Findings from the Field

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HWA Found in Jameson Woods, Old Orchard Beach

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Loranger Memorial School Nature Note
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Hemlock Woolly Adelgids (HWA) are an invasive species that uses Eastern hemlock trees as hosts for their food source and nesting. Their young suck the sap from the base of the hemlock needles, slowly killing the tree. On April 22, 2019, we found HWA in the forest behind Jameson Elementary School. We knew it was HWA because it had its distinctive white egg sacs. The HWA was on the underside of the hemlock branch at the base of the needles. There were only a few egg sacs so we believe it's just starting and will spread up the tree. It will kill the tree in 4 to 10 years depending on how fast the HWA spreads. We learned this from the rangers at Ferry Beach State Park.

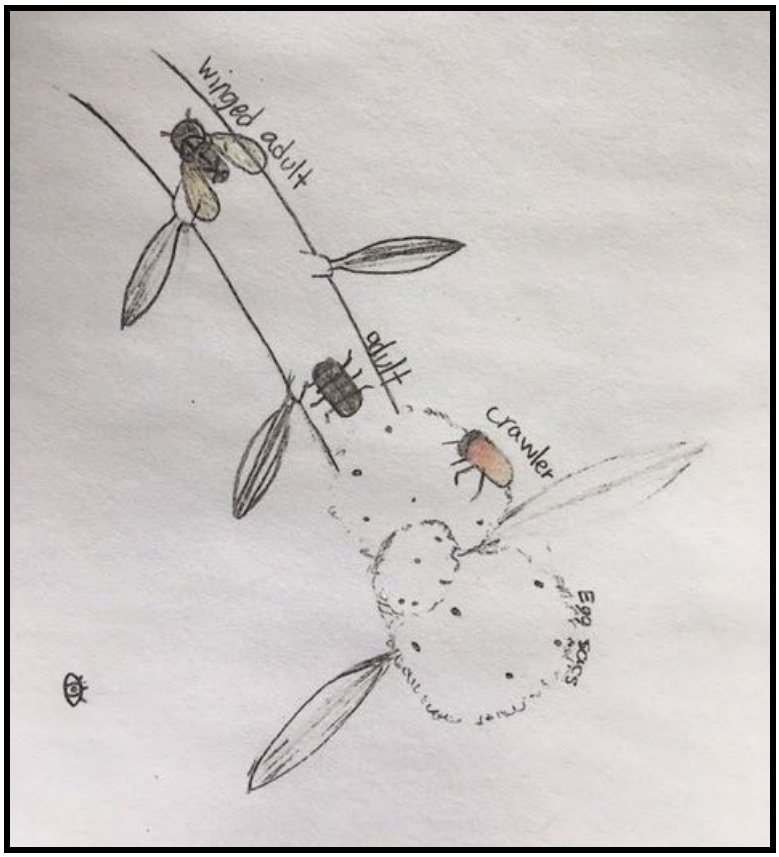
We predict the HWA will spread because there was a decent amount of hemlock around and quite a few carriers. Carriers are things that can spread HWA to different locations. Animals as well as abiotic factors of the surrounding environment can be carriers. An example of an abiotic carrier is wind, which can allow HWA to move from tree to tree. We heard birds and squirrels, which could potentially spread the HWA to different parts of the forest. A lot of people go into the woods since it is right behind Jameson School. The tree is on the main trail where people could easily pick up and spread the HWA by accident.

We could cut off the infected branch and put it in a bag to attempt to possibly resolve the situation, but we did not do that because we don't want people to go around unintentionally harming hemlock trees. We do not want to use pesticides because the school is Pre-K to Second Grade. Pesticides could potentially be dangerous to humans,

so we have come to the conclusion to refrain from using them. The tree is flagged, allowing us to find it and check it routinely to see if the HWA has spread.

We were surprised to see HWA on the tree because that means the HWA managed to live through the winter. This is surprising because HWA doesn't prefer colder temperatures. We learned this at Ferry Beach Nature Center. However, we know that winters are getting warmer due to climate change because we looked at data of past winters' coldest temperatures from 1980-2017 in every county of Maine. The trend line rising in all the graphs shows that the winters are getting warmer, at least in Maine.

Usually rain and wind can take off HWA, but some stay on through the winter. Wind and rain could wash HWA off the tree, but with large trees, the branches act like a shield and protect the HWA. 50% of the adults are winged and can fly to another host. However, the other 50% don't fly. If they stay on the tree, they can reproduce and proceed to kill the tree. In future years, we predict most of the hemlocks will die in the Jameson forest. Birds and squirrels use hemlocks for food and shelter. If all the hemlocks die, that will affect the animals living in the forest.



This is a drawing of HWA throughout its life cycle, drawn by our own Ih-Z G from Old Orchard Beach. There are 100-300 eggs in one tuft or egg sac.