Connecticut Department of ENERGY & ENVIRONMENTAL PROTECTION

Field Visit to Property Pond Place Association, Inc. in Avon, CT

Present parties: Mitch Uzwack (Board of Directors), two other board members (Gary one other who's name is unknown), Mike Famiglietti (President of Condominium Management), Andrea Urbano (Central District Service Forester) and Larry Rousseau (Western District Service Forester)

Date of visit: 10/15/2019

Observations and Notes

For the purpose of this recap, I am calling the first area we walked, the forest land abutting the pond and brook, east and southeast of the residential community, Stand 1. The second area we walked, just north of this forest land, but comprised mostly of grass and buffer vegetation between the walking trail and pond, Stand 2, and the community forest and landscape trees throughout the residential association, Stand 3.

STAND ONE

Tree Cover

This is an oak-pine forest of good site quality. A red maple swamp dominates the wetland area. The non-swampland overstory is comprised mostly of white oak, eastern white pine and scarlet oak in both sawlog and pole size classes. Areas of the overstory also include red oak, red maple (particularly in wet areas) and shagbark hickory in both sawlog and pole size classes. A trail runs through the northwestern portion of the stand, connecting it to Stand 2. Stand 1 is diverse in species composition. Though advanced regeneration is present in parts of the forest, no defined understory exists, no defined understory size class exists. The stand appears to be fully stocked. Access for a commercial harvest is limited due to its close proximity to Pond Place Road, which has guardrails to the west, and the pond and property boundaries to the east. If any machinery is operated in Stand 1, ensure such practices are conducted in dry or frozen conditions. Operability would be easy, but soil conditions are mostly poorly drained.

Species
White oak *(Quercus alba)*
Eastern white pine *(Pinus strobus)*
Scarlet oak *(Quercus coccinea)*
Red oak *(Quercus rubra)*
Red maple *(Acer rubrum)*
Shagbark hickory *(Carya ovata)*

Understory and Forest Floor

Advanced regeneration is comprised mostly of eastern white pine, eastern hemlock, American hornbeam (also known as musclewood), and a lesser amount of black birch and black gum (also known as Pepperidge tree or black tupelo). These are of sapling and seedling sizes. White pine saplings and seedlings have been persisting in suppressed conditions for over a decade. If the overstory canopy cover is reduced, these white pine saplings and seedlings will likely not be able to achieve saw log size. White pine seedlings can persist suppressed for about ten years until needing to be released into the overstory White oaks seedlings are well established on the forest edge, and white pine and red maple seedlings are found throughout the stand. Seedling adequacy is low.

Species
White oak *(Quercus alba)*
Eastern white pine *(Pinus strobus)*
Eastern hemlock *(Tsuga canadensis)*
American hornbeam *(Carpinus caroliniana)*
Black birch *(Betula lenta)*
Black gum *(Nyssa sulvatica)*
Red maple *(Acer rubrum)*

Though shrubs are established in Stand 1, their continuity lacks. Native shrubs such as witch-hazel, a shrub with vast medicinal properties, winterberry and highbush blueberry are present. Blueberry was observed in areas where soil is well drained but moist. Stand 1's ground cover is comprised mostly of leaf litter, downed coarse woody material and herbaceous plants, including princess pine, ferns, partridge berry, and a small amount of tree seedlings.

Native Species	**Invasive Species**
Witch-hazel *(Hamamelis virginiana)*	Japanese barberry (*Berberis thunbergii*)
Blueberry (*Vaccinium corybosum)*	Multiflora rose (*Rosa multiflora*)
Winterberry *(Ilex verticillata)*	Asiatic bittersweet *(Celastrus orbiculatus)*
	Winged euonymus *(Euonymus alatus)*

Though invasive wood plants are present in Stand 1, they are of low density. Japanese barberry is most commonly found along the trails, brook and in wet soils. Asiatic bittersweet is present in both the edge (particularly near the pond) and interior of the Stand. The bittersweet observed in Stand 1 appears to be young and manageable. Though neither of these populations are significant in their density or continuity, they are present and should be closely monitored and controlled. A few pockets of multiflora rose are also present near the brook.

Wildlife

Inferences about wildlife populations and potential can be made from the plant species composition and structural complexity. Nut and fruit producing species attract wildlife. Certain wildlife needs early successional growth to survive while others require older growth characteristics.

Stand 1 has an abundance of food sources for wildlife. All shrubs present produce soft masts (i.e., berries) that wildlife utilize. Note, however, that barberries are not as nutritious for birds and other wildlife as our native berry producing plants. Hickories and oaks are hard mast/nut producing species which also benefit wildlife.

Certain wildlife utilize downed woody material, standing dead trees, and/or old wolf trees for shelter, habitat, and/or feeding grounds. There is a small component of standing dead trees in Stand 1, a larger component of downed coarse woody material, and the potential for some of the large, overstory white pine trees to serve as wolf/cavity trees over time. Coarse woody material is particularly beneficial for insect, fungal, amphibian, and small mammal populations. It also plays a critical role in recycling nutrients into the soil.

Vernal pools provide critical breeding grounds and temporary habitat for amphibians. Evidence of vernal pools are present in Stand 1. Human activity should be limited in these areas.

The pond, brook, and surrounding wetland and riparian forests provide habitat and breeding grounds for amphibians, reptiles, fish, beaver, geese and song birds.

The herbaceous ground cover and shrub population likely supports healthy bird, deer, bear and coyote populations.

Tree and Forest Health

Generally, this is a good growing site in healthy condition. Diverse forested systems tend to be the most resilient and healthy over the long term. Forests can be diverse both structurally (in tree size - diameter and height, living vs. dead) and in species composition. Stand 1 has a diverse species composition.

Of greatest concern is the small amount of invasive species established. Since populations are so manageable, it is now an ideal time to manage existing populations and control their spread.

Also of concern is the amount of either poor-formed trees, or dead/dying trees present within one tree length of either side of the trail. These trees are hazardous due to their proximity to pedestrian traffic. They should be closely monitored and removed/felled or pruned if deemed safe and possible.

Hemlock scale is present, but populations appear to be low and not of concern.

General Recommendations

1. Manage and control invasive species. Reducing or eliminating current populations will reduce or prevent their spread. It is particularly important to do so prior to any removal of trees, particularly along the trail or wet areas where invasive species are currently established. Click the following links to learn more about each invasive species found in your parcel:
    a. Multiflora rose
    b. Oriental bittersweet

c. Japanese barberry
d. Winged euonymus
e. Though not observed, it was communicated that water chestnut has been found in the pond. The CT River Conservancy is working to stop its spread. You can learn more about potential assistance/partnerships and control methods by visiting their website (hyperlinked above).
f. Some populations, particularly that of the young/small bittersweet, can be managed by way of physical removal (ensuring roots are removed). However a general chemical control practice for most of these species is as follows: cut the stems or vines in mid-late summer and treat the cut surfaces with Orthomax Tough Brush Killer or a glyphosate solution. This application should be brushed or painted on the fresh cut. It is recommended to add a safe food coloring or dye so the applicator will know which stumps have been treated. Leave flagging or some area-recognition tool to relocate these stumps in September. At this time, make a fresh cut and re-apply the chemical solution.
g. Consider banning the ornamental/landscape planting of these species and their cultivars within the residential community. The current private landscape is likely contributing to their spread in Stand 1.

2. Remove or prune hazard trees, especially those within one to two tree lengths from the trails.
    a. Consider consulting a licensed arborist, which can be found here: arborists.ctpa.org/find-an-aborsit.
    b. Consider establishing an ecotone on one or both sides of the trail. An ecotone is an area of transition between two biological communities. They are commonly managed for surrounding field edges. A general approach to this would be to remove all trees within one tree length of the trail. Actively or passively allow for the establishment of native shrubs (ensure invasive species do not establish and take over). Remove about 50% of trees within one tree length from the newly-established shrub area. Doing this will prevent or significantly reduce the need to manage for hazard trees along the trail system. This “soft” edge effect also benefits wildlife, providing habitat, food, and a safe transition zone for an array of species.
3. Leave the brook and riparian forested area intact.
4. Avoid tree removal or management in wetlands.
5. Contact and consider working with the Natural Resource Conservation Service (NRCS) under their Environmental Quality Incentives Program (EQIP). This cost sharing program can provide up to 75% of costs for eligible lands. Learn more about it here and read this fact sheet.

STAND TWO

Tree Cover

Though not technically forest land, this Stand is comprised of landscape trees in maintained grass and buffer vegetation between the walking trail and pond. Present are white ash trees, oaks, hickories, maples, hackberry, crab apples, and other deciduous tree species.

Understory and Forest Floor

There is no understory in stand 2. Ground cover is comprised exclusively of managed grass, with the exception of areas of vegetation established in between the pond and grass. In these areas are both native species like the shrub, silky dogwood and herbaceous plant, common cattail and invasive species. Populations of winged euonymus, multiflora rose, and phragmites are of note.

Native Species	Invasive Species
Silky dogwood (*Cornus amomum)*	Winged euonymus *(Euonymus alatus)*
Common cattail *(Typha latifolia)*	Phragmites/Common reed *(Phragmites australis)*

Wildlife

Stand 2 has food sources for wildlife. All shrubs present produce soft masts (i.e., berries) that wildlife utilize. Hickories and oaks are hard mast/nut producing species which also benefit wildlife.

Woodpeckers will take advantage of the dying ash, eating EAB larva.

As mentioned above (in Stand 1's Wildlife information), the pond provides valuable habitat and breeding grounds for birds, beaver, amphibians and some reptiles and supports a healthy microvertebrate population. Downed dead trees along or within the brook helps support water-affiliated wildlife by way of habitat creation, micro-climate creation, and food sources.

Tree and Forest Health

The presence of invasive species is greater in Stand 2 than in Stand 1. This is in part because more resources (light, space, etc.) are available for invasive species to utilize and use to outcompete native species. This is of particular concern because if not managed, the spread of invasive species into Stand 1 is likely to occur over time. These species also benefit wildlife and pollinators less than native species.

Signs and symptoms of Emerald Ash Borer (EAB) are apparent. At least one white ash tree appears to be dead. Another seems stressed from larval feeding. The EAB is a single host species, only targeting ash trees. Very few ash trees are present on Pond Place property, so this is not of great concern.

General Recommendations

1. Remove or prune any potential hazard trees along the trail.
    a. Remove the dead ash tree
    b. Consider if any living ash trees are of enough importance to protect against the EAB. If so, consider treating accordingly. Most effective treatments for EAB, especially when the site is already infested are trunk and soil injections. If no ash trees are of significant meaning, remove all of them that are within reach of infrastructure or human activity.
    c. To learn more about EAB and control methods, click here.
2. Monitor and control invasive species. You may need to consider planting alternative species. If interested in learning about native alternative species to invasives, please click here.
    a. To learn about phragmites control, please visit:
        i. https://cipwg.uconn.edu/phragmites/
        ii. https://www.fws.gov/gomcp/pdfs/phragmitesqa_factsheet.pdf
        iii. https://www.lakerestoration.com/t-phragmites-control.aspx

3. Avoid fertilizing the grass/lawn areas, as fertilizer will ultimately impact the pond, compromising its ability to function properly.
4. Avoid applying salt to trail system near pond. In winter, if use of trail is necessary, encourage residents to snow shoe, cross country ski, or wear cramp ons/micro spikes instead of applying chemicals.
5. Maintain vegetative buffers between the pond and grass areas. Doing so will keep the geese out of the lawn area, but will also promote and maintain a healthy aquatic system.
6. Consider adding bird boxes for species of interest within the pond and/or the vegetative buffer surrounding the pond. Bird boxes are species-specific. If interested in learning more, please contact me.

STAND THREE

Tree Cover

This is a community forest comprised of private residential landscape trees and association-owned trees in common spaces, along roads or trails and near homes. Common species are eastern white pine *(Pinus strobus)*, pitch pine *(Pinus rigida)*, red, white and pin oaks *(Quercus rubra, alba,* and *palustris* respectively). Also present are some Norway maples *(Acer platanoides)*, red maples *(Acer rubrum)* and a few sugar maples *(Acer saccharum)*. Kousa and other dogwood species *(Cornus spp.)* are present as well as other deciduous trees and arborvitaes *(Thuja spp.)*. Many of the trees are of saw log and pole size classes. Trees are easily accessible, but tree removal and pruning is often hazardous or more complicated due to their close proximity to infrastructure.

Understory and Forest Floor

The ground cover is comprised mostly of grass and leaf litter. Native and invasive shrub and understory species are present throughout the residential area. Additionally, poison ivy and Virginia creeper are present in places.

Native Species	Invasive Species
Spicebush *(Lindera benzoin)*	Japanese barberry (*Berberis thunbergii*)
Raspberry/blackberry (*Rubus spp.)*	Multiflora rose (*Rosa multiflora*)
Winterberry *(Ilex verticillata)*	Asiatic bittersweet *(Celastrus orbiculatus)*
	Winged euonymus *(Euonymus alatus)*
	Norway maple *(Acer platanoides)*

Invasives are well established in this stand. The control efforts should be more aggressive. Pay particular attention to the establishment and spread of Norway maple. This tree tends to outcompete our native and much more valuable maple species.

Wildlife

The trees and vegetation present throughout Pond Place's property provide habitat and hunting grounds for small mammals, rodents, song birds and birds of prey.

Tree and Forest Health

Stand 3 ranges in tree health and conditions. Many healthy and well-formed hardwoods are present, however, stand health is compromised by the presence of invasives plants (shrubs and Norway maple), crowded growing conditions and associated poor form, and the proximity of trees (particularly those of poor form) to infrastructure.

General Recommendations

1. Develop a five-year tree removal and replacement plan
    a. Prioritize the removal of hazard trees, those with poor health or form located within one or two tree lengths from a road or infrastructure.
    b. Remove Norway maples.
    c. Remove trees that have outgrown their allotted space. Many of these are located within the vegetative circles that have pavement on all sides.
    d. Remove trees growing in dense pockets. Select one or two with the best form, and remove competing trees. Doing so will foster good form of the remaining trees and will save management worries and costs in the future.
    e. Prune or remove trees with narrow or "V"-shaped forks. These are weak unions, and will likely split over time.
    f. Plant the right tree in the right place. Refer to the CT Tree Owner's Manual and Vermont's Tree Selection Guide to inform these practices.
    g. If the development of this plan is contracted out, it should include a community forest inventory. This inventory will provide an accurate assessment of species composition, size classes, health concerns, hazards, management needs, and recommendations for replacement or additional plantings. This inventory would help inform tree removal and replanting priorities.
2. Inform residents of, or require residents to be Fire Wise. Many homes' roofs and grounds are blanketed in pine needles. This is both a fire hazard and can provide other structural issues, like mold, over time. Pines in these areas should likely be removed.
3. Control invasive species
    a. Follow aforementioned recommendations for shrub control.
    b. As mentioned above, consider banning the ornamental and landscape planting of invasive shrubs and trees, including their cultivars.
4. Contact or have Andrea put you in touch with the State Urban Forester, Chris Donnelly (Ph: 860-424-3178, email: chris.donnelly@ct.gov) regarding the American the Beautiful grant opportunities.
    a. Visit: https://www.ct.gov/deep/cwp/view.asp?a=2697&q=322872&deepNav_GID=1631#Grants to learn more about urban forestry grant opportunities.
    b.
5. Rectify the volcano mulch laid around the planted row of Bartlett pears along Pond Place Road.
    a. Do not plant any more Bartlett pears. They are over populated.
    b. Refer to the mulching guidelines provided in the CT Tree Owner's Manual given to you at the time of this visit. No landscaper, especially one for hire, should be laying mulch directly against the trunk of a tree, let alone piling it up for inches. Mulch should be

applied no more than two or three inches thick, in a doughnut shape around the trunk of the tree, leaving one to inches in between the mulch and the base of the trunk. The root collar should be noticeable on every planted tree.