

Vermont 1994 Detection Survey Minimum Standards

Objectives

1. To detect any damage to the forest.
2. To produce maps of known accuracy showing the location and extent of forest damages.
3. To provide additional information about forest health survey plots.
4. To look for oak wilt disease centers.
5. To determine the cause of major or unknown forest damages.
6. To provide timely reports on forest damage.
7. To meet minimum reporting thresholds for national forest health monitoring.

Methods

Pre-flight

1. Determine areas adjacent to district boundaries which will be mapped to provide overlap between districts. Overlapping lines will be used to determine mapping accuracy. Overlapping flight lines should add 4% to the total length of lines flown.
2. Assemble 7-1/2 minute maps for 100% coverage of the district and overlapping check areas.
3. Mark maps with flight lines 3 miles apart and with NAMP and Forest Health Monitoring plots.
4. Identify areas mapped last year which need to be rechecked.
5. Prepare pilot's navigation map.
6. Contact regional specialist.

Flying Requirements

1. Adequate visibility (generally adequate if air service visibility of 10 miles or more).
2. Two trained aerial observers.
3. Equipment:
 - Complete set of district maps
 - Navigation map
 - Pencils or Markers
 - Camera
 - Map board or Roller
 - Notepad or Tape Recorder
 - Polaroid Sunglasses (optional)
4. Normal flying altitude will be 1000-1500' above the terrain.

Sketchmapping

1. Determine size of a 250-acre block, and calibrate eye by flying over known areas.
2. Map in all damages observed, including defoliation, recent mortality, dieback, off-color (more another color than green), breakage, and thin crowns. Circle back if necessary.
3. For all polygons, record kind of damage or damage agent.
4. For all damages except mortality, record severity on affected trees as:
 - M - Moderate < 50% of crown affected
 - H - Heavy > 50% of crown affected
5. For all polygons, record damage pattern as 0-4.

	% of Polygon Area Affected		
	<30%	30-50%	>50%
Has undamaged areas > 250 acres	0	1	3
No undamaged areas > 250 acres	0	2	4

6. Check all Forest Health Monitoring and NAMP plots for damage. Photograph any plots with damage.

7. Look for any areas with symptoms resembling oak wilt.
8. For each kind of damage mapped, indicate several typical areas to be ground checked.
9. On subsequent flights, indicate if defoliated areas have not refoliated.

Post-Flight

1. Identify several areas of each damage type which will be ground checked.
2. Contact regional specialist about damage observed.
3. Record codes used, survey dates and other notes on aerial survey report.
4. Provide maps of any damage on state lands to the state lands forester.
5. Report damage on health survey plots to Sandy, and send photos when available.
6. Review survey maps to make sure all mapped areas are coded and that polygons are closed.
7. Ground check designated polygons. Areas with foliar symptoms should be checked before damaged foliage drops or refoliation occurs. Verify location, size, species affected, cause of damage, symptom severity, and proportion of overstory trees affected.
8. Modify and update survey maps as needed based on ground checking and subsequent observations.
9. Estimate mapped area by damage by county.
10. Archive survey maps by xeroxing mapped areas.
11. Submit aerial survey reports to regional specialist by 10/30.

Detection Survey Codes

Kind of Damage *(all polygons)*

Be	-	Beech Bark Disease
BLM	-	Birch Leaf Miners/Skeletonizers
BS	-	Bruce Spanworm
Fire	-	Fire
Fr	-	Frost
FTC	-	Forest Tent Caterpillar
GM	-	Gypsy Moth
HL	-	Hemlock Looper
MLC	-	Maple Leaf Cutter
SBW	-	Spruce Budworm
SP	-	Saddled Prominent
SWI	-	Spruce Winter Injury
Th	-	Thrips
Wet	-	Wet Feet
Br	-	Brown foliage, Scorch
Brk	-	Breakage
Chl	-	Chlorosis
Color	-	Premature Fall Color
Dead	-	Mortality
Defol	-	Unknown Defoliation
Dk	-	Dieback
Thin	-	Thin Crowns
Seed	-	Heavy Seed
Hdwd	-	Hardwood
HK	-	Hemlock
Ms	-	Sugar Maple
Pr	-	Red Pine
Pw	-	White Pine
SF	-	Spruce &/or Fir

Severity on Affected Trees *(all except mortality)*

M	-	Moderate	< 50% of crown
H	-	Heavy	> 50% of crown

Damage Pattern *(all polygons)*

	% of Polygon Area Affected		
	< 30%	30-50%	> 50%
Has undamaged areas > 250 acres	0	1	3
No undamaged areas > 250 acres	0	2	4