

Hemlock Woolly Adelgid Impact Plots

Adapted from Orwig and Foster 1998 by Allison Kanoti, Maine Forest Service November 2011

References:

- Orwig, D.A. and D.R. Foster 1998. Forest Response to the Introduced Hemlock Woolly Adelgid in Southern New England, USA. Journal of the Torrey Botanical Society. 125(1): 60-73 Orwig Paper: http://harvardforest.fas.harvard.edu/publications/pdfs/Orwig_JTorreyBotSoc_1998.pdf
- P2 field guide: <http://www.fia.fs.fed.us/library/field-guides-methods-proc/docs/Complete%20FG%20Document/NRS%20FG%205.0-Oct%202010-Complete%20Document.pdf>
- P3 Crown Manual: http://www.fia.fs.fed.us/library/field-guides-methods-proc/docs/2011/field_guide_p3_5-0_sec23_10_2010.pdf

Site: Hemlock dominated stand with 3 circular plots on a transect oriented along the central axis of the stand

- **Azimuth** of transect
- **Elevation** (from topo layer)
- **Notes** to find plot, any other necessary

Plots:

- 3 per site, goal of 5 sites/state
- Default distance between *plot centers*: **40M** (131.2 feet), if different note on sheet in space provided. ME Note: to avoid walking off the loggers tape, measure in 2 increments of 20 meters or measure with English equipment.
- 0.04 ha, 400m² [$400\text{m}^2 = \pi(r^2) \dots 400\text{m}^2/\pi = 127.323954 \dots \sqrt{127.323 \dots} = 11.28\text{m radius circle}$]
- **11.28 meter radius**

Plot Level Descriptions:

- **Location:** *Averaged* center location for all 3 plot centers, d.dddd, lat/long
- **Slope:** As described in P2 manual starting on page 91.
- **Aspect:** As described in P2 manual starting on page 92 (000 (no slope) to 360 (N))
- **Vegetation cover (% cover fern...from P3)**

Plot Measurements:

- **Regeneration** Tree species at least 1.4 meters in height, <8 cm diameter
 - Tally of number by species on entire plot (dot tally, number)
- **All live and recently dead trees** greater or equal to 8 centimeters:
 - Distance to center of base of tree(M)
 - Azimuth to center of base of tree(001 to 360)
 - DBH (cm) (As described in P2 manual starting on page 116)
 - Crown Class (As described in P2 manual starting on page 132, with the addition of 0 to indicate recently dead trees))
- **Hemlock** trees greater than or equal to 8 cm only
 - Infestation status (0 (no), 1 (yes))
 - Other pests (0 (no), 1 (yes), indicate what in notes)
 - Height to live crown base (although this is not a P3 measurement, it must be determined to record uncompact live crown ratio, see manual starting on pg. 7)
 - P3 Crown Density, as described in P3 crown manual starting on pg. 15, ME
 - P3 Foliage Transparency, as described in P3 crown manual starting on pg. 20, ME
 - Retained Foliage (Harvard Forest, after regional training with Orwig)