



Bird Habitat Inventory Field Procedures

This protocol was designed by Audubon Vermont biologists and Vermont foresters to be used to monitor changes in forest bird habitat and timber resource in forest stands over time. However, it may also be used as an adaptable template for foresters who want to integrate inventory of bird habitat features into a traditional forest inventory or timber cruise.

Materials

- Monitoring field procedures, blank data forms, map, clipboard, pencils, and camera
- GPS and extra batteries; compass
- Prism; DBH tape or Biltmore stick
- 25x25 square checkerboard transparency for estimating % canopy cover

Photos - optional

Take at least 1 north-facing photo at each plot.

Overstory Tree Plot and Stand Data

Collect tree, plot, and stand data that – at a minimum – meets VT UVA requirements using your preferred forest inventory method. **Also include data on snags, cavity trees, and presence of rocky-bottomed streams and wetlands.**

At a minimum, plot data/observations should include:

- Tree data: Species, DBH, AGS/UGS/Dead, Cavity (Y/N)
- Regeneration data
- Forest health observations

Bird Habitat Plot Data

The following data provide important measures and assessments of habitat features that are important to forest birds, but are not necessarily standard elements of a timber cruise. These data should be collected in addition to the standard forest inventory at each overstory plot. Unless otherwise noted, data is collected over the visual acre.

Canopy Height: Estimate height range of canopy: <20', 20-60', or >60'.

Overstory Cover (%): Record an ocular estimate of % cover for overstory vegetation greater than 30 ft. in height; 10% increments are adequate. Use the 5x5 checkerboard method to help calibrate your eye: Hold the transparency in a horizontal position over your head. Count the number of squares in which tree crowns (rather than sky) occupy more than half the square. Multiply that number times 4 to estimate percent crown closure for that point (be sure to record estimated % cover over the visual acre – not just directly over the plot center).

Overstory Distribution: Select “patchy” or “evenly distributed.”

Midstory Cover (%): Record an ocular estimate of % cover of foliage of woody stems in the 5-30' midstory in 25% increments: 0% - None; 25% - Low; 50% - Medium-Low; 75% - Medium-High; 100% - High. Include non-native, invasive plants if present in this layer.

Midstory Distribution: Select "patchy" or "evenly distributed."

Midstory Type: Enter whether midstory is hardwood, softwood, or mixedwood in type.

Understory Cover (%): Record an ocular estimate of % cover of foliage of woody stems in the 0-5' understory in 25% increments: 0% - None; 25% - Low; 50% - Medium-Low; 75% - Medium-High; 100% - High. Include non-native, invasive plants if present in this layer.

Understory Distribution: Select "patchy" or "evenly distributed."

Understory Type: Enter whether midstory is hardwood, softwood, or mixedwood in type.

Soft Mast: Select whether "present" or "absent." List species present such as *rubus spp.*, elderberry, dogwood, apple, and pin cherry.

Non-native, Invasive Plants: Record an ocular estimate of % cover of foliage of non-native, invasive woody plants in 25% increments: 0% - None; 25% - Low; 50% - Medium-Low; 75% - Medium-High; 100% - High. Include all height ranges. List species present.

Leaf Litter: Select whether "adequate" or "inadequate."

- Adequate = Deciduous leaf litter is present, thick, and moist over most of (>75%) of the visual acre. Conditions are well-suited for ovenbird nesting and wood thrush foraging.
- Inadequate = Leaf litter is not deciduous OR is deciduous, but covers < 75% of the visual acre, is not thick, and/or is desiccated. Conditions are not well-suited for ovenbird nesting or wood thrush foraging.

Coarse Woody Material (CWM): Record number of logs/branches >3ft in length and >10 inches in diameter **within a /10th acre fixed-radius (37.2 ft.) plot** around overstory plot center. For the purposes of this project, it is sufficient to estimate the radius (~40 ft.) from the plot center; exact measurements are not required. Only count qualifying items. Any piece partially in the radius is included. Dead trees leaning >45° are consider CWM; otherwise they are standing dead (snags).

Fine Woody Material (FWM): Record number of piles of FWM **within a /10th acre fixed-radius (37.2 ft.) plot** around overstory plot center. For the purposes of this project, it is sufficient to estimate the radius (~40 ft.) from the plot center; exact measurements are not required. Piles are clustered groups of small branches < 3" in diameter (tree tops, slash etc.) that would be sufficient to provide cover and feeding opportunities for birds. Only count qualifying items. Any pile partially in the radius is included.

Birds Observed: List all identified species (seen and/or heard) during your time at the plot.

Questions? Contact Kristen Sharpless at ksharpless@audubon.org or Nancy Patch at nancy.patch@state.vt.us