

Ohio Department of Natural Resources

Division of Forestry

Five Year Forest Management Plan

For

Shawnee State Forest



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Note: This plan covers the time period of Fiscal Year 2011 – Fiscal Year 2015 and will be updated in Fiscal Year 2016.

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*

The Division of Forestry, complying with Governor Ted Strickland's Directive dated October 25, 2007, desires to achieve certification to the principles and criteria of The Forest Stewardship Council (FSC) and the Sustainable Forestry Initiative (SFI). Upon the completion of this certification process the forest will then have met their requirements for being recognized as a forest properly managed for sustainability.

Divided into compartments, a 20-year schedule is used to monitor the health and sustainability of the forest. After cruising prescriptions have been written, recommendations follow requiring some silvicultural action be taken to maintain the health of the forest. Wood products are derived from the recommended management actions that support the local economy as monies from the sale of the products are returned to the local school districts, county and townships. By maintaining a healthy, sustainable forest these wood products will continue to be available and, managed appropriately, the results will be a quality produced product.

In this era of forest management producing a quality wood product is not enough. The forest is a renewable resource that provides food and cover for wildlife, protection of soil and water values, aesthetics, and an environment for both outdoor recreation and learning opportunities. Providing interpretive sites, trails, diverse habitats, are all part of the overall forest plan in meeting a multitude of uses.

Improving employee's knowledge, skills and abilities is a priority objective within the Division. The Division recognizes a knowledgeable work force translates into one that works more effectively and efficiently. Today this is even more important as the Division has seen its work force reduced greatly from years past. Training and educational opportunities are offered and made available to each employee annually.

II. FOREST HISTORY

Land Acquisition: Shawnee State Forest, "The Little Smokies of Ohio", began with the purchase of 5,000 acres of land from the Peebles Land Company in 1922. That same year, the Division of Conservation and Natural Resources began acquiring land for the Theodore Roosevelt Game Preserve. This land was typical of Southern Ohio in that it had been abused through unsustainable timber harvesting practices, primitive agricultural practices, and uncontrolled wildfires. These lands were commonly viewed as wastelands.

Following the creation of the Department of Natural Resources in 1949, the recreational facilities at Roosevelt Lake were transferred to the Division of Parks. The Roosevelt Game Preserve, by a 1951 agreement between the Division of Forestry and Wildlife, became a part of the forest.

Over the next decades, land acquisition has occurred to create the current status of Shawnee State Forest and has developed into Ohio's largest state forest. Much of the land adjacent to the forest consists of residential properties, small woodlands, and farms. However, access to large areas of forest land is restricted due to private ownership of road frontage and other inlaying lands. Further land acquisition in these areas would be of benefit.

Past Land Management/Uses: Some have estimated that before Ohio was settled, forests covered 95 percent of the state. A growing population quickly made its mark on the wilderness state, as land was cleared for agriculture and timber was harvested. As the decades passed, the forests were reduced until, by the early 1940s, only about one-tenth of Ohio remained forested.

Thanks to an aggressive reforestation program statewide, improved forest management of private woodlands, and expanded public ownership of forest lands, approximately 30 percent of Ohio is now forested. ODNR's Division of Forestry manages over 185,000 acres of state forest lands for multiple uses.

In the mid-1800s and early 1900s, stone was quarried from Vastine and Cabbage Patch Hollows. The stone was moved by railroad to the Ohio River and loaded on barges. Much of the stone was used in the construction of buildings in Cincinnati.

In the 1930s, six Civilian Conservation Corps Camps were located on the Forest and camp personnel constructed many miles of roads through the then nearly inaccessible area. Five small lakes, built as water supplies for the camps are now used for public enjoyment. The Corps built many of the current roads and trails in use today. During this era modern forest management practices began to be implemented in the forest. Old eroding fields were reforested by planting and timber stand improvement practices were completed throughout the forest.

Through the 1950's and 1960's forest management practices continued to be implemented aggressively throughout the land base. These included commercial thinning operations that increased the growth of remaining trees. Later regeneration harvests were conducted, primarily to increase early successional habitat for a rapidly maturing forest.

In 1972, nearly 8,000 acres of Shawnee State Forest was administratively designated as a wilderness area. In 1988, a House Bill was passed to statutorily protect this area. Timber management activities and public motorized travel have been eliminated in the area. A Backcountry Management Area was created in 1998 to further diversify the State Forest's management and recreational opportunities. During this time period the Division realized that many stands within the forest were reaching maturity and harvesting began to focus on regenerating these stands. The Division began to encounter the problem of regenerating a forest that was largely the same age and condition while maintaining the values the public expected from the forest.

Another major influence on Shawnee State Forest was the Ice Storm of 2003. This ice storm resulted in much downed woody debris. Many trees became uprooted and fell over; some snapped off at the trunk, and excessive amounts of limbs were broken from the treetops. This weather event created a higher fuel loading on the forest floor, stressed living trees, and caused a reduction in growth and vigor, along with other impacts to the forested environment. The ice storm also introduced additional stress on the already declining white oak (*Quercus alba*) population. This white oak decline is a symptom of many different influences including root disease and years of stress introduced by several species of insects. Throughout the forest, much white oak mortality can be found. These two factors have created an abundance of under stocked and poorly stocked stands throughout the forest.

The above descriptions are just some of the influences on the management of Shawnee State Forest. The Division of Forestry is striving to address the impacts while continuing to improve recreational opportunities. It is a working forest, so timber harvesting, tree planting, wildlife habitat, forestry research, watershed and soil protection, and production of tree seeds are all in a day's work for forest employees and many local residents.

II. FOREST DESCRIPTION

A. General

Property Location Description: Shawnee State Forest has developed into the largest of the 20 state forests, with approximately 63,747 acres. It is located five miles west of Portsmouth, Ohio in Nile, Union, and Brush Creek Townships of Scioto County, and Green Township in Adams County. The Forest is mostly contiguous with several outlying blocks of land. Throughout the forest are in-holdings of private land; however, this private property is located mostly along Hwy 125, Upper and Lower Twin Creek Roads, Pond Run, and Mackletree Road. The Forest is a fantastic recreation feature in Southern Ohio, and is also a working forest. It is managed to provide a variety of multiple uses on a sustained yield basis.

Soils: Soils of the Muskingham group are dominant in the uplands. They are light in color, and range in texture from loam to silty clay loam, with stoney silt loam predominating. These are residual soils left from the breakdown of sandstone, and contain numerous loose blocks of sandstone ranging from two inches to more than twelve inches in diameter. Sandstone was once quarried in this area. Because of the steep relief and the stoniness of the soil, it is of little or no agricultural importance except for timber production. Pope silt loam predominates in the creek valleys. This soil is acidic, well drained and largely used for pasture, hay and corn production.

Water Resources: Shawnee Forest is composed of the following watersheds: Ohio River, Scioto Brush Creek, Little Bear Creek, Pond Run, Turkey Creek, Rocky Fork, Upper and Lower Twin Creeks, and Ohio Brush Creek.

The Forest also contains several small wildlife ponds and five larger lakes. These lakes were constructed during the CCC era and were designed to support the camps. Following is a list of these lakes:

Name	Class	Surface area	Storage Capacity
Bear Lake	I	4.0 acres	25 acre feet
Churn Creek Lake	exempt	1.5 acres	07 acre feet
McBride Lake	II	1.4 acres	11 acre feet
Pond Lick Lake	I	4.0 acres	29 acre feet
Wolfden Lake	I	2.8 acres	19 acre feet

Access Issues/Transportation: Much care is taken by the forest staff to maintain safe road conditions and bridge structures. Great effort is also needed to maintain the drainage throughout this infrastructure. Shawnee State Forest includes over 70 miles of roads, over 60 bridges, and approximately 1000 culvert and header systems.

Approximate Road Mileages
(Dec. 2001)

Forest Road #1 – 16.7 Miles	Forest Road #17 -- 2.3 Miles
Forest Road #2 -- 13.1	Forest Road #18 -- 0.6
Forest Road #3 -- 3.8	Forest Road #19 -- 2.3
Forest Road #4 -- 4.6	Forest Road #22 -- 0.2
Forest Road #5 -- 0.9	Forest Road #23 -- 0.8
Forest Road #6 -- 11.8	Forest Road #25 -- 0.6
Forest Road #8 -- 1.5	Forest Road #33 -- 0.4
Forest Road #9 -- 2.1	Forest Road #34 -- 0.1
Forest Road #13 -- 3.9	Forest Road #35 -- 0.3
Forest Road #14 -- 4.1	Forest Road #40 -- 0.1
Forest Road #16 -- 0.3	Forest Road #54 -- 0.2

NORTH SIDE -- 35.9 MILES

SOUTH SIDE -- 34.8 MILES

TOTAL -- 70.7 MILES

Access to the south side of the Shawnee State Forest is gained via U. S. Highway 52. State Highway 125 passes through the central part of the forest and State Highway 73 parallels the northern border. Other main access roads into the forest include Upper and Lower Twin Creek Roads, Sunshine Ridge Road, Churn Creek Road, Bear Creek Road, Pond Run, Nace Run, Forest Road 1, Forest Road 3, Forest Road 14, and Mackletree Road.

Potential Productivity: There are multiple ways to measure forest productivity within a defined land area, such as Shawnee State Forest. The site index value is a 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 soil type. The average soil types are Shelocta-Brownsville (Scioto County) and Shelocta-Berks (Adams County). Due to its broad growth range in association with multiple tree species, Black Oak is often used to get a general site index value. The average site index value of Black Oak (base age 50) is 75. The area of the forest in Adams County (average site index in the upper 70s) has a slightly higher site index value than the bulk of the forest in Scioto County (average site index in the mid 70s).

Overstory: Shawnee State Forest is part of the overall Central Hardwood Region and contains two major forest types: mixed-mesophytic and oak-hickory, as well as small stands of other forest types spread throughout the forest.

The relatively narrow ridges and steep upper slopes typical of the Shawnee State Forest support trees of the oak-hickory forest type with the occasional stands of native pine. The main hardwood species include scarlet, chestnut, white, black and northern red oaks, pignut, shagbark and mockernut hickories and sassafras. Native conifers include Pitch, Virginia and shortleaf pines.

Depending upon the aspect, many sites support mixed-mesophytic hardwood species such as chestnut, white, black and northern red oaks; red and sugar maple; basswood, yellow-poplar, yellow buckeye, blackgum, white ash, beech, red elm, hackberry, aspen, and several species of hickory. The coves, depending on site class and aspect, support high quality hardwoods such as yellow poplar, black walnut, white ash, black cherry, and red oak.

Conifers, growing naturally or in plantations, comprise an insignificant proportion of the timber resource. Native pine is scattered and of poor quality, with little potential for improvement and is managed as a part of the hardwood stand within which it is growing. Pine plantations include shortleaf, scotch, white, and red.

A seed orchard has been established along Hwy 52 on the east side of Buena Vista. Six acres of shortleaf pine, established in 1971 – 1972 and seven acres of black walnut, established in two phases. Both walnuts and tublings were planted in 1969 to establish the first phase of the walnut seed orchard. The trees had attained a height of 15-20 feet by 1976. The second phase was accomplished in 1975-1976 by planting six acres of walnut seedlings with minimal mortality. The pine, because of unfavorable weather conditions and attacks from pine sawfly and tip moth, has required intensive management in the past. Currently, this plantation is naturally reverting back to a natural hardwood species composition.

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 plants tolerance for shade that dictates its ability to survive in the understory. Shade tolerant species such as maple, beech, hemlock, 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.

Greenbriar has always been a strong component of the herbaceous layer at Shawnee State Forest, especially on the ridges. Since the ice storm in 2003 greenbriar has become very prevalent in areas impacted by the storm and often creates dense thickets.

Herbaceous Layer: As with the overstory and understory, many factors will determine the types of species found in the herbaceous layer. This layer is often the most diverse and includes many different species of forbs, grasses, and shrubs. The forest management and variety of land uses also contributes to a further diversifying of the herbaceous layer. Silvicultural practices, prescribed fire, wildfire, maintained recreation areas, roadside habitats, bridle and hiking trails, and vista management are some examples of land use that may have an impact on the diversity of this plant layer.

Wildlife Populations and Habitat Components: Forest management increases our ability to create and maintain a high level of diversity and interspersions of 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.

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.

Proper BMP's can significantly benefit wildlife. All TSA's shall follow BMP recommendations when sale activities are occurring.

The Forest Wildlife Management Objectives for Shawnee 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 by maintaining public hunting access and partnership with the ODNR-Division of Wildlife.

Historically, specific wildlife management practices on the forest have been associated with the following areas:

1. Old field plantations of conifers.
2. T.S.I. work on the forest including that on select and regeneration cuts.
3. Waterhole construction from the mid 1950's through the early 1960's.

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, but not be limited to a Wilderness Area for deep woods habitat, zoning variability to provide for differing management strategies, regeneration harvests, 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: There are many locations throughout the Shawnee State Forest that suffer from invasive species. Invasive species include but are not limited to Ailanthus, Paulownia, bush honeysuckle, Japanese honeysuckle, Japanese knotweed, garlic mustard, and multiflora rose. Paulownia is currently considered to be the most invasive threat at Shawnee. It is our intention to increase the invasive species control activities through new opportunities in available manpower and by an increase in budgetary availability. In the fall of FY 2010, temporary employees were hired to focus specifically on invasive species control and timber stand improvement activities (Ohio Woodland Job Corps). Invasive species projects are currently being identified and approved through the Project Proposal Process. Approved projects may be addressed through several means including chemical and mechanical treatments.

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 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. To meet these requirements, a stratified forest inventory was conducted in the spring of 2009. The inventory used proprietary techniques to extrapolate a field sample consisting of 2,209 plots across all the acres of the project area. This approach provided a forest-level inventory estimate within the allowable budget and statistics.

While the Division of Forestry desires a stand-level inventory, lack of resources to perform such a detailed inventory was not possible at the current time. LandMark Systems proposed to leverage a

number of remotely acquired data sources (imagery, etc) to arrive at a level of detail that is more refined than a regular stratified-level inventory. The result was an inventory data set that is between a stratified-level and a stand-level approach. For this project, LandMark Systems provided color-infrared imagery and other data sets that were used to model certain stand characteristics based on the data produced from the 2,209 plots.

The inventory results were then modeled for growth & yield using the Forest Vegetation Simulator (FVS) Northeast Area TWIGS variant. FVS is a publicly available growth and yield model produced by the US Forest Service. For over 400 different stands that contained plot data, growth rates were established according to site conditions. Net growth rates incorporated in-growth and mortality and were evaluated for a 10-year period. Net growth rates were summarized and averaged for each stratum that occurred on the state forest project area.

For each state forest, the inventory and the net growth rates were calculated based on the data output from the FVS model and applied to the entire state forest. This calculation 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 calculation 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.

For further comparison, average growth rates for counties where state forest occur was calculated using the Forest Inventory and Analysis (FIA) data set compiled by the US Forest Service. The FIA data set is a statewide inventory data set that is maintained long-term and provides baseline data for the current and historic conditions of Ohio's forests.

The purpose of these calculations is to provide evidence that the harvest and removal of forest products from state forests are sustainable and well within the calculated growth of the forest. Also provided in the table below is the average harvest level over the last ten years for comparison.

Shawnee State Forest

Total Inventory (board feet)	Productive Acres	Total Growth Bd Ft / Yr	Zone 3B and Zone 3C Acres Only	"Constrained" Growth Bd F / Yr	FIA Data Average Growth Bd Ft / Yr (For Comparison)	Average Harvest - Last 10 Years	Harvest as % of Growth
628,456,616	63,118	18,682,097	52,251	15,555,692	11,482,576	2,246,731	14%

C. Landscape Level Information

Adjacent Forests and Attractions: Shawnee State Forest is located in Scioto and Adams County. Scioto and Adams Counties are 64% forested and together both counties average approximately 6,100 board-feet per-acre according to the most recent FIA data. The current forest inventory for Shawnee indicates an average volume of approximately 9940 board feet per acre, more than 60% greater than the county average. These statistics indicate that Shawnee provides significantly more, late successional habitat than the surrounding forests.

Nearby publicly owned forests include Shawnee State Park, Raven Rock State Nature Preserve, Brush Creek State Forest, and several properties owned by the Cincinnati Museum of Natural History but managed by The Nature Conservancy termed the Edge of Appalachia. Additionally Camp Oyo is a Boy Scout Camp surrounded by Shawnee State Forest. Highlands Nature Sanctuary recently purchased a property located in the Rock Run drainage in Adams County that is adjacent to Shawnee State Forest.

Local Social and Economic Conditions: Currently it is estimated that the wood products industry in Ohio is a 15-billion dollar/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 approximately 3 million board feet per year at Shawnee State Forest, which 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.

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. Shawnee State Forest Horseman's Camp, hunting within the forest, Floraquest, 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 Shawnee State Forest, they are also contributing to the community both economically and socially.

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 is 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 National Historic Park and the OSU-Newark Earthworks 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 5 years.

The FRAS is a document that is updated every 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* – The FRAS is an assessment of present and future forest conditions and trends on all ownerships in the state and a strategy document to deal with identified threats. All relevant state forest staff will receive training on the assessment and associated strategies and these strategies will be incorporated into our annual work plans for each forest.
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 playing a key role in the Division’s efforts to mitigate the threats and capitalize in the opportunities identified through FRAS. These efforts, identified in the FRAS strategies include:
 - a. Implementation of the Division’s strategic communications plan
 - b. Public awareness campaigns reaching citizens living in the wildland-urban interface and the small family forest owners.
 - c. Maintaining a supply of quality forest products and forest services from State Forest indefinitely into the future.
 - d. Provide diverse recreational opportunities.
 - e. Enhance Ohio’s diverse markets for forest products and services.
 - f. Improve the quality of urban life through proper urban forest resource management.
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 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 years.

1. Timely reporting for programs or efforts listed above relating to social and economic impacts.

2. Voluntary user registration will be maintained and enhanced. Data from voluntary registration will be summarized for determining trends in use. These trends will be incorporated into the activities identified in the annual work plan.
3. Catalogue public comments are received at public meetings and open houses
4. Catalogue disputes and records requests.
5. Commit to participate 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.
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: The climate in Scioto County is relatively mild with an average growing season of 192 days. The first killing frost in autumn comes around October 20th and the last frost in the spring comes around April 20th. The mean annual precipitation is 41.02 inches of rain and 18.5 inches of snow.

Geology: Shawnee State Forest lies completely within the western unglaciated section of the Allegheny Plateau, which is also referred to as the Kanawha Section of the Appalachian Plateau. The area is very rugged and broken, being dissected by many small, deep valleys. The ridge tops are narrow, the slopes steep, and the valley bottoms narrow except along a few of the main streams. Relief is uniform, ranging in elevation from 550 feet to 650 feet on the Ohio River terrace to over 1,000 feet in the interior of the forest. The underlying bedrock is composed primarily acidic-base sandstone as well as shale.

Cultural, Historical, & Archeological: The name Scioto was originally given to the river by the Wyandot Indians, who pronounced it Scio-on-to. It is also claimed that "Scioto" is a Shawnee name meaning "Falling Water", "Fresh Water" or "Hairy". Celeron named the Shawnee Indian Village he found at the mouth of the Scioto River "St. Yotoc", from the Indian name which sounded to him as "Seeyotah" and meant "Great Legs", the Indian designation for river.

After the Revolutionary War, land grants in the Northwest Territory, created by an Act of Congress in 1787, were made to the soldiers who had fought for independence. However, an Indian outlook on the "Devil's Den" just opposite to the mouth of the Scioto River discouraged travelers from going up or down the Ohio River. George Washington dispatched three armies to remove the danger, but these attempts failed. Finally, in a series of encounters, "Mad Anthony" Wayne defeated the Indians and opened the Scioto Valley to colonization. Cornstalk, who was born near the site of present-day Portsmouth, put up a brilliant defense of his native country.

When Ohio's first legislature convened in 1803, it passed an act creating Scioto County out of Adams County. Prior to 1803, Scioto County belonged to the Northwest Territory and the counties of Washington and Adams. The Scioto River served as the dividing line.

Shawnee Forest contains many historical artifacts relating to the Civilian Conservation Corps (CCC). Around the forest, it is common to find old foundations from buildings constructed during this era. The history of their hard work can also be seen throughout Shawnee Forest. These crews built many of the roads and provided access to an otherwise inaccessible area. The Corps labor can also be seen by visiting the lakes within Shawnee Forest constructed to facilitate the CCC camps.

Throughout Shawnee Forest, there are also several small cemeteries and grave sites. These historical areas of significance are currently being identified and mapped, so that they may be added into our current zoning classifications.

These historical occurrences and many others allows for Shawnee State Forest to have a rich cultural and historical past. No formal archeological excavations are known, but forest visitors may stumble upon artifacts remaining from these periods in history.

IV. MANAGEMENT OBJECTIVES

Zoning and Special Areas

Forest Zoning: Forest management objectives are guided and designated by zone classifications. The descriptions are described in detail in the Division's Land Management Manual. Currently the manual and all zone classifications are undergoing revision. Exhibit 1 contains the current zone map for Shawnee State Forest. Exhibit 2 lists acreages for each zone class in the forest.

Research Areas: Numerous research projects have been conducted at Shawnee State Forest throughout its existence. However currently there are no long-term or short-term areas designated for research. All requests for research are reviewed through the Special Use Permit Process.

Cultural Areas: Important cultural areas exist throughout the forest. These are primarily early settlement cemeteries 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.

Sensitive Areas: Both visually and environmentally sensitive areas are present at Shawnee 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, and 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 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 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 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. Following is an outline of the more specific concepts pertaining to land management at Shawnee State Forest.

Wilderness Area Goals:

- To uphold the law according to Ohio Revised Code Section 1503.43, Shawnee Wilderness Area
- To maintain a contiguous area of undeveloped State owned land as a designated Wilderness Area
- To provide an area in which humankind's past influences are largely unnoticed
- To allow for natural forest succession and natural forest disturbances to occur without human influence
- To provide an area that has outstanding opportunities for solitude and primitive recreation

For more specific information relating to the Shawnee Wilderness Area, please refer to the Shawnee State Forest Wilderness Area Management Plan.

Back Country Management Area Goals:

- To provide management opportunities for forest wildlife and state listed species
- To provide limited motorized vehicle travel
- To create unique walk-in hunting, back country camping, and recreational viewing opportunities

For more specific information relating to the Back Country Management Area, please refer to the Back Country Management Area Plan

Timber Management Goals:

- To protect and enhance the ecosystem and the many forest resources such as clean water, aesthetics, wildlife, soils, and recreation through the proper management practices
- To provide a sustained harvest of quality woods products for current and future generations by demonstrating sound forest management
- To protect and maintain environments for endangered, rare, or threatened species
- To provide abundant and diverse wildlife habitat through the proper use of timber management operations
- To protect the integrity of the soil and water resources
- To maintain an environment for recreation and public use through application of forest landscape management principles and incorporation of aesthetic and amenity values into timber management
- To promote sustainable forestry practices through public information and education programs as well as through logger education and proper timber sale administration

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.

The Shawnee State Forest Wildfire 2009 Forest Management / Timber Salvage Plan has been developed to identify areas in which wildfire timber salvage operations are to occur. The overall objectives in these harvests are to regenerate the fire-damaged areas and to salvage merchantable timber. In the development of this Forest Management / Timber Salvage Plan over 430 assessment points were established in order to statistically infer the current condition of the forest ecosystem. These inventory points have allowed foresters to determine the impact of the wildfire on the timber resource, to prioritize and assess areas to be salvaged, and to establish base line data so that future trends in forest dynamics may be analyzed to increase our knowledge and understanding of wildfire in an ice storm damaged ecosystem.

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. These inventories are scheduled on a rotation in which each compartment (a geographic block of forest) is visited every 20 years. 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. On average 2500 to 3000 acres are cruised per year.

Currently the Division is analyzing data from the forest inventory that will be used to develop a new inventory system based on a growth and yield model. This will change the historic 20-year schedule sometime in the near future.

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 publicly advertised and sold based on a competitive bid process.

Workflow Timeline:

Summer:

- Continue to cruise scheduled compartments and write prescriptions for the compartments that should be harvested.
- Review prescription cruise reports written during the previous year to determine what will be marked and marketed for future sales.

Fall:

- Complete cruises and prescription writing
- Begin painting sale boundaries

Winter:

- Within the upcoming selection harvest sales, mark trees to be removed with paint
- Collect volume data by cruising shelterwood and regeneration harvest sales

Spring:

- Continue marking harvests
- Continue volume cruising
- Begin prescription cruises

*Timber sale administration occurs throughout the year depending on weather; however, the majority of administration occurs from early spring to early winter. Timber sale administration is the highest priority duty for all Foresters and Forest Managers.

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 1. Examples of restrictions include streamside management zones, visually sensitive areas, and the Shawnee Wilderness Area. Any method of logging other than by means of animals, motor trucks, farm or crawler tractors, hydraulic tree shears and rubber tired four-wheel-drive skidders may be employed only with the advance approval of the Timber Sale Administrator in charge of the harvest. Tracked cut-to-length harvesters and forwarders are commonly used, and may be contractually required, for pine harvests. More specialized equipment or techniques may be necessary to limit harvesting impacts. In such a case this will be identified on the marking transmittal and will become part of the timber sale contract.

A Wet Weather Logging Policy has been designed to protect water quality, public infrastructure, and soil productivity during the harvesting of 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](#), ODNR - Division of Forestry.

Harvest Amounts: As a result of harvest and growth analysis the Division will create a harvest target based upon 40% of growth. The growth is calculated from only those acres zoned III-B and III-C, which comprise the bulk of harvesting on state forests. A synopsis of the analysis performed

is located in a table in section III, subsection B. The target is conservative and will continue to be evaluated throughout the period of this plan as better information is available.

Special Concerns:

Zone I-A is designated as a High Conservation Value Forest. The purpose of this area is to protect the areas natural resources for their scientific, ecological, and educational values. Shawnee State Forest contains two Natural Areas that are managed according to the Natural Areas Zoning Guidelines. The two Natural Areas at Shawnee are as follows:

Shaw Hollows

Located north of HWY 125 and just east of Forest Road 1, near Camp Oyo and contains approximately 775 acres. Upper Shaw Hollow contains good examples of Appalachian Oak and Oak-tuliptree communities as well as some good mixed oak stands. Lower Shaw Hollow has some of the best oak-hickory communities in the entire forest.

Snake Hollow

Located near the northern most tip of Shawnee State Forest and just southeast of Lombardsville is the 321-acre natural area known as Snake Hollow. This hollow is a well-known orchid area and receives substantial visitation from wildflower enthusiasts. Pink lady slippers are common and the area also contains a small hemlock stand.

Zone III-A is designated as a Resource Protection Area. This area is intended to offer protection to soil, water, and other natural resources, which 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-B is designated as an Aesthetic Area. This zone encompasses areas that may be adjacent to developed forest recreation areas, State Parks, or areas affected by high-density public use. Management in these areas is primarily directed toward maintaining healthy viable trees.

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 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 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 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 and open house process and various public meetings, on items that we should consider in our management. For the next five 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

Shawnee State Forest contains the single highest density of timber rattlesnakes in Ohio. It is also considered to contain one of the last remaining viable populations of timber rattlesnakes in Ohio. This species has continued to decline from their historic range and Shawnee State Forest represents a hopeful place for this species. The Conservation Plan for the Timber Rattlesnake outlines specific management practices for this species that will be adopted at Shawnee State Forest. These practices include education of landowners and public, training our state forest staff, training of logging companies, education of recreational users, and habitat enhancements. Over the next five years, Shawnee State Forest will take the following actions:

- Produce a display of rattlesnake conservation for interpretive viewing by visitors.

- Conduct training sessions for all state forest staff on timber rattlesnake conservation.
- Promote timber rattlesnake conservation to logging companies through trainings at local logger's chapters and partnering with the Ohio Forestry Association.
- Have all site-disturbing activities at Shawnee reviewed by the DOW rattlesnake biologist and adjust as necessary.
- Maintain security and discretion of den-site locations.

Desired Future Conditions(s): Through past, current, and future management activities, Shawnee 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 Forest Inventory and Analysis program of the U.S. Forest Service provides current condition of Ohio's forests. Through this program, Ohio's forests are inventoried annually, and every 10-15 years the data are summarized in a comprehensive report. The newest report was published in 2009, and in addition to describing the current state of our forests, it also describes how the forests have changed during the 15 years since the last report was released. From these data, several trends have been identified:

- Forest land in private ownership is being subdivided at an alarming rate. Compared to the early 1990s, Ohio has 500,000 fewer acres in parcels between 50 and 500 acres and 30,000 more landowners who hold less than 10 acres of forest.
- Oak-hickory forest types make up the majority of Ohio's forests, but the proportion of oaks in small and intermediate size classes has declined since the early 1990s. In the current inventory, oaks represent more than one-third of the trees 20 inches and larger in diameter, but only 5 percent of trees in the 2- and 4-inch diameter classes.
- Ohio's forests are maturing, and there are fewer early successional, or young, forests on the landscape today than in the early 1990s. Only 10% of the forests in the state are less than 20 years old.
- Forests where the overstory trees are greater than 100 year old are a small proportion of Ohio's forests, making up 5% of the total acreage. Oaks are the dominant canopy species in the larger and older size classes.

Further, the Division of Forestry's current inventory data for State Forest's show the following current condition:

- 75% of State Forest stands are classified as Oak/Hickory.
- 76% of State Forest are in the sawtimber or large sawtimber size class.
- Less than 10% of State Forest acres are under 20 years old; 90% of State Forest acres are between 20 and 80 years old.
- 82% of State Forest acres are between 76% - 100% crown closure.
- Approximately 16,000 acres of State Forest have been identified as High Conservation Value Forests. These areas not managed for resource extraction.

The conservation of biological diversity is a critical component of the sustainable management of state forests. The management of state forests is consistent with the biodiversity goals and strategies outlined in the statewide Forest Resources Assessment and Strategies 2010 (FRAS). The three goals outlined below, based on part of the FRAS 2010 project, are specific to some of the key threats to biological diversity in Ohio's state forests. These biodiversity goals and strategies were developed from consultation with a host of partners and finalized with the input of stakeholders and the public at-large. The biodiversity goals are the results of the analysis of the key threats in Ohio as determined by the FIA project, Wildland-Urban Interface data, the Division of Wildlife, The Nature Conservancy, NatureServe, Landfire, 2007 State of

Birds Report, the Ohio Bird Conservation Initiative, and the Appalachian Mountains Joint Venture to name a few.

Guided by these trends, and in a manner consistent with our commitment to sustainability, 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 precommercial 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.
- Intermediate treatments shall focus on improving forest health and timber quality.
- Rotation ages in managed zones will be between 80 and 120 years, except for pine stands.
- 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.
- As a general rule, High Conservation Value Forests will not be managed for resource extraction and will be allowed to develop through natural succession.
- 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 1924, the first fire tower in Ohio was constructed on Shawnee State Forest and was named Copperhead Fire Tower. This tower is one of only six towers that are still standing today in Ohio forests. Most towers, when closed in the late 1970's, were 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 (VFDs). Many of these departments are located within the Shawnee State Forest Fire Protection Area.

Since 2005, the Shawnee Fire Protection Area, including Scioto and Adams Counties, averaged about 87 wildfire responses a year, with a high of 131 and a low of 53. Wildfire responses in a particular year are highly correlated to spring and fall weather conditions.

The Division has also offered training to firefighters ranging from basic wildfire instruction to specialized courses to improve skills necessary in the complex and dangerous business of wildland firefighting.

Fire Suppression Objectives: Shawnee State Forest staff will be responsible for the initial attack activities on wildfires located within the forest boundaries. Suppression activities will occur within the Shawnee State Forest Protection area. This includes all of Scioto and Adams counties. The protection area total is 1,196 sq. mi. or 765,437 acres and includes parts of the state that see the most fire responses.

- The staff will also respond to VFD mutual aid requests within the Shawnee State Forest Protection Area.
- Area Fire Supervisors will maintain call out sheets and will coordinate wildfire response procedures.
- Area Fire Supervisors will report and update the District Manager of fire suppression activities and potential wildfire conditions.

Initial attack response on wildfires by the Division within the fire protection area is determined in consideration of one or more of the following criteria:

1. Fire on or threatening State Forest land.
2. Fire on or threatening other ODNR lands.
3. Fire within unprotected jurisdictions.
4. Multiple and/or large ongoing fires.
5. Severity of wildfire behavior conditions (past or predicted).
6. Per prior arrangement/agreement and/or confirmed request of fire service agency/official.

Initial attack response consistent with firefighter and public safety and values to be protected, may include a variety of actions:

1. Dispatch to scene to size up fire.
2. Provide overhead and technical assistance to manage fire.
3. Provide qualified personnel and/or specialized equipment to assist in fire suppression.
4. On scene law enforcement and/or wildfire investigation.

Prescribed Fire Goals: As a response to the 2003 ice storm, the Division adopted a 10-year burn plan to encourage regeneration of oak in the ice-damaged sites. A secondary objective of this stand is to reduce fuel loading to reduce the intensity of catastrophic wildfires.

Fire Prevention: Each fire season, the majority of wildfires are human caused and the most common cause is 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.
- The Smokey Bear sign will be updated as needed to raise public awareness according to the current fire danger.
- The Smokey Bear suit is also loaned out to local fire departments and other safety oriented organizations to further promote prevention.

Other Fire Program Issues: (FEPP, FFP, Training, etc.): Qualified and interested staff will be allowed to participate in one Interagency Fire Crew assignment per year. Interagency fire assignments will allow for professional development, information sharing among various agencies, and will also increase our ability to fight fire within our own fire protection district.

Forest employees are to complete Interagency Fire Crew Availability Sheets in late winter/ early spring and submit them to the Forest Manager for approval and forwarding to the Southern Region District Manager for approval.

Well-trained staff with diverse experience levels shall be maintained at all times in order to effectively achieve suppression on wildland fires.

- Fire fighting staff will attend the Interagency Fire Refresher annually
- A Shawnee/Dean fire refresher will be conducted annually
- Firefighters will attend NWCG and other fire training as needed
- Training shall be tracked and recorded shortly after completion
- The Office Assistant will update and improve recording of the employee training and a spreadsheet will be created for tracking.

Forest Officers also offer several training opportunities to local fire department including a basic wildfire class and a topography class.

- These classes will be offered to departments annually on a scheduled basis.
- Forest Officers will create a spreadsheet to track the trainings that are being offered.

Forest Officers will maintain the contact information for all of the fire departments within the fire protection area. Officers and staff will also strive to maintain open communications with departments and to also improve communications. As mentioned above, an e-mail contact list will be developed to further facilitate in these areas.

Officers will also attend the following fire department meetings:

- Adams County Chiefs Association meetings – once every three months
- OVFA Scioto County meetings – once a month
- Lawrence County meetings – once a month

Each year, Forest Officers will inspect FEPP property that has been assigned to the fire departments by the Division of Forestry. The inspections occur from January 1st to March 1st. There are a total of 28 departments participating in this program and 83 assigned pieces of equipment.

- Officers will inspect the equipment and perform the appropriate reporting by or before the due date
- Officers will update the Forest Manager of their current progress weekly, and should also provide the Forest Manger with a list of the FEPP equipment stationed throughout the protection area

VII. RECREATION

History: Shawnee State Forest has long provided for the people of Ohio and of neighboring states a wide range of outdoor recreation opportunities from wilderness and primitive backpack camping to an extravagant state park lodge complex in the heart of the forest. Each use is described in greater detail along with planned management and anticipated future improvements in the following sections.

Following the creation of the Department of Natural Resources in 1949, the recreational facilities at Roosevelt Lake were transferred to the Division of Parks. Since this time, Shawnee State Forest has focused its efforts on providing dispersed recreational opportunities that require a large land base.

Strategic Goals/Opportunities: Objectives for the management and development of Shawnee State Forest to accommodate public and special uses are:

- To provide opportunities for public education and exposure to the forest environment and forestry;

- To provide quality primitive recreation within the state forest development philosophy and within the capabilities of the forest, including horseman camping, backpack camping and wilderness; and
- To incorporate management for forest amenity values and aesthetics in areas impacted by public use.

Horse Camp and Bridle Trails: The Horseman's Camp consists of 58 numbered primitive campsites, horse ties, and two pit latrines. Bear Lake provides water for the horses and has largemouth bass and bluegill for fishing. The camp is open year round. However, the heavy use starts in April and continues through October.

Shawnee State Forest also has an extensive network of bridle trails for the enjoyment of horse riders and other visitors. There is currently 61 miles of trails available for horse riding.

Backpack and Hiking Trails: Shawnee State Forest contains one of two backpack trail systems that exist on State Forest property. The North Loop (23 Miles) of the Shawnee trail was the Division's first backpack trail. It was opened in September 1973. The South Loop (27.5 miles) and a ten-mile side trail through the Wilderness Area were opened in August 1974. In the 1990s a 7.2-mile day hike trail was opened. Currently, the trail system at Shawnee State Forest totals nearly 60 miles. However the entire forest is open to hiking, including bridle trails, access roads, and all forest roads.

The seven overnight camp areas include latrines, cleared area for tents and fires and drinking water provided nearby in underground storage reservoirs with gravity fed hydrants.

Trail use averages from 30 to nearly 200 per month. The trail provides the hiker with a different scene every season of the year, with wildflowers in the spring and summer, colorful foliage in the fall and snow scenes and better distant viewing (in absence of leaves) during the winter months.

The Buckeye Trail travels through the west side of the forest utilizing various forest trails and roads.

Shawnee Wilderness Area: The Shawnee Wilderness Area is wild and rugged. Ridges provide a panoramic view of the Ohio River Valley while many of the hollows contain large boulders, remnants of past mining activity. This area provides the public with the opportunity to have primitive recreation experiences in an area where man's influence goes largely unnoticed.

The Wilderness Law prohibits the public's use of mechanized equipment; however, the wilderness area is available for non-motorized forms of recreation. Buckhorn Ridge (5.5 miles) and Cabbage Patch Hollow (2.5 miles) bridle trails are accessible for horse riding recreation. Also, within the Wilderness Area are approximately 5 miles of backpacking trail as well as a portion of the Buckeye Trail. Hunting and fishing activities are permitted as well as wilderness camping. The following conditions apply to public access of the wilderness area:

- Bicycles are considered mechanized and are prohibited.
- Signage will be kept to a minimum.
- Horses must stay on the designated bridle trails.
- Parking is permitted along the berms and legal road right-of-ways.
- Dispersed wilderness camping is permitted but the following regulations apply:
- A permit must be first obtained from the Shawnee Forest Manger and may be denied during periods of high fire danger.
- Permits must be applied for 10 days in advance and in writing.
- Fires are prohibited except in portable stoves.
- Cutting of trees is prohibited.
- Leaving no trace practices must be exercised. Pack out trash, and leave a clean site.

Auto Touring: The road network at Shawnee State Forest provides for excellent auto touring. The many scenic vistas, numerous shady hollows, and the vast timbered ridges provide for quite and enjoyable aesthetic experience. Picnic Point, located at the end of Forest Road 9, provides a picnic area overlooking the city of Portsmouth and the Ohio River Valley. In addition there are several other maintained vistas throughout the forest. This attracts both local and regional tourism.

Hunting and Fishing: Fishing opportunities at Shawnee State Forest are limited to five small lakes. Common game fish are bluegill and largemouth bass. The Division of Wildlife periodically restocks the lakes. Each lake also has grassed areas for picnicking and parking lots.

The entirety of Shawnee State Forest is open to public hunting under the direction of the Division of Wildlife's rules and regulations. This area 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 diverse and abundant wildlife resource will be maintained following as much as feasible, with the guidelines provided by the DOW, to maximize both consumptive and appreciative opportunities.
- 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.

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. In general no recreation expansion will be considered without funding and possibly maintenance provided by an external partner. In addition opportunities for mechanized maintenance will be explored in areas that were previously maintained by hand.

Through out the Shawnee State Forest, there are approximately 60 miles of hiking trails available to the public. The following guidelines will be applied in administration and management of the trail:

- Clear trails of debris as needed
- Maintain trail outhouses as needed
- Trails will be evaluated for potential upgrades and reroutes. Heavy consideration will be given to grading and establishing sediment control measures with machines so that they can be mechanically maintained in the future.
- Blazes will be refurbished as needed on 6" dbh trees and larger where possible and with less frequent interval (dependent upon trail direction visibility or where trail intersects with other corridors). Signs and markers will be replaced and refurbished as required.
- Water tanks will be serviced at least weekly, one to two days prior to heavy weekends, during heavy use season and as necessary at other times. Self-registration permits will be checked weekly and supply replenished as needed.
- Camp areas will be checked periodically, depending upon intensity of use. Pit latrines will be relocated within the camp area as needed.

Shawnee State Forest contains over 60 miles of bridle trails. The bridle trail system will be maintained and possibly developed as needed. The following guidelines will be applied as necessary to provide a quality recreation experience:

- Trails will be upgraded and relocated as needed to minimize problem drainage areas, erosion, steep slopes, excessive stony substance in surface, etc. Watering area, points of interest, vistas and access/parking areas will be incorporated as much as possible.
- Signing with name or number of the trail. Trails will be blazed intermittently for reassurance only, depending upon trail directions at breast height on trees (6" dbh and larger where possible). Signs and blazes will be refurbished as required.
- Crew will rehabilitate the bridle trails by mechanical means as needed. Trails will be graded and sediment control structures will be established so that the system can be maintained mechanically.

According to the current Ohio Horseman's Council Volunteer Agreement, the Scioto and Adams County Chapters will be responsible for the following:

- Paint the bridal trails to visibly mark routes
- Clear trails of debris as needed
- Maintain horse ties and pickets
- Other bridle trail and associated maintenance

There are 60 campsites available to horseman in order to better utilize the trail system and provide for a family camping experience. The Forest Operations Crew and staff will be responsible for:

- Cleaning the restrooms weekly from April through October
- Power washing the restrooms annually in April
- Other camp related maintenance
- Collaborating with OVHA, Scioto County Chapter in monitoring and maintaining camp during high pressure holiday weekends
- Patrolling the horse camp and enforce forest rules and laws
- Staff the camp appropriately during peak usage to minimize problems and complaints
- Maintain kiosk, restrooms, and signage as needed

In order to provide for a quality hunting experience:

- The Forest Operations Crew may prepare and open Hobey Hollow and No. 10 Jeep Trail.

The Forest Staff will monitor and maintain all of the dams, spillways, and lakes by doing the following:

- Forest Manager will maintain Emergency Action Plan (EAP), Emergency Response Flowchart, and Maintenance records for each dam.
- Forest Manager will conduct monthly monitoring and inspections of the entire spillway and a yearly thorough inspection of entire dam construction.
- Crew will continue routine maintenance on lake drain annually – operate and lubricate gate valves.
- Annually remove brush and trees according to 10ft rule from all of the principal spillway inlet and outlet channels.
- Bi-annually exercise, inspect, and lubricate (if necessary) the lake drain valves on all lakes.

State Forest Crews will also maintain the vegetation within designated vistas as needed in order to allow for scenic viewing opportunities.

As seen in the previous sections, Shawnee State Forest provides a wide range of outdoor recreation opportunities. The majority of recommendations constitute improvement of existing forest recreation facilities. The guidelines contained in this section will ensure that the largest state forest does not become developed beyond the standards applied to the State Forest System and beyond the capability of the forest to sustain quality dispersed recreation.

VIII. PUBLIC AWARENESS

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 Shawnee State Forest:

- Increase signage at recreational sites about adjacent forest management activities
- Maintain the forest management driving tour and keep it updated
- 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

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 ten commissioned law enforcement officers and three commissioned managers. The purpose of the 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:
 1. Responding to emergencies and help requests with jurisdiction
 2. Protect and assist visitors through routine patrol of all facilities and incident investigation
 3. Issue warnings and citations for violations
 4. Assist in special projects with other forests and agencies
- Investigate wildfires in Scioto, Adams, Lawrence, and half of Gallia counties. Prepare wildfire reports for violations.
- It is the responsibility of each Law Enforcement Officer to maintain their own 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 an 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.
- Issue verbal warnings and citations when needed.
- Investigate problems on forest property including:
 - Dumping (trash, methlabs)
 - Encroachments (Timber sales, boundary disputes)
 - Vandalism (state structures, state property)
 - Theft (forest signs, timber, state property)

X. FACILITY MAINTENANCE AND INFRASTRUCTURE

Building/Infrastructure Maintenance: Throughout Shawnee State Forest, there are a total of nine buildings: office, carpenter shop, mechanics garage, parking garage, heavy equipment garage, wash house, oil house, restroom building at the Bear Lake Horse Camp, and two residences. Copper Head Fire Tower is also included in this section. The Forest Staff will be responsible for the following:

- *Routine maintenance on all buildings.
- *Routine upkeep on all buildings.
- *Routine maintenance on other aspects of the compound.
- *Routine maintenance and upkeep on the Copperhead Fire Tower.
- *Other projects may be considered as opportunities or needs arise.

Shawnee State Forest has two residences, one at the Forest Headquarters and one near Buena Vista. The Forest Headquarters Residence will be maintained and occupied; the Buena Vista residence shall remain vacant. Issues with residences shall be addressed as they arise.

Signage will be replaced as needed. They will either be purchased or constructed by Forestry Staff. Evaluations will be made, as needed, pertaining to the state of degradation, need for maintenance or replacement, and locations of signage. Signs should also be posted in areas where harvesting, prescribed burning, and trail work is being conducted. If necessary, these informational signs may also be placed at the Shawnee State Forest Headquarters and other kiosks throughout the forest.

Roadway Maintenance: Shawnee State Forest includes over 70 miles of roads, over 60 bridges, and approximately 1000 culvert and headwall systems. Forest Operations Crew and the Forest Manager will be responsible for the following planned workload as well as other issues as they arise:

- Perform Ohio Department of Transportation (ODOT) Scope of Services Request once per fiscal year by inventorying road conditions as well as drain tile and header conditions.
- Inspect culvert headwalls annually, clean and maintain as needed.
- Repair, maintain, and replace bridge components as needed.
- Repair, maintain, and replace road drainage components as needed.
- Utilize Massey Ferguson tractor with ditcher head to maintain ditches along roads as needed.
- Utilize road graders to grade gravel roads and maintain ditches as needed
- Clear debris from roads as needed.
- Litter pick up as needed.
- Perform Annual ODOT Work Order Request.
- Assist in Annual ODOT Inspections.
- Patch potholes as needed.
- Repair slips as needed.

Roadside mowing at Shawnee Forest is utilized in order to increase visibility and public safety and will be conducted according to the Forest Manager's discretion. When roadsides are not mowed properly, forward visibility, ditch visibility, and road edge visibility may become a safety issue. Damage to ditch and drainage systems as well as road surfaces may also occur due to overgrown vegetation. Roadside mowing is extremely important in maintaining infrastructure and public safety.

Shawnee State Forest's roadside mowing practice also recognizes plants of special concern and roadside habitat as an important aspect of the forest ecology and visitor enjoyment. These mowing practices are the result of considerations to public safety, the importance of roadside ecology, and the enjoyment of roadside habitats as a form of recreation. Forest staff will strive to implement roadside mowing practices that balance these diverse necessities of our road systems.

Field mowing will occur as needed on several fields through out Shawnee State Forest. There are occasions where additional area mowing may occur at the Forest Manager's discretion. Finish mowing occurs as needed depending on growth. These areas include, but may not be limited to: Shawnee State Forest Headquarters, Bear Lake Area, Road 1 entrance, Hobey Hollow entrance, intersection of Roads 1 and 4, the triangle on Road 4, Lombardsville entrance, Copperhead Vista, two places on Road 3, Wolfden Lake Area, Picnic Point, Tanger Vista, Nace's Run Vista, Road 13 Vista, Road 2 Vista, McBride Lake Area, Shawnee Lake Area, Churn Creek Lake Area, Road 23 Vista, and other entrances. The Ohio Valley Horseman's Association, Scioto County Chapter, mows Moores Run Bridal Trail entrance.

Boundary Maintenance: The property boundary surrounding Shawnee State Forest contains over 200 miles of line. It will be maintained by painting 3 out of every 5 years. In FY 2011 the boundary in Scioto Co., south of SR 125 will be painted. In FY 2014 the boundary north of SR 125 will be painted. In FY 2015 the boundary south of SR 125 in Adams, County will be marked. All forest boundaries will be marked according to Division Policy.

XI. BUDGET/STAFFING

Maintenance: Shawnee State Forest 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 condition of the Forest Unit and its projects often suffer from the reduction in available funds and it is always a challenge to accomplish our strategic objectives at our current funding level. Reductions in staff and the inability to regain previous levels of staffing are also a stress to the human resource. However, the employees at Shawnee State Forest strive to find ways of being more efficient and productive with limited resources.

Personnel:

**Employee List for both Shawnee and Dean State Forests*

Forest Manager – Nate Jester
Forest Program Administrator, Crew Operations – Matt Morgan
Forester – Brad Wireman
Forester – Mike Wisniewski
Forest Officer – Josh Deemer
Forest Officer- Jerry Chapman
Office Assistant – Mary Thomas
Equipment Operator - Craig McDowell
Equipment Operator – William P. Williams
Equipment Operator – Josh Shepard
Equipment Operator – Dean DePriest
Equipment Operator – Tim Boggs
Maintenance Repair Worker - Wayne Jewett
Conservation Aide – Garth Sturgill
Conservation Aide - Bill Logan

Equipment: Shawnee State Forest will also be responsible for maintaining all of the vehicles and equipment assigned to this forest. The actual vehicle inventory may vary. The following list is useful for work planning only.

Backhoe, Case	Four Wheelers (2)
Dozer, 450G John Deere	Tar Kettle
Dozer, 450H John Deere	APV, Rhino (inoperable)
Dozer, 350 John Deere	Chainsaws (9)
Dozer Transports (3)	Weedeaters (6)
Skid Steer, Case	Blowers (3)
Road Graders, Champion (2)	Commercial Air Compressor w/ trailer
Dump Trucks, (3)	Cement Mixer, Gasoline
Loader, Prentice	Wood Splitter
Trailers (5)	Generators (2)
Pickup Trucks (11)	Water Pump
Pumper Trucks (2)	Air Compressors (3)
Vans (2)	Power Washer
Tractor, Massey Ferguson	Mechanics and Carpentry Tools, Misc
Tractors (6)	Forestry Tools, Misc
Riding Mowers (5)	Hand Tools, Misc

All Forest Staff will be responsible for the following:

- All vehicles and equipment will be maintained and in working order.
- Diesel fuel, gasoline, oil, and other maintenance supplies will be purchased as necessary.
- A designated employee will keep fuel books and maintenance records current.
- Vehicles will be considered for replacement based on mileage, age, and condition.

SFY 2009
Budget DNR150175 Shawnee Region

500	Payroll-Fund GRF		\$912,564
510	Personal Services- Fund 5090 25% per quarter		\$250
			\$250
520	Supplies & Maint- Fund 5090 25% per quarter		\$125,000
	General Operating		\$125,000
530	Equipment		\$0
550	Subsidies		\$0
570	Capital		\$0
590	Settlements & Bonds - Refunds		\$0
591	Debt Service		\$0
		Total	\$1,037,814

XII. MONITORING AND ENVIRONMENTAL ASSESSMENTS

Monitoring and evaluation of activities is a continuous process.

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

Cruise Reports and District and Columbus Staff review Marking Reports. Final timber sale inspections will be conducted by the District Staff in order to ensure objectives and consistency are achieved throughout the District. Equipment and facilities will be reviewed for maintenance monthly and for potential replacement annually.

XIII. EXHIBITS

Exhibit 1: Shawnee State Forest Zoning Map

Exhibit 2: Shawnee State Forest Zones by Area

Exhibit 2

Shawnee State Forest

Zone	Acres
1A - HCVF Natural Area	1,373
1B - HCVF Cultural Historic	
1C - Shawnee Wilderness	8,353
1D - HCVF Restoration	
2 - Reserved Lands	
3A - Resource Protection	1,114
3B - Aesthetic Area	5,434
3C - Timber Wildlife	48,014
4A - Intensive Recreation	8
4B - Admin Areas	158
Total Zoned	64,454