Hemlock woolly adelgid (Adelges tsugae) sampling method

Find a hemlock tree or stand of hemlock trees

On each tree, find 5-10 branches you can safely reach

Check the **JUST LOOKING AROUND** sampling method on the datasheet

In your **FIELD NOTES**, write down:

1. The number of trees you are checking for hemlock woolly adelgid (HWA)
   Example: “We are looking for HWA on 2 small hemlock trees.”

2. Number of branches you are checking per tree
   Example: “On each tree, we are checking 8 branches for HWA.”

   ** This information is important so scientists and others who use your data know how extensively you looked.

Turn each branch over. Look at the **UNDERSIDE** of each branch. Hemlock needles often have 2 white stripes on their undersides:

If you can reach, examine the entire branch from tip to trunk.

Do you see the adelgid’s white fluffy sacs along the undersides of the branches? Check out the Vital Signs species card for more photos and key identification characteristics: http://vitalsignsme.org/species-identification-resources

Mark on the datasheet whether you think you **FOUND** or **DID NOT FIND** the adelgid.

Your photo evidence should focus on the UNDERSIDES of the branches and needles. Use the Vital Signs species identification card to guide you as you write evidence statements and take photographs: http://vitalsignsme.org/species-identification-resources

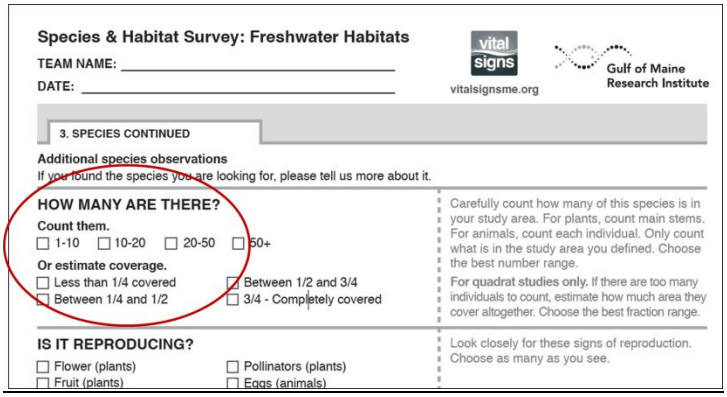
If you FIND hemlock woolly adelgid, try to estimate how much of the branches are covered. Use these ranges to help you estimate:

- Less than ¼ covered
- Between ¼ and ½ covered
- Between ½ and ¾ covered
- ¾ to completely covered

Record your estimate on the datasheet:

- If you are doing a **Species Survey**, write this estimate in your Field Notes.
  Example: "The branches were less than ¼ covered with the white sacs."

- If you are doing a **Species & Habitat Survey**, record this estimate on Page 3 of the datasheet: "How many are there? Estimate coverage." You can also add a note about the coverage in your Field Notes.



Species & Habitat Survey: Freshwater Habitats

TEAM NAME: _____

DATE: _____

vitalsignsme.org

Gulf of Maine Research Institute

3. SPECIES CONTINUED

Additional species observations

If you found the species you are looking for, please tell us more about it.

HOW MANY ARE THERE?

Count them.

☐ 1-10 ☐ 10-20 ☐ 20-50 ☐ 50+

Or estimate coverage.

☐ Less than 1/4 covered ☑ Between 1/2 and 3/4

☐ Between 1/4 and 1/2 ☐ 3/4 - Completely covered

Carefully count how many of this species is in your study area. For plants, count main stems. For animals, count each individual. Only count what is in the study area you defined. Choose the best number range.

For quadrat studies only. If there are too many individuals to count, estimate how much area they cover altogether. Choose the best fraction range.

IS IT REPRODUCING?

☐ Flower (plants) ☐ Pollinators (plants)

☐ Fruit (plants) ☐ Eggs (animals)

Look closely for these signs of reproduction. Choose as many as you see.

Thanks for looking and adding your HWA observations to the Vital Signs database!

Was this sampling method easy to understand? Let us know what was confusing: vitalsigns@gmri.org