

# Ohio Department of Natural Resources

## Division of Forestry

### Five Year Forest Management Plan

For

### Vinton Furnace State Forest



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# OHIO DIVISION OF FORESTRY

## I. **STRATEGIC PLAN** *(Effective 2008)*

*Our Vision: Ohio's state forests will be the best managed forest lands in the country, and will be widely recognized as such.*

**To fulfill this vision, the Ohio Division of Forestry commits to meeting five objectives.**

**We will:**

- Manage forests to ensure the health and sustainability of forest systems
- Produce high-quality forest products that contribute to local communities
- Provide recreational opportunities that require a large forest land base
- Provide unique forestry education sites and promote outreach and long-term research
- Maintain a highly trained and well equipped work force

**To fulfill these objectives, the Division of Forestry will develop and implement strategies and plans that allow us to accomplish the following goals by 2011:**

- Manage forests to ensure the health and sustainability of forest systems
  - *Implement a proven, verifiable approach to sustainable management*
  - *Manage for site-appropriate, native forest systems and species*
  - *Maintain long-term forest productivity through conservation of soil, water, and forest resources*
  - *Retain or promote stand- and landscape-level wildlife habitat*
  - *Assess the distribution and impact of non-native invasive species*
- Produce high-quality forest products that contribute to local communities
  - *Base State Forest harvest volumes on the goals and guidelines for each forest system, current stand and forest-wide inventories, and science-based silviculture*
  - *Develop marketing strategies to capture the maximum value of forest products*
- Provide recreational opportunities that are compatible with sustainable forest management
  - *Develop a comprehensive recreation plan for the state forest system*
  - *Build recognition for unique and varied recreation opportunities on state forests*
- Provide unique forestry education sites and promote outreach and long-term research
  - *Support forest research with an emphasis on sustainable forest management (silviculture, prescribed fire, native systems, etc.)*
  - *Develop opportunities to showcase forest management practices to the general public, private landowners, and forest industry*
- Maintain a highly trained and well equipped work force
  - *Develop a training, continuing education, and/or certification standard for all division staff*
  - *Inventory and evaluate equipment and facilities and develop maintenance and replacement schedules*
  - *Develop equipment and facilities budgets based on current and projected needs*
  - *Ensure all staff have appropriate health and safety training*

## II. FOREST HISTORY

*Land Acquisition:* Prior to the 1800's, dense forest of oak-hickory and associated species covered Vinton County. Then in the early 1800's, the refinement of native iron ore in charcoal furnaces became a flourishing industry. Between 1818 and 1873, 69 furnaces were built in this region. Production at this furnace, as at other furnaces in the area, proceeded unrestricted for a number of years because of the proximity of resources. However, as timber reserves and other resources were depleted, transportation costs for raw materials forced the furnaces to close. As the furnaces became abandoned, much of the timber-exhausted land was put into cultivation and pasture. But the characteristic steep terrain and the thin residual soils of the area proved agriculturally unproductive. By 1910, erosion and depleted fertility made the land not conducive to farming and agriculture. With no feasible alternative employment, tax delinquency increased and a population exodus occurred (1880-1930).

In 1935, under the direction of the US Department of Agriculture and the Ohio Division of Forestry, the Zaleski Land Utilization Project was established. This 46,000-acre project in Vinton County was part of 2,000,000 acres in Southeastern Ohio that was designated an economic problem area by the Federal Government. The objective of the Zaleski Project was to return the land to its most productive capacity by generating a forest community, aiding flood control and preventing soil erosion and by so doing, establishing an economic base to maintain a rural population. The Federal Government, through the Resettlement Administration, acquired 19,000 acres of land within the Zaleski Land Utilization Project and transferred its administration to the Ohio Division of Forestry. This included control of an area south of U.S. 50 known as Raccoon Forest (now a portion the Vinton Furnace State Forest). In all, the Division administered 22,000 acres of forest-recreation area.

Through the effort of the Works Progress Administration (WPA), many developments and improvements were accomplished. Many acres received timber stand improvement in the form of salvage cutting, thinnings and weed tree and vine removals. Roads, trails and fire breaks were completed, wildlife habitat improvements were initiated, a game refuge was established and numerous waterholes were built on Raccoon Forest.

Since this time, various land acquisitions, transfers and exchanges have occurred. Ownership of the land acquired by the Resettlement Administration was transferred to the Soil Conservation Service, then to the Forest Service and finally, in January of 1958, to the State of Ohio. Further land acquisition and exchanges, including an exchange involving Raccoon Forest to Mead Corporation for a similar holding in Zaleski State Forest.

"In 1952 the Baker Wood Preserving Company bought a tract of land in Vinton County and set aside 1,200 acres for use by the Forest Service as the Vinton Furnace Experimental Forest. A decade later, Mead Paper Company purchased the tract and maintained the relationship with the Forest Service. Many of the studies and demonstrations on the Vinton Furnace State Forest date from the mid to late fifties and include the comparison of different cutting practices on timber production and species composition. These studies evaluated the effect of the size of the canopy opening on composition of regeneration conversion of dry sites to pine and the effect of understory removal on the growth of the overstory." (Yaussy and Roush 2000)

Mead Paper Company continued the agreement with the US Forest Service for the Vinton Furnace Forest for many years. Subsequent purchasers of this tract also honored this agreement. Mead Paper merged with Westvaco in 2001 to form MeadWestvaco. When the company sold its operations to a private holding company in 2005 the land and paper mill operations were split. A new company called Escanaba Timber LLC took ownership of the Vinton. The land changed hands once again to a company called Scioto Land Company. Then in 2006 a Real Estate Investment Trust (REIT) called the Forest Land Group bought the land and held it until the time of the purchase by the State of Ohio.

The purchase of this tract of land by the State of Ohio was the largest single purchase in State history. And this was for good reason. Since 2000 alone, data collected at the forest has been cited in nearly 200 scholarly papers on forest ecology, forest management, and wildlife. The total purchase price and costs for the Vinton Furnace Forest was \$15,100,000. Of that amount, only \$3,884,000 came from state Capital funds. The Ohio Department of Natural Resources obtained environmental mitigation

funds from private companies and dedicated land conservation funds from the federal government. Together, non-state sources comprised 70% of the funding needed to purchase the Vinton Furnace Forest. For every \$1 of state funds more than \$2.5 will come from private and federal sources. In addition, a unique partnership with the USDA Forest Service Northern Research Station will provide continued, non-state funded staffing and maintenance for the property.

Under ownership by the State of Ohio, the Vinton Furnace State Forest will be comprised of three tracts; 3,409 acres purchased by the Ohio Division of Wildlife, 2,606 acres purchased through federal Land and Water Conservation Fund support, and 9,480 acres purchased with a combination of state, federal, and private funds, including \$1.5 million from the REX East Migratory Bird fund. The latter two tracts will be added to the land inventory of the Ohio Division of Forestry, and will be managed under the principles established in this stewardship plan. The Ohio Division of Wildlife will manage its tract in cooperation with the Division of Forestry, and for a range of wildlife species including the Cerulean warbler.

Future acquisitions will be dependent upon funding. Non-traditional sources of funding are becoming available with the advent of the Carbon Sequestration Markets. Land acquisition priorities will be three and four sided in-holdings. Adjacent properties to the current land base will also be a higher priority than disjointed tracts of land.

*Past Land Management/Uses:* Before and around the turn of the century, this area was extensively mined for coal, iron ore, farmed and cut for charcoal for the iron ore furnaces. "The area of the Vinton Furnace State Forest supported two iron furnaces that operated between 1850 and 1890. After the shut down of the furnaces, the land reverted to forest with little farming or grazing pressure. There is evidence that wildfires burned through the area every two to three years. It is the assumption that the clear cutting, ample stump sprouts, frequent fires and possible grazing determined the species composition of the resulting forest." (Yaussy and Roush, 2000) In response to the degraded shape the land was left, during the 1930's, a mass reforestation project lead by the Civilian Conservation Corps (CCC) and WPA planted thousands of trees on the former Raccoon State Forest and other state forests for erosion control. Some abandoned mine reclamation work has been done on the forest mostly on the far southern end.

### **III. FOREST DESCRIPTION**

#### **A. General**

*Property Location Description:* The Vinton Furnace State Forest is located in the Hill Country of Central and Southeastern Ohio, six miles southeast of McArthur and twenty miles west of Athens. This area is referred to as the "Southern Unglaciaded Allegheny Plateau Section of the Eastern Broadleaf Forest Province, which is characterized as a maturely dissected plateau of high hills, sharp ridges and narrow valleys" (McNab and Avers 1994). The ~12,000-acre forest covers portions of Clinton, Madison, and Vinton Townships in Vinton County. The forest is generally bounded by United State Route 50 and 32 on the north and south respectively and by State Routes 324/160 and County Road 6 on the west and east respectively. Refer to Exhibit 1 for the general location of the forest. The US Forest Service Headquarters is located in the middle of the property.

*Soils:* The Vinton Furnace State Forest falls within three (3) soil regions: the Shelocta-Brownsville-Latham-Steinsburg; the Coshocton Berks-Westmoreland; and Gilpin-Upshur-Lowell-Guensey as shown on soil regions of the Ohio map. The most common soil association found at the Vinton Furnace State Forest is the Steinsburg-Gilpin Association. This soil is characterized as 55% Steinsburg and 20% Gilpin with 25% other components. This soil is fairly shallow with an average of 22" to bedrock and 40-70% slopes.

*Water Resources:* The Vinton Furnace State Forest is contained within the Scioto-Hocking Watershed Region, and lies totally within the Raccoon Creek Watershed. The northern portion of the forest is drained by the Elk Fork of Raccoon Creek and Flat Run, while the southern portion is drained by Pierce Run.

*Access Issues/Transportation:* The Vinton Furnace State Forest is traversed by numerous county, township and forest roads (refer to Exhibit 3). State Routes 160 and 324 and County Road 6 are the only hard surfaced roads in the forest. However, numerous well-maintained county and township roads provide access to nearly all parts of the forest. Public vehicle traffic on forest management access roads is prohibited.

More than a dozen unmaintained township rights-of-way exist on the Vinton Furnace State Forest. These rights-of-way remain on the township records and are legally passable by the public, who occasionally use off-road vehicles on the old roads.

*Potential Productivity:* There are multiple ways to measure forest productivity. The Site Index Value is a common measurement of how well a certain tree species grows in the place where it is found, thus defining productivity of the tree species. It is highly correlated to available moisture and soil type. Site indices vary at the Vinton Furnace State Forest from 90+ Black Oak (base age 50) to <50 Black Oak. A broad average for the entire forest is approximately 75. According to timber surveys performed in 1951 by E. Conway, the average annual volume growth for the Vinton Furnace State Forest was 145 board feet per acre. Using numbers from the recent inventory on Zaleski State Forest, Zaleski grew approximately 270 bdft/ac/yr. The older stands on the Vinton would mirror this figure but the younger stands are not yet productive. The overall productivity of the forest is unknown until better data is available.

*Overstory:* The Vinton Furnace State Forest lies within the oak-hickory forest type, and contains a heterogeneous composition of forest species referred to as the Central Upland Hardwoods. Mixed oak species are located on upper slopes and ridges, with mixed mesophytic trees of more tolerant and later climax species located in the hollows and low areas. Principal species include red, white and black oak, red and sugar maple, various hickories, beech, yellow poplar and ash, with occasional walnut and scattered other species. Plantations of conifers are common throughout the forest. Principal species include white and pitch-pine (Pitch and Loblolly crossed) pine.

*Understory:* The understory layer is often as diverse as the overstory with a large number of species occurring. These species may be site or aspect oriented and the current stage of succession can dictate which species will be present. However, it is often a plant's tolerance for shade that dictates their ability to survive in the understory. Shade tolerant species such as maple, beech, hemlock, blackgum, and basswood may exist in the understory for many years. These species will strive for a position in the overstory once an opening in the canopy occurs. Other understory species such as flowering dogwood, spicebush, redbud, witch hazel, pawpaw, hawthorns, and others remain in the understory.

*Herbaceous Layer:* The herbaceous layer at the Vinton Furnace State Forest is typical of Upland Central Hardwoods. Black cohosh, ginseng, various orchids and native wildflowers grow in fertile cove areas. On drier sites, grasses, forbs and some wildflowers are common.

*Habitat Components and Wildlife Populations:* Forest management increases our ability to create and maintain a high level of diversity and interspersed habitats necessary for the maintenance of a great variety of native fish and wildlife, including non-game, as well as game species. One of the goals of state forest multiple use management is to provide a variety of vegetative covers (both in species and age classes). This should provide as great a variety of native flora and fauna as practical and produce levels of native fish and wildlife that are compatible with the environment and other forest uses.

This quote taken from the Division of Wildlife's Website, about the Waterloo Wildlife Area, also describes the wildlife resources at the Vinton Furnace State Forest: "Abundant native game species include the gray squirrel, wild turkey, and white-tailed deer. Lesser numbers of fox squirrel and ruffed grouse are found on the area. Cottontail rabbits occur in small numbers in the reverting fields. All of the furbearers common to Southeastern Ohio are found on the area. Approximately 80 species of birds can be seen or heard on the area in a year's time. Included are cedar waxwing, white-eyed vireo, red-eyed vireo, blue-winged warbler, prairie warbler, yellow warbler, hooded warbler, indigo bunting, Northern mockingbird, wood thrush, Acadian flycatcher, mourning dove, and red-tailed hawk."

As described in the Vinton Furnace Stewardship Plan, the Vinton Furnace State Forest will contribute to the primary management objectives for the state forest system: maintain oak-dominated forest types,

sustain mature and old oak-dominated forest types, and maintain a small proportion of early successional habitat for oak regeneration. These management objectives will contribute to the long-term viability of Cerulean warbler populations on this property. In addition, the Vinton Furnace State Forest will also be used to foster a broad-based research program on forest ecology and management.

On State Forests, habitat management objectives shall be accomplished through normal silvicultural practices. In relation to other forest practices, wildlife management should receive the same emphasis given to, soil, water, recreation, aesthetics, and timber.

The Forest Wildlife Management Objectives for The Vinton Furnace State Forest are:

1. To develop and maintain abundant and diverse wildlife resource representative of the Central Hardwood Forest. This will be accomplished through the application of sound silvicultural practices and, to a lesser extent, through the use of specialized wildlife habitat practices.
2. Sustain and improve populations of federal and state threatened and endangered species. Use the best science and consultation available to accomplish this goal.
3. To provide quality wildlife-related recreational experiences in the forest consistent with wildlife resource needs. Quality will be maintained by limiting recreational use, principally through controlled access and regulation.

Each silvicultural system has an impact on wildlife. Management strategies that favor site-appropriate, native species shall be favored. Specifically, silviculture that promotes the regeneration and maintenance of Oak/Hickory native associations shall be favored.

All silvicultural practices applicable to the forest types should be employed to provide for a mosaic of habitat types. This should include zoning variability to provide for differing management strategies, regeneration harvests (clear cuts and shelter woods), single tree selection and group tree selection harvest methods, timber stand improvement projects, and other types of thinning.

The intent in forest cover manipulation on state forests is not to control or manipulate wildlife. Rather, the intention is to manage primarily for multiple benefits and maximize biological diversity.

*Invasive Concerns:* Invasive species found on the forest include Autumn and Russian Olive, Ailanthus, Japanese stilt grass and Japanese honeysuckle to name a few. More specifically, the stewardship plan written for the Vinton Furnace includes the following point: The Division of Forestry is committed to following the policy of the Division of Wildlife on the control and eradication of non-native terrestrial vertebrate invasive species (Appendix 4). Further, the Division has on-going programs to address the control of non-native invasive plants on state forests and will utilize these programs to help control these species. To this end, invasive species control and eradication projects will be carried out.

## **B. Sustained Yield and Forest Level Growth**

In 2009, the Division of Forestry procured the services of LandMark Systems to provide a comprehensive inventory of the eight (8) largest state forests (Brush Creek, Hocking, Pike, Richland Furnace, Scioto Trail, Shawnee, Tar Hollow, and Zaleski). The purpose of this project was to provide decision support for forest management activities, to update our current inventory database, and provide forest inventory information for the public. This project produced an inventory of approximately 156,000 acres or 78% of the entire acreage of state forest land. The remaining 22% of state forest land was not part of this project.

The acreage of state forest land that was not inventoried totals roughly 42,000 acres. These acres are located on 13 separate, relatively small state forests and the Vinton Furnace. While the Division of Forestry desires an inventory on these State Forests, a lack of resources to perform such an inventory was not possible at the time and the Vinton Furnace had not yet been purchased. The Division does forest inventory work in the form of compartment prescription cruising on these state forests. This approach has been useful for our management of the forest, however, it does not provide for the data needed to maintain an inventory database or to calculate growth using a growth and yield model.

Despite the limitations of our data on the 42,000 acres of state forests, the Division feels that it is reasonable to use US Forest Service Forest Inventory and Analysis (FIA) data to make estimates of the

inventory and growth of the timber volume on those forests. The Division used FIA data across all ownerships in the southeastern Ohio counties to estimate a growth rate per acre for each forest. This estimate is noted in the table below as the "Total" growth rate. However, each state forest has a system of management zones that define the management options for those areas. Several zones provide for limited or restricted management. Therefore, the estimate of growth & yield is also provided for only zones 3B and 3C where forest management is active. This calculation is noted in the table below as the "Constrained" growth rate.

**Vinton Furnace**

Productive Acres	Total Growth Bd Ft / Yr	Total Growth Bd Ft / Yr	Zone 3B and Zone 3C Acres Only	"Constrained" Growth Bd Ft / Yr
12,089	219.76	2,656,679	9,437	2,073,875

**C. Landscape Level Information**

*Adjacent Forests:* The Vinton Furnace State Forest is located in Vinton County. Vinton County is 70% forested. Vinton County averages approximately 6,844 board-feet per-acre according to the most recent FIA data. The current forest inventory for the Vinton Furnace State Forest is not yet available due to its recent acquisition.

Nearby publicly owned forestlands include Lake Hope State Park, Waterloo Wildlife Area, and Wayne National Forest. Nearby state forests include Zaleski, Hocking, Tar Hollow, Richland Furnace and Shade River.

*Local Socio-Economic:* Currently it is estimated that the Wood Products Industry in Ohio is a 15- billion dollar per year industry. This industry is dependent on sustainably managed forestlands throughout the state. State Forests provide an important function of demonstration for long-term sustainable management that can be applied to private lands. This is an indirect economic benefit to all forests in the state. Indirect benefits also result from the sale of timber at the Vinton Furnace State Forest that will contribute to the local wood products community. Direct economic benefits are created when the proceeds from the sale of stumpage through the Timber Sale Program are shared with the State of Ohio General Revenue Fund, as well as counties, townships, and school districts where the sales are located. Between \$100,000 and \$450,000 has been returned to the local level in each of the past five (5) years (numbers from Zaleski State Forest).

The Forest and its staff also provide many informational and educational opportunities. Forest employees often lead local students, interested forest visitors, and other clubs and groups on informational tours. There are also many Special Use Permits issued each year for independent research projects and recreational uses. The hunting activity within the forest and other activities taking place within the forest often draw out of town and out of state visitors. When these forest visitors utilize the resources available at The Vinton Furnace State Forest, they are also contributing to the community both economically and socially.

According to 2010 US Census Bureau Data, the population of Vinton County is 13,435, which is the lowest population in any county in the State of Ohio. The median household income was \$34,242, which ranks Vinton County as one of the poorest counties in the state.

*Statewide Social and Economic Impact Evaluation and Monitoring:* The evaluation, incorporation, and monitoring of social and economic impacts of forest management is conducted by the Division in several ways. Data used in our evaluation of social and economic impacts comes from several sources including the Ohio Statewide Forest Resource Assessment and Strategy (FRAS) and a suite of particular programs and efforts specific to state forest management.

#### a. FRAS

The Food, Conservation, and Energy Act of 2008 (the 2008 Federal Farm Bill) requires each state to complete a *Statewide Forest Resource Assessment and Statewide Forest Resource Strategy* to continue to receive funds under the Cooperative Forestry Assistance Act. The Division completed a document titled "Ohio's Statewide Forest Resource Assessment and Strategy" (FRAS). The purpose of the FRAS document is to provide a basis upon which future strategic directions and actions can be evaluated and selected. It is to be used by the Division of Forestry as well as existing and potential partners to marshal limited resources towards addressing identified forest issues and threats. One of the criteria used in the FRAS, Criterion 6, is the Maintenance and Enhancement of Long-Term Multiple Socioeconomic Benefits to Meet the Needs of Societies. *The results of the FRAS and the associated strategies to deal with the identified threats are a significant source for state forest managers on our understanding and incorporation of social and economic impacts of state forest management.*

The 2010 Statewide Forest Resource Strategy for Ohio is a strategic planning document that will guide all state forestry activities by the Division of Forestry, including programs with funding from USDA Forest Service State and Private Forestry grants. The State Strategy is framed around the key issues identified in the FRAS, as well as the important benefits and services that Ohio forests provide. Stakeholder input was a critical component of the assessment process and, in particular, the identification of key threats and opportunities for Ohio's forests.

An important role for all stakeholders is to increase public awareness of the benefits forests provide and the role that all Ohioans play in sustaining those benefits. This has been identified as one of the major issues facing Ohio's forests. The Division has several programs, including state forest management, which are listed and committed to accomplishing this goal. Public outreach and educational efforts are identified in each state forest Annual Work Plan.

#### b. State Forest Efforts - evaluation and monitoring of Social and Economic Impacts

A suite of particular programs and efforts specific to state forest management contribute to our evaluation and monitoring of social and economic impacts. These activities happen at a local or regional level.

- *Civic Activities* – Division staff are members of and associated with various clubs, organizations and civic groups. This is an important way, especially for local forest managers, to stay in touch with their community.
- *Indigenous Peoples Consultation and Cooperation* - The Division works closely with the Hopewell NPS and the OSU-Newark Earthwork Center on training for staff on the significance and protection of cultural resources. Further, the Division extends an offer of cooperation to tribal contacts who may have an interest on providing input into our management.
- *Forest Industries Program* – This program works cooperatively with government agencies and industrial associations to enhance Ohio's domestic and international wood products marketing opportunities.
- *State Forest Timber Sale Revenue Distribution to Local Governments* - Through the "Trees to Textbooks" program, administered by the Ohio Department of Natural Resources (ODNR) Division of Forestry, a percentage of the revenues generated from state forest management activities go to the county, township, and school district in which the activity took place. Over \$21 million has been distributed since 1983 to some of the most economically disadvantaged counties in Ohio.
- *State Fire Assistance* – The Division has multiple programs to educate local communities on wildfire risks and to provide necessary training, equipment, and suppression assistance to rural volunteer fire departments.
- *Recreation Program* - The recreation program administers all of the recreation facilities, grants, and special uses of our state forests. The division collaborates with a number of not-for-profit recreation organizations on special projects that are compatible with the division's mission. All state forests are open to public recreation.

- *Public Participation and Consultation* – The Division has several means by which citizens' may have a voice to our management of the forests. There is an appointed Forest Advisory Council, annual open houses, public meetings, an open records law, and a friendly open door policy.
- *Other working groups and partnerships* – The Division is involved in a host of working groups, committees, and partnerships that focus on a variety of issues from forest health, Emerald Ash Borer, Logger Training, and many others.

c. Plan for Evaluation and Monitoring over the next five (5) years.

The FRAS is a document that is updated every five (5) years with new information. The FRAS serves as one type of monitoring since it incorporates social as well as economic data sets in the results. The Division's plan for the incorporation of the FRAS data into our management is as follows:

1. *Training* – Since the FRAS is a recently completed effort, all state forest staff will be trained on the results of the FRAS for better understanding of what the potential impact mean to our operations.
2. *Commitment to Participation in the Strategies* – The FRAS identifies 6 key issues with associated objectives and strategies to mitigate those issues. For each issue, agencies and programs are identified as being key factors towards mitigation. State Forests will commit to being a key partner in these efforts.
3. *Commitment to Participation in the monitoring and update of the FRAS* – State Forest will play a key role in the update and monitoring of the items of the FRAS assessment.

For other local or regional Division and State Forest efforts, the Division will attempt to gather data for evaluation and continue monitoring efforts. Specifically, the following activities will be planned for the next five (5) years.

1. Timely reporting for programs or efforts listed above relating to social and economic impacts.
2. Catalogue data from a voluntary registration form used by recreational users in order to determine user trends.
3. Catalogue public comments that are received at public meetings and open houses
4. Catalogue disputes and records requests.
5. Commit to participation in civic activities at each unit location.
6. Commit to the partnership efforts important to state forests and report as needed.
7. Continue to strengthen outreach and education programs.
8. Broaden the scope of our consultation efforts.

All of these monitoring efforts are reviewed at least once per year by the Integration Committee for the Division. The Integration Committee determines the responses and/or actions that need to be taken to address the results of the monitoring. Recommended actions or adjustments to policies or procedures will be considered for inclusion into our policy documents. The results of monitoring will be incorporated in our strategic plan, 5-Year Management Plans, and Annual Work Plans.

*Climate:* Most of Ohio lies within a climatic region classified as Humid Continental, warm summer phase, with predictable general changes. The mean annual temperature for the Vinton County area is 54° F, with season averages of 71° F in summer and 32° F in the winter. Annual precipitation averages 40.3 inches of total precipitation with 59% of precipitation falling from April to September. The average snowfall is 21 inches.

Within the Vinton Furnace State Forest, many microclimates exist, each producing its own combination of vegetation and wildlife. Wind, solar radiation, and soil moisture vary between ridges and slopes and hollows, resulting in a variety of flora and fauna. Annual localized floods are common. During the spring rains, highways and forest roads are frequently blocked because of high water conditions.

*Geology:* The Vinton Furnace State Forest lies entirely within the un-glaciated portion of the Appalachian Plateau. Topography of the forest ranges from rolling hills, found in central Vinton County to steep hills found in the western and eastern portions of the county. Streams and valleys penetrate the forest, which is typified by narrow ridges, steep valley slopes and level valley floors.

Surface strata are composed of residual soils formed by the weathering of bedrock and are composed predominantly of calcareous sandstone and shales, except for a small portion formed on limestone and limy shale. Most soil is generally light colored and well drained due to the steep, sloping relief. The deepest, richest soils are located within the valley bottoms. However, most of the soil is low in natural fertility and organic matter.

Numerous gas and oil wells are located throughout the county and provide supplementary incomes to landowners. There are currently no active wells at the Vinton Furnace State Forest although the federal government owns a controlling share of the oil and gas rights for the majority of the property. Sites could become active in the future. There is also potentially mineable coal under the Vinton Furnace State Forest. The Division of Forestry controls the majority of the Coal Mineral Rights. No mining is planned in the future.

*Cultural, Historical, & Archeological:* The Vinton Furnace State Forest has a rich history of Native American use. The most noticeable use was by the Adena group, 1500 to 2500 years before present. Indian mounds from this time period are found throughout the forest. The mounds, ranging in height up to 20 feet, were used for burial and signaling purposes. Similar mounds can be found scattered throughout Southeastern Ohio.

The remains of building foundations can be found at the site of the old Vinton Furnace. While the furnace is barely visible, Belgian coke ovens are very visible along the banks of the Elk Fork of Raccoon Creek. The coke ovens were used to “coke” coal for use in the furnace. Coking is a process that removed impurities and foreign substances from the coal, leaving only the carbon. These ovens, built in 1875, are believed to be the only ones of their kind built in the United States. Across the township road on the north side of the Elk Fork, there is still some evidence of the community built there to support the furnace. According to the 1876 County Atlas, a school, a store and 44 homes once stood there. Residents were primarily German and Polish immigrants. The area also has evidence of the old Vinton Furnace switch track, which was a short spur line of the old Marietta, Chillicothe and Cincinnati Railroad, which became part of the Baltimore and Ohio (B&O) Railroad. (Yaussy and Roush, 2000)

## **IV. MANAGEMENT OBJECTIVES**

### **Zoning and Special Areas**

*Forest Zoning:* Forest Management Objectives are guided and designated by Zone Classifications. The descriptions are listed in detail in the Division’s Land Management Manual. A goal during this five year plan cycle is to thoroughly identify the appropriate zoning for the forest. Zones will be identified and reviewed by the Research Advisory Committee, then approved by the Chief of the Division of Forestry and the Forest Advisory Council. Some work in this area has already begun with the identification and approval of a Zone 3E for Research and Demonstration. This zone will include approximately 2,158 acres which is an expansion of the historical research area under prior ownership (see Exhibit 6). This zone is outlined below and is the guide for what activities may or may not be carried out in the core research block.

The Division recognizes and supports the value of research for forest management activities. This subzone is designed to provide a venue for long-term forest research and demonstration. The goal of this subzone is to both protect existing research sites, designate areas for future long-term research studies, and to provide educational opportunities to the public about forest management. Research projects may be permitted in other zones, but this is the only area where research and demonstration are the primary functions.

Activities in this subzone may have additional requirements and restrictions listed in property records and forest management plans, as is the case with Vinton Furnace State Forest. This zone shall not be used to calculate targets for growth and yield of forest products nor shall it be part of the normal compartment cruise schedule.

Opportunities for extensive recreation (hiking, cross-country skiing, snowmobiling, picnicking, hunting, fishing, swimming, primitive camping, nature studying, etc.) may be provided by using the transportation system created from on-going research activities and existing infrastructure. Existing recreation opportunities will be maintained so long as the primary function of the area can be maintained. Opportunities to provide educational opportunities will be the priority.

Facilities necessary for research and demonstration activities may be maintained and constructed.

Visual resource management will consist of road right-of-way and facility maintenance. Visual buffers are not required for management activities.

Any significant site disturbing activities will undergo an environmental assessment as detailed in the forest management plan to ensure threatened and endangered species concerns are met. Maintaining and protecting unique wildlife habitats for rare, threatened, and endangered species will be a priority.

Layout, maintenance and closure of all skid and haul roads will follow guidelines as shown in the Timber Management Manual, Chapter VI and the publication, BMP's for Erosion Control on Logging Jobs. Exceptions will be allowed when relevant to active research.

Non-silvicultural vegetation management will be permitted to open up vistas, improve pedestrian access, eliminate invasive species, and encourage native plant and wildlife species.

Silviculture appropriate for eastern hardwood forests will be permitted when done for research or demonstration.

Traditional T.S.I. will be performed for research or demonstration activities only. Invasive species suppression may be conducted throughout the area so long as active research will not be impacted. The focus shall be removing the potential for invasive plants to impact research activities.

Fire suppression work, closing areas during dry periods, maintaining firebreaks, maintaining transportation system, fuel management and conducting hazard reduction burns, shall be carried out in this area. In the event of an uncontrolled fire, the Division and local volunteer fire departments will respond with appropriate means to minimize any loss to the resource.

Prescribed fire shall be performed in this subzone as needed for research or demonstration. Prescribed fire shall be consistent with Division policy and based on scientific peer-reviewed research.

All sites identified to have Cultural/Historic value within this area will be maintained for such values. Careful discretion will be used with any resource management activity adjacent to these sites. Where necessary activity plans will be amended to give site protection the highest priority.

In general, streamside management activities in this subzone will adhere to restrictions as found under Zone 3-A Resource Protection Area. This requirement may be waived for research activities that require disturbance in the shade/filter strip.

*Research Areas:* Numerous research projects have been conducted and are on-going at the Vinton Furnace State Forest throughout its existence. Research collaborators include The Ohio State University, Ohio University, and the USDA – Forest Service. Current topics of research include: prescribed fire, oak regeneration, and invasive species management. Much of this research is long-term in nature such as the Fire and Fire Surrogate Sites that are part of a National Research Program. All requests for research are reviewed through the Special Use Permit Process and the Research Sub-Committee who will in turn report to the Research Advisory Committee (RAC). The Research Advisory

Committee consists of The Division of Forestry, Division of Wildlife, USDA Forest Service and the US Fish and Wildlife Service. The Research Sub-committee consists of many agencies and partners including the Division of Forestry, Division of Wildlife, US Forest Service Northern Research Station and Wayne National Forest, US Fish and Wildlife Service, Glatfelter and academia including Ohio State University, Ohio University and Hocking College, to name a few.

The Division of Forestry is committed to long-term support of forest research and desires that the property be used as such. The Division of Forestry entered into agreement with the Northern Research Station of the US Forest Service to manage the property as a research forest, and established the Research Advisory Council to help coordinate research and management activities across the property.

*Cultural Areas:* These are primarily Adena Mounds, early settlement, and old homestead sites. These sites are designated for protection through forest zoning and/or a special sites zoning layer referenced prior to any forest management activities. As sites are found this layer is updated to reflect current knowledge. A map will be developed at a later time once more information has been gathered.

*Sensitive Areas:* Visually and environmentally sensitive areas are present at the Vinton Furnace State Forest. Visual management is guided both by forest zoning and aesthetic forest management guidelines. Environmentally sensitive areas are managed through BMP's for forest management operations, forest zoning, and streamside management zones.

*Forest Services:* In developing this 5-year forest management plan, the Division recognizes the important public benefits and services that our State Forests provide. These services include but are not limited to soil and water resources, municipal watersheds, aquatic life, wildlife, carbon storage, recreation and tourism. These services are considered in our management of state forest and the development of our management plans. It is the intent of the Division to maintain and/or enhance these services through proper forest management.

*Soil Quality:* The Ohio Statewide Forest Resource Assessment and Strategies, 2010 (FRAS) include criteria and strategies dealing with soil quality for Ohio's forests. The FRAS report includes data from FIA and other soil data that show that the Soil Quality Index (SQI) for Ohio's forest soils is superior to that of neighboring states. The higher SQI is attributed to greater cation exchange capacity and a more desirable calcium-aluminum ratio. Low calcium-aluminum ratios are indicators of acid deposition. The average amount of soil carbon in the top 20 cm of mineral soil is 22 tons per acre and similar to neighboring states indicating the importance of protecting the top 20 cm of mineral soil. Certain forest management practices can increase carbon sequestration. The FRAS assessment cites that although Ohio's forests are maturing, the amount of carbon stored per unit area has changed little over the past 6 years. Over the next five (5) years the Division will take the following actions to maintain or enhance soil quality on state forests:

- Continue to require and promote the use of Best Management Practices for logging practices to control erosion.
- Develop guidelines for acceptable working conditions for logging during times wet weather to prevent sedimentation and minimize rutting.
- Develop guidelines for the retention of biomass in the forest including live tree and snag retention.
- Promote carbon sequestration tree plantings on state forests.
- Conduct training for all relevant state forest staff on BMP's and biomass retention.
- Commit to the strategies outlined in the FRAS strategies document.

*Water Quality:* The Ohio Statewide Forest Resource Assessment and Strategies, 2010 (FRAS) include criteria and strategies dealing with water quality in Ohio's forests. This assessment cites that the amount of forest within a watershed is a very important factor on infiltration rates and timing of surface runoff that reaches a stream. The Ohio EPA data shows that despite this fact the water quality of the most heavily forested watersheds in Ohio varies. These data show that the principle cause of impairment of Ohio's forested watersheds is related to landscape modifications from agriculture and urban development. Specifically, the pollutants that enter streams in these impaired watersheds are

from 1) human or livestock sewage, and agriculture chemicals, and 2) sediment from agriculture or urban development. Acid mine drainage is also cited as a factor. The Ohio EPA has also designated many Superior High Quality Waters and Outstanding State Waters based on a number of factors including aquatic life. Several of these streams are located on Ohio's State Forests. Over the next five (5) years the Division will take the following actions to maintain or enhance water quality on state forests:

- Continue to require and promote the use of Best Management Practices for logging practices to control erosion.
- Develop and analyze our pesticide use policy on state forests with the intent of limiting pesticide use to only directed applications mostly for invasive species control.
- Continue to implement a "Streamside Management Zone" (SMZ) policy on all harvests.
- Review our current state forest zones and Ohio EPA high quality water locations for possible gaps with the intent to maintain and protect the current high quality status of those streams.
- Conduct training for all relevant state forest staff on BMP's, SMZ's, and EPA water quality data.
- Commit to the strategies outlined in the FRAS strategies document.

*Public Recreation and Tourism:* Forests are an important aspect of outdoor recreation in Ohio. All State Forests managed by the Division of Forestry are open to public recreation and the Division maintains a recreation program to administer those recreational uses of the forest. The ODNR 2008 Statewide Comprehensive Outdoor Recreation Plan (SCORP) shows that there are 3,638 forest-based recreational sites in Ohio. It further shows that Ohio ranks low nationally for per capita outdoor recreation acreage. The SCORP shows that forest-based recreational sites are the most popular; including camping, niche recreation, and trail-based recreation. The Division maintains a large network of trails for horse riding, hiking, biking, and ATV riding. Over the next five (5) years the Division will take the following actions to maintain or enhance public recreation on state forests:

- Maintain our backcountry recreation resources for all state forests.
- Build recognition for unique and varied recreation opportunities on state forests.
- Develop trail standards for maintenance and seek funding for activities.
- Build partnerships with recreational user groups.

## **V. LAND MANAGEMENT GOALS**

A more complete description of the land management practices and processes on state forests can be found in the Division of Forestry's Land Management Manual. Silviculture is the art of cultivating stands of trees, including their establishment, tending, perpetuation and harvest to produce a forest of distinctive form. Systems of silviculture are broadly classified according to methods of harvest cutting employed in reproducing a stand of trees. A multitude of silvicultural applications, both pre-commercial and commercial are utilized to accomplish the above management objectives. The Division policy and forest zoning generally govern the application of the various methods and practices. Foresters weigh these factors with current stand conditions to determine the appropriate silvicultural practice for a given site.

*Inventory Goals:* In order to determine if an area should be harvested and to also determine what type of harvest should take place; Land Management Foresters conduct an inventory and analysis of the forest stands in questions. This inventory is commonly referred to as a "cruise". During these cruises, the trees are statistically sampled to give the foresters numerical data that assists in detailing the prescription for that particular area. Tree health, forest health, wildlife and aesthetic values, and tree reproduction are just some of the other important assessments that are made during the cruise. Other areas may be cruised on an as-needed basis to respond to changing forest conditions.

The Division of Forestry recently began using information from the forest inventory performed in 2009. However the Vinton Furnace State Forest was not part of this inventory. The goals for the inventory specific to the Vinton Furnace State Forest for the next five (5) years are to; acquire the best imagery available for comparison with the previous owner's forest inventory (from approximately 2006) and using the acquired imagery update stand layers and assign stand ID's. After the imagery and stand layers

have been updated, sawtimber stands not previously visited in the 2006 inventory will be cruised to supplement that data. The collection of these data should then be sufficient to import to a forest growth model for the forest. Prescription and inventory cruising will be performed as necessary outside of the research area to meet fiber supply agreement goals. Compartment layers similar to other forests, will also be developed using topographical features.

Once the forested stand has been cruised, analyzed, and prescriptions are written, the areas to be harvested are then prepared for the actual harvest operation. This entails painting boundaries around the sale, flagging trails and roads that will be utilized, and depending on the type of sale, individual trees may be painted as either leave trees or harvest trees. These preparations will guide the loggers in performing the harvest according to the prescription.

Once the area has been cruised, appropriate prescriptions have been written, timber volumes have been estimated and the trees have been marked, the sale is publically advertised and sold based on a competitive bid process.

*Harvest Restrictions:* Harvest restrictions are generally determined by the zoning within the state forest. For more information please refer to the Land Management Manual and Exhibit 3. Examples of restrictions include Streamside Management Zones and visually sensitive areas. Furthermore, logging is restricted in the Research Zone 3E. Harvests may only be performed in this area as part of a research project approved by the Research Advisory Committee.

A Wet Weather Logging Policy has been designed to protect water quality, public infrastructure, and soil productivity during the harvesting of the Vinton Furnace State Forest timber sales. This policy restricts logging during various states of wet weather conditions to allow for better resource protection.

In all cases, BMPs shall be followed as listed in [BMPs for Erosion Control on Logging Roads in Ohio](#), Ohio State University Extension, Bulletin 916. 2004

*Harvest Amounts:* Harvests will take place as necessary to meet the fiber supply agreement encumbrance on the property deed. The State is obligated by a stumpage agreement with P.H. Glatfelter Company of Chillicothe, Ohio for the supply of timber, both sawtimber and pulpwood, until the year 2019.

The Division sees the stumpage agreement with Glatfelter and research focus of the property as catalysts by which management will be done in an efficient, scientific, and environmentally responsible fashion. These two contexts will be an opportunity to apply management, in the form of timber harvesting and prescribed fire, to the property in order to meet our objectives outlined in the previous section. The agreement requires the property owner to produce 83,800 tons of hardwood pulpwood, 35,471 tons of softwood pulpwood, and 16,600 tons of hardwood sawtimber from 2013 through 2019. Harvests from other state forests may supplement this requirement. Harvests may also be done in conjunction with research as approved by the RAC within the Research Zone. Outside of the Research Zone, harvests above and beyond and outside of the stumpage agreement may also take place within the Division of Forestry policy as dictated in the Land Management Manual and as described above.

*Special Concerns:* Forest zoning is designed to identify areas of special concern.

The zones listed below are the expected zones that will be used on the Vinton Furnace State Forest. These zones have not yet been approved by the Forest Advisory Council (FAC), but are the preliminary zones that will most likely be proposed. More zones or acreage may be added or removed as recommended by the FAC and approved by the Chief of the Division of Forestry.

Zone III-A, is designated as a Resource Protection Area. This area is intended to offer protection to soil, water, and other natural resources that may suffer significant damage by inappropriate management or use. The goal of this area is to protect the major natural resource elements of the land to which irreparable damage could be done.

Zone III-E, is designated as a Research and Demonstration Area. This zone encompasses the core of the forest which has traditionally been known as the Vinton Furnace Forest. This area is set aside for forest research activities.

For zone descriptions and more detailed information for the special management considerations for each zone, please see the full narrative in the Division of Forestry's Land Management Manual.

Future defoliation events caused by the gypsy moth caterpillar and the potential arrival of sudden oak death in the Eastern United States are of particular concern to the oak resource in Ohio. Emerald Ash Borer, a lethal pest found in Ohio, will increase ash mortality in both urban and forested landscapes. It will likely cause significant financial cost to municipalities, property owners, and the forest products industries as it spreads through the state.

Movement of firewood around the state has the potential to spread invasive forest pests, such as the Emerald Ash Borer and Gypsy moth and also could spread other agents, such as the Asian Longhorned beetle.

*Threatened/Endangered Species:* The identification, conservation and enhancement of rare, threatened, and endangered species is of the utmost importance to the Division of Forestry. The Division has a legal obligation to comply with laws of this country and state and a moral obligation to use the tools at our disposal for the conservation of these species. The Division of Forestry employs several mechanisms to aid in the identification, conservation, and enhancement of rare, threatened, and endangered species on State Forest land that are discussed below.

#### Pre-Activity Assessment

Prior to any site-disturbing activities, the Division conducts an assessment using the most up-to-date relevant data sources available. These data sources include the Ohio Biodiversity Database, formally known as the Natural Heritage Database, administered by the Ohio DNR – Division of Wildlife, Biodiversity Program. This data is used to plot the actual suspected or known locations of rare, threatened, and endangered species. The Division seeks to review all compartments, harvests, and prescribed fires using this data. Over the next five (5) years, the Division is expected to review dozens of compartments using this data. Further, the results of our reviews can be used by the Biodiversity Program to update the data set.

These reviews are used to map locations of species or sites and used as a planning tool for the layout of activities. The Division of Wildlife staff offers recommendations on the life history of the species found as well as mitigation efforts to be considered.

#### Review by Relevant Specialists

Prior to any site-disturbing activities, all reviews that note a positive "hit" of a possible sensitive species is offered to a relevant specialist for a ground survey. A botanist or a biologist is asked to review the site on the ground for their recommendation or concerns. Mitigation and recommendations are communicated in the pre-activity assessment documents.

#### Commitment and Partnerships

Ohio has several Conservation Plans that the Division of Forestry references in our management of the state forests. These plans are put together by various partnerships that the Division is active in one form or another. The relevant conservation plans are listed below

- The Conservation Plan for the Karner Blue Butterfly
- The Conservation Plan for the American Burying Beetle
- The Strategic Plan for the Management of Ohio's Black Bear Population
- The Conservation Plan for the Timber Rattlesnake
- The ODNR Indiana Bat Management Strategy

These plans outline specific objectives, goals and strategies for the recovery, management, and habitat requirements for these species. The Division is committed to complying with the recommendations of these plans. Further, over the next five (5) years the Division will:

- Ensure all relevant state forest personnel are trained and have an understanding of these plans and strategies.
- Maintain an active role as a partner in the composition and review of these plans.
- Commit to restoration efforts on state forests as budgets allows.

- Commit to the review of our activities by various partners of these plans.
- Promote and enhance our educational efforts for the protection of rare, threatened, and endangered species through landowner education, brochures, trade shows, and public website.
- Achieve and maintain forest certification

#### Consultation with Other Experts and Interested Citizen's

The Division actively solicits the input of various experts from academia, NGO's and other partners. Their input on the identification and conservation of the sensitive species is valuable to our work. The Division promotes our Pathway's to Participation program whereby citizen's can have a voice, through an open house process and various public meetings, on items that we should consider in our management. For the next five (5) years, the Division will:

- Commit to continued solicitation of comments and input from local experts
- Commit to enhancing and refining our Pathway's to Participation program
- Commit to annual open houses
- Commit to public meetings for new efforts

*Desired Future Conditions(s):* Through past, current, and future management activities, the Vinton Furnace State Forest looks forward to maintaining and improving a healthy forested environment composed of mixed species stands and of containing exemplary specimens of representative forest types. Through proper long-term management strategies, the forest will become less susceptible to catastrophic fire and should have a reduce probability of insect infestation and pathogen infection. The forest will also provide adequate cover, forage, and habitat for the various species of wildlife associated with the area. Along with sustaining viable populations of wildlife, the forested areas will be maintained in a manner that continues the aesthetic quality and environmental integrity of the property. Improving the health of these forests will better promote vigorous vegetation, provide wonderful wildlife viewing opportunities, create healthier watersheds, and will produce an enjoyable place for public recreation.

The Division of Forestry has adopted the following Desired Future Condition objectives:

#### **1. Maintain and promote regeneration of oak-hickory forests**

- Enhance oak regeneration in appropriate forest types in Zone 3.
- Favor oak and hickory in pre-commercial treatments
- At a minimum, preserve an oak component in oak-hickory stands where oak regeneration is unlikely.

#### **2. Protect Ohio's unique or rare forest plant species and biological communities**

- Protect high conservation value forests by either prohibiting extraction or by restoration efforts.
- Assess potential impacts to unique or rare forest plant species and communities for each forest management activity and mitigate as necessary.

#### **3. Maintain habitat for a diversity of forest-associated wildlife**

- Manage for a diversity of forest wildlife by maintaining a sustainable distribution of successional stages.
- Increase the area of early-successional forest habitat (age class < 20 years old in Zone 3) and old forests (over 100 years old in High Conservation Value Forests)
- Ensure that critical habitat requirements for rare forest wildlife species are being met

These objectives are consistent with the Statewide Forest Resources Assessment completed by the Division of Forestry in 2010. The strategies that will be employed to accomplish the Desired Future Condition objectives outlined above include:

- Timber harvesting levels will be at sustainable rates and substantially less than the current annual growth as determined by appropriate inventory data.
- Rotation ages in managed zones will be between 80 and 120 years, except for pine stands.
- Intermediate treatments shall focus on improving forest health and timber quality.

- Regeneration harvests will be based on sound silvicultural science and employ regeneration techniques to promote oak regeneration. Prescribed fire and /or herbicide treatments will be employed where possible to promote oak regeneration.
- Impact assessments will be completed and mitigation opportunities will be identified prior to any activity in managed zones.
- High Conservation Value Forests will not be managed for resource extraction.
- A percentage of High Conservation Value Forests may receive timber harvesting and/or prescribed fire activities with the purpose of restoration.

## VI. FIRE MANAGEMENT

*History:* Wildfire protection in Ohio had its origins in Southern Ohio in the early 1920s. Division of Forestry Fire Wardens had the responsibility to reorganize fire crews, keep hand tools and equipment ready, and enforce burning regulations. In this period, the Oreton Fire Tower was constructed near Radcliff. This tower when closed in the late 1970's was dismantled and sold for scrap metal.

When a wildfire occurs today, its suppression falls mostly to the local fire department. Within the Forest Fire Protection District of the state, the ODNR Division of Forestry has cooperative agreements with over 300 rural volunteer fire departments (VFD's). These VFD's receive a nominal payment in return for providing a wildfire report to the Division.

The Division also offers training to firefighters ranging from basic wildfire instruction to specialized courses to improve skills necessary in the complex and dangerous business of wildland firefighting. The Division maintains some larger specialized equipment such as bulldozers to assist in suppression efforts. A limited number of vehicles and equipment are also loaned as available to cooperating VFD's through the Federal Excess Personal Property Program.

Most of the fires occur in Vinton and Meigs counties. A portion of Athens County is part of US Forest Service fire control, so fewer fires are reported to Zaleski State Forest due to the Forest Service control of that area.

*Fire Suppression Objectives:* The Division of Forestry has the statutory authority for fire suppression and protection within the hill country of the state. Zaleski State Forest is responsible for these duties in Vinton, Meigs, and a portion of Athens Counties. Division employees serve as initial attack resources within the forest boundaries and assist VFD's outside the forest boundaries, when requested. Most requests involve the use of heavy equipment. Zaleski State Forest averages around 100-150 fire reports per year. Most of these fires occur on privately owned lands. The forest staff responds to around five (5) fires per year on average.

*Prescribed Fire:* The Vinton Furnace State Forest has had many prescribed burns in the past. Most of these burns were conducted as part of a research study. Recently burns have been conducted as part of the Fire and Fire Surrogates Study as well as other research projects such as the US Forest Service Study near the entrance gate.

Future burning will target oak/hickory shelterwood cuts as well as shortleaf and pitch pine plantations or natural stands to aid in regeneration. Oak/hickory stands benefit from the use of fire by reducing the competition from thin barked tree species such as red and sugar maple and yellow poplar. Shortleaf/pitch pine stands need a seedbed preparation by reducing the duff layer to mineral or near mineral soil. These trees also benefit from fire by having cones opened from the heat of the fire due to the amount of pitch in the cones (serotinous cones).

The amount of acres to be burned each year will vary based on previous management and will be dependent upon the size of the regeneration present. 100-200 acres per year may be an average burn year. Some years may be less and other times significantly more. Until the shelterwood and burn regime is applied more frequently, the amount of area burned will likely not increase.

*Fire Prevention:* Each fire season, the majority of wildland fires are human caused, and usually result from debris burning. In order to promote wildfire prevention and awareness the Forest Manager will work with the District Forest Manager and Columbus staff to coordinate media activities such as interviews with the local press for television and newspaper articles. Timing critical releases with high danger fire weather will be critical in increasing public awareness. Fire prevention programs will focus on schools, county fairs/local festivals and parades where the greatest exposure is made in a single event.

*Other Fire Program Issues: (FEPP, FFP, Training, etc.)* Zaleski employees are encouraged to participate in Ohio's Interagency Fire Crew. This program gives the personnel and the Division additional experience and training opportunities that broaden their overall wildland fire suppression knowledge. Zaleski State Forest normally has crewmembers that qualify for the Inter-Agency Fire Crew.

Classroom training will be offered to all Volunteer Fire Departments as requested. Staff training will be available through the Fire Management Program.

Visits are made to each Fire Association a minimum of once per fire season. The Forest Officer will visit each fire department, update the Fire Department Information Sheet, document the visit and file a report to the Forest Manager once per year. All Federal Excess Property will be inspected at least once per year.

## **VII. RECREATION**

*History:* Recreation at the Vinton Furnace State Forest has been somewhat limited due to the area being privately owned. Most recreation has come in the form of hunting. This area will continue to be a public hunting area and will likely remain as one of the top public land destinations.

*Strategic Goals/Opportunities:* Provide recreational opportunities that are compatible with and highlight sustainable forest management. This will be done by implementing the comprehensive recreation plan for the state forest system and building recognition for unique and varied recreation opportunities on state forests.

This property will be managed as a state forest and as such will be a publicly accessible property. Hunting and passive forest recreation will be allowed. Formal hiking and bridle trail systems do not currently exist on the property, but informal trails are present. Formal trail systems may be developed on the property in future years, but any planned trail development will be included in the annual work plan and will be evaluated according to policy. There will be no motorized trails or motorized recreation allowed on this property.

*Hunting and Fishing:* The majority of the Vinton Furnace State Forest is open to public hunting under the direction of the Division of Wildlife's rules and regulations. One small area that is not open to hunting is a small area around the US Forest Service Headquarters and buildings. The forest provides hunters with a very large contiguous public hunting area with an abundance of many wildlife species. Common game species include whitetail deer, wild turkey, ruffed grouse, squirrel, and several other common species. In addition, appreciation of both game and non-game wildlife has been recognized as an important part of the forest visitor experience. While many individuals purposely take to the woods to see and/or photograph wildlife, many wildlife encounters are coincidental to driving the forest roads or hiking the trails. In either case, contact with wildlife is essential to either fulfill or enhance the forest visit. The following are planned:

- A. A diverse and abundant wildlife resource will be maintained following as much as feasible, the guidelines provided by the DOW, to maximize both consumptive and appreciative opportunities.
- B. Hunter parking areas will be provided where needed as part of the Timber Management Program by addressing and defining timber sale/operation entrance areas to accommodate several cars. Areas requiring frequent service access will not be developed for parking.
- C. Re-instate roadside camping at designated areas during deer and turkey season.

*Maintenance:* Due to current staffing levels, minimizing staff time on recreational projects is essential. Therefore in the future partnerships with external stakeholders will be an integral part for maintaining quality recreational experiences. Both mechanized equipment and hand tools will be utilized for maintenance of all trail systems. Trails will be maintained as needed throughout the year to ensure user safety.

## VIII. PUBLIC AWARENESS

*Strategic Goals:* Public awareness is an important aspect of the Division's mission of informing the public and landowner's of sustainable forest management and opportunities. To further the Division's goals in public awareness several items will be emphasized at the Vinton Furnace State Forest:

- Increase signage at recreational sites, particularly the trail systems, about adjacent forest management activities
- Continue to maintain and update the Non-Industrial Private Forest Demonstration Plots.
- Update and maintain all forest entrance signs.
- Continue to partner with volunteer fire departments on wildfire danger awareness messages
- Use available opportunities with school systems to speak about sustainable forest management
- Use available opportunities with local media to highlight sustainable forest management
- Continue to provide tours and promote on-going research at the Forest.
- Education and Demonstration Sub-Committee
  - The Education and Demonstration Sub-Committee is comprised of the members of the RAC as well as academia, industry and other partners. The sub-committee is tasked with creating educational programs at the Vinton Furnace State Forest as well as maintaining and creating demonstration areas that are in place to show the public what different forest management activities. The sub-committee reports activities and programs to the RAC. This committee takes care of much of the above mentioned items as education and demonstration are key components of the purpose of the forest.

## IX. LAW ENFORCEMENT

*History:* In 1967 legislation established the position of Forest Officer in the Division of Forestry. In 1974 rules and regulations governing state lands were adopted that Forest Officers were responsible for enforcing. In 1985, OPOTA Certification Law Enforcement Training became mandatory for all officers and weapons were issued to those commissioned.

State Forests currently have nine (9) commissioned law enforcement officers and one (1) commissioned manager. The purpose of these positions is to enforce the forest rules depicted in the Ohio Revised Code. One very important aspect of the program is resource protection. Forest Officers protect property boundaries from encroachment, recreation resources from undesignated uses, and guard against timber theft. Specific law enforcement policies and procedures are delineated in the Division's Law Enforcement Manual.

### *Program Expectations:*

- Enforce all Forest Rules, Ohio Revised Code
- Priorities for patrol will be established utilizing the following criteria:
  - a. Responding to emergencies and help requests with jurisdiction
  - b. Protect and assist visitors through routine patrol of all facilities and incident investigation
  - c. Issue warnings and citations for violations
  - d. Assist in special projects with other forests and agencies
- Investigate wildfires in Vinton, Athens and Meigs counties. Prepare wildfire reports for violations.
- Maintain equipment, including patrol vehicles. Law Enforcement Officers are also responsible for communicating and collaborating with the Forest Manager pertaining to equipment and uniform necessities.
- Well-trained Forest Officers are necessary in order to effectively and safely perform their law enforcement duties. Officers will maintain current qualifications and will attend law enforcement trainings.
- Special Projects are scheduled as needed. Potential projects may be holiday horse camp security and trail patrol, and any illegal APV use detail.
-

### *Other Enforcement Issues:*

Forest Officers will:

- Seek opportunities to increase public awareness and forest education through visitor assists and other information and education opportunities.
- Visit each county court system and prosecutors office annually
- Coordinate search and rescue missions as necessary
- Respond to user conflicts
- Investigate problems on forest property including:
  - Dumping (trash, meth-labs)
  - Encroachments (timber sales, boundary disputes)
  - Vandalism (state structures, state property)
  - Theft (forest signs, timber, state property)

## **X. FACILITY MAINTENANCE AND INFRASTRUCTURE**

*Building/Infrastructure Maintenance: Buildings:* The Vinton Furnace State Forest Headquarters, located just north of the town of Zaleski, houses all of the administrative support for the Unit, as well as maintenance services. US Forest Service's Vinton Furnace Forest Headquarters is located off of Sam Russell Rd. in the middle of the forest. The US Forest Service has leased a portion of the area for their administrative and maintenance work. The Forest Service will be responsible for the maintenance and utilities at the building. The area includes an office, bunkhouse, maintenance barn, training and conference center, and two outside pit latrines.

*Roadway Maintenance:* There are numerous old Township Roads that are in various stages of abandonment, maintained Township Roads, County Roads, and State Routes at the Vinton Furnace State Forest. The Division of Forestry also maintains forest access roads at the Vinton Furnace State Forest. This includes several miles of Class III dirt roads. All of these roads, with the exception of the Class III roads are maintained for vehicular travel.

*Boundary Maintenance:* Boundary maintenance is an important function in the management of the forest. Properly maintained boundaries prevent encroachment from neighboring properties and from state activities encroaching onto neighboring properties. To accomplish this task, the Vinton Furnace State Forest conforms to the Division's Boundary Maintenance Policies. One fourth of the entire forest boundary is inspected and/or repainted each year. Any evidence of encroachment is reported to the Forest Manager who may assign the Forest Officer to investigate. The entire Vinton Furnace State Forest was painted over the course of two (2) years to bring it back to compliance with the rotation schedule as well as changing the color to yellow which signifies Division of Forestry property.

*Signage:* Wooden signs are replaced and re-painted as needed. Signs will be updated to reflect the new ownership.

*Residences:* The Vinton Furnace State Forest has one (1) bunkhouse type residence, which is maintained by the US Forest Service.

## **XI. BUDGET/STAFFING**

*Maintenance:* The Vinton Furnace State Forest budget will be included as part of Zaleski State Forest's operating budget. Zaleski receives an annual operating budget that fluctuates from fiscal year to fiscal year depending upon the funding and allocation of funds available to the Division of Forestry. The majority of this budget is devoted to payroll, but the maintenance and supply portion is equally as important. This line item is dedicated to purchases necessary for the completion of projects, such as purchase of supplies, repair and maintenance of equipment, and paying of utility bills and other services. With the state of current and past budgets, staff purchase from this fund only as necessity arises. The employees at Zaleski State Forest strive to find ways of being more efficient and productive with limited resources.

**SFY 2012  
Budget DNR150130 Zaleski Region**

<b>500</b>	<b>Payroll-Fund GRF</b>		<b>\$526,609</b>
<b>510</b>	<b>Personal Services- Fund 5090 25% per quarter</b>		<b>\$250</b>
			\$250
<b>520</b>	<b>Supplies &amp; Maint- Fund 5090 25% per quarter</b>		<b>\$75,000</b>
	General Operating		\$75,000
<b>530</b>	<b>Equipment</b>		<b>\$0</b>
<b>550</b>	<b>Subsidies</b>		<b>\$0</b>
<b>570</b>	<b>Capital</b>		<b>\$0</b>
<b>590</b>	<b>Settlements &amp; Bonds - Refunds</b>		<b>\$0</b>
<b>591</b>	<b>Debt Service</b>		<b>\$0</b>
		<b>Total</b>	<b>\$601,859</b>

*Personnel:* The following is a list of personnel at Zaleski State Forest

Forest Manager:	Thomas Shuman
Forest Officer:	Nicholas Appleman
Forester:	Danzil Walker
Forest Technician:	Vacant
Forest Technician:	Christopher Kerr
Equipment Operator:	Clayton Acord
Equipment Operator:	Cory Kerr
Equipment Operator:	Eric Thomas
Maintenance Repair Worker:	Brian Porter

*Equipment:* The following is a list of all vehicles and heavy equipment at Zaleski State Forest.

<b>Vehicle/Equipment Type</b>	<b>Used By</b>
Pickup S15-A72	Forest Officer
Pickup S15 B-95	Forest Crew
Pickup S15-163	Forest Crew
Pickup S15-213	Forest Crew
Pickup S15-270	Forest Crew
Pickup S15-330	Forest Manager
Pickup- S15-449	Forest Technician
Pickup S15-515	Forest Crew
Semi-tractor S15-383	Crew
Log Truck S15-458	Crew
Dump Truck S15-829	Crew
Pickup S15-910	Crew
Pickup S15-943	Crew
Pickup S15-973	Forester

Pickup S15-978	Crew
291-S15 Lowboy Trailer	Crew
592-S15 14' Trailer	All
18' Trailer	Crew
Honda 350 APV	All
Honda 300 APV	All
Honda 350 APV	All
Honda 500 APV	All
Polaris Ranger 800XP	All
Polaris Ranger 800XP	All
Polaris Ranger 500	All
Case Skid Steer	Crew
John Deere 450 H Bulldozer	Crew
John Deere 350 B Bulldozer	Crew
Case 680 Backhoe	Crew
Kubota Tractor and Mow-trim	Crew
Case 695 Tractor	Crew
John Deere 5300 Tractor	Crew
John Deere 770 Road Grader	Crew
Cat 910 Loader	Crew
Taylor Forklift	Crew

## **XII. MONITORING AND ENVIRONMENTAL ASSESSMENTS**

Monitoring is a critical component of our management of state forests and is conducted in accordance to Chapter 12 "Monitoring Program" of the Land Management Manual. The chapter summarizes portions of other chapters and procedures into one discussion of the myriad of monitoring activities that are vital to our understanding of the forests and our management thereof.

The results of monitoring efforts are used at various levels to make management decisions. Compartment reviews, activity inspections, and inventory are used at the forest, district, and program levels. Growth & Yield and harvest levels are used at management levels to evaluate sustainability. Monitoring results are analyzed at by the Division administration and the Integration Committee for compliance and effectiveness. The administration and the Integration Committee make policy and procedural recommendations back to the forest and district level based on the results of monitoring.

The Forest Manager's Annual Performance Review will be tied in part to his effectiveness in implementing the forest plan. In addition all employees will be evaluated on their appropriate portions of the plan. Statistical reports will be completed monthly to track items accomplished.

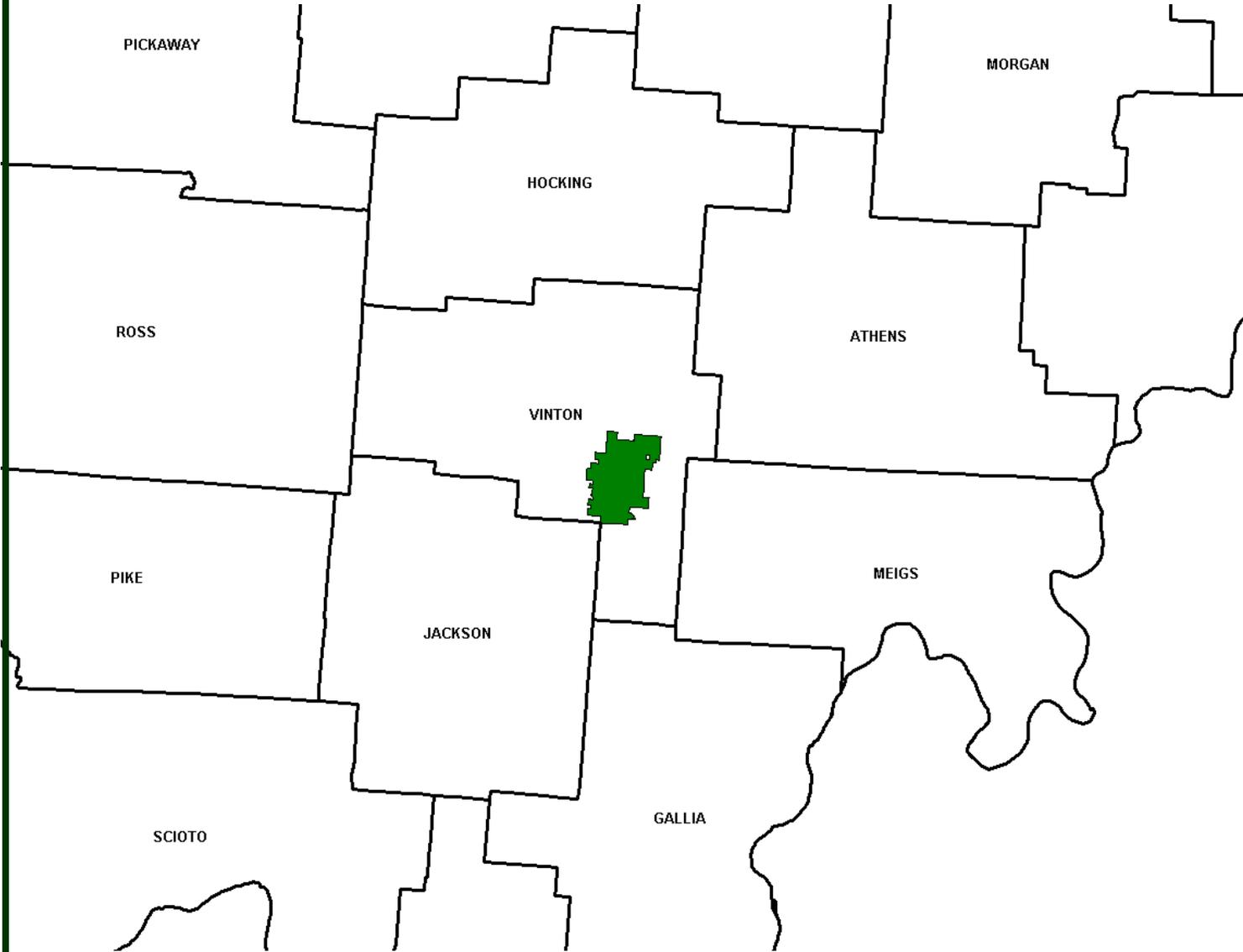
District staff reviews cruise reports and marking reports. The District Staff, to ensure objectives are achieved and consistency throughout the District, will conduct final timber sale inspections. Equipment and facilities will be reviewed for maintenance monthly and for potential replacement annually.

As part of the Stewardship plan for the Vinton Furnace State Forest, Warbler Monitoring was a key component. The ODNR-Division of Wildlife will place this property on a Breeding Bird Survey route. If no current routes are available and an older one does not exist in the area, DOW will agree to either (a) set up a BBS route for the area and recruit someone to run it annually or (b) set up a point-count grid to cover the Vinton Furnace and run the survey annually with a focus on the species of interest.

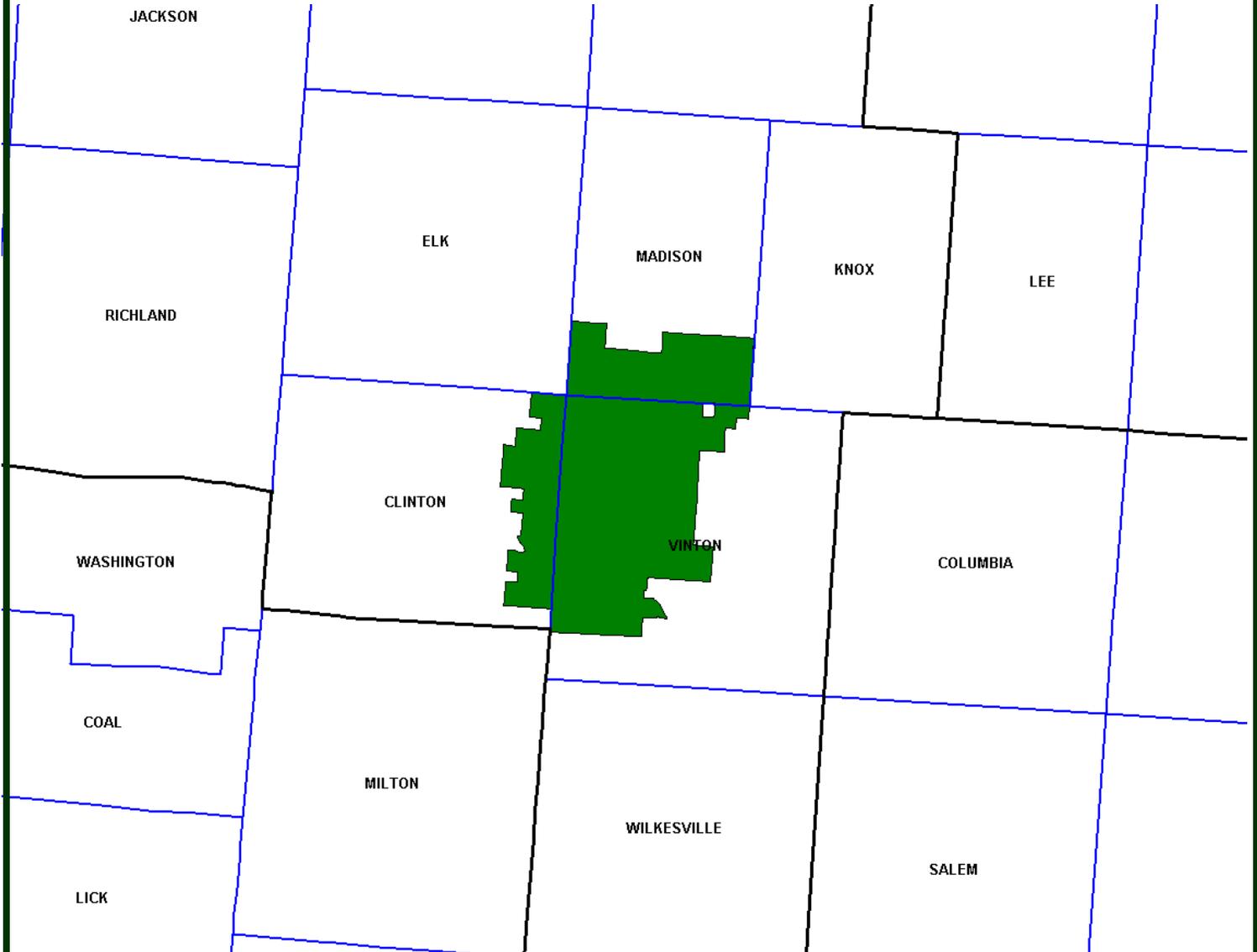
## **XIII. EXHIBITS**

- Exhibit 1: The Vinton Furnace State Forest Location Map
- Exhibit 2: The Vinton Furnace State Forest Township Overview Map
- Exhibit 3: The Vinton Furnace State Forest Road Map
- Exhibit 4: The Vinton Furnace State Forest Adjacent State Lands Map
- Exhibit 5: The Vinton Furnace State Forest Proposed Zones by Area Map
- Exhibit 6: The Vinton Furnace State Forest Proposed Zones by Area Acreage
- Exhibit 7: Bibliography

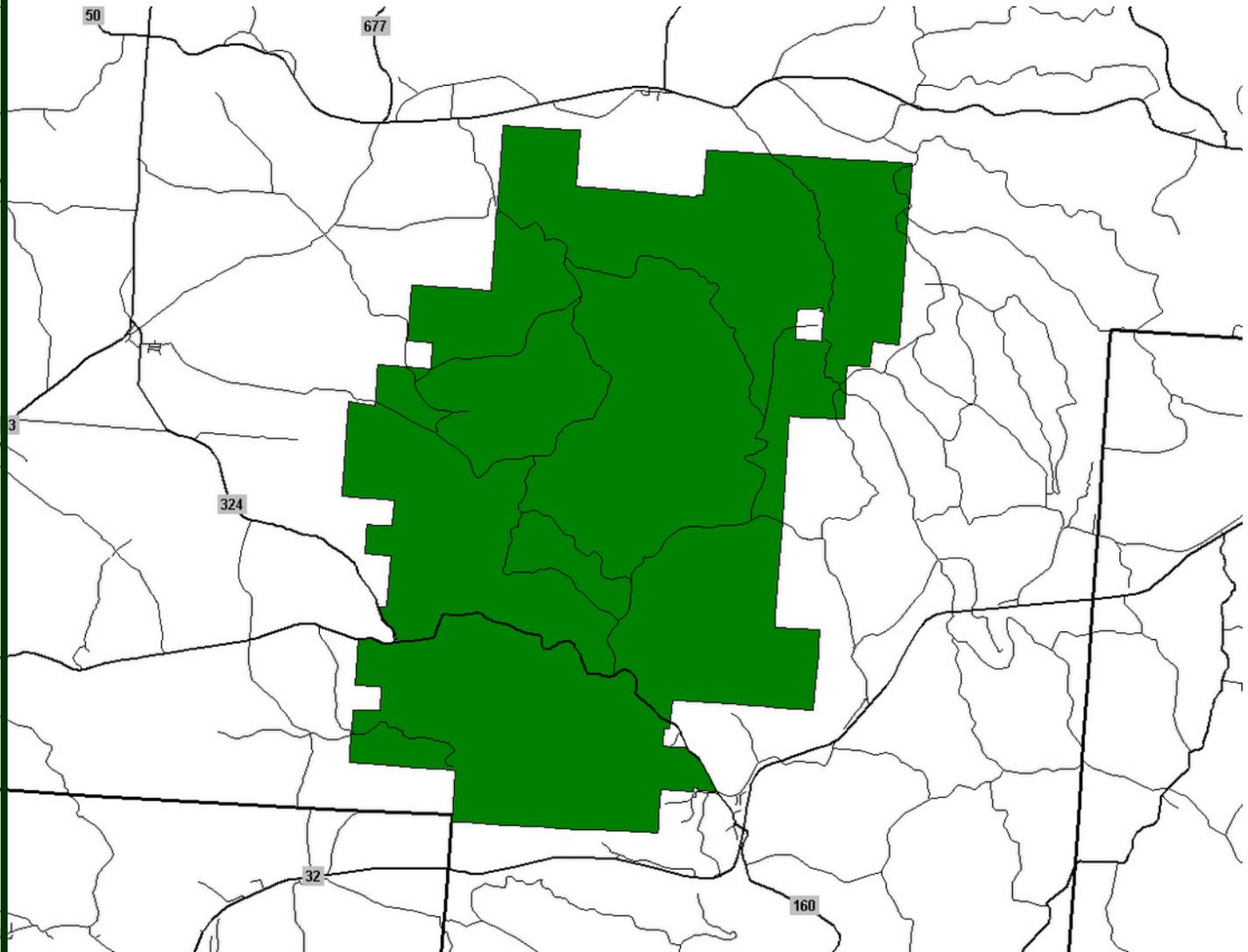
**Exhibit 1**  
**The Vinton Furnace State Forest Location Map**



**Exhibit 2**  
**The Vinton Furnace State Forest Township Overview**

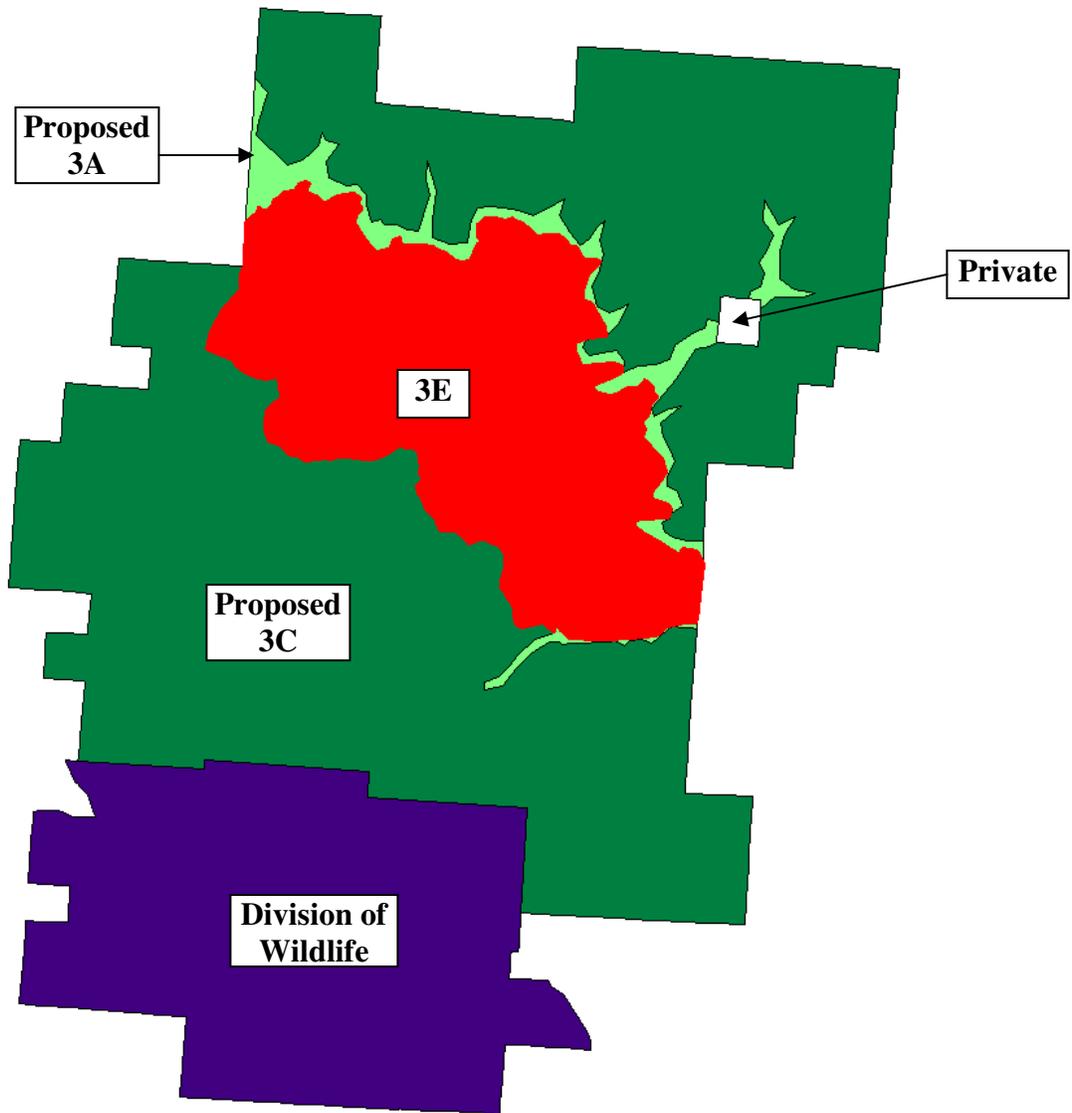


**Exhibit 3**  
**The Vinton Furnace State Forest Roadways**





**Exhibit 5**  
**The Vinton Furnace State Forest**  
**Proposed Zone Map**



**Exhibit 6**  
**The Vinton Furnace State Forest**  
**Proposed Zone Acreage**

**The Vinton Furnace State  
Forest Zones By Acreage**

<b>Zone</b>	<b>Acres</b>
3A - Resource Protection	494
3C - Timber Wildlife	9,437
3E-Research	2,158
Total Zoned	12,089

## Exhibit 7

### *Bibliography*

- Bakermans, M.H. 2008. Demography and habitat use of cerulean warblers on breeding and wintering grounds. Dissertation, The Ohio State University, Columbus.
- Bakermans, M.H. and A.D. Rodewald. 2009. Think globally, manage locally: The importance of steady-state forest features for a declining songbird. *Forest Ecology and Management* 258:224-232.
- BMPs For Erosion Control on Logging Roads in Ohio, Ohio State University Extension. Bulletin 916. 2004
- Forest Use and Resource Management Plan, 1976-1985, Zaleski State Forest. State of Ohio Department of Natural Resources. May, 1976; Revised 1977. 95 p.
- Goode's Atlas, 1964.
- Lemaster, D.D.; Gilmore, G.M. 2004. Soil Survey of Vinton County, Ohio. U.S. Department of Agriculture, Natural Resources Conservation Service and Forest Service, in cooperation with the Ohio Department of Natural Resources Division of Soil and Water Conservation; the Ohio Agricultural Research and Development Center; the Ohio State University Extension; and the Vinton County Commissioners. 358 p.
- McNab, W.H.; Avers, P.E. 1994. Ecological subregions of the United States: Section descriptions. Ecosystem Management Report WO-WSA-5. Washington, DC: U.S. Department of Agriculture, Forest Service. 284 p.
- Ohio Department of Natural Resources, Division of Forestry. Land Management Manual. 2010
- Ohio Department of Natural Resources, Division of Forestry. The 2010 Statewide Forest Resource Strategy for Ohio. 2010. 29 p.
- Ohio Department of Natural Resources, Division of Forestry, State Forest Operation Section. Vinton Furnace State Experimental Forest, Stewardship Plan. 2010. 13 p.
- Ohio Department of Natural Resources, Division of Forestry. Website.
- Ohio Department of Natural Resources, Division of Wildlife. Website.
- Roach and Gingrich. Ag. Hndk. 355, US Department of Agriculture, Forest Service. 1968
- United States Census, 2010. Website data.
- United States Department of Agriculture; Forest Service. Forest Inventory and Assessment. 2006. Website Data
- Widmann, Richard H.; Balsler, Dan; Barnett, Charles; Butler, Brett J.; Griffith, Douglas M.; Lister, Tonya W.; Moser, W. Keith; Perry, Charles H.; Riemann, Rachel; Woodall, Christopher W. 2009.

Ohio forests: 2006. Resour. Bull. NRS-36. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 119 p.

Yaussy, Daniel A. and Roush, Eric L. Mead's Vinton Furnace Experimental Forest Story. The Ohio Woodland Journal 01/2000; Spring: p14-21.