



Summary Report to the U.S. Forest Service

November 20, 2015

National Priorities Addendum



Over the last five years, Delaware Forest Service staff members have focused on completing the 78 state-specific goals listed in the 2010 *Delaware Statewide Forest Strategy* (otherwise known as the *Delaware Forest Action Plan*). Many of the attained goals are correlated to the National Priorities. Contained in this addendum is a sampling of recent successes and where they fall within the framework of the three National Priorities.

NATIONAL PRIORITY 1: CONSERVE AND MANAGE WORKING FOREST LANDSCAPES FOR MULTIPLE VALUES AND USES

1.1 Identify and conserve high priority forest ecosystems and landscapes.

Strategy DE-1.2:

Establish scientifically based, reasonable goals for both forest protection and the long-term maintenance and restoration of a variety of forest types (species), including state rare forest types.

Performance Goal for DE-1.2.4:

Identify critical forested blocks to connect using tree plantings to improve ecological value.

Using GIS technology, the Delaware Forest Service identified forested areas that are high, medium, and low priority based on a detailed analysis of 23 input layers. In addition, the DFS determined which watersheds in the state were of high priority. These high priority areas are targeted for conservation whenever possible through various programs in which the Delaware Forest Service is involved.

1.2 Actively and sustainably manage forests.

Strategy DE-1.3:

Protect forestland through conservation easements and, when appropriate, fee simple acquisition.

Performance Goal for DE-1.3.1:

Protect 2,000 acres of forests in priority areas by 2015.

Fee simple acquisitions of forestland through the U.S. Forest Service's Forest Legacy program resulted in the permanent protection of 1,302 acres of former Glatfelter Pulp Wood Co. lands that are now part of Redden State Forest with full public access. Through the state's Open Space Council, an additional 133 forested acres were conserved through fee simple purchases. These lands are now incorporated into the State Forest system. And lastly, the Forestland Preservation Program protected nine forested parcels through the purchase of development rights in 2010. These parcels totaled 873 acres. Total forested acres protected through DFS programs: 2,308. All of these forested acres are under active forest management plans.

A total of 2,308 forested acres have been protected through the U.S. Forest Legacy Program, the Delaware Open Space Council, and the Forestland Preservation Program. All of these forested acres are now under active forest management plans.



NATIONAL PRIORITY 2: PROTECT FORESTS FROM THREATS

2.1 Restore fire-adapted lands and/or reduce risk of wildfire impacts.

Strategy DE-1.8:

Utilize prescribed fire for forest and wildlife habitat restoration and management.

Performance Goal for DE-1.8.2:

Annually treat at least 250 acres to maintain/restore fire-adapted ecosystems.

Between the Delaware Forest Service and the Department of Natural Resources and Environmental Control's (DNREC) Divisions of Parks & Recreation and Fish & Wildlife, more than 250 acres of land are subjected to prescribed fire annually. Furthermore, all three agencies are moving to fully adopt the safety standards put forth by the National Wildfire Coordinating Group (NWCG). Such a collaborative action is outlined in the 2008 Cooperative Wildland/ Prescribed Fire Agreement between the Delaware Department of Agriculture, Delaware Forest Service, and the Delaware Department of Natural Resources and Environmental Control. This agreement was last updated in 2013 and also supports a cooperative effort to provide NWCG-qualified resources at the national level if needed.

The Delaware Forest Service has awarded \$139,222 in equipment grants to 30 different volunteer fire companies over the last five years.



Strategy DE-1.9/1.10:

Minimize the impact of wildfires on public safety and forest health.

Performance Goal for DE-1.9.4:

Provide wildland firefighting equipment grants to VFCs, including at least \$10,000 annually to VFCs within rural forest and urban forest WUI priority areas.

Through both the Volunteer Fire Assistance (\$10,000 annually) and State Fire Assistance, the Delaware Forest Service has awarded \$139,222 in equipment grants to 30 different VFCs over the last five years. This represents 50% of the 60 VFCs located in Delaware. On average, VFCs provided \$1.67 in match (cash) for every federal dollar received through this program.

Performance Goal for DE-1.10.2:

Continue wildland fire mitigation grants to communities within high-risk wildland fire danger areas—100 acres treated annually to reduce hazardous fuels.

In the last five years, nine communities at risk received \$154,804 in federal funding (State Fire Assistance and the American Recovery and Reinvestment Act) to help mitigate the risk of wildland fires to their communities. On average, 117 acres were treated annually in that time frame.



2.2 Identify, manage, and reduce threats to forest and ecosystem health.

Strategy DE-1.7:

Maintain and, where possible, improve forest health.

Performance Goal for DE-1.7.2:

Continue to monitor for forest pests: invasive (EAB, ALB, etc.) and native (BLS, SPB, etc.). Maintain aerial/ground surveys.

As part of our Forest Health program, an annual aerial defoliation survey is conducted at the end of June each year by our Forest Health Specialist who also utilizes the Forest Disturbance Monitor to screen for potential forest health threats. Hot spots are identified and then ground-truthed. Appropriate management action is then taken to mitigate further damage. In 2013, our forest health specialist identified a potentially very damaging southern pine beetle (SPB) spot on state Fish & Wildlife land. Our staff foresters assisted with a successful strategy to eliminate the spread of this potentially devastating native eruptive insect. Additionally, forest health staff and assisting foresters annually survey for destructive invasive pests. So far, none of the major exotic forest pests have been discovered in Delaware although many of these pests can be found in neighboring Maryland, Pennsylvania, and New Jersey.



NATIONAL PRIORITY 3:

ENHANCE PUBLIC BENEFITS FROM TREES AND FORESTS

3.1 Protect and enhance water quality and quantity.

Strategy DE-1.4:

Maintain and improve water quality through forest establishment, forested buffers, forest restoration, and protecting headwater forests.

Performance Goal for DE-1.7.2:

Restore wetlands/floodplain forests—250 acres by 2015.

A total of 419 acres of wetlands/floodplain forests restored in the last five years:

Blackbird State Forest: James Dobson, Northern Regional Forester, worked with DNREC and NRCS to protect the source and headwaters of the Massey Branch that drains into the Smyrna River, which then empties into the Delaware River. The project involved 23.5 acres.

Taber State Forest: Kent County Forester Christopher Miller worked in cooperation with DNREC Division of Water Stewardship, U.S. Fish and Wildlife, NRCS, and the Kent County Conservation District, to return the water table on 401 acres to its original level using a series of water control structures. Of these 401 total restored acres, 223 are forested.

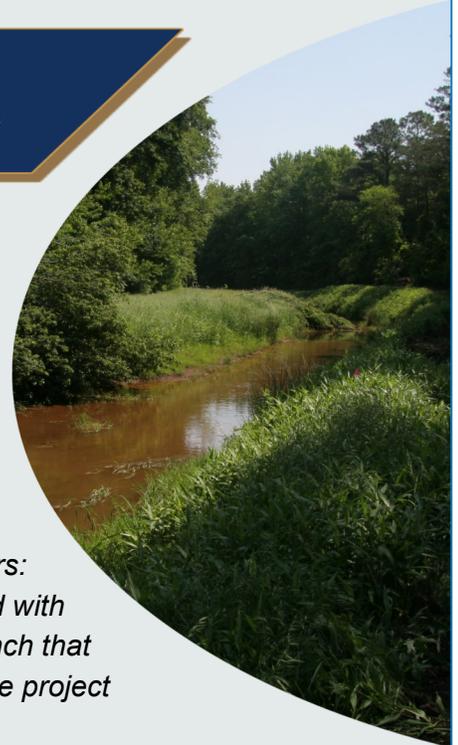
Redden State Forest: Erich Burkentine, Southern Regional Forester, worked with DNREC, NRCS, and the Sussex County Conservation District on several projects:

Mifflin Ditch – restored hydrology to 113.8 acres of degraded forested wetlands.

Rayne Tract – restored hydrology to 6.1 acres of degraded forested wetlands.

Deep Creek – restored flood flow hydrology to 47.3 acres of forested floodplain wetlands.

Gravelly Branch – restored flood flow hydrology to 5.4 acres of forested floodplain wetlands.



3.2 Improve air quality and conserve energy.

Strategy DE-1.6:

Increase urban tree canopy.

Performance Goal for DE-1.6.2:

Incorporate urban tree canopy goals into all 17 urban UTC priority communities by 2015.

To date, we have 16 total communities in Delaware that have formal tree canopy goals. Of these, nine are UTC priority communities. At least two more priority communities will be added in 2016.

3.3 Assist communities in planning for and reducing forest health risks.

Strategy DE-1.9/1.10:

Minimize the impact of wildfires on public safety and forest health.

Performance Goal for DE-1.10.1:

Develop CWPPs for seven communities in WUI urban priority areas. Complete by 2015.

Through a 2011 competitive grant (Cooperative Invasive Species Management and Wildfire Suppression in Delaware, 11-DG-11420000-235), Community Wildfire Protection Plans (CWPP) were developed for 11 communities/municipalities. These plans outline wildfire risk, locations of invasive fuels, and a working action plan that allows the community to update management activities as they see fit. The City of Newark has adopted their CWPP and its practices as standard operating procedure for the city. The plan was submitted to the Aetna Insurance Company and Newark received a rate reduction because of the plan.

CWPPs will serve as an outline for these communities over the next several years. The Delaware Forest Service has seen a reduction in the amount of fuel loading located within the wildland urban interface. Much of the fuel load was in the form of phragmites, which most people do not realize is invasive or at risk for wildfire. Because the Delaware Forest Service noticed the lack of knowledge that municipalities and their residents have, we held public meetings that helped educate residents on the dangers it poses.



Much of the fuel load in wildland-urban interface (WUI) priority communities is in the form of phragmites, which most people do not realize is invasive or at risk for wildfire.



3.4 Maintain and enhance the economic benefits and values of trees and forests.

Strategy DE-2.3:

Create markets for low-value, low quality wood and dedicated woody crops such as for bio-energy and bio-fuels.

Performance Goal for DE-2.3.1:

Analyze the amount of low value/low quality wood available. Complete in 2012.

The Greater Delaware Area Forest Biomass Resource Analysis report was published in 2012. The report was prepared by Renewable Resource Solutions, LLC, U.S. Forest Service Wood Education and Resource Center. According to the report, nearly 350,000 green tons are available every year through logging residue recovery and timber stand improvement. This total includes all of the Delmarva Peninsula plus two neighboring Pennsylvania counties. The results make it clear that there is ample wood available for numerous bio-energy projects in the State of Delaware. However, the "Incinerator Law" (Title 7, Chapter 289) "prohibits the burning of solid waste, even if the byproducts of the operation include useful products such as steam and electricity."

There currently is disagreement as to whether forestry operation by-products (tops, branches, small trees, etc.) would be considered solid waste or not. Furthermore the law states that an incinerator must be at least three miles from every point on the property boundary line of any residence, residential community, church, school, park, or hospital. Essentially, the entire State of Delaware is covered by this restrictive law. So although we have the resource available and the production of woody biomass for energy production would greatly improve forest health, we cannot proceed with the implementation of an operation until the law is amended or struck down.

3.5 Protect, conserve, and enhance wildlife and fish habitat.

Strategy DE-1.5:

Maintain and enhance wildlife habitat, particularly endangered and/or threatened species habitat, during forest management activities.

Performance Goal for DE-1.5.1:

Incorporate the Delaware Wildlife Action Plan into forest management, conservation, and protection activities.

Starting with the forthcoming updated/revised national program guidelines and standards for forest stewardship plans, the Delaware Forest Service will incorporate formal references and links to the updated state wildlife action plan. All current Delaware Forest Service forest stewardship plans contain multiple goals including wildlife habitat improvement.

Performance Goal for DE-1.5.2:

Maintain, protect, and enhance habitat for federally listed threatened and endangered species that are forest dependent.

This is standard operating procedure for our agency. We work with appropriate agencies to protect known federally listed species. Furthermore, we work with the state's Division of Fish & Wildlife and Natural Heritage Program to enhance habitat for state-listed threatened and endangered species and those of special concern.



3.6 Connect people to trees and forests, and engage them in environmental stewardship activities.

Strategy DE-3.1:

Increase the number of privately owned forests that are sustainably managed.

Performance Goal for DE-3.1.9:

Maintain technical forestry assistance to landowners. New stewardship plans for 7,000 acres by 2015, including 5,000 acres within rural priority area.

In the last five years the Delaware Forest Service has enrolled 14,637 acres into our Stewardship program. Of this total, 12,024 acres are in high priority areas.

Strategy DE-4.2:

Increase teachers' and students' understanding and appreciation of forests and forest management.

Performance Goal for DE-4.2.1:

Establish 10 new outdoor forestry classrooms by 2015 and assist with incorporating them into schools' curriculum.

Three formal (with signage) outdoor classrooms have been established with an additional eight school tree plantings (multiple trees involved) that serve as an outdoor forestry classroom. McIlvaine Early Childhood Center (MECC) in Magnolia was a model success story. It is the state's largest all-day kindergarten program with over 500 students. Students there spend a portion of their year studying trees in science. McIlvaine teachers attended a Project Learning Tree workshop in 2013 facilitated by the Delaware Forest Service. Project Learning Tree is an award-winning environmental education curriculum that focuses on incorporating outdoor education into the instructional day. An evaluation of the school's campus identified the lack of trees as an instructional challenge.

MECC's new "Tree Walk and Talk Arboretum" is the centerpiece of the school's effort to incorporate "place-based" environmental learning as part of Delaware's "No Child Left Inside" initiative. Funded by a GreenWorks! grant from the American Forest Foundation's Project Learning Tree Program, the project was completed with the help of the Delaware Forest Service (DFS), MECC staff and students, the Caesar Rodney High School FFA, and local businesses. The arboretum was completed at a planting event at the school on May 7, 2014. Steps taken to complete this successful outdoor forestry classroom included:

- *Teachers were first trained in PLT,*
- *A site evaluation was completed identifying the lack of trees as an instructional challenge,*
- *A PLT GreenSchools grant proposal was written by the school naming the DFS as a partner for the project of installing an arboretum,*
- *An outdoor classroom "kiosk" was built and installed by DFS staff,*
- *Caesar Rodney High School Natural Resource students were trained by DFS staff to deliver an educational program as a rotation in the tree planting event,*
- *The trees were planted with participation by the entire school,*
- *The arboretum was dedicated during the state's Arbor Day Ceremony with Governor Markell, and*
- *All DFS involvement was used as match for the grant.*



The Delaware Forest Service helped students install a new arboretum at their school.

Performance Goal for DE-4.2.6:

Continue providing forestry educational programs to elementary schools (Arbor Day, Smokey Bear, etc.). Reach 12,000 students annually.

In the last five years, the Delaware Forest Service has reached an average of 12,260 elementary school-aged children annually with our Fire Prevention (Smokey Bear) and Arbor Day programs. This number is included in our annual average of 15,075 total persons reached through various educational programs.



3.7 Manage trees and forests to mitigate and adapt to global climate change.

Strategy DE-1.6:

Increase urban tree canopy.

Performance Goal for DE-1.61:

Work with communities and other organizations to address heat islands by developing a protocol for parking lot shade requirements in new developments.

Install at least one demonstration project in each county by 2015.

The Delaware Forest Service has not yet developed a protocol but is working with DNREC and the Governor's office on the Green Infrastructure Primer (GIP) that will serve as guidance to landowners (municipalities/counties/developers/state agencies) on green infrastructure improvements with a section designed to help mitigate heat islands through the use of tree plantings. The GIP is in its first round of edits and is a result of Executive Order 41 (Preparing Delaware for emerging climate impacts and seizing economic opportunities from reducing emissions). Completed projects:

- **Hockessin Library** (New Castle County): *The Delaware Forest Service helped the Library with technical guidance on the porous pavement project at its facility. This project was one of the first projects to utilize this type of pavement in the state and has allowed for better drainage filtering debris/sediment before it enters the water table.*
- **Wilmington** (New Castle County) *Acme shopping center parking lot: We assisted the Delaware Center for Horticulture with technical guidance on the design, tree species selection, and location of several green infrastructures aimed at reducing the heat island effect in center city Wilmington. Three tree pit areas were installed along with four bio-swales, one rain garden, one infiltration bed, and a tree trench. These green infrastructure techniques have helped reduce storm water runoff from the parking lots and buildings in the area. The design has also allowed for larger tree species that help with shading in the area, thus reducing the amount of heat coming off the blacktop and buildings.*
- **Georgetown** (Sussex County): *The Delaware Forest Service funded and designed a streetscape project for the Town of Georgetown in 2013-2014. The project goal was to install larger below ground tree pits utilizing organic rich soils to help promote better growing conditions for the trees. Fifteen trees were removed that were either in a declining condition or dead. These trees were replaced with species better suited for the area, which will help reduce the heat island effect in years to come.*
- *The Delaware Forest Service has several heat island planting projects scheduled for the fall of 2015/spring of 2016 throughout the state with one scheduled near the capitol in Kent County.*