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January 26, 2016

Mr. Sean Loomis, Park Ranger
Pelham Lake Park
83 Pond Road
Rowe, MA 01367

Re: Evaluation of Percy Point and Old Hemlock on Trail near Potter Brook

Dear Mr. Loomis:

At your request Lattrell Ecological Consulting, LLC (LEC) conducted a site visit at two locations in Pelham Lake Park on January 25, 2016. The purpose of this site visit at Percy Point was to evaluate the Eastern White Pine (*Pinus strobus*) die back and to suggest what might replace some of the dead trees that need to be removed. The purpose of the site visit to the hemlock near Potter Brook was to suggest plantings to replace the tree in the event it is removed.

Percy Point

The eastern white pines on the point are in decline. It was suggested that this decline may be due to both the high water table and soils contaminated by road salt. Although these are likely contributing factors it is my initial opinion that the decline is more complicated than a combination of the high water table and road salt in the soil.

I am struck by the fact that the trees have fallen into decline only in recent years. Judging by the size of the white pines on Percy Point they have inhabited this small peninsula for some time. Also younger white pines have impacted to a greater degree; most have died. Also other tree species in this area are not showing an immediate signs decline or disease.

After examining the eastern white pines in the area it is my initial opinion that the white pines are experiencing either white pine decline or white pine root decline. White Pine decline is caused by complex abiotic (environmental or site related) factors. It is not reversible. Symptoms include light green to yellow needles, reduced annual shoot growth, short needles, and a sparse canopy. The white pines on Percy Point reveal all of these symptoms.

White Pine Root Decline is caused by root fungus. There are 4 separate fungi that can cause the disease. Symptoms include delayed bud break and reduced candle elongation, yellow to brown needles, and tree death. Also tree resin can often be seen on cankers near the root crown. It can easily be diagnosed by evaluating the roots. A cross-section of white pine roots will reveal a healthy white inner root while a cross-section of an infected root will be brown. It also not considered to be reversible once it has taken hold in a white pine plant community.

Both ailments would only impact the white pine on Percy's Point.

It is the suggestion of LEC that the Conservation Commission allow the removal of these trees during the winter season when there removal will have the least ecological impacts due to the frozen conditions. They can condition the replanting of trees to replace those that have been removed. During the next growing season we can do a more thorough evaluation to determine the cause of the decline and suggest new tree sapling plantings that will do well in an environment that has high water table, soil compaction, and potential soil salt contamination issues.

Large Hemlock Removal near Potter Brook

I concur that the old hemlock near the bridge over Potter Brook is leaning, in poor health, and will eventually fall down. It occurs to me that any large storm, including storms that could occur in the near future, could send this tree to its final demise. The tree is leaning towards the steel bridge and could result in significant damage to the bridge if it were to fall.

We do not recommend replanting another eastern hemlock (*Tsuga canadensis*) in its place. The hemlock adelgid is already found in nearby locations and will likely infest Pelham Lake Park at some point. In the long term this pest kills the hemlock tree and has been known to deforest large areas. Therefore we believe it would be best to plant another species. Balsam Fir (*Abies balsamea*) is a native tree that is found throughout the Potter Brook watershed. We recommend planting two four foot saplings to replace the failing eastern hemlock after it is removed. They could

be located slightly (about 15') to a nearby area where there is more available light in the over story.

Thank you for consulting with Lattrell Ecological Consulting LLC. We look forward to working with you in the future.

Sincerely,
Lattrell Ecological Consulting, LLC



William A. Lattrell, PWS
Restoration Ecologist and Professional Wetland Scientist

Copy:

Rowe Conservation Commission
Mark Stinson, MA DEP, WERO