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

Foresters for the Birds Integrated Inventory - Sample Data Form

Property: _____ BAF:_____ DATE:_____

PLOT ID: _____ Technician: _____ GPS Point ID: _____

VARIABLE-RADIUS PLOT								HABITAT ASSESSMENT

Tree	Species	DBH	#16-ft Logs	Pulp Height	AGS/ UGS	Cavity (Y/N)	Living/ Dead
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

Birds Observed | **Notes**

HABITAT ASSESSMENT

Understory (0-5')

density:	absent	low	med	high
species:				

Midstory (5-30')

density:	absent	low	med	high
species:				

Coarse and Fine Woody Material

CWM abundance:	absent	low	med	high
drumming logs (>8in):	absent	present		
FWM/brush piles:	absent	low	med	high

Leaf litter | lacking | abundant

Canopy

height:	<20 ft	20-60 ft	>60 ft
closure:	<30%	30-80%	>80%
canopy gaps:	present	absent	
distribution:	uniform	patchy	

Water

stream	present	absent
wetland	present	absent

Species

soft mast

invasives (and extent of invasion)

Silviculture with Birds in Mind
Bird Habitat Data Field Sheet

Property: _____ Plot ID: _____ GPS ID: _____

Technician: _____ Date: _____ BAF: _____

Photo(s)				
Canopy Height:	<20 ft	20-60 ft	>60 ft	
Overstory (30'+)				
% cover				
distribution:	uniform	patchy		
Midstory (5-30')				
% cover:	0%	25%	50%	75%	100%
distribution:	uniform	patchy		
type:	hdwd	softwd	mixed	
Understory (0-5')				
cover	0%	25%	50%	75%	100%
distribution:	uniform	patchy		
type:	hdwd	softwd	mixed	
Soft mast				
presence:	present	absent		
species:				
Non-native invasive woody plants				
cover:	0%	25%	50%	75%	100%
species:				
Leaf litter		adaquate	inadaquate	
Coarse woody material (CWM)				
(# of pieces >10 in diameter and >3 ft long in 1/10 acre sub-plot)				
Fine woody material (FWM)				
(# of piles and tops in 1/10 acre sub-plot)				
Birds Observed	**Notes**			

VISUAL ESTIMATES OF PERCENTAGE COVER

Use these reference figures to help estimate the percentage of canopy cover and the percentage of low vegetation cover. We suggest you laminate this copy so it will last longer in the field.

10%

20%

30%

40%

50%

60%

70%

80%

90%