Ohio's Statewide Forest Resource Strategy - 2010

Zaleski State Forest

June 2010

Ohio's Statewide Forest Resource Strategy - 2010

David Lytle, PhD., Chief and State Forester
Ohio Department of Natural Resources, Division of Forestry
2045 Morse Road, Building H-1
Columbus, Ohio 43229-6693

Table of Contents — *Page*

Introduction

The 2010 Statewide Forest Resource Strategy for Ohio is a strategic planning document that will guide all state forestry activities by the Ohio Department of Natural Resources Division of Forestry, including programs with funding from USDA Forest Service State and Private Forestry grants. It supports the Division's mission to promote and apply management for the sustainable use and protection of Ohio's private and public forest lands. The State Strategy is framed around the key issues identified in the Statewide Forest Resource Assessment, 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 (see the Appendix of the Assesment document for details on the stakeholder input). A combination of these threats and opportunities were considered when developing the list of six key forest issues for Ohio.

The State of Ohio's Forest Issues:
State Issue 1: Sustainable forest management on all forest lands
State Issue 2: Public benefits from Ohio's forests
State Issue 3: Conservation of soil & water resources
State Issue 4: Conservation of biological diversity (plants and animals)
State Issue 5: Health and vitality of Ohio's forests
State Issue 6: Forest fragmentation and land use conversion

This Statewide Strategy introduces objectives and strategies that will help guide forestry programs in the state over the next 5 years to effectively and efficiently address these issues. This Strategy and the accompanying Forest Resource Assessment will be reviewed and updated after a 5-year period. This document also outlines the resources necessary to address the strategies for each state issue. The priority forest maps developed in the Forest Resource Assessment will be a critical tool to support many of the strategic guidelines that are outlined. This document provides a general description of each state issue and the broad approach that is envisioned to meet the objectives. Also included are descriptions of Division of Forestry program areas and how they contribute to the statewide strategies. Collaboration with partners will be critical for success. The Forest Resource Assessment and Strategy is intended for use by partner organizations and agencies to complement their existing planning documents and tools. Various other strategic plans developed by partner groups were consulted during the development of Ohio's Forest Resource Assessment and Strategy, including the following:

Other Plans Consulted:
Ohio Comprehensive Wildlife Conservation Strategy
Ohio's Statewide Comprehensive Outdoor Recreation Plan
Community Wildfire Protection Plans (currently 13 in Ohio)
Priority Conservation Areas / Matrix Forest Analysis, The Nature Conservancy
2006 Land and Resource Management Plan, Wayne National Forest

State Issues, Objectives, & Strategies

State Issue 1: **Sustainable forest management on all forest lands**

Description:

Statewide forest inventories by the USDA Forest Service since 1952 have consistently shown a net annual growth in the volume of trees, which indicates sustainable management of Ohio's forests. However, as the statewide Forest Resource Assessment reports, the most recent inventory (2006) found a few new trends with potential implications for future sustainability. Specifically, Ohio is no longer gaining new forest land as it had been from around 1940 to 1990, and existing forestland across the state is becoming more mature. In addition to these changes in forest structure, Ohio's forests are exposed to growing threats like exotic invasive species, forest fragmentation, and poor management practices on private lands. To address these threats and maintain the important ecological, economic, and social benefits that forests provide, natural resource professionals and diverse forest landowners can work together to utilize sustainable forest management practices on all private and public forest lands.

Approach:

Sustainable forest management has been and continues to be a central goal for Ohio State Forest management. The current effort to obtain third party forest certification of state forests is one way in which the Ohio Division of Forestry is verifying sustainable forest management. All public forest lands in the state can help address State Issue 1 by demonstrating sustainability and supporting research with direct applications to such management. Most public forest lands have management or legal guidelines that identify the goals that they will be managed for, with a variety of management practices available for use, such as timber harvests and prescribed fire. However, with 88% of Ohio's forests under private ownership, the greatest opportunity and challenge for achieving sustainable forest management statewide is on private lands. To successfully address this issue, established programs, such as landowner assistance from ODNR service foresters, the Ohio Forest Tax Law Program, the Ohio Forest Legacy Program, and OSU Extension landowner workshops will need to be combined with new or modified approaches. Some examples include an expanded role for private consulting foresters and targeted regional or local programs like the southern Ohio invasive plants project sponsored by the USDA Natural Resources Conservation Service and Ohio Division of Forestry. Some programs will be statewide in scope, but others will use the rural lands priority forest areas identified in the Forest Resource Assessment to focus efforts on areas with the highest, long-term forest stewardship potential.

Objectives and Strategies:
1.1   Sustainably manage public forest lands for multiple public benefits
        Strategies:
        1.1.1   Manage public forests to ensure the health and sustainability of forest systems
        1.1.2   Obtain & maintain third-party forest certification of state forests
        1.1.3   Provide demonstration sites and promote outreach and long-term research on public
                  forest lands
1.2   Increase the number of private landowners sustainably managing their forestlands
        1.2.1   Increase the number of landowners receiving professional forestry assistance.
        1.2.2   Create and promote a network of charismatic woodland owners as sources of inspiration
                  for private land management

Implementation:

The following matrix describes the necessary resources and approach to implementing the statewide strategies. Specifically, the matrix identifies:

- Column 2: Identifies the geographic focus of the strategy, if relevant. Strategies that will incorporate the priority forest maps for rural, urban, or wildland-urban interface (WUI) areas, as identified in the statewide assessment, will be identified using the terms "rural", "urban", or "WUI."
- Column 3: The expected time frame for strategy completion
- Column 4: Existing and potential partners
- Columns 5: Which resources are limiting ($ = funding ☺ = personnel)
- Column 6: The national objectives that each strategy supports.

Note: the strategies for each of the six state issues will include a matrix with the same format to describe the necessary resources. A separate table on page 19 describes how currently funded program areas contribute to the strategies.

1. Strategy	2. Geographic Focus	3. Time Frame (Short=1-5 yrs, Long=5+ yrs)	4. Partners[1]	5. Limiting Resource(s)	6. Supports National Objective[2]
1.1.1.	Public forests	Ongoing	DOW, USFS-Wayne, NPS, Master Loggers, OFA, DNR-Parks		1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.4, 3.5, 3.7
1.1.2.	State forests	Short; then ongoing			1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.4, 3.5, 3.7
1.1.3	Public forests	Ongoing	DOW, USFS-Wayne, NPS, DNR-Parks, Universities	$	1.2, 2.1, 2.2, 3.4, 3.6, 3.7
1.2.1.	Rural	Short	OSU-Ext, NRCS, SWCDs, OSAF, ACF, ATFS, RA, Auditors, Arboretums	$, ☺	1.1, 1.2, 2.2, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
1.2.2.	Statewide	Short	OSU-Ext, SWCDs, OSAF, ACF, ATFS, RA		1.2, 2.2, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7

[1] A key to the listed acronyms for partners can be found on page 16.

[2] A list of the national themes and objectives can be found on page 17.

State Issue 2: **Public benefits from Ohio's forests**

Description:

Ohio's forests provide the public with many ecological, economic, and social benefits and services. In terms of ecology, forests in Ohio are rich in biodiversity, providing habitat for 350 species of terrestrial wildlife and over 500 species of plants, and they play a critical role in maintaining quality aquatic habitat. They also provide significant economic benefits. In 2007, Ohio ranked sixth nationally in GDP from manufacturing of furniture and related products. A recent study found that Ohio's forest products industry contributes $15.1 billion to Ohio's economy and employs over 119,000 people. Other economic benefits of forests include nature-based tourism and non-timber forest products (e.g., ginseng, maple syrup, Christmas trees). However, the benefits that forest provide goes beyond forest products and tourism and include numerous ecosystem services that may not have a dollar amount assigned to them. Some examples of ecosystem services include improved air and water quality, carbon sequestration, biodiversity, energy reduction in urban areas, and scenic landscapes for recreation. On the 12% of Ohio's forest land that is publicly owned, management often focuses on sustaining some or all of these benefits and services. While many private forest land owners enjoy many of these benefits and also manage for them, a recent woodland owner survey found that the vast majority are not seeking management advice from natural resource professionals (only 13% of family forest owners have sought advice). Investments of time, money, and expertise on all forest lands are necessary to sustain the important and diverse benefits and services that Ohio's forests provide to individual forest landowners and the general public.

Approach:

Many different programs, organizations, and stakeholders play a role in sustaining benefits from forests. One 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. The Ohio Division of Forestry (Ohio DOF) has a strategic communication plan and communications committee that is focused on increasing public awareness and communications with its partners. While public awareness campaigns should reach citizens across the continuum from urban to rural areas, two key groups will be those living in the wildland-urban interface, where a unique mix of urban and rural issues occur, and the large group of family forest owners who are currently not receiving advice from natural resource professionals. Another critical group to reach with any public awareness program is children, and Project Learning Tree is an active program in Ohio with that focus. Urban areas and communities across the state will continue to receive technical support from the Ohio DOF on a variety of urban forest management topics that will improve the quality of urban life. The Ohio DOF's Urban Forestry program focuses on providing community officials and allied agencies with the organizational and technical ability to effectively manage the trees along streets, within parks, and on public grounds. On the topic of forest recreation, the Statewide Comprehensive Outdoor Recreation Plan (SCORP) serves as a planning and reference document, and complements existing strategic plans or management documents guiding recreation programs at land management agencies and organizations. Of the wide range of economic benefits that forests provide, the greatest contribution to Ohio's economy comes from the wood products industry. Quantifying the value of ecosystem services from forests is more difficult, but with growing pressures on natural resources from threats like development, invasive species, and climate change, the importance of ecosystem services cannot be overlooked. Sustaining or enhancing forest benefits, including forest products and other ecosystem services, will require a mix of approaches from a variety of partners, including technical support and research from state and federal forestry agencies and state universities, administrative support and training by professional organizations, and in some cases, targeted grants or programs to facilitate growth opportunities.

Another key strategy in sustaining Ohio's forest benefits is maintaining a supply of quality forests products and services from Ohio woods indefinitely into the future. State Issue 1 addresses that need directly. Finally, achieving success in meeting the diverse objectives related to this State Issue, as well as the overall Statewide Strategy, will require enhanced partnerships among stakeholders, increased funding from a variety of sources (including competitive grants), and effective leveraging of existing funds.

Objectives and Strategies:

2.1   Increase public awareness of forest benefits and services
    2.1.1   Increase public awareness of forest benefits and services and major forest threats
    2.1.2   Increase awareness of Ohio DOF Mission and programs
    2.1.3   Expand partnerships to maximize effectiveness in communications efforts

2.2   Increase recreational opportunities and use of Ohio's forests
    2.2.1   Provide diverse recreational opportunities on public forests
    2.2.2   Support private organizations or individuals providing public access to their forest lands

2.3   Enhance Ohio's diverse markets for forest products and services
    2.3.1   Enhance Ohio's domestic and international wood products marketing opportunities
    2.3.2   Support emerging markets for forest products and ecosystem services
    2.3.3   Produce high-quality forest products and ecosystem services on public lands that contribute to local communities
    2.3.4   Support the sustainable production of forest products and ecosystem services on private lands
    2.3.5   Provide training opportunities to support businesses and organizations associated with forest products and ecosystem services

2.4   Improve the quality of urban life through proper urban forest resource management
    2.4.1   Provide direct assistance to communities on how to properly manage their urban forest resource
    2.4.2   Administer an urban forestry grant program for Ohio communities that promotes comprehensive tree care programs
    2.4.3   Provide information to help communities successfully implement their urban forest management programs

2.5   Increase funding for forest conservation programs & organizations
    2.5.1   Increase funding for forest conservation programs administered by natural resource agencies, local governments, and non-governmental organizations

Implementation:

The following matrix describes the necessary resources and approach to implementing the statewide strategies.

1. Strategy	2. Geographic Focus	3. Time Frame (Short=1-5 yrs, Long=5+ yrs)	4. Partners[1]	5. Limiting Resource(s)	6. Supports National Objective[2]
2.1.1	Statewide	Short	OSU-Ext, DOW, DNR-Parks, OFA, OSAF, ACF, ATFS, USFS-Wayne, RA, NRCS, SWCDs, WIGs, NPS, TNC, Metroparks, Arboretums, ODE	$	3.6
2.1.2	Statewide	Short			3.6
2.1.3	Statewide	Short			3.6
2.2.1	Statewide	Short	DOW, USFS-Wayne, NPS, DNR-Parks, Metroparks	$	3.4, 3.6
2.2.2	Statewide	Long	ATFS, WIGs, COLT, DOW, TNC	$	3.4, 3.6
2.3.1	Statewide	Ongoing	OFA, USFS-NRS, OSU		3.4
2.3.2	Statewide	Ongoing	OSU-Ext, USFS-NRS, OFA, PUCO		3.4
2.3.3	Public forests	Ongoing	USFS-Wayne, DOW		1.2, 3.4
2.3.4	Statewide	Ongoing	ATFS, AEP, Glatfelter, OSAF, ACF, OFA, OSU-Ext		1.2, 3.4, 3.6
2.3.5	Statewide	Long	OSU-Ext, OFA, Loggers Chapters	$	3.1, 3.4, 3.6
2.4.1	Statewide	Ongoing	OTA, OML, OISA, ADF, OLEC, MORPC,	$, ☺	1.2, 2.2, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
2.4.2	Urban	Ongoing	OTA, OML, OISA, ADF, OLEC, MORPC, GLRI	$	1.2, 2.2, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
2.4.3	Statewide	Ongoing	OTA, OML, OISA, ADF, OLEC, MORPC,	$, ☺	1.2, 2.2, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7
2.5.1	Statewide	Short	All partners	$	All

[1] A key to the listed acronyms for partners can be found on page 16.
[2] A list of the national themes and objectives can be found on page 17.

State Issue 3: **Conservation of soil & water resources**

Description:
  The conservation of soil and water resources in Ohio is closely tied to the management of forests. Productive soils support healthy forests, and healthy forests, in turn, support high quality water resources. The maintenance of productive soils is also important to sustaining the forest products industry. The protection or expansion of forests within watersheds that supply public water is one of the most economical and effective ways of producing clean water. For years, conservation organizations have promoted the use of forest buffers between crop fields and streams. These riparian forest buffers reduce runoff of soil and agricultural pollutants and provide wildlife habitat. Streamside forests are equally important in urban areas. Furthermore, the expansion of urban tree canopy across the urban environment can lessen stormwater management issues resulting from large areas of impervious surfaces such as paved roads, parking lots, and sidewalks. In rural forested landscapes, the use of voluntary Best Management Practices (BMPs) during timber harvesting has been shown to effectively control non-point source pollution.

Approach:
  All soil and water conservation concerns have statewide applications in Ohio. However, some of the management tools for addressing soil and water conservation issues may have regional emphasis based on differences in the key threats. For example, forestry BMPs, while important everywhere, probably have a greater potential impact in the steep, hilly country of southern Ohio than in relatively flat, northwestern Ohio. In northwest Ohio, traditional agricultural fields dominate the landscape, and riparian forest buffers are a critical management tool. Geospatial data accumulated through the Statewide Forest Assessment project will be useful in guiding some programs areas that address strategies under this State Issue. For example, regions of the state with the lowest percentage of riparian areas with forest cover could be prioritized for riparian forest buffer programs, while programs that permanently protect forest land through fee acquisition or conservation easements might prioritize subwatersheds with the highest ability to produce clean water.

Objectives and Strategies:
3.1 Reduce soil and water quality impacts from poor land management practices and urbanization
   3.1.1 Expand riparian forest buffers in agricultural areas and urban tree canopy in urban areas
   3.1.2 Promote the use of Best Management Practices during logging operations
3.2 Maintain high quality public water supplies
   3.2.1 Maintain high quality public water supplies by protecting critical forest areas, riparian buffers, and forested wetlands

Implementation:

      The following matrix describes the necessary resources and approach to implementing the statewide strategies.

1. Strategy	2. Geographic Focus	3. Time Frame (Short=1-5 yrs, Long=5+ yrs)	4. Partners[1]	5. Limiting Resource(s)	6. Supports National Objective[2]
3.1.1	Rural, Urban	Long	NRCS, FSA, SWCDs, DOSW, OAPA, OTA, OML, OISA, ADF, OLEC, MORPC, GLRI	$	1.1, 1.2, 2.2, 3.1, 3.4, 3.5, 3.6, 3.7
3.1.2	Statewide	Ongoing	OSU-Ext, OFA, SWCDs, DOSW, OEPA	$, ☺	1.2, 2.2, 3.1, 3.4, 3.5, 3.6, 3.7
3.2.1	Rural	Long	NRCS, FSA, SWCDs, DOSW, OEPA, COLT, FWS, DOW, TNC	$	1.1, 1.2, 2.2, 3.1, 3.4, 3.5, 3.6, 3.7

[1] A key to the listed acronyms for partners can be found on page 16.

[2] A list of the national themes and objectives can be found on page 17.

State Issue 4: **Conservation of biological diversity (plants and animals)**

Description:

The conservation of biological diversity is a critical component of the sustainable management of forest ecosystems. Diverse ecosystems are better able to respond to external influences, recover from disturbances, and maintain core ecological functions and services. An important aspect of conserving biodiversity is the protection of rare plants, animals, and biological communities, as well as areas with high species diversity that are experiencing outside pressures such as human development. Forest ecosystems play a key role in conserving Ohio's biological diversity. Forests serve as critical habitat for many plants and animals both in heavily forested parts of the state and in relatively open, agricultural or urban areas. At the landscape scale, forest management for biodiversity often focuses on providing various forest successional stages to encourage a diversity of habitat and providing connectivity of habitat, which may require habitat corridors in fragmented landscapes. Management may also focus on promoting or maintaining plant species that have the greatest value to the greatest number of wildlife species. Prior to its die-off from disease, the American chestnut tree was a good example of such a "keystone" species. Other nut-producing trees, like oaks and hickories, have filled some of the void left by the chestnut's decline, and they currently play a critical nutritional role for wildlife. The most recent forest inventory for Ohio found some concerning trends related to these topics. First, Ohio's forests tend to be maturing but the age class distribution of forest stands is unbalanced with over 88% classified between 20 and 100 years old. The observed decline in early-successional forest habitat is a threat to biodiversity, as is the lack of old forests (less than 0.4% of forest stands in Ohio are over 140 years old). Ohio's Comprehensive Wildlife Conservation Strategy recognized these as major threats and identified tactical plans to address them. The composition of tree species is also shifting with a decline in oak and hickory and an increase in tree species like maple and yellow poplar, which generally have a lower wildlife value. Other key threats to biodiversity in Ohio's forests include the loss of forest habitat due to development or land conversion, habitat modification and fragmentation, and exotic invasive species.

Approach:

The conservation of biological diversity is an important component of all natural resource management. As such, relevant objectives and strategies can be found throughout this statewide strategy, as well as the strategic plans of many partner agencies and organizations (e.g., Ohio Comprehensive Wildlife Conservation Strategy). Many of the objectives and strategies outlined under this State Issue are specific to some of the key threats to biological diversity in Ohio's forests. The declining relative abundance of oak is being addressed on multiple fronts, from research by the U.S. Forest Service and various universities that includes studies on prescribed fire as a management tool, to management prescriptions being applied on public forests that favor oak regeneration. Regionally, the oak-hickory forest types are most dominant in the unglaciated Allegheny plateau of southern and eastern Ohio. That same area is also the most heavily forested part of the state, and therefore provides the greatest opportunities for managing forests for a more sustainable distribution of successional stages. However, those strategies will also be applied elsewhere in the state, when appropriate. Finally, several strategies under this State Issue relate to protecting critical habitat for rare plant and animal species, and biological communities. Priority areas have been identified utilizing data from the Ohio's natural heritage database, including the rural lands priority forest areas identified in the Statewide Forest Resource Assessment. High conservation value forests are also being defined and identified for protection on state forests. In addition, several key partners have identified their own priority areas for conserving biodiversity, and future collaborative efforts will likely rely on data and maps from various organizations. An initial analysis found good compatibility and overlap between

priority forest areas identified in the Forest Resource Assessment and those developed by a few key partners, including the Ohio Division of Wildlife and The Nature Conservancy.

Objectives and Strategies:
4.1   Promote regeneration of oak-hickory forests
    4.1.1   Enhance oak regeneration in appropriate forest types
4.2   Protect Ohio's unique or rare forest plant species and biological communities
    4.2.1   Protect high conservation value forests, including old forests, through conservation easements, fee simple acquisition, and other available means
    4.2.2   Provide information and resources to private landowners to conserve rare species or communities
4.3   Maintain habitat for a diversity of forest-associated wildlife
    4.3.1   Manage for a diversity of forest wildlife by maintaining a sustainable distribution of successional stages
    4.3.2   Increase the area of early-successional forest habitat (age class < 20 years old) and forests over 100 years old (e.g., old forests) on public and private lands
    4.3.3   Ensure that critical habitat requirements for rare forest wildlife species are being met

Implementation:
    The following matrix describes the necessary resources and approach to implementing the statewide strategies.

1. Strategy	2. Geographic Focus	3. Time Frame (Short=1-5 yrs, Long=5+ yrs)	4. Partners[1]	5. Limiting Resource(s)	6. Supports National Objective[2]
4.1.1	Statewide	Ongoing	DOW, USFS-Wayne, OSAF, ACF, OFA, OSU-Ext, USFS-NRS, ATFS, AEP, Glatfelter, RGS, WMI		1.1, 1.2, 2.1, 3.4, 3.5, 3.6
4.2.1	Rural	Ongoing	COLT, TNC, USFS-Wayne, DOW, NRCS, Metroparks, TPL, TCF, DNR-Parks	$, ☺	1.1, 1.2, 3.5, 3.7
4.2.2	Statewide	Ongoing	OSU-Ext, FWS, SWCDs,	☺	1.1, 1.2, 3.1, 3.5, 3.6, 3.7
4.3.1	Statewide	Ongoing	USFS-Wayne, DOW, ATFS, AEP, Glatfelter, OSAF, ACF, OFA, OSU-Ext, SWCDs, RGS, NWTF, PF, WMI, NWF	$	1.1, 1.2, 3.1, 3.5, 3.6, 3.7
4.3.2	Statewide	Ongoing	USFS-Wayne, DOW, ATFS, AEP, Glatfelter, OSAF, ACF, OFA, OSU-Ext, SWCDs, RGS, NWTF, PF, WMI, NWF		1.1, 1.2, 3.1, 3.5, 3.6, 3.7
4.3.3	Rural	Short	FWS, DOW, Audubon, NWF	$	1.1, 1.2, 3.1, 3.5, 3.6, 3.7

[1] A key to the listed acronyms for partners can be found on page 16.
[2] A list of the national themes and objectives can be found on page 17.

State Issue 5: **Health and vitality of Ohio's forests**

Description:

Forests are regularly exposed to various threats that impact their health and vitality. Some of the primary forest health threats include native and non-native insects and diseases; natural events or disturbances such as wildfires, drought, tornados, and ice storms; non-native invasive plants; and air pollution. Climate change also presents several potential threats to forest health including impacts from changes in weather patterns and growing seasons, shifts in native plant species' geographic ranges, and the potential expansion of some southern non-native invasive species into Ohio. Some of these climate change impacts may confound or amplify some of the common forest health threats listed previously. Currently, the major, established insect threats to Ohio's forests are two non-native species, the emerald ash borer (EAB) and the gypsy moth. Several other insects or diseases have been observed in isolated locations and present significant threats if they spread, including the hemlock woolly adelgid, beech bark disease, and bacterial leaf scorch. Another potential disease threat that could cause significant damage to Ohio's forests if it becomes established is sudden oak death. Monitoring for these existing and potential insect and disease threats is ongoing. Many of the natural disturbances that impact forest health are difficult to prevent (or mitigate their impact); however, good opportunities exist to mitigate wildfires through active management that reduces forest fuels (e.g., downed wood, leaves, and flammable vegetation). Ohio has an active wildland fire prevention and management program that includes suppression and prescribed burning activities, as well as a significant training and capacity building program. Another major forest health threat in Ohio is non-native or exotic invasive species. Invasive insects and disease were discussed previously, but invasive plants also have significant impact in Ohio's forests. Some of the biggest problem species are tree-of-heaven (Ailanthus), bush honeysuckle, multi-flora rose, and garlic mustard, but other problem species exist.

Approach:

Managing the various health threats to Ohio's forests requires a combination of monitoring and control programs, and in some cases, threat or risk reduction. Strong partnerships and collaboration are essential to successfully addressing this issue. Monitoring and control programs for insects and disease involve multiple agencies, with the Ohio Department of Agriculture and U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS) taking the lead in state and federal jurisdictions. For forest-associated insects and disease, the Ohio Division of Forestry also plays a substantial role through an annual statewide aerial survey, service forestry assistance with private landowners, urban forestry assistance to communities, and targeted grant programs, like the Western Lake Erie EAB project. Control programs related to forest health threats include the EAB and gypsy moth quarantines, invasive plant control on public lands (state forests, national forest, wildlife areas, and metroparks) and private lands (land trusts lands, USDA landowner incentive programs like EQIP and WHIP, US FWS private lands program), and general technical assistance to private landowners and communities on identifying and controlling forest health threats. The priority areas for monitoring and control programs vary based on the nature of the threat. For example, some monitoring needs to be statewide to capture trends on spread or location of outbreaks, but other monitoring efforts are dictated by the location of the specific threat or host species. Statewide risk assessment maps will be used when applicable to target risk reduction efforts where they will be most effective and efficient. A wildfire risk assessment map was completed in 2009 for Ohio that will help guide fire management programs, like the development of community wildfire prevention plans, Firewise communities, and the distribution of grants and wildland fire equipment to volunteer fire departments. The wildfire risk assessment map will be updated periodically to adapt to changing conditions and maintain accuracy.

Objectives and Strategies:
5.1   Monitor and manage for existing and future forest health threats
      5.1.1   Monitor existing forest health threats and mitigate their impact
      5.1.2   Identify future forest health threats and minimize their potential impact
5.2   Reduce the impact of exotic invasive species
      5.2.1   Reduce the impact of invasive species in Ohio's forests through active control, public awareness campaigns, and pro-active identification of future problem species
      5.2.2   Mitigate the impact of the emerald ash borer on Ohio's urban and rural forests
5.3   Apply appropriate wildland fire management
      5.3.1   Develop future DOF fire management leadership
      5.3.2   Appropriately apply wildland fire management actions
      5.3.3   Position rural fire departments for success
5.4   Manage forests for the impacts associated with climate change
      5.4.1   Evaluate potential climate change impacts to Ohio's forests and develop a plan to manage for those impacts

Implementation:

The following matrix describes the necessary resources and approach to implementing the statewide strategies.

1. Strategy	2. Geographic Focus	3. Time Frame (Short=1-5 yrs, Long=5+ yrs)	4. Partners[1]	5. Limiting Resource(s)	6. Supports National Objective[2]
5.1.1	Statewide	Ongoing	ODA, APHIS, OSU-Ext, USFS-NRS, USFS-SPF	$, ☺	1.2, 2.2, 3.3, 3.4, 3.5, 3.6
5.1.2	Statewide	Ongoing	ODA, APHIS, OSU-Ext, USFS-NRS, USFS-SPF	$, ☺	1.2, 2.2, 3.3, 3.4, 3.5, 3.6, 3.7
5.2.1	Statewide	Ongoing	OSU-Ext, USFS-NRS, USFS-Wayne, USFS-SPF, FWS, DOW, DNR-Parks, OFA, OSAF, ACF, ATFS, RA, NRCS, SWCDs, WIGs, NPS, TNC, Metroparks, Arboretums, Audubon, OIPC, OISA, ADF, GLRI, CWMAs, TSI Vendors	$, ☺	1.2, 2.2, 3.3, 3.4, 3.6, 3.7
5.2.2	Statewide	Ongoing	OSU-Ext, APHIS, ODA, USFS-Wayne, DOW, DNR-Parks, OFA, OSAF, ACF, ATFS, NRCS, SWCDs, WIGs, TNC, Metroparks, Arboretums, OISA, ADF, GLRI	$, ☺	1.2, 2.2, 3.1, 3.3, 3.4, 3.5, 3.6, 3.7

1. Strategy	2. Geographic Focus	3. Time Frame (Short=1-5 yrs, Long=5+ yrs)	4. Partners[1]	5. Limiting Resource(s)	6. Supports National Objective[2]
5.3.1	Statewide	Ongoing	ORFC, OPFC, MAFC, Fire Academy	$	2.1, 3.3
5.3.2	Statewide	Ongoing	ORFC, OPFC, MAFC, EMAs, RFDs, USDOD, TNC, DOW, FWS	$, ☺	1.2, 2.1, 2.2, 3.3, 3.4,
5.3.3	Statewide	Ongoing	ORFC, OPFC, MAFC, EMAs, RFDs, USDOD	$	2.1, 3.3,
5.4.1	Statewide	Short	USFS-NRS, FWS, NWF, TNC, USFS-Wayne, USFS-SPF, OSU-Ext	$	1.2, 2.2, 3.4, 3.5, 3.6, 3.7

[1] A key to the listed acronyms for partners can be found on page 16.
[2] A list of the national themes and objectives can be found on page 17.

State Issue 6: **Forest fragmentation and urbanization**

Description:
Forest land conversion for development and forest fragmentation are often listed as two of the key threats to forests, both nationally and in Ohio. As population centers grow and expand into adjacent rural areas, parcelization and land conversion are common, and many of Ohio's largest metropolitan areas have nearby counties with significant forest cover that are being impacted. Forest fragmentation can result from urban development, but it can also occur when land is cleared for mining or traditional agriculture, when roads are improved or expanded, or even when trees are harvested for timber. Fragmentation from timber harvests is temporary, but most other forms of fragmentation tend to be permanent. Urbanization and fragmentation often reduce the capacity of forests to provide ecological, economic, and social benefits as described under State Forest Issue 2. For example, the management of forests for traditional uses like timber products and hunting becomes increasingly difficult as forest landscapes become urbanized and more fragmented. Fragmentation also provides access for the entry of various forest health threats discussed in Issue 5, like invasive plants and insects, and can negatively impact biological diversity.

Approach:
Some of the concerns associated with forest fragmentation are regularly addressed in landowner and community assistance programs like the Ohio Division of Forestry's Service Forestry and Urban Forestry programs. Service foresters often advise forest landowners on how to manage fragmented forests that may have invasive plant problems, lack of suitable wildlife habitat, or limited timber management potential due to small land base. Urban foresters advise community officials on how to effectively manage trees along streets, within parks, and on public grounds. Private landowners who own small, forested properties of less than 10 acres are an important and expanding group in Ohio, but they may not be reached effectively under current programs. The Ohio Division of Forestry recognized this critical group during recent strategic planning and is currently developing a plan to address their needs. Efforts to work with stakeholders to address the significant threats of forest fragmentation and urbanization will require collaboration among various partners, including urban foresters, service foresters, extension personnel, and others, like local and regional land use planners. The Statewide Forest Resource Assessment includes several maps of current or future areas affected by fragmentation and urbanization. Those maps will be useful in focusing efforts on the most heavily impacted areas.

Objectives and Strategies:
6.1   Slow the trend of increasing forest fragmentation and urban development in previously rural forest land
    6.1.1   Maintain economic benefits and ecological values of working forests through landowner incentives, conservation easements, and property tax programs
    6.1.2   Support efforts to improve comprehensive land use planning and zoning in urbanizing areas
6.2   Mitigate the impact of forest fragmentation and urban development in forested landscapes
    6.2.1   Sustain forest benefits and services in parcelized forest landscapes (e.g., parcels < 10 acres)

Implementation:

The following matrix describes the necessary resources and approach to implementing the statewide strategies.

1. Strategy	2. Geographic Focus	3. Time Frame (Short=1-5 yrs, Long=5+ yrs)	4. Partners[1]	5. Limiting Resource(s)	6. Supports National Objective[2]
6.1.1	Statewide	Ongoing	Auditors, TNC, COLT, NRCS, TPL, TCF, USFS-SPF	$, ☺	1.2, 2.2, 3.1, 3.2, 3.4, 3.5, 3.6, 3.7
6.1.2	WUI	Long	OLEC, GLRI, MORPC, OAPA, OTA, OML, OSU-Ext, TNC	$, ☺	1.1, 3.1, 3.2, 3.4, 3.5, 3.6, 3.7
6.2.1	WUI	Short	OSU-Ext, OISA, OSAF,	$, ☺	1.2, 2.2, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7

[2] A list of the national themes and objectives can be found on page 17.

[1]Key to partners:

ACF = Assoc. of Consulting Foresters
ACOE = Army Corps of Engineers
ADF = Arbor Day Foundation
AEP = American Electric Power
APHIS = USDA Animal & Plant Health Inspection Service
ATFS = American Tree Farm System
COLT = Coalition of Ohio Land Trusts
DNR-Parks = Ohio DNR Div. of Parks & Recreation
DOSW = Ohio DNR Div. of Soil & Water
DOW = Ohio DNR Div. of Wildlife
EMAs = County Emergency Mgt. Agencies
FSA = USDA Farm Service Agency
FWS = US Fish & Wildlife Service
GLRI = Great Lakes Restoration Initiative
MAFC = Mid-Atlantic Fire Compact
MORPC = Mid-Ohio Regional Planning Commission
NPS = National Park Service
NRCS = USDA Natural Resources Conservation Service
NWF = Natl. Wildlife Federation
NWTF = Natl. Wild Turkey Federation
OAPA = Ohio Chapter American Planning Association
ODA = Ohio Dept. of Agriculture
ODE = Ohio Department of Education
OEPA = Ohio Environmental Protection Agency
OFA = Ohio Forestry Association

OIPC = Ohio Invasive Plant Council
OISA = Ohio Chapter International Society of Arboriculture
OLA = Ohio Landscape Association
OLEC = Ohio Lake Erie Commission
OML = Ohio Municipal League
OPFC = Ohio Prescribed Fire Council
ORFC = Ohio Rural Fire Council
OSAF = Ohio Chapter Society of American Foresters
OSU-Ext = Ohio State Univ. Extension
OTA = Ohio Township Association
PF = Pheasants Forever
RA = Rural Action
RFDs = Rural Fire Depts.
RGS = Ruffed Grouse Society
SWCDs = Soil & Water Conservation Districts
TCF = The Conservation Fund
TNC = The Nature Conservancy
TPL = Trust for Public Land
USDOD = US Dept. of Defense
USFS-NRS = US Forest Service Northern Research Station
USFS-SPF = US Forest Service State & Private Forestry
USFS-Wayne = Wayne National Forest
WIGs = Woodland Interest Groups
WMI = Wildlife Mgt. Institute

[2] List of the National Priorities and Objectives (developed by the USDA Forest Service, State & Private Forestry):

NATIONAL PRIORITIES	NATIONAL OBJECTIVES
1. Conserving and Manage Working Forest Landscapes for Multiple Values and Uses	**1.1.** Identify and conserve high priority forest ecosystems and landscapes
	1.2. Actively and sustainably manage forests
2. Protect Forests from Threats	**2.1.** Restore fire-adapted lands and/or reduce risk of wildfire impacts
	2.2. Identify, manage and reduce threats to forests and ecosystem health
3. Enhance Public Benefits from Trees and Forests	**3.1.** Protect and enhance water quality and quantity
	3.2. Improve air quality and conserve energy
	3.3. Assist communities in planning for and reducing forest health risks
	3.4. Maintain and enhance the economic benefits and values of trees and forests
	3.5. Protect, conserve, and enhance wildlife and fish habitat
	3.6. Connect people to trees and forests, and engage them in environmental stewardship activities
	3.7. Manage trees and forests to mitigate and adapt to global climate change

Division of Forestry Programs & Statewide Strategies

The Ohio Department of Natural Resources, Division of Forestry (Ohio Division of Forestry) and partners have established program areas that are currently working on many of the strategies listed in the previous section or have the capacity to address them in the future. An evaluation of how currently funded programs contribute to each of the statewide strategies provides additional information on the necessary resources to implement the Statewide Strategy. This section includes a table that crosswalks current Ohio Division of Forestry program areas and statewide strategies. Descriptions of each of the programs follow.

The program areas are:
Forest Operations:
1. State Forest Operations
2. State Fire Program
Forestry Assistance
3. Forest Stewardship Program
4. Forest Legacy Program
5. Ohio Forest Tax Law (OFTL)
6. USDA Environmental Quality Incentive Program (EQIP) - Forestry Program
7. Urban and Community Forestry
8. Forest Health
9. Forest Industry / Utilization and Marketing
Information and Education
10. Information and Education
11. Project Learning Tree (PLT)

The Division of Forestry program areas that contribute to each statewide strategy:

Statewide Strategy	State Forests	Fire Program	Forest Stewardship	Forest Legacy	OFTL	EQIP – Forestry	Urban Forestry	Forest Health	Forest Industry	Info & Ed	PLT
1.1.1	X	X						X		X	
1.1.2	X							X		X	
1.1.3	X	X						X		X	
1.2.1			X	X	X	X				X	
1.2.2			X							X	
2.1.1	X	X	X	X			X	X	X	X	X
2.1.2	X	X	X	X	X	X	X	X	X	X	X
2.1.3	X	X	X				X	X		X	
2.2.1	X									X	
2.2.2			X	X	X					X	
2.3.1									X	X	
2.3.2	X		X		X			X	X	X	
2.3.3	X								X	X	
2.3.4			X	X	X	X		X		X	
2.3.5									X	X	
2.4.1							X			X	
2.4.2							X			X	
2.4.3							X			X	
2.5.1	X	X	X	X	X	X	X	X	X	X	X
3.1.1			X			X	X			X	
3.1.2	X		X	X	X				X	X	
3.2.1	X		X	X	X		X			X	
4.1.1	X	X	X	X	X	X				X	
4.2.1	X			X							
4.2.2		X	X	X	X			X		X	
4.3.1	X	X	X	X	X				X	X	
4.3.2	X	X	X	X	X				X	X	
4.3.3	X	X	X	X	X			X		X	
5.1.1	X	X	X	X	X	X	X	X		X	
5.1.2	X	X	X				X	X		X	
5.2.1	X	X	X	X	X	X	X	X		X	
5.2.2	X		X		X	X	X	X		X	
5.3.1		X									
5.3.2		X								X	
5.3.3		X								X	
5.4.1	X	X	X	X			X	X	X	X	
6.1.1			X	X	X	X				X	
6.1.2		X	X					X		X	
6.2.1			X			X	X	X		X	

1. State Forest Operations

The Ohio Division of Forestry operates 20 state forests, covering more than 190,000 acres in 21 counties, mostly in Ohio's unglaciated southeastern region. The Chief of the Division, and State Forester of Ohio, is given statutory authority for multiple-use management of state forests through Ohio Revised Code (ORC), Section 1503. State forest management involves a balanced approach to several, and sometimes conflicting, programmatic areas that include: land management (consumptive uses); fire management (both prescribed and wildland); backcountry recreation (motorized and non-motorized); law enforcement; and forest operations (infrastructure maintenance). This management is accomplished, on the ground, by eight forest managers that have the large responsibility of developing and implementing 5-year Forest Management Plans and Annual Work Plans for each state forest. These forest managers answer directly to the two district forest managers (one in the North District and one in the South District). District managers are responsible for consistent implementation of programs and work plans and provide both programmatic and administrative support to the forest managers. They help forest managers provide a balanced and prioritized approach to multiple use management.

All state forests and associated programs are overseen by a state forest administrator. The state forest administrator is responsible for recommending program implementation policy changes to the Chief, working on interdivisional or interdepartmental programs (e.g., Ohio Department of Transportation's Cooperative Roadway Maintenance Preprogram, dam safety with the Ohio DNR Office of the Chief Engineer), and other special projects. Answering directly to the state forest administrator are three program administrators that focus on the following programs: land management and timber, fire, and recreation/law enforcement. These program administrators are responsible for overseeing and recommending the general direction for each program, keeping policy and operation manuals up-to-date, and seeking funding opportunities for these core programs. Brief descriptions of each core programmatic area follow. Prescribed burning is discussed in the context of land management, but the broader wildfire management and training program, which also falls under state forest operations in the Division's organizational framework, will be described separately in this statewide strategy document due to its unique funding structure and application beyond the scope of publicly-owned state forests.

Land Management:
Forest management occurs on state forests to promote forest health and sustainability, wood products that contribute to local communities, recreational opportunities that require a large land base, and outreach and education to private landowners. Timber sales average approximately 8 million board feet on approximately 25 different sales each year. Both even-aged and uneven-aged management occurs on state forests. State forest silviculture is actively focusing on the oak regeneration problem and developing even-aged harvesting coupled with prescribed fire silvicultural systems. Partial timber harvesting occurs on approximately 2,500 acres per year and regeneration harvesting occurs on approximately 400 acres per year. Revenue from state forest timber sales are distributed to local governments and the Ohio Department of Natural Resources (ODNR). Prescribed burning activities average approximately 1,500 acres each year on approximately eight different units. The last two years have been a transition phase in the management of state forests. The Ohio Division of Forestry (DOF) successfully procured an integrated forest information system to better utilize GIS technologies and to track forest activities. DOF also contracted to complete a comprehensive forest inventory of 80% of our state forest acreage. DOF desires to complete the remaining 20% in the next two years. The new information system, as well as the inventory data, is intended to transition our management to a more landscape approach replacing the file-based area approach.

Management of Ohio's state forests is being guided by a strategic plan implemented in 2008 (online at: http://ohiodnr.com/LinkClick.aspx?fileticket=A%2b6r2Vhp%2fe4%3d&tabid=5622), as well as 5-year forest-specific management plans and annual work plans. Annual work plans have been completed for fiscal year 2010 (http://ohiodnr.com/Home/forests/StateForestsRecreation/tabid/5622/Default.aspx). Forest-specific management plans are in-progress at this time but are expected to be completed soon. Further, all land management and prescribed fire activities follow the policies and procedures of an internal guidance manual that contains all aspects of operational, environmental, and governmental policies. Finally, the Ohio Division of Forestry is currently pursuing third-party certification of sustainable forest management of all state forests in Ohio through both the Sustainable Forestry Initiative (http://www.sfiprogram.org/) and the Forest Stewardship Council (http://www.fscus.org/).

Recreation:
State forests support numerous outdoor recreational opportunities. Visitors to state forests can enjoy over 350 miles of backcountry bridle trails, over 80 miles of backpacking trails, many day-use hiking trails, as well as camping, hunting, wildlife viewing, and gathering. The Division of Forestry is the sole provider on state lands of 4 designated APV areas for off-road four-wheeler and motorcycle riding on a total of 50 miles of motorized trails. DOF also manages the only state designated wilderness area at Shawnee State Forest in southern Ohio.

Law Enforcement:
The law enforcement program is a tool to complement the Division of Forestry's role as a steward of Ohio's forest resources. The Forest Officer's service to the public includes enhancing the experiences of visitors using state forests. This responsibility can begin with public relations programs to people who have not yet visited the area, and extend to visitor assists for those using the forest. Enhancing visitor experiences includes enforcing the Ohio Revised Code and Ohio Administrative Code (Forestry Rules) with several goals in mind: 1) to protect the resources from activities that detract from their enjoyment or would jeopardize the Division's mission and management strategies; 2) to protect visitors themselves from others whose activities may be harmful to them; 3) and to ensure that state forests have a quality social environment that is complementary to and worthy of the natural environment being made available for public enjoyment. Responsibilities related to Ohio's forest fire laws are also multi-fold and include public relations work in fire prevention, training volunteer firefighters in wildland fire suppression, and enforcement of the Ohio Revised Code. All Forest Officers receive continual training in the areas of legal updates, fire investigation, weapons qualifications, and other proper law enforcement procedures and activities.

2. State Fire Program

The Ohio Division of Forestry administers the state's Fire Program and is responsible for direct fire protection of 5.9 million acres in southern and eastern Ohio. This area of the state is unglaciated and heavily forested. The Division of Forestry (DOF) also provides training, grants, fire prevention and technical support to the entire state, and oversees the Ohio Certified Prescribed Fire Managers program, which regulates all prescribed fire operations within the entire state.

In a typical year, an estimated 15,000 wildfire and natural-fuel fire occurrences are encountered statewide. Each year, an average of 800 wildfires burn 4,500 acres of forest and grassland within Ohio's forest fire protection district in the state's southeast unglaciated hill country. These wildfires are attributed primarily to the careless burning of debris and household litter and arson, and result in untold damage to trees and landscape, water quality, improvements such as fences and outbuildings,

and place people and their homes at significant risk. DOF works with volunteer fire departments to ensure that they are trained in the latest advances in fire prevention and suppression. The Division also enters into partnerships with other state and federal agencies to share knowledge and resources. In addition to fire suppression, the division conducts prescribed burns on state forest lands each year to enhance habitat and reduce fuel buildup. Finally, DOF administers the Firewise Ohio Program, which is an initiative designed to include fire safety professionals, homeowners, and community leaders in an effort to lessen the risks to communities across Ohio. The ultimate goal of the Firewise program is to increase community safety through cooperative education and hazard mitigation techniques.

3. Forest Stewardship Program

Approximately seventy-three percent of all forestland in Ohio, or 5.8 million acres is under nonindustrial private ownership (i.e., family forests), contributing significantly to the state's clean water and air, wildlife habitat, recreational resources and timber supplies. Authorized by the federal Cooperative Forestry Assistance Act of 1978, the Forest Stewardship Program provides technical assistance, through the Ohio Division of Forestry's Service Forestry program, to private forest owners to encourage and enable active long-term forest management. A primary focus of the Stewardship Program is the development of comprehensive, multi-resource management plans that provide landowners with the information they need to manage their forests for a variety of products and services. Forest owners may also meet with DOF service foresters for assistance on a various forest management topics without developing a written plan. Service Foresters are uniquely qualified to work one-on-one with landowners to determine what can and should be done to develop woodlands for wildlife habitat, timber production, rare species habitat, hunting, and/or recreation.

Ohio currently has 20 service foresters statewide, who each provide private landowner assistance over a multi-county project area. Service forester project areas range in size from two to seven counties. Three service forestry coordinators directly supervise the service foresters and report to the private lands program administrator who oversees the service forestry program at the state level. For more information about the Forest Stewardship Program in Ohio, as administered under the Ohio Division of Forestry's private landowner assistance program, visit DOF's website at: http://ohiodnr.com/forestry . Other programs administered under the service forestry program include Forest Legacy, Ohio Forest Tax Law, and USDA EQIP, which are each described separately.

4. Forest Legacy Program

In 1993, then Governor George Voinovich designated the Ohio Division of Forestry (DOF) as the lead agency for Ohio for the Forest Legacy Program (FLP). The State Forest Stewardship Committee oversaw the development of the original Assessment of Need (AON) that included a series of public input meetings. The AON was approved on August 5, 2005. The committee continues to advise the DOF on the implementation of the FLP.

The State Forest Stewardship Committee identified the following threats to Ohio's forestland and traditional forest uses:
- Fragmentation, conversion, parcelization from development
- Influx of aggressive non-native plant and animal species
- A lack of professional forest management plans
- Surface mining
- Livestock grazing
- Insect and disease

The mission of the Ohio FLP is *to protect working forests*. The goals of the program are to:
1. Protect working forests threatened by conversion to non-forest uses
2. Protect and enhance social/cultural values associated with forest uses
3. Improve/enhance biodiversity
4. Improve water quality and protect water quantity
5. Enhance economic productivity through traditional forest uses

To achieve these goals, the following objectives were established for Ohio's FLP:
1. Foster and connect large and intact forest tracts
2. Protect areas of social, recreational, cultural and historic significance
3. Focus on the most ecological significant areas of the state
4. Support communities by focusing on conserving the most economically significant areas for forest related industries

Based on the national criteria and the Stewardship Committee's recommended program goals and eligibility criteria, two Forest Legacy Areas (FLAs) were identified in Ohio, The Grand River Lowlands and the Unglaciated Appalachian Plateau (see Figure C on page 117 of the Assessment for the map of FLAs). In both FLAs, the primary means of protection will be the acquisition of conservation easements from willing sellers. Fee acquisition from willing sellers will also be considered on a case-by-case basis.

As the state lead agency, the Ohio Division of Forestry has concluded that Ohio's Forest Legacy Program (FLP) will continue to be implemented according to the current Assessment of Need (AON) approved on August 5, 2005. A copy of the State Lead Agency designation letter, the AON, and the AON approval letter can be found online at: http://ohiodnr.com/Forestry/tabid/5293/Default.aspx .

5. Ohio Forest Tax Law

The Ohio Forest Tax Law (OFTL) program is administered by the Ohio Division of Forestry, according to the Ohio Revised Code and the Ohio Administrative Code. Under the OFTL program, landowners agree to manage their forest land for the commercial production of timber and other forest products and to abide by pertinent rules and regulations in exchange for a fifty percent reduction of the local property tax rate. According to the Ohio Administrative Code, "forest land" is defined as:

> "Land for which the primary purpose is the growing, managing and harvesting of a merchantable forest product of commercial species under accepted silvicultural systems through natural or artificial reforestation methods and for which there is an approved forest management plan. The forest land shall consist of a stand or stands of commercial species of forest trees which contain at least fifty square feet of basal area or at least three hundred stems per acre which shall be evenly distributed throughout the stand."

The requirements for the OFTL program are as follows.
- Forest land must be 10 or more contiguous acres (home sites or other building sites excepted) and not less than 120 feet wide.
- Property boundary lines and/or forest boundary lines must be clearly marked prior to examination and those markings continuously maintained.
- All forest land must be managed according to a forest stewardship management plan approved by the State Forester. The owner shall follow all provisions of the plan, which may include commercial cutting.
- Boundary lines must be visibly marked prior to examination.

- Before the forest land can be certified, the landowner is required to demonstrate his or her intent to manage that land by completing a prescribed forestry practice.
- Every five years, the Division of Forestry will inspect certified forest land to ensure compliance with the program and with the forest management plan.
- During the first five years of certification, the landowner must attend eight hours of forestry education approved by the Chief of the Division of Forestry.
- There is a one-time $50 application fee.

6. USDA EQIP-Forestry Program

The USDA Environmental Quality Incentives Program (EQIP), Forestry Program assists private forest landowners in establishing a stand of trees or improving the health and vigor of their existing woods. The EQIP-Forestry Program is a way for landowners to receive program payments and technical advice from professional foresters. The eligibility criteria for Ohio's EQIP Forestry program include:
- Owning or managing a minimum of 5 acres of woodland.
- Having a forest stewardship plan.
- Restricting livestock from the forested land
- A USDA customer service record with the USDA Farm Service Agency

Forestry practices that are eligible under the EQIP-Forestry Program include: tree planting, grape vine control, crop tree release (selective cutting of trees to allow other trees of value to grow), thinning, and control of woody invasive plants (e.g., bush honeysuckle, tree of heaven). The USDA Natural Resources Conservation Service (NRCS) administers the EQIP-Forestry Program, but the Ohio Division of Forestry partners with the NRCS to provide technical assistance for the program to both the NRCS and participating landowners.

7. Urban and Community Forestry

A significant majority of Ohioans live and/or work within urban areas. The quality of life for them and their families is dependent upon the urban environment. Healthy, safe, and functional trees enhance this environment by promoting clean air and water, increasing property values, reducing erosion and stormwater runoff, providing wildlife habitat, moderating temperature, lessening energy demands, and offering year-round enjoyment. Without a vibrant urban forest the condition of our lives would appreciably diminish.

Ohio Division of Forestry's Urban Forestry Program was created in 1979 within the Ohio Department of Natural Resources to promote trees and other vegetation as tools to enhance the quality of life within our cities, villages, and townships. The purpose of the program is to provide community officials and allied agencies with the organizational and technical ability to effectively manage the trees along streets, within parks, and on public grounds. Currently, six regional urban foresters are available to help communities statewide manage their urban forest resources to meet their local needs.

Objective Statement:
Through this program, we envision an improved quality of urban life for all Ohio communities. We believe this can only be achieved when comprehensive urban forestry programs (organizations within the community infrastructure that have the authority and ability to effectively manage its urban forest resource) are integrated and on par with other community services.

Urban Forestry Program Strategy:
A four-phase strategy will be used to meet the stated objective.

1. <u>Direct Assistance:</u> Regional urban foresters, through one-on-one assistance, will encourage, enhance, and/or expand local tree care programs within participating communities (cities, villages, and townships). Through technical knowledge, the urban foresters will convey the benefits of a safe, healthy, and functional urban forest resource to community leaders. Using organizational skills they will demonstrate how to effectively provide these benefits by properly managing the urban forest resource.
2. <u>Grant Program:</u> An urban forestry grant program, funded by federal, state, and/or private sector monies, will be administered for Ohio communities when available. The grant program will be based on community commitment rather than community need. These will be reimbursable grants requiring a 50/50 match, used to promote comprehensive tree care programs.
3. <u>Information Facilitation:</u> Ohio's Urban Forestry Program will provide information to help communities successfully implement their urban forest management programs. Regional and statewide activities will include:
   - A World Wide Web site for the efficient dissemination and communication of information.
   - A yearly networking meeting for Ohio's city foresters.
   - Annual urban forestry conferences for local community officials and interested citizens.
   - Tree Commission Academy classes.
4. <u>Urban Forest Threats and Pressures:</u> The Urban Forestry Program will strive to identify and help mitigate potential risk to Ohio's urban forests. By partnering with federal and state agencies, we will help communities prepare for, avoid, or deal with factors that would adversely affect their urban forest resource.

During the last thirty years, the awareness level of municipal officials to the benefits that properly managed trees bestow upon their community has markedly increased. The challenge for Ohio's Urban Forestry Program is to constantly channel this awareness into long-term urban forestry commitment at the local level. As Ohio continues to urbanize, this need increases, as does our obligation to enhance the quality of life in our cities, villages, and townships through healthy and productive urban forests.

8. Forest Health

The Ohio Division of Forestry has two main program areas that focus on forest protection, the State Fire Program (previously described) and the Forest Health Program. Activities for these programs monitor and report on the health of Ohio's forests. The program objective it to improve long-term forest health, productivity, and economic viability by protecting the forest from agents such as invasive plants, insects, and disease. The Forest Health program achieves this objective through monitoring and reporting, evaluation/research, and management activities. Each of these program areas are described in more detail below.

Forest Insect and Disease Damage Monitoring and Reporting:
<u>Quarantines</u>
The quarantine boundaries regarding the Emerald Ash Borer and the Gypsy Moth change as the range of the insect changes. In order to find the most up-to-date information and quarantine regulations visit the following Ohio Department of Agriculture web sites.

     EAB (http://www.agri.ohio.gov/divs/plant/eab/eab-index.aspx)
     Gypsy Moth (http://www.agri.ohio.gov/divs/plant/gypsy/gypsy-index.aspx)

Aerial Survey
Statewide aerial surveys of Ohio's forests take place on an annual basis in June. Planes and their pilots are supplied by the Ohio Department of Transportation or the Ohio Division of Wildlife. The surveys are performed by trained observers who are responsible for the digitized mapping of areas of concern. Ground checks of damaged areas are performed to identify the cause.

Ground Survey
Ground surveys for emerging exotic pests of concern such as Gypsy Moth, Hemlock Wooly Adelgid, and the Emerald Ash Borer will be performed in an ongoing manner on state forests. Special surveys for important and/or emerging pests will be completed as needed to maintain management objectives.

Evaluation/Research
When damage to state forests is detected, details about the damage are reported to the Division of Forestry's Forest Health Program Administrator. Data from these reports are evaluated for regional or statewide trends and for potential research opportunities. The results of the evaluation and any research that is completed will be used to develop strategies to mitigate the problem, protect the forest resource, and sustain healthy forest conditions. Two current examples of evaluations and research include the white oak mortality evaluation and research project in southern Ohio and the evaluation of the white pine decline and mortality event occurring statewide. As the results of these evaluations are realized, management strategies can be developed and implemented to protect surviving trees and/or encourage the growth of the next productive forest.

Management Strategies:
Management strategies are developed, and adapted as needed, for key forest health threats in the state, including the gypsy moth, the emerald ash borer, butternut canker disease, and invasive plants. These strategies, which may include specific silvicultural prescriptions, are implemented on state forest lands, and may have application on private lands (administered through the Division's Service Forestry program).

Invasive Plants:
Invasive plants are widely recognized as a key threat to Ohio's forests. Currently, the Ohio Division of Forestry has two special programs that focus on invasive plant control on public and private lands.

Special Invasive Plant Project in Southern Ohio: A special project is targeting invasive plant control on private lands in a 22-county area in south-central and southeastern Ohio, with support through special USDA EQIP funding. The project is also addressing the identification and control of invasive plants in 47 communities in the same 22-county area. More information about this special invasives project can be found online at: http://www.ohiodnr.com/default/tabid/21391/Default.aspx .

Ohio Woodlands Job Corps: This special program is funded through the American Recovery & Reinvestment Act of 2009. The program hires conservation workers for 25-week appointments that include extensive training. Job Corps workers control invasive plants on state forest lands across Ohio, and also conduct various timber stand improvement practices. At the completion of their appointment, participants have received training in the following areas: master logger, safety and first aid, wildfire management, pesticide safety and application, and various forestry practices that qualify them to be timber stand improvement vendors (including invasive species control).

9. Forest Industry

Ohio grows one billion board feet of wood and harvests 300-400 million board feet of timber each year. The ultimate goal of Ohio Division of Forestry's Forest Industry Program is to conserve Ohio's timber resources. Staff works cooperatively with government agencies, research institutions, and industrial associations to enhance Ohio's domestic and international wood products marketing opportunities. Key partners include other Ohio Department of Natural Resources divisions, the Ohio Environmental Protection Agency (OEPA), the USDA Forest Service, the Ohio State University, and the Ohio Forestry Association. An example of a forest industry program supported through a partnership is the Linked Deposit Program for Silviculture, which offers low-interest financing to logging companies to purchase equipment that will help them protect and improve the health of Ohio's woodlands and follow best management practices for logging. This program is administered by the OEPA with technical support from the Ohio Division of Forestry. More information about this and other forest industry programs can be found online at:
http://ohiodnr.com/Home/industries/ForestIndustriesHome/tabid/5251/Default.aspx . The Ohio Division of Forestry's Forest Industry webpage contains a wealth of information related to forest industries, including timber price reports, forest products publications, and various directories (e.g., sawmills, firewood dealers, primary and secondary wood manufacturers).

10. Information & Education

Ohio's forests contain a wealth of natural information that can be experienced first hand by visiting any of Ohio's 20 state forests. Through additional education, one can become an informed steward of the land. The Ohio Division of Forestry is committed to helping Ohioans and other visitors understand the full importance of well-managed woodlands. Information and education activities are an important component of all Division of Forestry program areas. To assist in educating Ohio's youth, the Division's Information and Education section coordinates Project Learning Tree workshops so educators and youth leaders can incorporate quality environmental education into their lessons or programs. The Project Learning Tree program is described in more detail in a separate program description that follows.

The Ohio Division of Forestry has a communications team and a recently completed three-year communications plan (effective 2009 to 2012). The guiding principles for that plan follow:
- Forests are crucial to all Ohioans for the benefits they provide.
- The Division of Forestry is the leader on forestry issues in Ohio.
- Communications (both internal and external) is a critical part of fulfilling a leadership role.
- Division messages cross program areas and responsibilities.
- Communications efforts reflect the professionalism of our staff.

11. Project Learning Tree (PLT)

Project Learning Tree (PLT)-Ohio is a comprehensive environmental education program that strives to deliver all aspects of the award-winning international Project Learning Tree. PLT helps educators with balanced non-biased learning experiences for PreK through 12th grades that encompass the total environment - land, air, water, plants and animals (including humans). Since 1980, PLT-Ohio has provided workshops to more than 20,000 educators. Originally managed by the Ohio Department of Education, PLT-Ohio is now a non-profit 501(c)(3) organization. PLT-Ohio is managed by a board composed of educators and natural resources professionals, under the sponsorship of the Ohio Division of Forestry.

New State Education Standards & PLT:
Many educators have been involved in the development process to create a user-friendly database to integrate Project Learning Tree activities into learning experiences. For information regarding the Ohio Content Standards of PLT activities, visit the following webpage: http://www.dnr.state.oh.us/education/correlations/ .

The Benefits...
Children:
- Develop skills in creative problem solving, critical thinking, evaluation, research, and decision making.
- Begin to make wise personal decisions about everyday matters that affect the environment
- Learn how to think, not what to think, about our complex environment.

Teachers and Other Leaders:
- Participate in creative, hands-on workshops that help improve their teaching skills.
- Receive a ready-to-use PLT guide which actively involves students in the learning process. The activities in the guide are also correlated to education standards
- Find that PLT activities work with a variety of teaching and learning styles.
- Receive a periodical called "The BRANCH", with updates and additional teaching ideas, activities, and information.
- Receive support from PLT-Ohio and the national network.
- Are able to participate in special advanced PLT workshops on a variety of themes.
- Learn about the annual Greenworks! Grant Opportunity, for community-action projects that involve a PLT participant, youth and local partner groups. Amounts vary ($200 - $2000) and more information is available through the National PLT office (http://www.plt.org/).

The PLT Story
Nationwide, PLT is a program of the American Forest Foundation (AFF), a non-profit organization that works for healthy forests, quality environmental education and informed decision making about our communities and our world. PLT was developed by classroom teachers and other educators, as well as by representatives of conservation and forestry groups. The AFF continues to update and develop new PLT materials to keep up on current issues in education and the environment. PLT has reached more than 100,000 educators and more than 20 million students in all 50 states and several foreign countries since it was field tested and revised by classroom teachers in 1977. Research and field surveys have shown PLT to be an effective teaching tool. In Ohio, Project Learning Tree began in 1980, and it has been received enthusiastically by teachers and youth leaders. More than 300 people are currently certified as volunteer workshop leaders and more than 15,000 teachers and youth group leaders have attended a local workshop to learn about using the activities with young people. A strong state board committee, made up of education and resource professionals, is responsible for financing and operating the Ohio PLT program.