

Maryland Sustainable Forestry Council

No-Net-Loss of Forest Policy

Distribution Draft

October 2011

The Task

Over the past several years, multiple reports, directives and laws have made plain that working lands like forests and farms are critical to Maryland's economy, community and environment. These have included the Sustainable Forestry Act of 2009, Chesapeake Forest Conservation Directive 06-1ⁱ and The State of Chesapeake Forests report.ⁱⁱ

The Sustainable Forestry Council's task is to use the findings of these previous efforts and new information to advise the Department of Natural Resources on timely forest conservation issues and appropriate actions. This white paper focuses on the actions that can help Maryland implement a no-net-loss of forest policy. The recommended actions build on existing programs and regulations including the development of Watershed Implementation Plans to meet the Total Maximum Daily Load requirements for the Chesapeake Bay, the Forest Conservation Act and local planning and zoning requirements.

Development pressure, economic markets, pests and pathogens, invasive species and many other issues influence and unite farms and forests. In many cases, landowners deal with both land uses at the same time as 40% of all forests in Maryland occur as part of a farm. The Council has taken care to develop recommendations that support a no-net-loss of forests policy that are complementary to the state's broader goals for maintaining healthy and productive farms and forests and provide numerous opportunities for common action with Maryland forest landowners.

Why act now?

Whether a resident of Maryland lives in a rural, suburban or urban community, they receive vital benefits daily from working lands like farms and forests. These benefits include clean water, clean air, drinking water, flood control, wood products, food, wildlife habitat and recreational opportunities. Despite the fundamental importance of these benefits to the state, their continued provision is threatened by forest conversion and actions are needed now to sustain them.

The area of farms and forests throughout the state has fluctuated over the past several decades and is closely tied to economic conditions. Overall, Maryland lost approximately 873,000 acres of farmland from 1950 to 2007 and, between 1950 and 2011, an average of 7,000 acres of forest per year. The state has a high standard of living and will continue to attract new residents even in a weakened economy. For example, the Department of Defense's Base Closure and Realignment Commission (BRAC) projections among others will increase the State's population by 1,100,000 people by 2030.

The loss of forests and other working lands is occurring parcel by parcel across the state. In 2006, the Governor's Commission for Protecting the Chesapeake Bay through Sustainable Forestry noted the primary threat to forests is the *"development of forests due to **uninformed local land use decisions** leading to the parcelization and fragmentation of forests and conversion to non-forest uses."* There are numerous opportunities now for local governments to better incorporate forest conservation into land use planning. Local governments are currently developing federally mandated Watershed Implementation Plans that map out their roles in reducing nutrient and sediment loads to the Chesapeake Bay. In addition, they are currently updating Local Land Preservation and Recreation Plans and Priority Preservation Area Plan Elements.

Given the importance of forests to the state's economy, community, and environment; vulnerability of forests and working lands to changing economic conditions and opportunities

to incorporate forest conservation in land use planning, the Sustainable Forestry Council presents the following options for implementing a no-net-loss of forests policy to the Secretary of the Department of Natural Resources.

The Sustainable Forestry Council's work has been called for through two important acts of the Maryland General Assembly:

- Sustainable Forestry Act of 2009 (SB 549), which recognizes the role of sustainable forest management for meeting Chesapeake 2000 Agreement goals and the 2007 Forestry Conservation Initiative, and which establishes the Sustainable Forestry Council to advise the Department of Natural Resources on forestry matters.
- Forest Conservation Act (SB 666)—No Net Loss of Forest Policy, which requires that DNR consult with forestry-related stakeholder groups to determine the meaning of no net loss of forest for state policies and to develop proposals for the creation of a no net loss of forest policy by December 2011.

Meaning of a No-Net-Loss of Forest Policy

Like the overall restoration of the Chesapeake Bay, a no-net-loss of forest policy must slow the trend of degradation and loss as well as begin long-term recovery of the resource. Therefore, the Sustainable Forestry Council defines the no-net-loss of forest policy as the *stabilization of the rate of loss by 2020 with the goal of maintaining the state's existing 40% forest coverage*. The target of 2020 provides enough time for proposed statutory and planning requirements to be initiated or enhanced as well as take effect.

The Sustainable Forestry Council further recommends that a no-net-loss of forest policy must address not just the net loss of forest, but also issues affecting its environmental and economic health. These issues include low rates of sustainable private forest management, declining forest industry infrastructure, pests and pathogens, and climate change just to name a few.

The Proposal

The Sustainable Forestry Council recommends that the Maryland Department of Natural Resources work with partners and stakeholders to pursue an integrated set of actions and measures that seek to stabilize forest loss. These actions and measures will build upon existing efforts to create jobs, restore the Chesapeake Bay, promote smarter growth and protect the health of its residents. The recommend actions are organized in four policy elements:

Prioritize Forest Conservation

Maryland has long recognized that larger forested "hubs" and connecting "corridors" provide greater environmental services for water quality and habitat. Program Open Space currently prioritizes these areas when making land conservation decisions. The Forest Conservation Act should also recognize this and provide these areas the highest protection from conversion to non-forest land cover.

Protect High Quality Forests

Protecting important forest cover from development through land use planning, appropriate incentives and disincentives and protective zoning will be more successful than relying on site-by-site development regulations.

Offset all sources of forest loss

While it is not practical to protect all forest from conversion, it is nevertheless important that all forest losses be offset. A strategic approach to forest loss should include directing reforestation to priority needs including expanding urban tree canopy and riparian buffers, and to targeting low-conflict opportunities such as excess lawn on large rural residential lots rather than productive farmland.

Encourage working land and family-owned forest stewardship

Because 76% of forests in Maryland are owned by families, forest industry and other related non-governmental organizations, a no-net-loss of forest policy should include financial and

technical assistance measures that provide incentives for stewardship, forest retention and the maintenance of forest health.

The Details

Prioritizing Forest Conservation

The State should develop management strategies that address key functional and spatial characteristics of forest areas within existing State programmatic frameworks for forest resource management, smart growth and Chesapeake Bay Program commitments. Attention should be directed at three spatially significant forest resource area groupings (See map in Appendix A), each with distinct management objectives:

1. Forest Conservation Areas

Contiguous forest patches greater than 200 acres should be provided enhanced protection from conversion and parcelization because of their importance to water quality and watershed health. Forest Conservation Areas complement Maryland's Green Infrastructure hubs for water quality at the sub-watershed scale. The primary mechanism for enhanced protection of these forest areas is an enhanced mitigation ratio under the Forest Conservation Act for forest conversion, such as 4:1.

2. Urban Tree Canopy Areas

Urban Tree Canopy Areas contain trees, woods and forests within U.S. Census-designated "urbanized areas." The goal in Urban Tree Canopy Areas is to achieve and maintain a minimum 40% Urban Tree Canopy cover in support of the State's Chesapeake Bay Program commitments. The primary mechanism for increasing urban canopies is to reduce Forest Conservation Act mitigation requirements generated outside urban areas if met within urban areas, such as a 2:1 credit per acre for urban reforestation, using the Chesapeake Bay Watershed Implementation Plan (WIP) rate of

100 urban trees per acre.¹ Under this policy element, for example, a forest mitigation obligation for 2 acres of forest could be met by planting 100 urban trees with a reasonable maintenance provision.

3. **Woodland Conservation Areas**

Woodland Conservation Areas are all forested areas outside of Urban Tree Canopy and Forest Conservation Areas. The management objective in this area is to conserve the resource to the extent possible. The Forest Conservation Act can be revised to differentiate forest clearing based on type of development. The Chesapeake Bay Critical Area Act differentiates development that needs to be located adjacent to the water (water dependent facilities) from development that can be sited outside of the Bay buffer. In a similar manner, the Act can be amended to differentiate more “discretionary” types of land use, such as low- to medium-density housing developments, from those that are more critical to locate strategically regardless of forest cover, such as critical public infrastructure and core “smart growth” town centers.

Low and moderate density housing developments that are more discretionary in location requirements should be discouraged and any associated forest loss should be mitigated fully, at a mitigation rate of at least 1:1. Non-discretionary development should be mitigated at a rate of 0.75 acres per forest acre converted.

Protection of High Quality Forests

In order to successfully achieve a no-net-loss of forest policy in Maryland, it will be critical that local land use decisions better protect forest cover overall, and especially Forest Conservation Areas, from conversion because of land development pressure. Improved land use planning can reduce the vulnerability of forests to land conversion and “keeping forest in forest.”

¹ The Forest Conservation Act currently equates one acre of forest to 100 trees.

For a number of years the State has required local governments with planning and zoning authority to protect wetlands, steep slopes and other sensitive areas from development through the incorporation of a Sensitive Area Protection Element in local comprehensive plans. The Sustainable Forestry Council finds that the State can use the Sensitive Area Protection Element to incorporate forest conservation in land use planning through two actions:

1. Prepare a revised Models and Guidelines for forest resources

The existing Models and Guidelines document prepared by State agencies in 1993 predated the inclusion of agricultural and forest resources as defined sensitive areas by the General Assembly in 2009. A revised Models and Guidelines should include two component assessments:

- Forest Resource Assessment

This assessment is a basic GIS landscape analysis at the county scale of the distribution of forest patches by size and a differentiation of their ecological function through an analysis such as Baltimore County's "water quality typology." For example, the relative value of forest patches to water quality can be assessed based on their size and location in a watershed.

- Forest Vulnerability Assessment

This assessment is another GIS landscape analysis that assesses forest patch risk to development. This vulnerability is assessed based on a variety of factors such as ownership, protected area status and zoning.

2. Require county governments to prepare a "Forest Resource Element."

A Forest Resource Element would be similar to, but much simpler than the 2007 requirement for a Water Resources Element in local comprehensive plans. Counties would be responsible for completing these elements for their entire geographic areas including municipalities. Whereas the State's Water Resource Element is a more passive review of water infrastructure capacity issues and pollution impacts at the local level, the Forest Resource Element can become a priority for local implementation through

the use of incentives for local adoption of the land use plan changes. A pollutant reduction credit can be given to counties in the Phase II Watershed Implementation Plan for maintaining forests. Because the Chesapeake Bay Program Watershed Implementation Plan, for the foreseeable future, uses a coarse land cover dataset in the watershed models for assigning pollutant loads, the actual amount of forest cover on the ground can be up to 59% more and an additional 10% of tree canopy can be misplaced.

Counties can be given a forest "best management practice" credit for each acre adequately protected by 2013 to make up for this discrepancy between what the Chesapeake Bay Program tracks and actual on the ground conditions. For example, if a county can demonstrate that 65% of priority forest patches under the Forest Resource Element are protected to a high degree from conversion (i.e., public ownership, conservation easements, or development densities of one lot per 20 acres), a credit can be given for 65% of the forest acreage difference between the Chesapeake Bay Program estimate forest cover and the actual on-the-ground cover. This credit can provide an incentive for local governments to adjust zoning to protect forests rather than spend funds for control of stormwater and pollution loads from land cover assumed to be impervious urban surfaces due to scale limitations of the land cover data source.

Local governments that have funding in place for water infrastructure upgrades or that plan to raise funding can use this cost-savings to provide financial and technical assistance to the forest landowners who provide these credits. This financial incentive will encourage private landowners to increased protection of their forests.

Offset all forest losses

Maryland's existing Watershed Implementation Plan requires a no-net-loss of forest policy be put into action to prevent or mitigate the loss of 2,000 acres of forest per year. For this to be achieved, most of the existing exemptions in the current Forest Conservation Act (FCA) will

need to be revised. These existing exemptions include clearing of permitted public rights-of-way and mining. Over the next decade, over 400 miles of new utility rights-of-way clearings is proposed. With an average width of 200 feet, this clearing will remove nearly 9,700 acres of forest which should be mitigated.

In addition to FCA exemptions, county and municipal governments often have difficulty directing dollars collected from developers as a fee-in-lieu of mitigation to on-the-ground forest conservation and reforestation projects.

The Sustainable Forestry Council recommends that the Department of Natural Resources develop a requirement for the mitigation of forest loss due to currently exempt sources and develop options to assist local governments in using fee-in-lieu funds be developed.

Encourage working land and family-owned forest stewardship

Enhancing the Forest Conservation Act and local planning requirements will help slow conversion of forest loss, but not stop it all together. Therefore, incentives to encourage landowner stewardship in Forest Conservation, Urban Tree Canopy and Woodland Conservation Areas will be important. Maryland's no-net-loss of forest policy needs to recognize that despite the focus on the quantity of forest cover in the State, the quality of forest resources is critical to the long-term provision of the environmental and economic benefits they provide.

The continued provision of clean water and air, habitat, flood control and other ecosystem services is primarily in the hands of private citizens who own 76% of the forests in the state. Within this private forest land base, there are 156,000 different landowners. The majority of these landowners own small residential parcels (an average of 17 acres) and do not always consider themselves forest landowners. Using appropriate and focused incentives for these landowners is critical.

The Sustainable Forestry Council recommends the following actions to foster forest retention and sustainable forest management on private forestland:

- Develop private landowner “on-ramps” to widely recognized third-party forest certification systems
- Provide technical and financial assistance for programs that promote the conversion of residential turf to trees. Lowering the minimum parcel size requirements for “current use” property tax programs can be a strong incentive for homeowners to plant and manage trees.
- Support emerging markets with appropriate incentives in areas like wood biomass energy (e.g. fuels for schools, district heating systems and combined heat and power energy systems) to maintain and enhance the viability of the state’s multi-billion dollar forest products industry and attract new jobs.

Additional measures are presented in Appendix B.

Defining and Tracking Forest Loss

Regardless of the policy mechanisms used to implement a no-net-loss of forest policy, the state must be able to track forest losses and gains. However, no consistent and reliable data source for forest cover is in place for tracking the net change in forest cover as an outcome of implementation of these recommendations.

The Sustainable Forestry Council reviewed several candidate data sources and recommends that Maryland use the most reliable source of data for forest canopy. A comparison of the two leading sources of continuous forest data was made:

- Chesapeake Bay Program land cover data, based on 30-meter Landsat imagery, and
- Forest canopy mapping derived from the National Agricultural Imagery Project (NAIP), based on one-meter aerial photography.

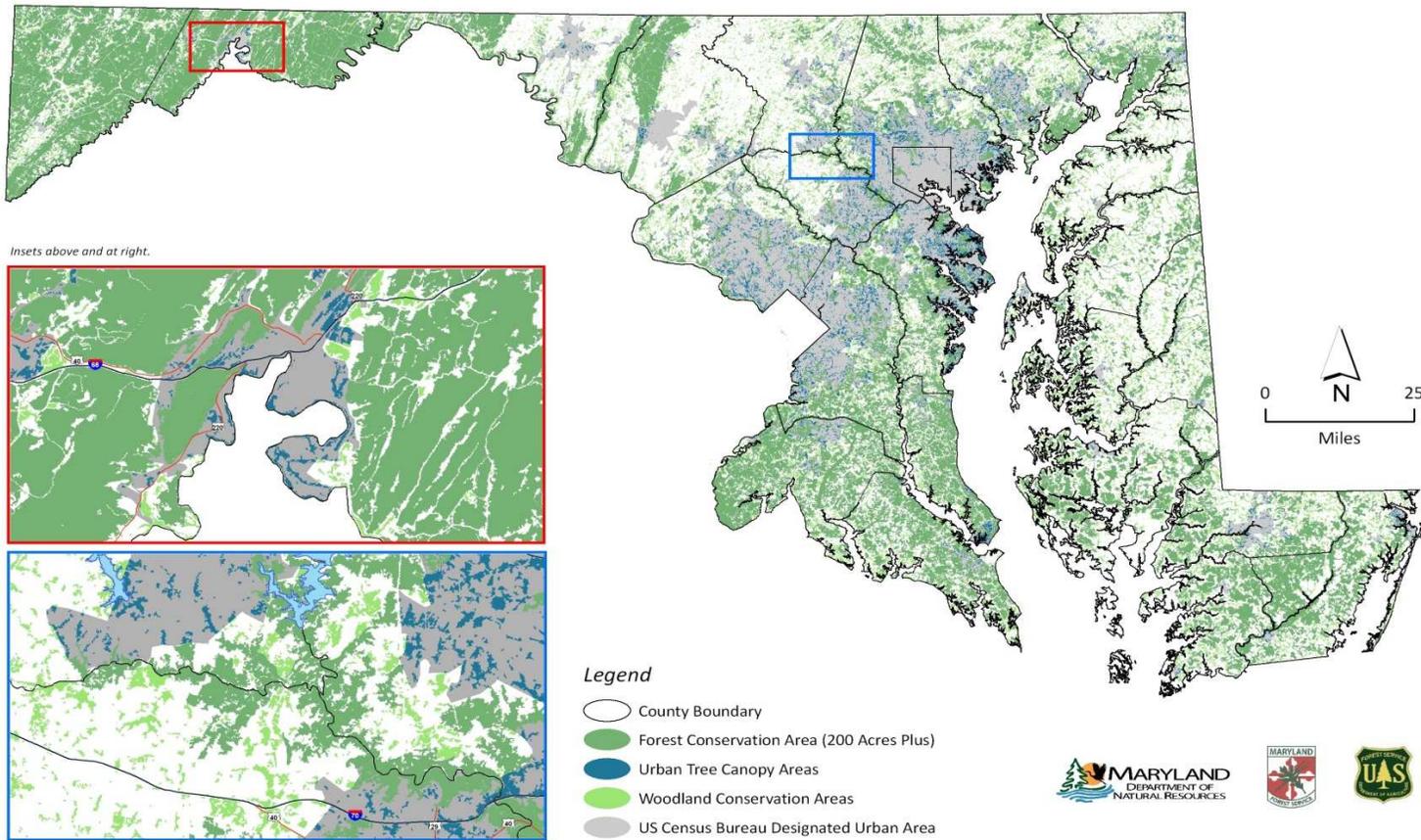
As mentioned earlier, the comparison of these two datasets revealed that up to 60% of true forest and tree canopy are not visible at the 30-meter scale and that another 10% of canopy is inaccurately located. Because of these scale issues, the Sustainable Forestry Council recommends that Maryland adopt one-meter NAIP data as the baseline for determining forest cover area and tracking forest changes. NAIP photography is available for Maryland from 2007 and is being acquired every three years, so it provides an accurate, reliable and cost-effective basis for setting a baseline year for a no-net-loss of forest policy and tracking forest cover changes going forward. NAIP photography is available at no cost to the State, and interpreted data is currently available for most of the urban corridor and for other areas in Maryland. Interpretation of data and enhancement using local radar technology (LiDAR) will require some additional capital investment, and DNR can prioritize classification of forest cover for high vulnerability areas in the near term.

Conclusion

The Sustainable Forestry Council believes that the integrated set of measures outlined above can make an important contribution to “bending the curve” for the rate of forest loss in Maryland. They will also assure that those who influence the quantity of the forest resource also recognize that without a healthy forest resource that is sustainably managed; all benefits and values are at risk. The Sustainable Forestry Council stands ready to work in earnest with the DNR and other stakeholders to further develop these proposals.

Appendix A

MARYLAND NO NET LOSS OF FOREST PRIORITY AREAS OCTOBER 2011



Appendix B

Additional Measures to Encourage Working Forest and Family-owned Forest Stewardship

- Provide adequate resources to the Maryland Forestry Boards to provide stewardship activities for private landowners including the continued expansion of forest stewardship plans. The county Boards are nationally unique organizations that can offer peer-to-peer education and assistance to landowners, but currently lack capacity to fully achieve their mission.
- Encourage Forest Service and Wildlife staff to collaborate with partners to deliver technical assistance to landowners. Collaborative conservation will become increasingly important as state budgets tighten. These partners include Forestry for the Bay and Pinchot Institute for Conservation's LandServer and Bay Bank programs.
- Encourage DNR and other state grant programs to recognize the protection of high quality forests (i.e., avoided deforestation) as an eligible and priority water quality strategy in grant programs including the Bay Restoration Fund.
- Evaluate the fiscal impacts of lowering the "current use" property tax exemption for forest landowners from five to three acres. Property tax relief would be a strong incentive for large lot residential landowners to reforest and manage trees.
- Reserve State riparian buffer cost share funding for only forest cover. Grass buffers do provide water quality benefits and are inexpensive in the short-run, but forest buffers provides more environmental outcomes and cost efficiencies in the long-term.

ⁱ Protecting the Forests of the Chesapeake Bay Watershed. Chesapeake Bay Program. 2006.
<http://www.chesapeakebay.net/ec2006.aspx?menuitem=19350>

ⁱⁱ Sprague et al. The State of Chesapeake Forests. The Conservation Fund. 2006