ACCOUNT		8
IR_HORSE_HUNGRY HOLLOW	FORCE ACCOUNT	0.5	
IR_HORSE_PADDLE CREEK LOOP	FORCE ACCOUNT	3	
IR_HORSE_KIMBLE LOOP	FORCE ACCOUNT	5.3	
IR_HORSE_VESUVIUS MAIN LOOP	FORCE ACCOUNT	31	
IR_HORSE_VESUVIUS CONNECTOR	FORCE ACCOUNT	1	
IR_HORSE_DEAN CONNECTOR	FORCE ACCOUNT	5	
IR_HORSE_HUNGRY HOLLOW	VOLUNTEER		0.5
IR_HORSE_KIMBLE LOOP	VOLUNTEER		5.3
IR_HORSE_DEAN CONNECTOR	VOLUNTEER		5
IR_HORSE_VESUVIUS MAIN LOOP	VOLUNTEER		31
IR_HORSE_VESUVIUS CONNECTOR	VOLUNTEER		1
IR_HORSE_PADDLE CREEK LOOP	VOLUNTEER		3
KINDERHOOK HORSE TRAIL	VOLUNTEER		19.9
<b>TOTAL</b>	<b>--</b>	<b>56.05</b>	<b>57.05</b>



*Sawyers clearing horse trail on Ironton District after June 2012 wind storm event*

**Objective 11.2g** – Construct new trails during the next 10-15 years within the ranges and densities shown in Table 2-5. (*Forest Plan pg. 2-46*)

**Monitoring Work Plan Question #48:** How many miles of new motorized and non-motorized trails have been constructed?

#### **Athens District**

No new trails were constructed on the Athens Ranger District in FY2012. However, a trail bridge was reconstructed on the Scenic River Hiking Trail which accounted for 0.1 miles of “improved to standard”.

*(Before Photo)**(After Photo)**Scenic River Hiking Trail Bridge Replacement*

### **Ironton District**

No new trails were constructed on the Ironton Ranger District in FY2012.

## **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 Scenic Integrity Objectives (SIOs) and scenery guidelines found in the Forest Plan?

Three timber sales were monitored in FY2012 for compliance of Scenery Management System (SMS) guidelines. All three were on the Athens District (Bessie Sale – Unit 3; Kacklemacher Timber Sale – Units 1 and 2; and Tornado Salvage Sale – Units 2 and 3).

#### **Bessie Hardwood Thinning – Unit 1 (Completed July 2010)**

This 49 acre hardwood thinning (single-tree selection) is within Unit 1 of Compartment 79 on the Athens District. It is within an area assigned a “low” scenic integrity objective (SIO).

Upon review of the project Environmental Assessment (EA) (Gore-Greendale), it was found

that an analysis of the effects on scenery resources from the proposed action and its alternatives were completed. However, not all appropriate scenery mitigation measures were included. Most mitigation measures were applied and observed in the field. These measures worked relatively well to reduce the negative effects of timber harvesting activity on the scenic resources.

Although the cutting unit was adjacent to State Route 595, it was not easily noticeable to drivers because it was well screened with residual trees and the cutting unit was located higher than the road. The access road was well graveled and graded. Skid trails and landings were not easily noticeable from road and were well grassed in. Little logging debris (flagging, trash, oil spills, etc.) was observed. Residual mature trees (upland hardwoods with scattered shortleaf pines) were not damaged from logging activity and were evenly spaced with a basal area at approximately 50 sq.ft./acre (park-like in appearance). The cutting unit matched natural surroundings. Tree stumps were 1 foot high or less. Little residual slash was evident. The cutting unit met or even surpassed the criteria set for a “low” SIO.



*Bessie Hardwood Thinning – Unit 1 (Access road and landing)  
5 months after harvest completion (11/8/12)*

### **Kacklemacher Hardwood Thinning – Units 1 and 2 (Completed August 2012)**

This 200-acre hardwood thinning (single tree selection) is within Units 1 and 2 of the Kacklemacher timber sale in Compartment 75 of the Athens District. It is within an area assigned a “moderate” SIO. The cutting unit was adjacent to and can be seen from County Road 19, but much of it is screened by residual trees. Upon review of the project EA (Gore-Greendale), it was found that an analysis of the effects on scenery resources from the proposed action and its alternatives were completed. However, not all appropriate scenery mitigation measures were included. The mitigation measures were applied and observed in the field. These measures worked relatively well to reduce the negative effects of timber harvesting activity on the scenic resources when properly applied.

The front part of the access road was well graveled but the back part of the road needed additional gravel. Skid trails and landings were not easily noticeable from road, but were not well grassed in. It is suspected that grass seeds were applied and sprouted but due to the summer heat and drought, the grass wilted. Skid trails were not well grassed in either. Little logging debris (flagging, trash, oil spills, etc.) was observed. However, there were several

large slash piles noticeable on the edge of the landing. They could have been scattered better to reduce the slash piles' visibility. Some cut stumps were greater than 1 foot high. Some of the residual mature trees were damaged (debarked) from logging machinery. Residual trees were evenly spaced with basal area at approximately 50 sq.ft./acre (park-like in appearance). The units matched natural surroundings. The cutting unit did not fully meet its "moderate" SIO, but would meet the scenery objective within 2-3 years.



*Kacklemacher Harwood Thinning – Units 1 and 2  
Four months after harvest completion (11/8/12)*

### **Tornado Salvage Cut – Units 2 and 3 (Completed July 2012)**

This salvage cut was a result of the September 2010 tornado that went through the area and severely damaged the predominantly mature upland hardwood forest. Cutting Units 2 and 3 of Compartment 243 on the Athens District were monitored for scenery resources. The affected area had all three SIOs (low, moderate, and high) because it bordered on both a State Route 691 and private land.

The environmental analysis for the salvage cut was completed under a categorical exclusion (CE) due to the need to act quickly to salvage the damaged timber and restore the area. The area's scenic quality was severely affected by the tornado. Most of the tree tops were broken off and many trees were wind-thrown, up-rooted, or bent over. When compared to the natural surrounding (standing mature upland hardwoods), the salvage cut area does not appear as visually pleasing. However, the harvesting activity has greatly enhanced the area's scenic quality when compared to the initial devastation caused by the tornado. There are positive signs of the land healing. New vegetation has begun to take growth which will help soften the

scars left by the tornado and subsequent harvesting activity. The landing and skid trails did not grass in well, perhaps due to the dry summer. The affected area has not met its SIO for “moderate” or “high”. It is presumed that the affected area will take five to ten years to fully restore to its natural scenic qualities. This site is a good candidate for further evaluation in a year or two.



*Tornado Salvage Cut – Units 2 and 3  
Five months after harvest (11/8/12)*

### 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><b>Objective 13.1c</b> – Reduce the backlog of heritage sites that require formal evaluation for eligibility to the National Register of Historic Places.</p>	<p><b>Monitoring Work Plan Question #50:</b> How many heritage sites have been evaluated for National Register eligibility?</p>
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No sites were evaluated for National Register eligibility in FY2012. However, 72 new sites were identified, 2,850 acres were surveyed and 25 sites were monitored for

protection.

<p><b>Objective 13.1d</b> – 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><b>Monitoring Work Plan Question #51:</b> 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 FY2012.

Most of the WNF Heritage Program activities continue to be based on NEPA compliance projects. However, with the help of partners and volunteers, the program has made progress towards activities that are heritage-based. A direction supported by the new heritage Program Managed to Standard (PMTS), specifically to strike a balance between project compliance and heritage legal mandates. US Forest Service Heritage Programs can no longer report project-related accomplishments each year. Yearly targets will consist of purely heritage activities scored within a point system. In FY2012, the WNF exceeded its assigned target of 25 activities by “9” and consisted largely of public outreach, interpretive and partnership projects.

## 14 - Land Ownership

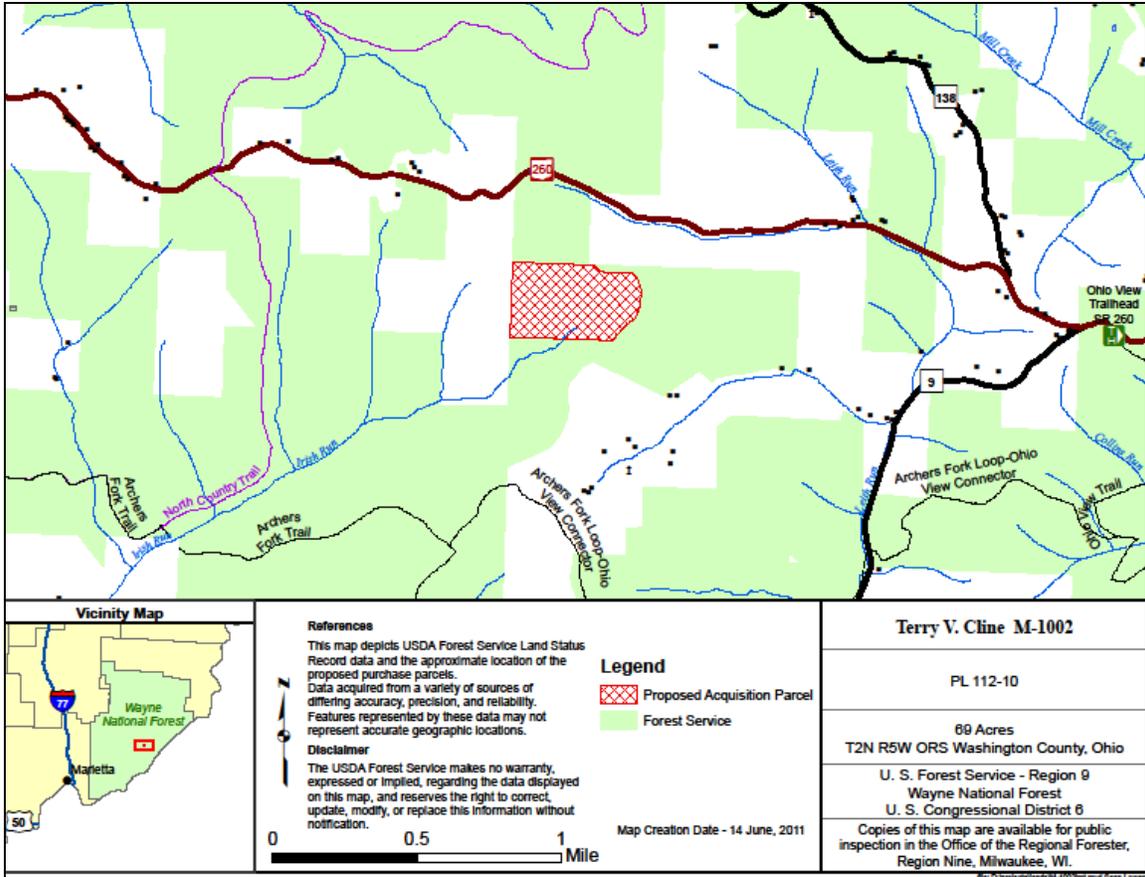
### Goal 14.1 – Consolidate Ownership

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

The current size of the WNF is 241,191 acres of which 104,305 acres are on the Ironton Unit, 72,176 acres are on the Athens Unit and 64,710 acres are on the Marietta Unit. This is 29% of the land area within the Forest Boundary. The county with the highest acreage of NFS land is Lawrence County with 73,416 acres or 25% of the county land area.

<p><b>Objective 14.1a</b> – Purchase, exchange, accept donations or convey lands and minerals rights on a willing seller, willing buyer basis.</p>	<p><b>Monitoring Work Plan Question #52:</b> Does the Forest’s land base progress toward consolidation that meets objectives by exchange, purchase or donation?</p>
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The WNF land base is progressing toward improved consolidation by land purchase and exchange. In FY2012, the WNF acquired 63.8 acres that improved consolidation. The acquired tract is in the Future Old Forest with Mineral Activity (FOFM) Management Area. One land exchange was initiated on the Ironton Ranger District, the Sean Doyle Exchange at Timber Ridge Lake and is underway.



*Marietta Unit-Critical Inholding parcel acquired near Hohman, OH*

<p><b>Objective 14.1b</b> – Acquire rights of ways or property to improve access to NFS land.</p>	<p><b>Monitoring Work Plan Question #53:</b> 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 WNF acquired one property that improved access to existing WNF lands in FY2012. No temporary rights-of-ways were acquired for administrative use.

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

The WNF issued 15 special use permits in FY2012. These permits contribute to community development since private individuals or companies hold permits to occupy public land or provide access to private property. The community benefits by the use of public lands for occupancy since alternatives are not available on private land. The WNF issued several temporary Recreation Event Permits in FY2012, which are accountable by the Recreation Staff.

The WNF did not acquire property that contained prime farmland or land with high potential for community development in FY2012.

### Goal 14.2 Maintain Boundary Lines



*Forest Surveyor with his Total Station Surveying Equipment*

**Objective 14.2a** – Survey and post landlines not currently marked. Maintain lines previously marked on a 10-year cycle.

**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?

The WNF completed 12 miles of boundary marking and maintenance. The WNF continues to make progress in marking NFS property boundaries. High visibility and recognition of boundary marking along public road frontage is making public land more available to the public. Marking of NFS boundary is needed to manage NFS land so projects remain within public land.

Contracting for boundary maintenance and cadastral surveys achieved successful results on the Athens District and the Ironton District. Two Indefinite Delivery/Indefinite Quantity (IDIQ) survey contracts were awarded in FY2012, one on the Athens District

and one on the Ironton District. The Bessemer Hollow Project on the Athens District completed boundary marking for a watershed project. The Pine Creek Project on the Ironton District completed boundary marking for a timber project.

The WNF continues to provide recognizable property lines through meeting annual targets to mark and maintain the NFS boundaries. The Forest Surveyor meets targets by completing projects himself and by the administration of IDIQ contracts.



*Entering National Forest Land – 2 Red Blazes*

<p><b>Objective 14.2b</b> – Survey and post landlines not currently marked. Maintain lines previously marked on a 10-year cycle.</p>	<p><b>Monitoring Work Plan Question #57:</b> Is the Forest making progress towards resolving trespasses as they occur and are discovered?</p>
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The WNF resolved 2 trespasses in FY2012. The Wayne National Forest continues to investigate and resolve trespasses and encroachments on the WNF as they are discovered. When a trespass or encroachment is discovered, the Lands Staff will provide coordination with the Line Officer to adhere to Forest Service Manual and Handbook directions. The Regional Office and Office of General Counsel are involved in the resolution of trespasses.



*Trespass- Timber theft and Occupancy on the Ironton District 2012-Investigation ongoing.  
Red line is USA line by validated Survey*

## 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 WNF considers all special use requests. If the request meets the standards set forth in the directives of the Forest Service and the agency and are deemed an acceptable use, the application is processed per the customer service standards. Cost Recovery, when applicable, is used to recoup certain processing and monitoring fees related to the application. A permit is issued for special use authorizations on NFS lands once all aspects of the process are complete and processing and land use fees are collected. The WNF processed and issued 15 permits in FY2012. The WNF inspected 104 permits and

found them to be to standard.



*Helca Water Co. buried water line  
under permit-installation*



*and current condition - after*

## 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 acquired in FY2012 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 100 acres permitted for grazing, all on the Marietta Unit. None of these acres contributed to wildlife habitat objectives or were grazed for non-native invasive species control. The WNF mowed 50 acres of the grazing pastures to knock back multiflora rose, an invasive plant that cattle do not consume.

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

In FY2012, 62 facilities Forest-wide are shown as meeting standards per the infrastructure database (INFRA) as either good or fair condition. Because of personnel shortages, only two facilities were inspected for general maintenance needs under condition surveys, less than the 60% that was planned to make up for the shortfall of inspections in FY2011. If funding is available, additional inspections will be completed in FY 2013 with a target of closing the shortfall of inspections that has developed over the years. No decommissioning of facilities was completed in FY2012.

### Goal 17.2 – Safety and Effectiveness of Dams

Maintain dams as safe and effective water storage facilities.

<p><b>Objective 17.2a</b> – Maintain dams to standard.</p>	<p><b>Monitoring Work Plan Question #62:</b> 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><b>Objective 17.2b</b> – Inspect high hazard dams annually.</p>	
<p><b>Objective 17.2b</b> – Decommission or appropriately dispose of dams no longer needed.</p>	

Forest INFRA database shows 17 dams; this is not correct. The correct number is 30. Inspection of all dams should be completed in FY2013 and data collected and entered in INFRA to reflect the conditions that exist on the ground.

There are two dams classified by the Ohio Department of Natural Resources, Division of Water, Dam Safety Program as high-hazard dams. Both were inspected in FY2012 by the Regional Dam Engineer, Forest Engineer Staff, and ODNR. The two high-hazard dams are Vesuvius and Timbre Ridge, both on the Ironton District. The one major item on the inspection report was no secondary all-weather route to Timbre Ridge for emergency equipment and repair in the case of partial dam failure as noted in early reports. Funds have been requested for their construction.

Utah Pond dam had a new principal installed in FY2012.

The Forest Engineer and ODNR conducted an inspection of Kenton Lake dam in FY2012 with the general inspection showing that the dam has not been maintained in many years with trees growing in the dam face and the principal inlet completely blocked by a beaver dam. There is no anti-vortex plate or trashrack. The toe drainpipe does not discharge freely. The emergency spillway needs cleared of beaver dam material and a healthy grass cover established. No other dams were inspected in FY2012. Generally, the area of “Safety and Effectiveness of Dams” will require considerable funding to bring the various dams up to reasonable standards.

**Table 2.12 Dam Inspections**

Dams	2012 Inspections	
	Number Receiving Inspections by District	Noted Deficiencies
Athens Ranger District – 7*	0	0
Ironton Ranger District – 10*	3	13

\* These numbers are from INFRA and are not correct.

### 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.

<b>Objective 17.3a</b> – Reduce sedimentation and improve passage for aquatic and semi-aquatic organisms at Forest development road and forest service recreation trail crossings.	<b>Monitoring Work Plan Question #63:</b> How many stream crossing were inventoried and/or corrected for sedimentation production?
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In FY2012, no aquatic organism passage (AOP) inventories were conducted or any inventory of sedimentation production. Six new OHV trail bridges were installed on the Athens Ranger District and two new OHV trail bridges are under construction on the Ironton Ranger District. One culvert along Vesuvius Beach Road on the Ironton Ranger District was constructed to provide AOP.

The eight new OHV bridges will improve aquatic life by reducing sediment loads and improving the safety of trail users. The new culvert on Vesuvius Beach Road will reduce sediment and improve passenger vehicle traffic flow on this road.

On the Athens Ranger District two new hiking trail bridges, along with one boardwalk, were constructed to improve hiking safety and reduce sediment production.

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

	<b>Sedimentation Production</b>	<b>Aquatic Passage</b>
Athens District -	No inventory of sediment production was completed in FY2012	0
Ironton District –	No inventory of sediment production was completed in FY2012	0



*Airplane Hollow Old Bridge*



*Airplane Hollow New Bridge*

<p><b>Objective 17.3b</b> – Decommission temporary and system roads when they are no longer needed for administration of the Forest or its resources.</p>	<p><b>Monitoring Work Plan Question #64:</b> How many miles of roads were evaluated to determine maintenance, storage or decommission needs?</p>
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Due to the Engineering Technician vacancy on the Athens District, no roads on the Athens District were evaluated to determine maintenance, storage or decommission needs.

On the Ironton District 0.8 miles of Timber Road (FR 618) were decommissioned. No overall evaluation of all roads in the Ironton District was done to determine maintenance, storage or decommission because of a shortage of personnel to complete such an evaluation.

<p><b>Objective 17.4c</b> – 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><b>Objective 17.4d</b> – Maintain at maintenance level 3, or higher, roads intended for passenger vehicles.</p> <p><b>Objective 17.4e</b> – Maintain at maintenance level 2 roads intended for high clearance vehicles.</p> <p><b>Objective 17.4f</b> – Maintain at Maintenance Level 1 roads that are closed to public travel.</p>	<p><b>Monitoring Work Plan Question #65:</b> 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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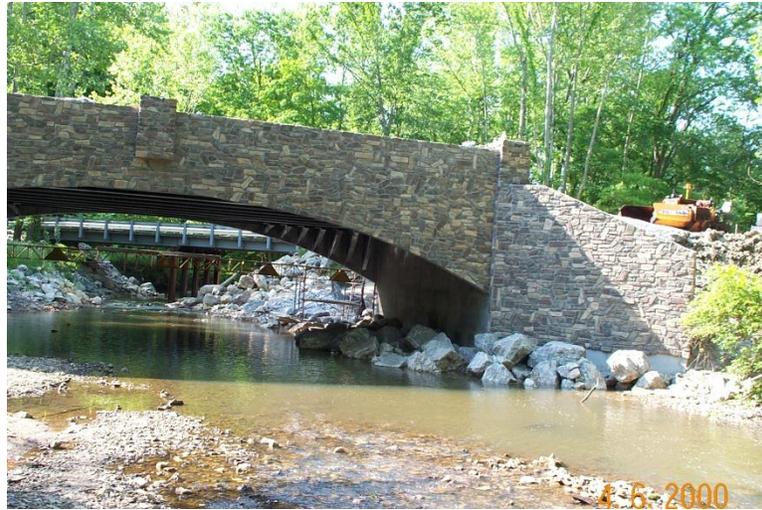
Forest-wide 55.8 miles of road were maintained to some level (some only brushing) with 7.5 miles grading/ditching work. Needed maintenance is dependent upon available personnel and funding, and is currently not at a level needed to meet standards. Several roads on the WNF currently have slips and are not environmentally stable.

As stated in the FY2011 Report, the WNF INFRA database for roads needs a major clean-up. A first-cut study of the roads in INFRA indicates 3000-5000 pieces of missing or incorrect/erroneous data. A small amount of the clean-up was completed in FY2012.

An overall evaluation of the roads has not been carried out because of engineering personnel shortage with data entered into INFRA; therefore, it is not possible to determine the total roads not meeting objective maintenance levels at this time.

Based on professional judgment of the Forest Engineer, it is estimated that only 1% of the roads are meeting objective maintenance levels at this time because of a shortage of funding.

Looking forward, it appears that roads funding will be based off of the INFRA report to a greater extent so it will be important that a professional evaluation of the roads be completed and the INFRA database reflect what exists on the ground.



*The new bridge on CR29 (FH2) was completed in FY2012*



*The landslide repairs on FH2955 and FH1957 were completed in FY2012 (before on left, after on right).*

Design and awarding of a construction contract to repair two landslides on FH132 was completed in FY2012.

<p><b>Objective 17.4g</b> – Remove hazard trees along Forest development roads from Sept. 15 through April 15.</p>	<p><b>Monitoring Work Plan Question #66:</b> Are known hazard trees removed during the appropriate time of year?</p>
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In FY2012, known hazardous trees were identified and removed, those with Indiana bat roost tree characteristics removed during the period from September 15th to April 15th.

## 18 - Public Health and Safety

### Goal 18.1 – Law Enforcement

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

<p><b>Objective 18.1a</b> - Prevent violations of law through:</p> <ul style="list-style-type: none"> <li>• Education</li> <li>• Information and regulatory signing</li> <li>• Improved facilities</li> <li>• Effective citing and prosecution of violations</li> <li>• Public notice of prosecutions and penalties</li> <li>• Presence of uniformed Forest Service personnel</li> <li>• Working with cooperating agency law enforcement officials at times and locations of heavy public use.</li> </ul>	<p><b>Monitoring Work Plan Question #67:</b> How many prevention activities were performed?</p>
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Hundreds of routine daily prevention activities were performed in FY2012 including: All-Terrain Vehicles (ATV) patrols on designated and illegal trails, boat patrols, hunting, fishing, recreation areas, camping areas, horse and hiking trail patrols.

<p><b>Objective 18.1b</b> - Focus law enforcement efforts on Forest priorities to reduce incidence of:</p> <ul style="list-style-type: none"> <li>• Illegal OHV use</li> <li>• Arson Fires</li> <li>• Trespass and timber theft</li> <li>• Trash dumping</li> </ul>	<p><b>Monitoring Work Plan Question #68:</b> How many incidences of illegal OHV use, arson fires, trespass and timber theft, and trash dumping were reported?</p>
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Incidences by category are as follows: OHV 104, Fire 23, Timber 22, Sanitation (Trash Dumping) 43.

<p><b>Objective 18.1c</b> – 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><b>Monitoring Work Plan Question #69:</b> How many agencies does the Forest have agreements with?</p>
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Wayne National Forest has Cooperative Law Enforcement Agreements (CLE's) with six

counties: Athens, Gallia, Hocking, Lawrence, Monroe and Scioto.

<b>Objective 18.1d</b> – Report violations of laws and regulations.	<b>Monitoring Work Plan Question #70:</b> How many violations were reported?
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There were 559 violations in FY2012.

- Warnings: 180
- Incidents: 273
- Violation Notices: 106

### 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.

<b>Objective 18.2a</b> – Ensure that water supplies and wastewater facilities meet relevant state and federal laws.	<b>Monitoring Work Plan Question #71:</b> Were the appropriate water quality tests performed?
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#### Drinking Water

In FY2012, the WNF operated wastewater systems at two campgrounds on the Ironton District (Oak Hill and Iron Ridge) and two campgrounds on the Athens District (Leith Run and Burr Oak). Also, a water distribution system is operated at Frontier Boat Ramp (Athens District) and Vesuvius Recreation Area (Ironton District). These distribution systems are served by public water suppliers, with no treatment or mass storage tanks at any of these facilities. Testing for contaminants such as coliform bacteria and total chlorine residual is maintained by each District. A construction contract for new watering and water hydrants was awarded for Iron Ridge Campground in FY2012 with completion of construction scheduled for FY2013.

Burr Oak Campground waterline developed a significant leakage problem in FY2012 and the location and repairs were not able to be completed, therefore, the water distribution for that campground was shut down in FY2012. A decision in FY2013 will need to be made to locate and repair or discontinue water supply at Burr Oak campground.

#### Wastewater

The recalcitrating effluent mound system at the Wayne National Forest Headquarters Office had a back-flow from the mound system to pump well because of a check valve problem causing a high water alarm notice and continuous pump operation. Repairs of that problem were completed in FY2012.

Operational problems with the drip irrigation system of Beach House wastewater treatment system in the Ironton Ranger District were corrected in FY2012.

Seepage in the sides of the leach field mound system at the Oak Hill campground is occurring during high rainfall events. Acetone soil material will need to be added when funding becomes available.

### **Permitting**

The Wayne National Forest no longer has any National Pollutant Discharge Elimination System (NPDES) permits, however, a historic permit for the Ironton Ranger District office continues to receive violation notices from OEPA for testing that was not performed and/or not reported to OEPA. The WNF contacted both OEPA's district office in Logan and State office in Columbus to verify the permit was closed and the WNF was not violating its terms. Contacts included e-mail and by mail to verify the notices are erroneous. The WNF was assured that the permit will eventually be removed from the automated violation mailing system that reports failure to provide test results. The WNF Forest Engineer was told that it is closed and to disregard any future notices. The closure will eventually be recognized by their automated system, and sometimes it takes several years to complete the process internally at OEPA.

### **Standards and Guidelines Compliance**

Did any project require guideline modification or a Forest Plan amendment to modify a standard?
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No standards or guidelines in the 2006 Forest Plan were modified in the 2012 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 Ohio University Voinovich School of Leadership and Public Affairs for their Non-Point Source monitoring website.

The employees and volunteers of the Wayne National Forest who contribute information to our monitoring efforts are too numerous to list. The primary author of the report is Nicole Stump, GIS Specialist and Acting Forest Plan and Monitoring Coordinator. The following staff directly contributed the many words, photos, tables, charts and expertise for this effort:

Steven Alarid	Forest Timber Program Manager
Steve Blatt	Forest Biologist
Kristofer Butcher	Program Assistant, South Central Zone, Law Enforcement & Investigations
Cheryl Coon	Forest Botanist
Ann Cramer	Forest Archeologist
Richard Jones	Lands, Minerals and Special Uses Program Manger
Chris Wilson	Forest Engineer
Jonathan Olsen	Forest Fire Management Officer
Rachel Orwan	NEPA, Appeals & Litigation Coordinator (Acting Forest Planner)
Katrina Schultes	Wildlife Biologist
Pamela Stachler	Forest Hydrologist, Watershed Program Manager
Chad Wilberger	Recreation Program Manager