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Attached is information on monitoring spruce budworm in Maine. Please consider participating in this region-wide effort to follow the development of this insect infestation that may effect the quality of the spruce/fir resource in Maine.

If you are interested in setting out spruce budworm pheromone traps, please contact:

Charlene Donahue  
Insect & Disease Laboratory  
168 State House Station  
Augusta, Maine 04333  
(207)287-3244 or  
[charlene.donahue@maine.gov](mailto:charlene.donahue@maine.gov)

#### Maine Spruce Budworm Population Prediction Survey

**Background:** Although spruce budworm populations declined sharply and remained at very low levels in Maine after the 1970s-80s outbreak, populations are again increasing across the region.

- Quebec has a very large and severe SBW outbreak to our north with over 10.5 million acres of SBW defoliation; most north of the St Lawrence, but now expanding south to almost the New Brunswick border.
- In New Brunswick the number of SBW moths caught in pheromone traps is up sharply.
- In Maine, the number of SBW moth caught in both pheromone traps and light traps increased significantly, mirroring NB trends.

SBW is an insect that goes into outbreak mode over vast regions and flights of moths from heavily infested areas can migrate to new areas. It appears we are now entering that phase.

In response to this increased threat, the MFS is increasing its pheromone trap network to 400-500 sites across the northern half of the State.

#### Methods:

Spruce budworm traps will be placed at appropriate sites across the northern half of Maine, spaced to monitor as much of the area as possible. The Maine Forest Service is asking interested landowners to coordinate with/through the MFS to avoid duplication of effort and to maximize information sharing across the region.

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The trapping method follows standardized protocol used by both Canadians and Americans since 1986.

Site locations: 400-500 sites in the northern half of the State.

Place traps in same locations as previous year if possible. Follow major road systems; approx. a trap every six miles or one/township. Place traps in stands that are 25 acres or larger and at least 50% pole-sized or larger spruce/fir. Use sites where landowners have an interest in monitoring for spruce budworm.

### Trap Deployment

Make sure traps are CLEAN before deploying (drain holes in bottom are open)

Each sample site will be a 3 trap cluster and must be located in a spruce-fir stand.

- Sites:
  - Mature or pole sized trees
  - Uncut or lightly cut spruce-fir stands
  - Of high value to landowner
  - Can be PCT or shelterwood stands.
- Trapping:
- Place trap at a point of average elevation for the general area or higher.
  - Low areas such as stream beds or gullies should not be chosen.
  - Cover at the trap site should be relatively dense; avoid sparse cover.
- Trap site should be 130 feet from the road and
- Arrange traps in a triangle with traps 130 feet from each other.
- **GPS** locations. Flag by the road and at each trap tree so that the sample could be replicated in subsequent years (and to facilitate recovery of the traps). Hang each trap on a sound branches of a host tree, at least 5 feet above ground.
  - Ensure that there is no living foliage touching the trap (which may attract female moths and other insects), and
  - That the trap is hanging free of obstructions.
- **Place traps during the first three week of June** before the moth flight. The moth flight usually occurs at the end of June- July.
- After the trap is hung on the branch double-check to ensure that the pheromone lure is in place and that there is an insecticide strip in the bucket.

### The trap:

A pheromone trap consists of three parts: 1) pheromone lure 2) killing agent 3) trap

### Lure:

- Polyvinyl-chloride pellet with the pheromone incorporated into the plastic to provide a slow, controlled rate of release to last throughout the moth flight period.
- Immediately upon receipt place the lures in a freezer, or if not available, a cool place. Avoid at all times direct sunlight, or excessive heat (do not place them on the dashboard or in the glove compartment of a car).
- There is a lure 'basket' on the trap lid. Attach the lure to the basket using the tabs on the lure.
- Lures may be mounted in the traps and the traps assembled the day before being deployed, provided they are kept in a cool shady place. Avoid putting the insecticide in until the trap is being deployed.

### Killing Agent (Insecticide)

The killing agent is a plastic strip impregnated with dichlorvos (DDVP). The particular brand used is "Vaportape II". Each tape is individually wrapped. Keep in a cool place until use, but not where food or live insects are kept. Open packet and place Vaportape in trap at time of deployment. The strip can be placed in the bucket of the trap through the hole in the funnel after the trap is assembled. Avoid handling the strip, and do not carry large numbers of traps in the car with the exposed tape in them for any length of time - the fumes are poisonous.

### Trap:

The Multipher trap is a high capacity re-usable trap, capable of monitoring spruce budworm moth populations over a wide range of densities. Using the lure provided, catches will range from 0-20 at low population densities to over 1000 at high densities.

To assemble trap:

- Place funnel inside cup
- Attach basket to lid
- Attach lure to basket
- Take pesticide strip out of wrapper and drop into cup
- Screw lid onto cup
- Attach wire
- Hang on tree

### Data Collection

- Collect the traps after **mid-August**. (Alternatively, the traps can be left out until early October so that hemlock looper moth will also be collected in traps.)
- Empty contents of traps into a ziplock bag
  - label the bag with the sample site location.
  - All three trap catches can be put in one bag.
  - Note if any traps did not collect insects (missing, damaged, on ground etc.)
  - Attempt to make collections on a dry day so that the sample will not rot before it is checked.
- Send data and insects to lab.
- Properly dispose of kill strip, clean traps and store for winter. Note any damaged or missing traps or parts that need replacing.

Send samples to:

Charlene Donahue  
Insect & Disease Laboratory  
168 State House Station  
Augusta, Maine 04333

All materials will be provided by the MFS.

**Training:** MFS will provide cooperators a brief update of procedures prior to the field work as needed.

Questions? Contact Charlene Donahue at (207)287-3244 or [charlene.donahue@maine.gov](mailto:charlene.donahue@maine.gov)

Number of Sites Monitored for Spruce Budworm in 2014

Land Manager	Number of Sites Monitored
American Forest	22
Appalachian Mountain Club	5
Baskahegan	9
Baxter State Park	9
HC Haynes/Lakeville Shores	7
Huber	14
J. D. Irving	93
Katahdin Forest	16
LandVest	33
Materiex Blanchet	1
MFS	46
North Maine Woods	6
Orion Timberlands	21
Parks + Lands	8
Penobscot Exp Forest	1
Penobscot Nation	11
Plum Creek	31
Prentiss + Carlisle	14
Seven Islands	47
USDA-FS	7
Wagner Forest Management	11
<b>Grand Total</b>	<b>412</b>

Spruce Budworm Pheromone Trapping Supply Inventory

Cooperator:		Date:
Item	Number in Good Condition	Need Replacing
TRAPS		
bucket		
funnel		
lid		
birdie		
hanger		
	Number on hand	
kill strips		
lures STORED IN FREEZER		

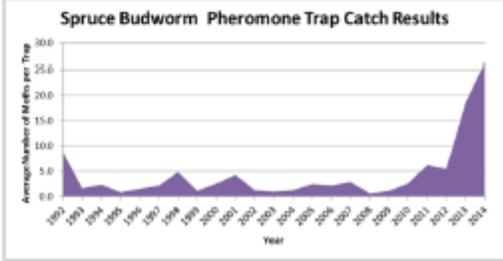
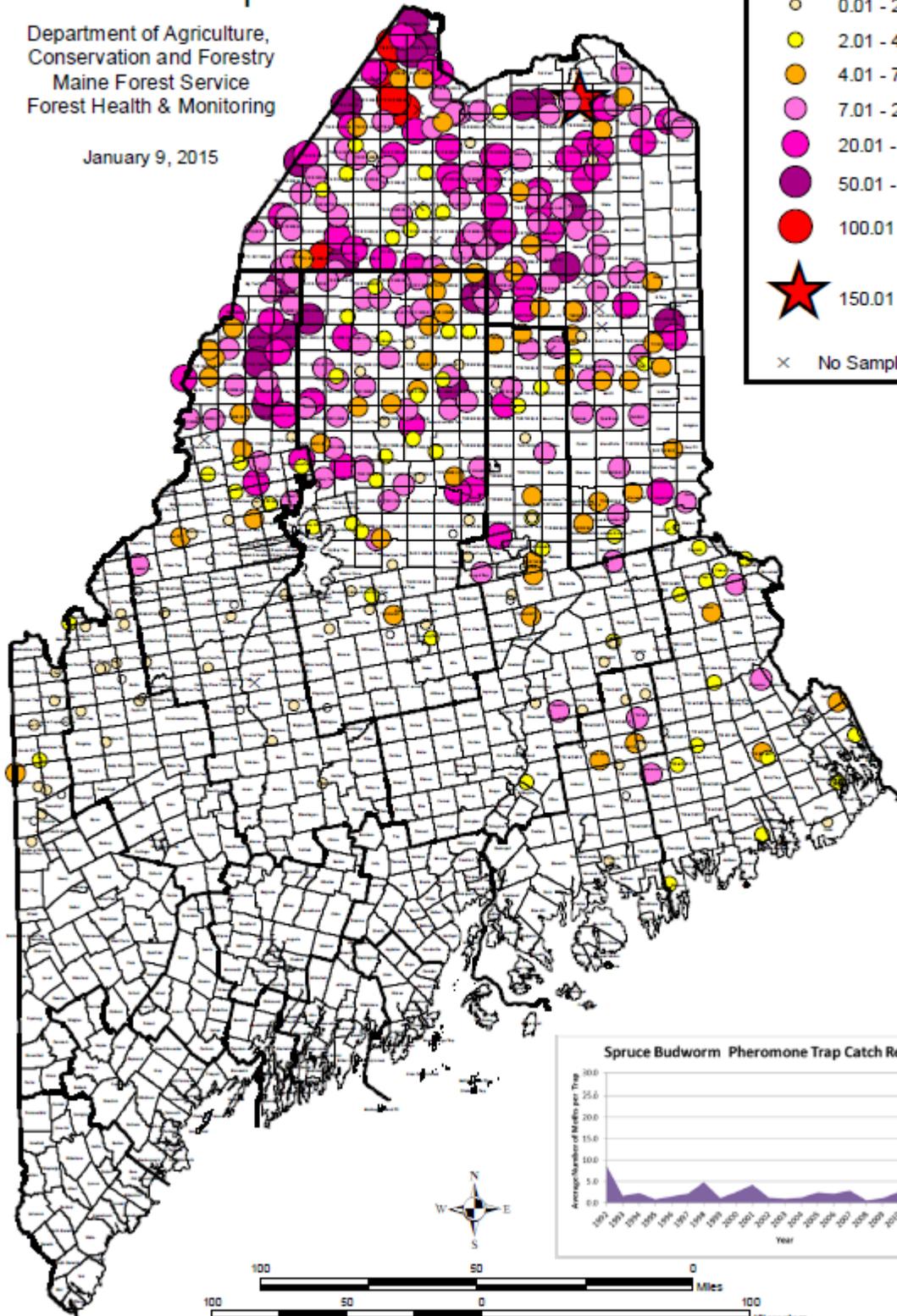
# 2014 Spruce Budworm Pheromone Trap Catches

Department of Agriculture,  
Conservation and Forestry  
Maine Forest Service  
Forest Health & Monitoring

January 9, 2015

## 2014 Trap Catches

- 0.0
- 0.01 - 2.0
- 2.01 - 4.0
- 4.01 - 7.0
- 7.01 - 20.0
- 20.01 - 50.0
- 50.01 - 100.0
- 100.01 - 150.0
- ★ 150.01 - 211.0
- × No Sample



G.T.Miller:bugs/stw/2014 trap catches with priority areas.mxd