



CANPOLIN 2009 Survey of Pollinator Diversity in Canada

Notice: Please contact Cory Sheffield (corysheffield@yahoo.ca) with any queries regarding equipment, protocols, permitting, or field site localities.

Sampling Protocol

Pan-traps

Pan-traps will be arranged along a linear transect. 30 pans will be set in a line, one every 3m alternating blue, yellow, and white. Therefore, the transect should be 87m long. Ideally the transect will be set along an East-West axis with a south facing aspect in order to maximize sun exposure. Pans should not be set in the shade or under heavy vegetative cover. The growth of vegetation may cause some interference with the pans, and microsites with bare ground or high visibility (from an insects P.O.V.) should be selected whenever possible. A pan placed in a high quality microsite can easily be seen from several meters.

Pans should be set once every 7-10 days throughout the field season which should result in about 10 collection events over the course of the season. The same locations should be used throughout the season. They should be placed out in the morning at 9am and collected at 4pm. Pan-traps are filled $\frac{1}{2}$ to $\frac{3}{4}$ full with soapy water prepared with 5 drops of Ultra Concentrated Original Scent Blue Dawn Dish Detergent per litre of water. The detergent will be supplied with the equipment shipment.

Data Collection

- Basics: Accurate GPS co-ordinates, Lat/Long or Degrees Decimal for site locations
Date and time of setting and retrieving
Within a transect the yellow, blue, and white pans should be separated into 3 collections.
- Advanced: Notes on pollinating insect activity and abundance around the transect on the day of sampling
Notes on flowering plants, pollen samples with associated plant ID or digital image taken around the transect on the day of sampling
Digital photographs of the habitat or transect over the season
Digital photographs of flowering plants at the landscape level

Trap-nests

Trap-nests are to be mounted 1-1.5m off the ground with the entrances facing south. Try to avoid shaded locations, and heavy vegetative cover. Trap-nests should be easily visible from a nearby/immediate clearing. 5 trap-nests should be placed in each site and should represent the same type of habitat. The group should be contained within a 100-200m range and should occur no closer than 500m from Malaise traps, or pan-trap transects. Preferably, the trap-nests would be set >2km from the pans and Malaise traps to avoid killing the cavity nesting insects.

Data Collection

- Basics: Accurate GPS co-ordinates, Lat/Long or Degrees Decimal for site locations
Date of installation and removal
- Advanced: Notes on activity at the trap-nests, including dates of gallery completions
Notes on nearby flora, pollen samples with associated plant ID
Digital photographs of trap-nests with associated dates
Digital photographs at habitat level
Digital photographs of nearby flowering plants

Malaise Traps

For those personnel receiving Malaise traps, mounting instructions will be shipped with the trap. Malaise traps should be established in forested and shaded settings to encourage the capture of flies (Diptera). For ease of maintenance, the collecting vessel can be emptied on the same day as pan-traps are set. This should ensure that the vessel is refreshed with 95% ethanol every 7-10 days during the course of the season.

Data Collection

- Basic: GPS co-ordinates, Lat/Long, or Degrees Decimal for site locations
Date of installation and removal
Dates associated with the emptying/refreshing of the collection vessel

Advanced: Notes on nearby flora, pollen samples with associated plant ID's

Digital photographs of habitat, and nearby flowering plants with associated dates

Labelling and Storage of Specimens:

Containers (Whirl-Pak bags) for each collection event will be supplied to the National Parks and CANPOLIN associates. All specimens must be stored in 95% ethanol in a freezer after removal from the field. For each pan-trap transect collection event, 3 containers of specimens will be produced; one from the yellow pans, one from the blue pans, and one from the white pans. This should amount to 30-36 independently labelled containers of specimens per transect over the course of the season. For Malaise traps, each time the collecting vessel is emptied will represent a collection event that occurred over a 7-10 day period. All containers (Whirl-Paks) require a label written in *pencil* with the date, the time set and retrieved, the location, and the colour of pan.