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Spruce Budworm L2 monitoring involves the collection of fir or spruce branches from 3 trees per site that are then brought to the processing lab at UMaine. The branches will be evaluated for defoliation estimates and then they will undergo a chemical process that results in all larvae being separated from the branch. Once SBW larvae are counted, the site average L2 counts will be calculated and shared with landowners. Please read the following instructions and guidelines to ensure a successful processing season. Feel free to contact sprucebudworm@maine.edu with any questions you may have about the SBW monitoring program.

Due to additional financial support received in 2025, the number of sites paid for through the SBW monitoring program will increase from 350 sites to 700 sites. Landowners wishing to process additional sites beyond those included in the program can do so at a cost of $35 per site. Orders can be placed through the SBW Lab Store here.

Some FAQS

1. I have been collecting branches for the SBW monitoring program for years. Do I really need to read the rest of this protocol sheet?
A: Yes please! We are asking everyone to follow some **new steps** to ensure that everything is more efficient, especially now that SBW populations are elevated across a wide area.

2. I have had multiple sites processed. Should I collect from the same locations, even if some of the sites were new, purchased sites, last year?
A: If possible, yes. By having the same sites sampled year over year, we are able to draw conclusions about the changes in SBW populations. In addition, if some of your previous sites were sprayed this past spring, sampling from the same area is valuable in order to estimate spray treatment efficacy. Due to the additional funding, we will be able to accommodate many of last year's purchased sites as a part of this year's monitoring program.

3. What if some of my previous monitoring sites were harvested or sold since last year's sampling?
A: In preparation of the upcoming processing season you will be contacted by Angela Mech at the SBW lab regarding your previous monitoring sites. You will be asked to confirm which sites you will be collecting from this year and to notify them of any changes (such as harvesting) that they should note.

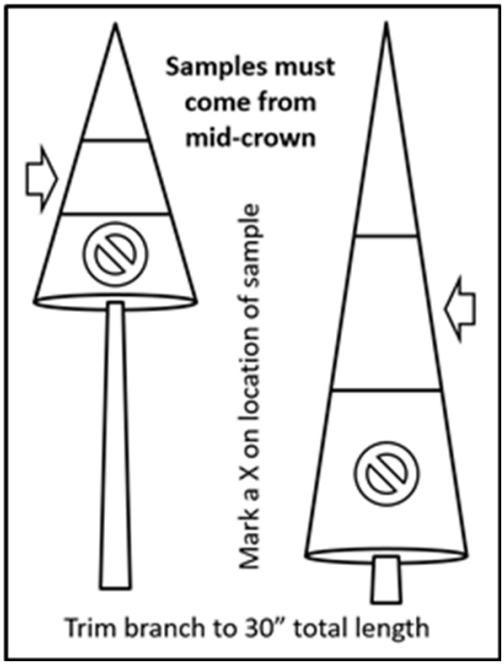
4. When are we able to start sampling and dropping off branches?
A: We will be processing a subset of ~175 sites in Maine to have an initial snapshot of the SBW population. Neil will be collecting these sites as soon as he sees L2s (estimated mid-August). We ask that everyone wait to collect/drop off their other sites until late-September or later so we can use the space we have for this first group of samples. Both Neil (UMFK drop-off) and Angela (UMaine drop-off) are increasing freezer space, but please stay in touch with them to confirm space is available to take your samples (especially if it will be more than 20 sites worth).

Collecting Guidelines and Protocols

When bags get dropped off, it takes time to enter the data and get the bags organized so we can store them. Less time doing this = more time to process samples ☺

Branch collecting notes:

- Sample from three (3) codominant trees of the same species, whichever is most abundant in stand
- Make sure the branch is exactly 30 inches. Branches cut smaller could underestimate L2 counts
- Branches MUST COME from the middle part of the crown, NOT the bottom



Collect from the middle of the crown. SBW females preferentially lay their eggs on the higher portion of the tree. Branches collected from the bottom of the crown may result in false negatives.

Branches should be 30 inches. Hotspot L2 values were determined based on the branch being 30 inches. Shorter branches could be underestimating the SBW population and subsequent risk.

Branch Bag Notes:

- **Fill in ALL lines** on the branch bags. Yes, it is tedious, but it really saves us a lot of time if we don't have to look things up or hunt people down to get the information
- Please make sure the handwriting is legible
- For new, purchased sites, include your company initials at the beginning of your ID name to reduce the chances of repeated numbers used as IDs (e.g., use IRV-1422 or LV-1812, not 1422, 1812). This also helps us to know who the site belongs to (and who to contact with results).
- **Make sure latitude and longitude values are in decimal degrees NOT degrees, minutes, seconds.** You only need to include one set of coordinates for all 3 bags (from the center of 3 trees)
- ****NEW**** Once you have measured the branch, cut it into 2 or 3 pieces so that the bag can be folded in half flat (see image below)
- ****NEW**** Tie all 3 branch bags together with flagging like you would a present (so there is horizontal and vertical support holding the bags together. Make sure the bag label is facing out before you tie the bags together (see image below)

Note – branches should be stored in a freezer until they can be transported to Fort Kent or Orono

Information to include on bag labels:

Location ID. This is the ID name you give to your site. It will be the ID used every year that site is sampled.
Examples:
- IRV-1411
- LV-1812
- SI-OT-C

If you have new sites, include your company initials at the beginning of your ID name to reduce the chances of repeated numbers as IDs

Tree #. 1, 2, or 3 depending upon which tree the branch was taken from

Sample Date. The date the branch was collected

Location ID:_____

Township:_____

Phero. Trap ID: _____

Latitude: _____

Longitude:_____

Tree #:_____

Sample Date:_____

Township. This helps us to recognize importance since certain townships are at a higher risk

Phero. Trap ID. If your sample site also had a SBW pheromone trap, include its ID, otherwise leave it blank

Latitude & Longitude. You only need to include one set of coordinates to represent the site (from center of 3 trees). This should be in decimal degrees, **NOT** degrees, minutes, seconds

Example of perfectly prepared bags that were dropped off:

- Branches cut in half
- Legible handwriting
- Bags folded and flat
- Tied and compact per site
- Labels facing out
- All data entered on bag
- Decimal coordinates

Dropping off samples:

1. For samples in the north, contact Neil Thompson neil.thompson@maine.edu 207-706-9228 to arrange sample drop-off at The University of Maine at Fort Kent.
2. Contact sprucebudworm@maine.edu or call 207-581-4834 for drop-off at the Spruce Budworm Lab in Orono, ME.

Other Notes:

- Sites will be processed in order of priority. This will be determined by Neil and Angela on the basis of last year's L2 counts and proximity to known populations, including observed defoliation and pheromone trap counts – we recognize that there is a deadline for insecticide orders for a 2026 spray program and will be prioritizing accordingly. Notify us if you observe unexpected defoliation during the sampling process.
- If you are considering adding more monitoring sites but wondering where they should be, contact Neil to set up a meeting to discuss recommendations
- The SBW processing lab in Orono has increased staff and space to accommodate the increased processing needs (~1,500 sites should be able to be processed by May 2026)
- Results will be provided by email to the addresses on file; please provide any additional addresses that should receive results
- You will also receive a link to a site that hosts an ArcGIS map that will be updated weekly with L2 counts and model estimates