STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
MAINE FOREST SERVICE –FOREST HEALTH & MONITORING
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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 17 million acres of SBW defoliation; most north of the St Lawrence, but also in the Gaspe penninsula south to the New Brunswick border. Defoliation was seen within 30 miles of Maine's border in 2016.
- In New Brunswick they are planning their fourth year of treatment under the Early Intervention Strategy research program. Light defoliation was mapped in the province in 2016.

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

In response to this increased threat, the MFS is working with cooperators to increase Maine's pheromone trap network to 400-500 sites across the northern half of the State.

See www.maineforestservice.gov or www.sprucebudwormmaine.org for more information about spruce budworm in Maine.

Enclosures:

1 - Trapping Directions (NOTE: Instructions & data sheet will be linked from the Maine Forest Service Spruce Budworm webpage accessed by scanning the QR code below with a "smart" device or at www.maine.gov/dacf/mfs/forest_health/insects/spruce_budworm_2014.htm.)

1 - Label and SDS for Pesticide Strips (available from: http://www.herconenviron.com/insecticidal-strips.php)

1 - SBW Pheromone Trapping Data Sheet

1/trap - SBW Lures

1/trap – Hercon Vaportape II Pesticide Strips

1/Site - Labels for Collection Bags

1/Site - Gallon Plastic Bags

Traps – as requested

Replacement Trap Parts – as requested

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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.

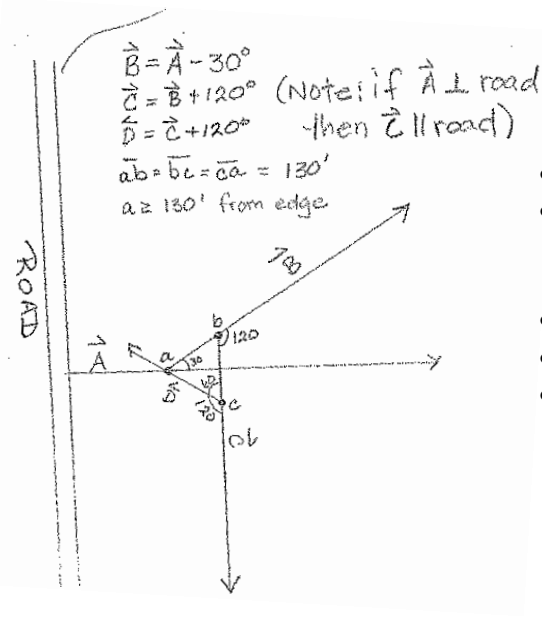
The trapping method follows standardized protocol used by both Canadians and Americans since 1986.

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 pesticide strip in the bucket.

The trap:

A pheromone trap consists of three parts: l) 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).
- A lure 'basket' (birdie) is clipped to the trap lid. Attach the lure to the basket by weaving it in to the basket.
- 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 traps in the passenger compartment of the vehicle 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 l000 at high densities.

To deploy trap:

Take pesticide strip out of wrapper and drop into bucket
Place funnel inside bucket
Attach basket to lid
Attach lure to basket
Screw lid onto bucket
Attach wire to lid
Hang on tree branch, about 5' from the ground and 20" from the bole of the tree.
Double check lure/pesticide strip are in place
Flag tree

Data Collection

- At deployment, collect GPS coordinates from location of first trap (WGS 84 or NAD 83)
  - Send deployment data to MFS after traps are set.
- 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 and L2 samples can be collected concurrently)
- Empty contents of traps into provided resealable plastic bag
  - Label the bag with the sample site location, date of collection, number of traps collected.
  - Discard samples from damaged traps. Note on bag how many traps were collected, and condition of traps not collected (missing, damaged, on ground, etc).
  - Samples from all intact traps on site should be combined in one bag.
  - Attempt to make collections on a dry day so that the sample will not rot before it is checked. If not, put a paper towel in with the sample.
- Send, deliver or arrange for pick up of samples:
  Allison Kanoti, allison.m.kanoti@maine.gov, (207) 827-1813
  Maine Forest Service
  PO Box 415 (87 Airport Road)
  Old Town, ME 04468
- Send data with samples and/or electronically.
- Properly dispose of pesticide strip, clean traps and store for winter. Note any damaged or missing traps or parts that need replacing.

Questions? Contact Allison Kanoti at (207)827-1813 or allison.m.kanoti@maine.gov

Thank you!