

Prince William County Office
8033 Ashton Avenue, Suite 105
Manassas, VA 20109
703-792-6285 Fax: 703-792-4630
www.pwcgov.org/grow

May 1, 2013

Stormwater Site Visit Report

Site: Occoquan Forest Owners Association(OFOA) **GPIN:** 7994-99-6858

Acreage: 32 acres

A site visit was conducted on March 27, 2013 at Occoquan Forest. Those present included Henry Bibber, William Johnson, Ann Stampf, Jim Parker, from Occoquan Forest Owners Association(OFOA) and Virginia Cooperative Extension Staff, Paige Thacker and Nancy Berlin, and Master Gardener Volunteers, Don Peschka, Sally Peterson and Leslie Paulson. The Occoquan Forest community has 240 homes, wooded and grassy common areas and is located on a peninsula in Lake Occoquan. A management plan for natural areas compiled by Henry Bibber for the Occoquan Forest Owners' Association was adopted January 14, 2013. This report outlines the current management plans for common areas of this community and was provided to VCE for review prior to the stormwater site visit. Patty Dietz, Prince William County Public Works – Watershed Branch visited this site several years ago to provide recommendations regarding the Resource Protection Areas (RPA). Due to the location of this community on the Occoquan Reservoir all landscape management decisions are critical to water quality concerns. Most of the common areas are forested. Forest composition is Virginia pines (in decline), beech, oak, and poplar.

Understory plants included *Magnolia virginiana*, *Sambucus*, Ferns, *Smilax rotundifolia*, *Kalmia latifolia*, and *Ilex sp.*, but are limited due to deer pressure and browse. Also noted were a number of invasive species, including barberry, Japanese honeysuckle, multiflora rose, Nandina, *Euonymus coloratus*, *Euonymus japonicus*, and English ivy. Common areas are used for passive recreation. There have been discussions regarding addition of fitness areas in the future. There are four areas that have been designated as “meadows” and recommendations were solicited for those. The Virginia Department of Forestry has conducted Firewise training and has been managing hardwood trees to reduce fire risk. Areas of concern include erosion, meadow establishment and management, management and removal techniques for invasive plants, and hardwood forest management. The committee reported that because there is no water access for new plantings, they have decided to depend on spontaneous regeneration of the forested areas that have been cleared in places for Firewise. Recommendations for specific areas as well as general recommendations will be covered in this report.

General Recommendations:

1. Many of the areas noted in this site visit report are considered Resource Protection Areas (RPAs) by Prince William County. These are corridors of environmentally sensitive land that are situated alongside waterways. All waters in Prince William County flow into the Chesapeake Bay and removal of trees, invasive and desirable plants must be approved by the PWC Watershed Branch prior to removal. Guidelines and regulations and penalties are outlined in this resource on the PWC website:

www.ext.vt.edu

Extension is a joint program of Virginia Tech, Virginia State University, the U.S. Department of Agriculture, and state and local governments.

Virginia Cooperative Extension programs and employment are open to all, regardless of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. An equal opportunity/affirmative action employer.

<http://www.pwcgov.org/government/dept/publicworks/environment/Pages/Resource-Protection-Area-Requirements.aspx>

No mowing or lawn establishment should be done within 100 feet on either side of the waterway. Establishing a vegetated buffer to filter contaminants and sediment is crucial to clean waterways.

2. Common areas with turf grass can be managed in a cost and environmentally effective manner by applying the best practices from Virginia Cooperative Extension – Prince William’s BEST Lawns program. For a site visit from a Master Gardener Volunteer including soil testing, measurement of square footage and a customized lime and fertilizer plan, please contact our BEST Lawns Coordinator, Thomas Bolles at bestlawns@pwcgov.org or 703-7924037. There is a small cost involved for soil testing and printed materials.

3. Leave trees and snags for wildlife value and have an arborist assess risk to passersby.

4. Continue work with the Firewise program to clear declining pines and other trees that present a fire hazard and risk to residents and visitors.

5. Common understory plants (without deer pressure) associated with the beech-maple forest include the following maple-leaf viburnum and creeping strawberry-bush. spring beauty, common blue violet, downy yellow violet, sweet white violet, jack-in-the-pulpit, mayapple, cut-leaf toothwort, wild geranium, yellow trout lily, large-flowered trillium, squirrel corn, Dutchman’s breeches, Solomon’s seal, purple bittercress, wild ginger, and Christmas ferns. Understory plants (again, without deer pressure) associated with a declining pine forest include pioneer hardwoods (beech, spicebush, maples, sumacs, raspberries, mountain laurel, blueberries)

Invasive removal and re-vegetation

Invasives noted were barberry, Japanese honeysuckle, multiflora rose, Nandina, Wintercreeper (*Euonymus fortunei*), *Euonymus coloratus*, English ivy and privet. Committee members indicated that their preference was to remove these invasives mechanically. Each targeted area for removal should be considered individually based on how large the infestations is, proximity to water sources, type of invasive plant (annual, perennial, woody), life stage (dormant, seedling, woody – early season, woody – late season). See <http://hortweeds.tennessee.edu/webapp/weedguide/allpages.pdf>

Hand-pulling is appropriate when plants are small and the soil is moist, utilizing shovels, hoes, mattocks. This method should be considered when working with a small infestation in sensitive areas where access to motorized equipment is limited, or desirable or rare species are intermixed with the invasive plant. Hand pulling can greatly disturb the soil allowing other weed seeds to germinate and/or damaging roots of surrounding desirable species. The Weed Wrench © or a similar product may be appropriate, although a combination approach, mechanical plus carefully selected chemical application is considerably more effective in fighting invasive plants.

<http://www.weedwrench.com/weedwrench/order.cfm>

Mowing is appropriate for herbaceous species and woody species with young/small stems. This method should be considered for any size infestation that allows access of motorized equipment. Mowing is most successful with annual species when mowed before seeding, and perennials when mowed both before seeding and repeatedly to exhaust the root stock. All vegetative material, especially

when flowers or seeds are present, should be bagged and moved off the site. Be careful not to move viable plant material to other areas as that can start a new infestation. There is possibility to do damage to desirable species in the area and compact the soil. Disking should be avoided due to erosion potential in this site.

Any application on common areas can only legally be done by a Commercial Certified Pesticide Applicator (either for hire, or not for hire) through Virginia Department of Agriculture and Consumer Services <http://www.vdacs.virginia.gov/pesticides/certification.shtml>

The “Hack and Squirt” method involves removal of a woody species with a chain saw or other equipment and immediately treating the cut stump surface with an herbicide solution to prevent regrowth. This technique is appropriate for any woody or robust perennial species with a thick stem. This method should be considered when desirable species are intermixed with the invasive species in any environment. It is most successful later in the season when the plant is drawing nutrients to its rootstock. If desirable roots are tightly tangled with invasive roots; there is possibility for the desirable plants to be damaged. A certified pesticide applicator must be employed for this technique. Areas cleared of invasive plants should be re-vegetated with natives as soon as possible. Please consult any herbicide product labels for replanting instructions.

Meadow establishment/management

Four areas were designated as possible sites for informal landscaping or a “meadow”. Three of these areas were characterized by a variety of invasive plants. Steps to creating a meadow area may include the following. Please consult Urban and Suburban Meadows by Catherine Zimmerman for more detailed information.

1. Avoid tilling, which exposes the seed bank in the soil to sunlight and moisture, creating more of a weed problem. Disturbed soils are a haven for invasive plants establishment.
2. Avoid rushing into planting until the site is clear of vegetation. This will mean less time weeding later. Start with a small meadow and gain community support before moving on to more areas.
3. The use of Glyphosate (Round Up® with no additional herbicides added) is one option for removal of weeds. Other organic alternatives are available at www.beyondpesticides.org. A combination approach of mechanical removal and periodic treatment afterwards with a conventional or organic control product is recommended.
4. After treatment for weeds, a “lasagna” method could be used. This technique uses cardboard or newspaper to smother weeds and seeds and adds organic matter to the soil, while minimizing site disturbance. This will require a waiting period before planting or seeding the meadow. Site preparation should be done in the summer or fall for spring planting. Plastic and landscape cloth is not recommended as it does not decompose and encourages populations of voles. Clear plastic can create a greenhouse to encourage weed growth. Techniques are described in this publication. See <http://extension.oregonstate.edu/gardening/layer-compost-lasagna-style-no-till-gardening>
5. Establish paths through the meadow for maintenance and for visitors to enjoy the pollinators and plants.

6. At planting time, loosen the soil surface slightly to enhance seed contact. At this time the soil surface should be disturbed as little as possible because most annual weed seed that germinate are within the top one-fourth inch of soil. If the soil is deeply disturbed, additional weed seed that are capable of germinating and competing with the wildflowers will be moved to the soil surface. Distribute the wildflower seed evenly in the planting area to give each seed adequate space and resources for germination. Even seed distribution allows maximum coverage of the soil by new seedlings and provides the most benefit in weed suppression. After sowing, either tamp the soil or water the area to ensure good seed-soil contact. A light, seed-free mulch, such as wheat straw, can also be used for seedling protection. The mulch should be lightly and evenly dispersed with no heavy clumps. A heavy, uneven mulch reduces wildflower growth and development and results in areas with no plants.

7. Choose plants or seeding or a combination of both. Plants that would perform well in these meadows include grasses and wildflowers. The selection of the wildflower species will affect weed management at the site. The objective in selecting a variety of wildflowers is to develop a plant community that will be attractive and compatible in terms of growing requirements, that will flower over extended periods of time, that will reseed the site for generation of new plants, and that can be held and maintained at the flowering successional stage. In order to be successful in a particular location, the wildflower species must be compatible with and adaptable to growing conditions at the site. They must also be competitive with other species present, including weeds. Native species generally are most adaptable to local growing conditions and are usually the most competitive with native weeds that will be present.

In determining species that are to be included in a wildflower seed mix, consideration should be given to the germination times and growth characteristics of the species. Most wildflower mixes are a combination of annuals for flower color the first year and reseeding annuals or perennials for flowers in the second and succeeding years. The objective in using a mix is to develop a wildflower community of compatible species. Species that germinate and emerge rapidly after planting will become better established, provide ground cover and, consequently, will help reduce the number and growth of weeds. Early establishment allows the wildflowers to develop better root systems and to capture available resources such as water and nutrients so they can successfully compete with weeds that germinate at later times. A careful selection of wildflower species will help with weed management at the site.

Grasses, such as switchgrass, (*Panicum virgatum*), little bluestem (*Schizachyrium scoparium*) big bluestem (*Andropogon gerardii*), Indian grass (*Sorghastrum nutans*) would be excellent choices for a native warm season grass meadow or intermixed with native flowers. For other choices, please consult this publication: <http://www.dgif.virginia.gov/habitat/wild-in-the-woods/grow-a-native-grass-meadow.pdf>

Perennials/annuals

Coreopsis tinctoria, *Bidens aristosa*, *Rudbeckia hirta*, *Dracopsis amplexicaulis* (annual), *Ratibia columnaris*, *Coreopsis lanceolata*, *Echinacea purpurea*, *Aster* sp., *Helianthus angustifolia*, *Solidago*, *Eupatorium* sp. *Monarda* (prefers wet areas of the meadow), *Asclepias* sp., *Baptisia*. For other regional plant lists, please consult this excellent resource for plant selection for the Chesapeake Bay Watershed Native Plants for Wildlife and Conservation Landscaping, available online.

<http://www.nps.gov/plants/pubs/chesapeake/>

http://www.dcr.virginia.gov/natural_heritage/documents/pied_nat_plants.pdf

Seed sources for meadow establishment include, but are not limited to:

Ernst Seeds <http://www.ernstseed.com/>
Applewood Seeds <http://www.applewoodseed.com/>
Southern Exposure Seeds <http://www.southernexposure.com/>
Jellito Seeds <http://www.nps.gov/plants/pubs/chesapeake/>

Open pollinated, native, local cultivars (Virginia Piedmont) seed mixes will perform best with soil and weather conditions in Prince William County.

Sources of conservation funding can be accessed at <http://www.pecva.org/land-conservation/sources-of-conservation-funding>. Because Occoquan Forest is a very sensitive area bordered by water, funding may be available.

One potential meadow area in a clearing surrounded by declining pines does not have groundcover. Reportedly, this area has been free of vegetation, including invasives for many years. It was recommended that the OFOA soil test this area, either through Virginia Tech soil testing lab or through A&L labs <http://www.al-labs-eastern.com/>. Virginia Tech can provide an analysis of micronutrients and pH and A&L labs can provide tests for customer-specified toxins. No meadow establishment should be attempted prior to obtaining these results.

8. Maintenance and development of a weed management strategy for wildflowers includes both short and long-term maintenance programs. The best approach for developing these programs is to anticipate weed problems, identify seedlings quickly as they grow; and take corrective weed control action as soon as possible. In general, weed seedlings are easier to control before they mature and establish good root systems. Optimum size for best control is usually four inches or less. Early control will reduce weed competition with young wildflower seedlings giving them maximum growth conditions.

Playground and pavilion area

It was reported that a “rain garden” was established in the pavilion area. This area is characterized by steep slopes, poor soil, with high erosion potential, providing little significant vegetated buffer. Plants in this area include Nandina, Rhododendrons, Euonymus ‘Manhattan’, Liriope, and a holly of unknown variety. While these plants provide seasonal color and some stabilization of the bank, several of the shrubs appear to have nutrient problems or to be unsuited to this site. A possible solution to this sloped area is to stabilize the slope first with a coir-type landscape product e.g. Curlex® and then seed with native warm season grasses or a steep slope mix (Ernst Seed steep slope mix <http://www.ernstseed.com/seed-mixes/> or shrubs and native perennials. Areas beyond the slope to the water’s edge are closely mown and should be left unmown or replanted for 100 feet to comply with the County recommendations for an RPA. Please consult this publication for native plants specific to riparian (streamside) zones http://www.dcr.virginia.gov/natural_heritage/documents/riparian_nat_plants.pdf

These plants would be suitable on a sunny slope:

Grasses & Grasslike Plants

Ammophila breviligulata
Andropogon gerardii
Dichanthelium clandestinum
Elymus canadensis

Panicum virgatum
Panicum amarum
Schizachyrium scoparium

Herbaceous Plants

Any of the herbaceous plants that thrive in a sunny, dry site tend to be deep-rooted and would provide good slope stabilization.

Baptisia tinctoria
Lespedeza capitata
Chamaecrista (Cassia) fasciculata

Shrubs

Ceanothus americanus
Clethra alnifolia
Cornus racemosa
Cornus alternifolia, florida
Celastrus scandens
Hypericum calycinum
Kalmia latifolia
Morella pensylvanica (Northern bayberry)
Physocarpus opulifolius (ninebark)
Rhus aromatic (sumac)
Rhus copallina (sumac)
Rhus glabra (sumac)
Vaccinium angustifolium (blueberry)
Viburnum acerifolium

Areas by the pavilion which stay wet and muddy could be mulched with wood chips to provide a more pleasant setting for community gatherings.

Fauna/Flora identification

Photos or samples of unknown plants can be brought or emailed to the VCE –Prince William office which is open 8 am – 5pm M-F at 8033 Ashton Ave. Suite 105 Manassas 20109 or emailed to master_gardener@pwcgov.org. Additionally, Project Noah, an online resource, or smartphone app for documentation of living things may also be helpful <http://www.projectnoah.org/>

Occoquan Forest Parcels

GPIN: 7994-88-8508

Parcel Address:

6251 OCCOQUAN FOREST DR
MANASSAS, VA 20112

Census Tract: 901219

Owner:

OCCOQUAN FOREST OWNERS
ASSN INC

6251 OCCOQUAN FOREST DR
MANASSAS, VA 201123011

Acreage: 0.2947

DB: 1328 **DP:** 1014

Instrument No.:

GPIN: 7994-88-4621

Parcel Address:

10657 BIG OAK CL
MANASSAS, VA 20112

Census Tract: 901219

Owner:

OCCOQUAN FOREST
OWNERS ASSN INC

6251 OCCOQUAN FOREST DR
MANASSAS, VA 201123011

Acreage: 1.9123

DB: 1328 **DP:** 1014

Instrument No.:

GPIN: 7994-99-6858

Parcel Address:

10821 SPLIT RAIL DR
MANASSAS, VA 20112

Census Tract: 901219

Owner:

OCCOQUAN FOREST
OWNERS ASSN INC

6251 OCCOQUAN FOREST DR
MANASSAS, VA 201123011

Acreage: 29.840700000000002

DB: 1328 **DP:** 1014

Instrument No.:

