Issues and Strategies

Issues and Strategies

This section gives focus to the dominant issues identified in the Assessment by contrasting the expected future conditions of Tennessee's forest resources against the desired future conditions of the resource. The expected future conditions were projected on the basis of trends and threats identified in the Assessment. The desired future conditions, or goals, are those necessary to sustainably provide the benefits expected by Tennessee landowners and citizens.

Issues

The Working Committee of forest resource partners and stakeholders thoroughly analyzed the assessment and developed a list of issues that were driving the trends or sustaining the threats to the resource. The issues were then organized under seven general categories or aspects of the resource.

The issue categories identified include:

1. **Forest Health**
2. **Public Benefits**
3. **Private Lands**
4. **Urban Forestry**
5. **Forest Industry**
6. **Education and Outreach**
7. **Wildlife and Natural Heritage**

Strategies

The Working Committee then developed a list of potential strategies that would address issues within each category. Some strategies are broad in nature and therefore benefit multiple issues, in which case they will be listed multiple times.

The strategies were developed unconstrained by current capabilities or limitations of the forest resource professional community to implement them. In some cases, multiple organizations may be staffed and equipped with full capability to implement a strategy. In other cases it may be that only one organization has the capability to implement the strategy. In still other situations new authorities or staff may be required in order to effectively implement the strategies. Opportunities for multi-state projects will be explored on a annual basis as interest develops and funding becomes available.

Twelve agencies/organizations that would most likely be able to implement a strategy were asked to provide level of participation for each strategy. Level of participation included:

- Lead
- Co-lead
- Contributor

The following list of Issues and Strategies indicates each organization's initial level of participation in implementing a particular strategy: lead, co-lead or contributing. A lead or co-lead organization is fully committed to providing the necessary resources to address a strategy. Sister agencies or private organizations may have similar interests and involvement or similar responsibilities and organizational missions to address the strategy. Often times cooperation between agencies and organizations is critical to addressing common issues. A contributing organization or agency will respond to requests in a support role and offer services of a general or technical nature.

Lead or co-lead organizations are signified by their logo being enclosed within a box. Contributing organizations logos are outside the box.

Other organizations with interest and expertise in any of these strategies are encouraged to contact the lead agency if they want to participate in implementation.

1. FOREST HEALTH

Tennessee's physiological conditions and location in the southern U.S. determines forest types and land uses within the state. It also helps determine patterns of commerce from outside the state which may provide potential pathways for pests. With increasing populations and economic activity Tennessee has become a literal crossroads of these potential pathways. Highways and waterways are potential pathways for pest introduction and are cause for concern for several pests currently found in other regions of the continent, many of which are exotic pests. This includes gypsy moth, emerald ash borer*, and Asian longhorned beetle from the north; southern pine beetle from the south; hemlock woolly adelgid from the east; and thousand cankers disease* from the west. (Pg 65)

Oak decline is currently the most pervasive problem within the forests of Tennessee. The Western Highland Rim and the Cumberland Plateau have the highest risk, though all other areas of the state support an oak resource at risk from oak decline. (Pg 68)

* At the time of printing, emerald ash borer and thousand cankers disease were discovered in east Tennessee for the first time. State response plans were being implemented for each pest.

Issue: Forest Age

1.1. In 1999, an estimated 45% of Tennessee's forestlands were greater than 50 years old. By 2007 58% of Tennessee's forestlands were greater than 50 years old. With continued aging, Tennessee's forests will be more susceptible to native and non-native forest pests (Pg 8).

GOAL: Reduced susceptibility of forests to pests.

Strategies:

1.1.1. Diversify the age structure and species composition of the forest by utilizing science based forest stand regeneration practices.

1.1.2. Maintain tree growth by utilizing science based forest stand intermediate treatments.

1.1.3. Ensure forest management practice recommendations include appropriate measures that exclude, limit or eradicate non-native forest pests (diseases, plants and animals).

1.1.4. Develop proactive monitoring processes for early detection of forest health problems.

1.1.5. Expand markets for hardwood forest products, including biomass, biofuels, and urban waste wood.

1.1.6. Develop vendor services infrastructure capable of implementing applicable forest management prescriptions.

Partner Level of Participation

Lead/Co-Lead | Contributor

Issue: Climate Change

1.2. The climate of the southeastern U.S. and Tennessee is thought to be changing. Potential impacts from anticipated climate change include shifting forest types and associated wildlife, increases in forest fire intensity, extent, and frequency, and increased forest pest activity. These impacts could affect urban and rural forests for decades and centuries. Climate changes are expected to compound the stresses urban and rural forests already endure, making them more susceptible to insects, diseases, and abiotic impacts (Pg 73-76).

GOAL: Appropriate response and adaptation to climate change.

Strategies:

1.2.1. Improve ecological health by establishing connectivity between local, state and federal public owned properties where practical.

1.2.2. Stop and reverse the spread of non-native invasive pests in both urban and rural areas.

1.2.3. Support research for measuring impacts of climate change on forestland and adapt management strategies accordingly.

1.2.4. Build awareness of the possible effects to forests as climate change occurs.

Partner Level of Participation

Lead/Co-Lead	Contributor

ISSUES & STRATEGIES

Issue: Oak Decline

1.3. Oak decline is caused by a combination of factors, including abiotic stresses, insects, and/or diseases. It is currently the most pervasive forest health problem in Tennessee's forests. While most of the state supports an oak resource that is at risk from oak decline, the greatest risk occurs in the Western Highland Rim and Cumberland Plateau regions of the state (Pg 68).

GOAL: Reduced losses of forestland values due to oak decline.

Strategies:

1.3.1. Diversify the age structure and species composition of the forest by utilizing science based forest stand regeneration practices.

1.3.2. Maintain tree growth by utilizing science based forest stand intermediate treatments.

1.3.3. Expand markets for hardwood forest products, including biomass, biofuels, and urban waste wood.

1.3.4. Develop proactive monitoring processes for early detection of forest health problems.

1.3.5. Conduct and publish more research on the causation factors of oak decline.

Partner Level of Participation

Lead/Co-Lead	Contributor

ISSUES & STRATEGIES

Issue: Non-Native Forest Pests

1.4. Non-native insect and disease pests impact forests by directly killing host species. Such pests with confirmed occurrences in the state include chestnut blight, hemlock woolly adelgid, gypsy moth, butternut canker, beech bark disease and dogwood anthracnose. Potential future pests that could have devastating impacts include emerald ash borer*, Asian long horned beetle, Sirex wood wasp, sudden oak death, and laurel wilt. Risk from other pests yet detected or described is possible. Non-native insect and disease pests pose a pervasive forest health threat to the sustainability of Tennessee's forests (Pg 66).

GOAL: Effective public policy towards control of non-native forest pests.

Strategies:

1.4.1. Develop or support initiatives to maintain or restore historic diversity within ecoregions by maintaining or reestablishing native forest tree species.

1.4.2. Ensure forest management practice recommendations include appropriate measures that exclude, limit or eradicate non-native forest pests (diseases, plants and animals).

1.4.3. Develop proactive monitoring processes for early detection of forest health problems.

1.4.4. Develop vendor services infrastructure capable of implementing applicable forest management prescriptions.

Partner Level of Participation

Lead/Co-Lead	Contributor

* At the time of printing, emerald ash borer was discovered in east Tennessee for the first time. A State response plan was being implemented for this pest.

Issue: Non-Native Plants

1.5. Non-native invasive plants impact forests by displacing native plants. Examples of non-native plants currently causing problems in Tennessee include Tree-of-Heaven, kudzu, bush honeysuckle, exotic privets, and Nepalese browntop. Examples of emerging plants of concern include oriental bittersweet, Japanese knotweed, garlic mustard, and cogongrass. Continued spread of non-native invasive plants has the potential to inhibit regeneration and development of Tennessee's native plants and forest types with resulting damage to other forest resources (Pg 68).

GOAL: Effective public policy towards control of non-native invasive plants.

Strategies:

1.5.1. Develop or support initiatives to maintain or restore historic diversity within ecoregions by maintaining or reestablishing native forest tree species.

1.5.2. Ensure forest management practice recommendations include appropriate measures that exclude, limit or eradicate non-native forest pests (diseases, plants and animals).

1.5.3. Encourage and support native plant inventories and studies on state and private forestlands where native plant species knowledge is lacking.

1.5.4. Develop vendor services infrastructure capable of implementing applicable forest management prescriptions.

Partner Level of Participation

Lead/Co-Lead	Contributor

2. PUBLIC BENEFITS

The southeast U.S. produces more wood products than any other country outside the United States. Tennessee is an important component of this 'wood basket' and consistently ranks as one of the top hardwood lumber producing states in the U.S. Although a wide variety of wood products are produced in Tennessee – from pulp and paper to pencils – the production of lumber products from sawlogs is the dominant major component (Pg 25).

Tennessee's wide variety of forest types provides a number of values, goods, and services to the public. Forested watersheds are of particular significance to water quality because of their numerous natural functions, including protecting drinking water quality and reducing risk of downstream flooding. According to recent public polling, over 95% of Tennesseans are concerned about water pollution, and 87% expressed concern about the loss of wildlife in the state (Pg 34).

Increased recreation use (traditional and/or non-traditional) will have an intensified impact on other resources and the forest ecosystems. With the influx of more individuals and groups in pursuit of recreational activities, it becomes increasingly important to develop management strategies to provide a quality outdoor experience, minimize conflicts and maintain ecological processes. (Pg 44)

Issue: Forest Based Recreation

2.1. Forests provide multiple recreation outlets:

- Camping
- Hunting/Fishing
- Hiking
- Mountain biking
- Horseback riding
- Birding/nature viewing
- Pleasure driving
- All terrain/OHV riding
- Aesthetics

The importance of scenic areas like forests increases dramatically as cities continue to spread outwards into the landscape. Often much needed relief from stress can be found in the forest. The demand for forest based recreation on both public and private forestland is intensifying (Pg. 44).

GOAL: Increased forest based recreation in private and public forests.

Strategies:

2.1.1. Support initiatives to provide readily available access to public and private forest lands for recreation purposes.

2.1.2. Coordinate management of public and private forests to increase recreation opportunities.

2.1.3. Promote forest recreation and tourism for the social, psychological, physical, spiritual, educational and economical well-being of citizens and communities.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Wetlands and Riparian Lands

2.2. According to recent public polling, over 95% of Tennesseans are concerned about water pollution, and 87% expressed concern about the loss of wildlife in the state. Forested riparian areas & forested wetlands have tremendous impact on the quality of Tennessee's water serving as a retention and filtration source for pollutants. Protection and proper management of these particular types of forest habitats is critical in order to meet water quality and wildlife habitat protection goals (Pg. 34)

GOAL: Protected and Managed Wetlands and Riparian Lands

Strategies:

2.2.1. Develop and support initiatives to establish or maintain forest cover that protects public water supply watersheds and streams.

2.2.2. Increase awareness of the benefits of forested watersheds and wetlands for providing sustainable and quality drinking water supply.

2.2.3. Increase proper use of forestry BMP's.

2.2.4. Educate loggers about forestry BMP's and other important emerging issues.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Ecosystem Services

2.3. Tennessee's diverse forest cover types and ecosystems provide a number of vital values, goods, and services to the public, including benefits to air quality, water quality, and the economy. The health of these forest types is dependent in part upon proper forest use and management (Pg. 34, 68).

GOAL: Increased Recognition and Value of Ecosystem Services.

Strategies:

2.3.1. Promote ecosystem services provided by well-managed forests including clean air and water, wildlife habitat, soil conservation, biodiversity, carbon storage and aesthetics through a strong network to implement programs and provide education and outreach.

2.3.2 Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

2.3.3. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

2.3.4. Improve ecological health by establishing connectivity between local, state and federal public owned properties where practical.

2.3.5. Restore and protect unique forest habitats (i.e. savannahs, cave openings, wetlands, rock outcrops, bogs, spring/seeps, glades, balds, and vernal pools).

2.3.6. Develop or support initiatives to maintain or restore historic diversity within ecoregions by maintaining or reestablishing native forest tree species.

2.3.7. Make urban communities more energy efficient through maintaining/increasing tree canopy.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Stream Buffers

2.4. Nitrogen, phosphorus, and excess sediment are major pollutants in Tennessee's waterways. Forested riparian buffers serve as water retention and infiltration areas, trapping sediment from surface flows and stabilizing stream banks which reduces soil erosion. Lack of forest cover eliminates an effective defense against degradation of Tennessee's water quality and ecosystem health (Pg. 34).

GOAL: Presence of Forest cover on lands adjacent to streams.

Strategies:

2.4.1. Ensure landowners receive applicable technical assistance in identifying opportunities to create, enhance and maintain riparian buffers.

2.4.2. Implement and support Farm Bill initiatives and other programs that enhance water quality and aquatic habitat benefits by establishing or improving forested riparian buffers.

2.4.3. Increase proper use of forestry BMP's.

2.4.4. Educate loggers about forestry BMP's and other important emerging issues.

Partner Level of Participation

Lead/Co-Lead	Contributor

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3. PRIVATE LANDS

Tennessee timberland remains overwhelmingly in private ownership. Eighty-three percent of forestland in the state is owned by private individuals. An estimated 12 percent of Tennessee's forestland is publicly owned and administered, with 5 percent being managed by the U.S. Forest Service as National Forests and 7% held by state, local and other federal agencies. A 2007 forest inventory estimated 5 percent of Tennessee's forests were owned by forest industry. However, recent and ongoing divestments by forest industry will result in a significant amount of industry land being transferred to other public and private ownerships. (Pg 6)

Issue: Sustainability of Forest Benefits

3.1. General forest condition trends on Tennessee's private forestlands include:

- forests are aging (Pg 8)
- pine forest types have decreased (Pg 7)
- acreage of sawtimber sized stands is increasing (Pg 8)
- hardwood tree volume inventory is increasing (Pg 9)
- softwood tree volume has decreased (Pg 10)
- hardwood sawtimber quality is decreasing (Pg 10)

The means by which risks and opportunities associated with the above trends are addressed will determine the sustainability of future benefits from Tennessee's forests.

GOAL: Managed private forests provide sustained forest benefits.

Strategies:

3.1.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

3.1.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

3.1.3. Diversify the age structure and species composition of the forest by utilizing science based forest stand regeneration practices.

3.1.4. Maintain tree growth by utilizing science based forest stand intermediate treatments.

3.1.5. Expand markets for hardwood forest products, including biomass, biofuels, and urban waste wood.

3.1.6. Support efforts to increase the number of certified forests, and the availability of certified logs and wood products.

Partner Level of Participation

Lead/Co-Lead | Contributor

ISSUES & STRATEGIES

Issue: Forest Based Recreation and Private Lands

3.2. Forest recreation needs are expected to increase and will have a greater impact on other forest resources. Private forestlands will be under increasing pressure to meet forest recreation needs (Pg 44).

GOAL: Balanced recreation use of private and public forestlands.

Strategies:

3.2.1. Support initiatives to provide readily available access to public and private forest lands for recreation purposes.

3.2.2. Coordinate management of public and private forests to increase recreation opportunities.

3.2.3. Promote forest recreation and tourism for the social, psychological, physical, spiritual, educational and economical well-being of citizens and communities.

3.2.4. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Parcelization and Fragmentation

3.3. The trend of increasing forestland acres over the last three decades appears to have plateaued, forest industry has liquidated a significant portion of its forestland holdings, and a large percentage of non-industrial private forestlands are poised for ownership change as current landowners continue to age. Collectively, these events suggest a period of accelerated parcelization and fragmentation for Tennessee's forests is possible, if not inevitable (Pg 56).

GOAL: Intact and Maintained Forested Landscapes.

Strategies:

3.3.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

3.3.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

3.3.3. Establish forested N-S corridors at the landscape scale with wider riparian zones and mixed hardwood corridors.

3.3.4. Improve ecological health by establishing connectivity between local, state and federal public owned properties where practical.

3.3.5. Expand markets for hardwood forest products, including biomass, biofuels, and urban waste wood.

3.3.6. Educate state and local planning officials on development issues at the wildland-urban interface.

3.3.7. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Small Forest Ownerships

3.4. Sixty-five percent (344,000) of Tennessee's non-industrial private forest landowners own 10% (960,000 acres) of Tennessee's non-industrial private forestlands in tracts of less than 10 acres. Maintaining forest benefits provided by small forest ownerships will be especially challenging (Pg 58).

GOAL: Sustained Forest Benefits on Smaller Forestlands.

Strategies:

3.4.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

3.4.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

3.4.3. Develop vendor services infrastructure capable of implementing applicable forest management prescriptions.

3.4.4. Increase awareness of the benefits of forested watersheds and wetlands for providing sustainable and quality drinking water supply.

3.4.5. Implement and support Farm Bill initiatives and other programs that enhance water quality and aquatic habitat benefits by establishing or improving forested riparian buffers.

3.4.6. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

Partner Level of Participation

Lead/Co-Lead	Contributor

ISSUES & STRATEGIES

Issue: Large Forested Landscapes

3.5. Five percent (24,000) of Tennessee's non-industrial private forest landowners own 44% (4.4 million acres) of Tennessee's non-industrial private forestlands in tracts of 100 acres or larger. The interior forest land use classification comprises the most prevalent land use occurring on Tennessee's landscape. Opportunity still exists to maintain landscapes dominated by intact forests in regions of the state (Pg 58).

GOAL: Intact and Managed Large Forested Landscapes

Strategies:

3.5.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

3.5.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

3.5.3. Develop vendor services infrastructure capable of implementing applicable forest management prescriptions.

3.5.4. Expand markets for hardwood forest products, including biomass, biofuels, and urban waste wood.

3.5.5. Establish forested N-S corridors at the landscape scale with wider riparian zones and mixed hardwood corridors.

3.5.6. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Land Use Change

3.6. Between 1990 and 2000, Tennessee experienced an estimated 360,000 acre increase in urban area, resulting in loss of 178,000 acres of forestland to urban use. If similar rates of change continue, an additional 1.2 million acres of forestland could be urbanized before 2050. Urban expansion, regardless of rate, will replace previous land uses at the cost of some forestland (Pg 53).

GOAL: Protected and Managed Open Space.

Strategies:

3.6.1. Develop and implement new tools for management of forests within the wildland-urban interface.

3.6.2. Educate state and local planning officials on development issues at the wildland-urban interface.

3.6.3. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

3.6.4. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

3.6.5. Develop vendor services infrastructure capable of implementing applicable forest management prescriptions.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Forest Ownership Opportunity Costs

3.7. Whether actively managed or passively owned, NIPF landowners place value on forestland ownership. External economic factors such as increasing land prices, real estate taxes, and economic hardship are constraints for landowners that hinders their ownership (Pg 59).

GOAL: Compensated Forest Owners Providing Forest Benefits and Values

Strategies:

3.7.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

3.7.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

3.7.3. Develop vendor services infrastructure capable of implementing applicable forest management prescriptions.

3.7.4. Provide tax and estate planning opportunities for forest landowners.

3.7.5. Pursue changes in state and federal tax codes to provide more favorable taxation of forestland.

3.7.6. Expand markets for hardwood forest products, including biomass, biofuels, and urban waste wood.

3.7.7. Educate state and local planning officials on development issues at the wildland-urban interface.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: People and Wildfire

3.8. Tennessee is experiencing an increasing trend of building residences in or near the edge of the forest or other undeveloped land. This condition is referred to as the wildland urban interface (WUI). This situation puts residences in close proximity to wildfires resulting in higher expectations for fire protection services, increases public pressure to reduce outdoor burning, and changing regulatory environments for state and local government. Many local communities lack the fire protection capacity to address fire suppression needs and many landowners are unaware of the fire related hazards in the wildland urban interface (pg 71-72).

GOAL: Protected Urban Populations.

Strategies:

3.8.1. Develop and implement fire prevention activities to reduce the frequency and severity of wildfire.

3.8.2. Encourage at risk communities to engage in community level fire prevention planning.

3.8.3. Develop and implement new tools for management of forests within the wildland-urban interface.

3.8.4. Educate state and local planning officials on development issues at the wildland-urban interface.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Wildfire Risks

3.9. Due to new development in or around forested areas, fighting wildland fire has become more complicated involving greater risks of losing higher valued property. These situations also create greater public safety hazards, change priorities for allocating fire fighting resources and place forestland values at higher risk form wildfire. It is becoming more difficult to protect the scope of values at risk form wildfire (pg 70).

GOAL: Reduced Risk from Wildfire.

Strategies:

3.9.1. Increase ability of volunteer fire departments to better suppress wildland fire.

3.9.2. Develop and implement fire prevention activities to reduce the frequency and severity of wildfire.

3.9.3. Encourage at risk communities to engage in community level fire prevention planning.

3.9.4. Develop and implement new tools for management of forests within the wildland-urban interface.

3.9.5. Educate state and local planning officials on development issues at the wildland-urban interface.

Partner Level of Participation

Lead/Co-Lead	Contributor

4. URBAN FORESTRY

Even though significant amounts of forestland could be replaced by urban uses, many urban forests can be retained depending on development patterns and natural vegetation (Nowak and Walton 2005). Urban forests provide many benefits, including improved air quality, reduction of storm water runoff and erosion, tempering local climate, conservation of energy, increased property values, habitat for plants and animals, improved health of residents, and a stronger sense of community (USDA Forest Service 2003). Expertise on how to maintain and manage urban forests for these benefits becomes increasingly important as the urban land base expands and human populations increase. (Pg 53-55)

Issue: Tree Canopy Cover

4.1. Tree canopy has proven to be beneficial to cities and towns by mitigating storm water, air quality improvements, and energy savings. The amount of urban tree canopy is a direct result of increasing planting in urban areas and improving tree maintenance to reduce the practice of tree topping. Increasing and/or maintaining canopy cover for communities to provide these benefits is a recent trend, and it is expected to become increasingly important in the near future (pg 31-32).

GOAL: Define and Adopt Tree Canopy Goals Within Communities

Strategies:

4.1.1. Make urban communities more energy efficient through maintaining/increasing tree canopy.

4.1.2. Develop and implement new tools for management of forests within the wildland-urban interface.

4.1.3. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

4.1.4. Explore the feasibility of developing storm water mitigation programs through urban forestry.

4.1.5. Educate state and local planning officials on development issues at the wildland-urban interface.

Partner Level of Participation

Lead/Co-Lead Contributor

ISSUES & STRATEGIES

Issue: Land Use Planning

4.2. Urbanization is causing increased pressures at the forest interface in many areas of the state. As a result there is an increased need for natural resource planning when land use changes from rural forests to urban. This change also creates an opportunity to manage the increasing acres of urban and suburban forests. Urban forestry and natural resource planning at all levels will be increasingly important to preserve existing forest land and implement management (pg 53-55).

GOAL: Planned Retention of Forested Areas

Strategies:

4.2.1. Provide technical assistance to local and state planning commissions and boards.

4.2.2. Explore the feasibility of developing storm water mitigation programs through urban forestry.

4.2.3. Develop and implement new tools for management of forests within the wildland-urban interface.

4.2.4. Educate state and local planning officials on development issues at the wildland-urban interface.

4.2.5. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Urban Forest Benefits

4.3. Urban forests provide several benefits including improved air quality, reduction of storm water runoff and erosion, tempering local climate, conservation of energy, increased property values, habitat for plants and animals, improved health of residents, and a stronger sense of community. These benefits will become increasingly important as Tennessee's urban land base expands and human populations increase (Pg 54).

GOAL: Public Recognition of Urban Forest Benefits

Strategies:

4.3.1. Develop and implement new tools for management of forests within the wildland-urban interface.

4.3.2. Educate state and local planning officials on development issues at the wildland-urban interface.

4.3.3. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

4.3.4. Promote forest recreation and tourism for the social, psychological, physical, spiritual, educational and economical well-being of citizens and communities.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Public Policy Conflicts in Urban Landscapes

4.4. Resource pressures from urban/rural conflicts are increasing. Urbanization is replacing the forest in many areas around the State. Management of rural lands often conflicts with land use for development. Conflicts over landowner rights versus right to practice agriculture and forestry can be confusing to foresters and loggers, developers, planners and planning commissions, and local residents as they seek to protect and manage the resource (pg 53-59).

GOAL: Coordinated Public Policy

Strategies:

4.4.1. Provide technical assistance to local and state planning commissions and boards.

4.4.2. Identify local and state government authorities/roles in enforcing laws/exemptions that play a role in directing land use change.

4.4.3. Educate state and local planning officials on development issues at the wildland-urban interface.

4.4.4. Develop and implement new tools for management of forests within the wildland-urban interface.

4.4.5. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

Partner Level of Participation

Lead/Co-Lead	Contributor

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5. FOREST INDUSTRY

Tennessee has a large and productive forest products industry. Many of the fundamentals for the future of the industry are strong: The forest resource is large and growing, a well-developed and efficient harvesting, transportation and processing infrastructure is in place, and demand for wood products is expected to increase over the long term. However, within the state and across the nation the forest products industry has been in sharp decline due to the economic downturn in general and the depressed housing market in particular. Across all sectors, industry production has dropped by about 1/3 over the past few years. As the economy recovers it is likely that the Tennessee forest industry will rebound also, although it may be significantly changed. (Pg 29)

The drivers for change are many. There has been a significant shift in wood products manufacturing to low-cost labor countries, including Mexico, China and Vietnam. This trend has impacted the more labor-intensive sectors (such as furniture) the most. Consumer preferences have shifted away from red and white oaks (species very common in Tennessee forests) to woods lighter in color or with less grain, such as maple and cherry (less common in Tennessee) and exotic species (such as rubber wood and bamboo. Pg 29)

Issue: Forest Certification

5.1. Certified wood is gradually becoming the way of doing business over the coming years, both domestically and internationally. Tennessee State Forests are an exemplary example of forest certification, but this concept has yet to carry over to the private sector in measurable quantity. The current supply of certified forests, logs, and lumber is insufficient to support emerging demand, thus stifling forest industry from pursuing forest certification chain-of-custody (Pg 63).

GOAL: Readily Available Certified Forest Products.

Strategies:

5.1.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

5.1.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

5.1.3. Develop vendor services infrastructure capable of implementing applicable forest management prescriptions.

5.1.4. Investigate applicability of different certification systems for Tennessee forest landowners.

5.1.5. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

5.1.6. Increase awareness of, and participation in, emerging forest certification programs and markets among private consulting foresters.

Partner Level of Participation

Lead/Co-Lead | Contributor

ISSUES & STRATEGIES

Issue: Forest Products Industry Improvements

5.2. The Tennessee forest products industry is vital to the state's economy. More efficient, sustainable methods, of culturing, extracting and utilizing wood products is needed to assure continued contribution to the state's commerce (Pg 28).

GOAL: Thriving and Competitive Forest Products Industry

Strategies:

5.2.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

5.2.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

5.2.3. Diversify the age structure and species composition of the forest by utilizing science based forest stand regeneration practices.

5.2.4. Maintain tree growth by utilizing science based forest stand intermediate treatments.

5.2.5. Expand markets for hardwood forest products, including biomass, biofuels, and urban waste wood.

Partner Level of Participation

Lead/Co-Lead	Contributor

5.2.6. Develop vendor services infrastructure capable of implementing applicable forest management prescriptions.

5.2.7. Educate loggers about forestry BMP's and other important emerging issues.

5.2.8. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

5.2.9. Partner with the system of Tennessee Technology Centers to recruit, train, and retain employees for the forest products industry.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Products and Uses from Hardwood Forests

5.3. The preponderance of the state's forestland is hardwood-type. Tennessee's primary and secondary industries lack enough comparative market advantages to fully utilize the hardwood forest type (Pg 26).

GOAL: Managed and Highly Merchandised Hardwood Forests.

Strategies:

5.3.1. Develop a marketing campaign emphasizing the quantity/quality of Tennessee's hardwood resource.

5.3.2. Partner with the Department of Economic and Community Development to provide incentives that help retain our current forest products industry.

5.3.3. Partner with the University of Tennessee Forest Products lab to address the technical and manufacturing needs of our current forest industry.

5.3.4. Promote forest products utilization technology transfer as a means to help our current forest products industry remain competitive.

5.3.5. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

5.3.6. Promote ecosystem services provided by well-managed forests including clean air and water, wildlife habitat, soil conservation, biodiversity, carbon storage and aesthetics through a strong network to implement programs and provide education and outreach.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Value Added Forest Products

5.4. Over the past 50 years, the number of sawmills, loggers, and employees in the secondary wood products industry has decreased steadily. Economic incentives, as well as employee recruitment and modern training, are insufficient for the state to remain competitive in the national and global arena (Pg 28).

GOAL: Thriving and Competitive Value Added Forest Products Industry.

Strategies:

5.4.1. Partner with the system of Tennessee Technology Centers to recruit, train, and retain employees for the forest products industry.

5.4.2. Develop a marketing campaign emphasizing the quantity/quality of Tennessee's hardwood resource.

5.4.3. Partner with the Department of Economic and Community Development to provide incentives that help retain our current forest products industry.

5.4.4. Partner with the University of Tennessee Forest Products lab to address the technical and manufacturing needs of our current forest industry.

5.4.5. Promote forest products utilization technology transfer as a means to help our current forest products industry remain competitive.

Partner Level of Participation

Lead/Co-Lead	Contributor

6. EDUCATION AND OUTREACH

The number of landowners who have received advice or information about their forest land is nearly equally split with 52 percent indicating no and 48 percent yes. Landowners whom have received advice have: larger ownerships, harvested trees, used a professional forester, participated in government cost-share, and higher education. The most common source of advice is the Tennessee Department of Agriculture Division of Forestry. One-in-four of landowners with 40 + acres of forest land indicate that they have received cost-share for forestry or wildlife practices in the past. Over half the landowners feel that staying up-to-date with new forestry practices and programs is either important or very important. Yet, in a west Tennessee regional study over three-fourths of the landowners (78 %) were not aware that their county had formed a county forestry association and only 9 percent are members. (Pg 23)

Issue: Natural Resource Management

6.1. Many private forest landowners do not seek professional natural resource advice about managing their forests, including timber marketing, wildlife, water, recreation and cultural resources. Private landowners would benefit from the expertise of natural resource professionals (Pgs. 23, 63).

GOAL: Managed Forestland; public and private.

Strategies:

6.1.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

6.1.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

6.1.3. Expand and support targeted educational opportunities, such as Tennessee Healthy Hardwoods field days, for forest landowners.

6.1.4. Market the services of private forestry consultants.

6.1.5. Increase awareness of the benefits of forested watersheds and wetlands for providing sustainable and quality drinking water supply.

6.1.6. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

6.1.7. Promote forest recreation and tourism for the social, psychological, physical, spiritual, educational and economical well-being of citizens and communities.

Partner Level of Participation

Lead/Co-Lead	Contributor

ISSUES & STRATEGIES

Issue: New Forest Landowners

6.2. Two landownership trends offer an immediate or near opportunity to educate new landowners on the responsibility of sustainable forest management, including: 1) the sale of approximately 1.4 million acres of forestland from forest industry and 2) generational transfer from the aging landowners. Private land ownership patterns are changing (Pg. 57).

GOAL: Increased Capacity of Public and Private Sectors to Assist New Forest Landowners

Strategies:

6.2.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

6.2.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

6.2.3. Expand and support targeted educational opportunities, such as Tennessee Healthy Hardwoods field days, for forest landowners.

6.2.4. Market the services of private forestry consultants.

6.2.5. Increase awareness of the benefits of forested watersheds and wetlands for providing sustainable and quality drinking water supply.

6.2.6. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Forest Health Education

6.3. Landowners and the general public alike lack understanding of forest health issues, including non-native exotic invasive plants, and how these impact the long-term sustainability of forest resources. Forest health issues are misunderstood by most of the public (Pgs. 65-69).

GOAL: Informed Forest Landowners and Publics on Forest Health Issues.

Strategies:

6.3.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

6.3.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

6.3.3. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Fire Prevention in Wildland Urban Interface (WUI)

6.4. Homeowners residing in forested settings, and the public at large, are not well-informed of the dangers of wildfire, its impact on the environment, the expense of suppression, and how to avoid it. Forest fire protection begins with the public (Pgs 71-72).

GOAL: Educated Residents and Public Officials of the Dangers in WUI.

Strategies:

6.4.1. Develop and implement fire prevention activities to reduce the frequency and severity of wildfire.

6.4.2. Encourage at risk communities to engage in community level fire prevention planning.

6.4.3. Develop and implement new tools for management of forests within the wildland-urban interface.

6.4.4. Educate state and local planning officials on development issues at the wildland-urban interface.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Urban Forestry

6.5. The majority of Tennesseans don't own forestland, but most do own a tree. Urban forests have an important role in global environmental sustainability. Issues such as tree planting and culture, wildlife benefits and carbon sequestration, are not well understood by most in the public (Pgs 31-33).

GOAL: Educated Publics on Urban Forestry Issues

Strategies:

6.5.1. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

6.5.2. Make urban communities more energy efficient through maintaining/increasing tree canopy.

6.5.3. Develop and implement new tools for management of forests within the wildland-urban interface.

6.5.4. Educate state and local planning officials on development issues at the wildland-urban interface.

Partner Level of Participation

Lead/Co-Lead	Contributor

Issue: Urban Populations and Forestry

6.6. Urban residents and many public decision makers are not well informed of the importance of forests and forest industry to the state's economy - in terms of employment, revenue provider and local and state taxes. There is misunderstanding of the value of forests for wildlife habitat, carbon storage, water protection, climate mitigation and the relationship between timber harvesting and forest health (Pg 28, 34, 39, 48, 69, 73).

GOAL: Informed Urban Populations on Forestry Issues

Strategies:

6.6.1. Promote forest recreation and tourism for the social, psychological, physical, spiritual, educational and economical well-being of citizens and communities.

6.6.2. Increase awareness of the benefits of forested watersheds and wetlands for providing sustainable and quality drinking water supply.

6.6.3. Develop and implement or support information and education programs that publicize benefits of urban and rural forests.

6.6.4. Educate state and local planning officials on development issues at the wildland-urban interface.

Partner Level of Participation

Lead/Co-Lead	Contributor

ISSUES & STRATEGIES

Issue: Master Loggers

6.7. The Tennessee Master Logger program has been very successful in reducing soil erosion through responsible harvesting practices. Continuing education of loggers with emerging issues is vital for improved forest management, health and aesthetics (Pg 29).

GOAL: Implemented BMP's on Harvest Sites.

Strategies:

6.7.1. Partner with the system of Tennessee Technology Centers to recruit, train, and retain employees for the forest products industry.

6.7.2. Increase proper use of forestry BMP's.

6.7.3. Educate loggers about forestry BMP's and other important emerging issues.

Partner Level of Participation

Lead/Co-Lead	Contributor

7. WILDLIFE

Tennessee has a rich tradition of outdoor recreational activities associated with the state's forest resources. Virtually all hunting activities can be directly linked to species that depend on various forest cover types during some portion of their life cycle. Fishing, on the other hand, is directly and indirectly linked to the health of the local forest resources too. Without healthy forests the fish and wildlife populations in Tennessee would likely decline along with the forests. Ultimately the recreational opportunities would similarly diminish (Pg 38).

The Tennessee Comprehensive Wildlife Conservation Strategy (CWCS) identifies 664 species as in greatest conservation need (GCN). These species inhabit terrestrial, aquatic and subterranean habitats across the state. Additionally, the Tennessee Wildlife Action Plan identified 37 potential threats or problems associated with management of these species or their habitats. Modification of some forest practices has been identified as an opportunity to aid some species in conservation need (Pg 39).

Issue: Wildlife Habitat in Pine Forest Types

7.1. Intensively managed pine plantations often exclude non-game wildlife species that typically would be present in mixed hardwood stands. When in large blocks these pure pine stands become a barrier for movement of some non-game species in neighboring mixed hardwood stands. Non-game species would benefit from modification of some forest practices used to manage pine monocultures (Pg 40).

GOAL: Increased Species Diversity in Pine Forest Types.

Strategies:

7.1.1. Develop a set of silvicultural practice modifications (pine and hardwood) that provide opportunities to improve non-game wildlife habitat.

7.1.2. Incorporate wildlife friendly practices and activities into appropriate federal and state cost-share and incentive programs.

7.1.3. Train natural resource professionals in the use of wildlife friendly practices and programs.

7.1.4. Emphasize the role forestland plays in providing habitat for greatest conservation need animal and plant species.

7.1.5. Develop or support initiatives to maintain or restore historic diversity within ecoregions by maintaining or reestablishing native forest tree species.

Partner Level of Participation

Lead/Co-Lead	Contributor

ISSUES & STRATEGIES

Issue: Forest Management for Wildlife Benefits

7.2. Lack of proper forest management in some forests has resulted in stands with little vertical structure (i.e. understory, mid-story and canopy development) essential for wildlife. This lack of structure is the result of little or no intermediate action such as burning or thinning. Owners of these unmanaged forests need professional advice from foresters or wildlife biologist on how to manage their forest for multiple benefits, including wildlife (Pg. 40).

GOAL: Managed Forestlands for Multiple Benefits.

Strategies:

7.2.1. Increase the capacity to provide forest landowners with comprehensive, multi-resource forest management planning.

7.2.2. Develop continuing education programs for private consulting foresters to encourage preparation of forest stewardship plans that address: forest health, intermediate stand practices, aesthetics and non-native invasives.

7.2.3. Develop a set of silvicultural practice modifications (pine and hardwood) that provide opportunities to improve non-game wildlife habitat.

7.2.4. Incorporate wildlife friendly practices and activities into appropriate federal and state cost-share and incentive programs.

7.2.5. Train natural resource professionals in the use of wildlife friendly practices and programs.

7.2.6. Emphasize the role forestland plays in providing habitat for greatest conservation need animal and plant species.

Partner Level of Participation

Lead/Co-Lead	Contributor

ISSUES & STRATEGIES

Issue: Forest Fragmentation Effects on Wildlife

7.3. Forests of middle Tennessee and west Tennessee's Mississippi flood plain are fragmented. Loss of forest connectivity or forested corridors significantly impacts wildlife. Interior forest birds need large patches of forest. Overall health of Tennessee's ecoregions has been imperiled by forest fragmentation. Connectivity is also critical to fauna and flora adaptation and movement as natural climate change occurs. (Pg 40).

GOAL: Intact and Maintained Forested Landscapes (same as 3.3)

Strategies:

7.3.1. Incorporate wildlife friendly practices and activities into appropriate federal and state cost-share and incentive programs.

7.3.2. Train natural resource professionals in the use of wildlife friendly practices and programs.

7.3.3. Improve ecological health by establishing connectivity between local, state and federal public owned properties where possible.

7.3.4. Establish forested N-S corridors on the landscape scale and wider riparian zones and mixed hardwood corridors.

7.3.5. Restore and protect unique forest habitats (i.e. savannahs, cave openings, wetlands, rock outcrops, bogs, spring/seeps, glades, balds, and vernal pools).

7.3.6. Emphasize the role forestland plays in providing habitat for greatest conservation need animal and plant species.

7.3.7. Encourage and support native plant inventories and studies on state and private forestlands, where native plant species knowledge is lacking.

Partner Level of Participation

Lead/Co-Lead | Contributor

ISSUES & STRATEGIES