

## BENEFICIAL INSECTS FOR NATURAL PEST CONTROL:

# Flower Scouting

### PURPOSE

Beneficial insects like flower flies, soldier beetles and predatory wasps can provide important natural pest control in a farm or garden setting. This guide and worksheet is designed to help you assess the presence of beneficial insects visiting flowers in a farmscape. Many predatory and parasitoid insects use flowers for food. With this guide, you will be able to count these flower-visiting beneficial insects in habitat adjacent to crops. Use this guide along with our foliage and soil scouting guides to gain a better understanding of the beneficial insect community on your farm.

<b>WHAT YOU NEED</b>	<ul style="list-style-type: none"><li>• Clipboard, worksheet copy, and pen/pencil</li><li>• Timer</li><li>• Measuring tape (100-ft. preferred, shorter ok)</li><li>• Thermometer (or means to collect weather info)</li><li>• Flags or stakes (to mark transect lines)</li><li>• Hand lens (optional)</li></ul>
<b>WHERE TO USE</b>	Flowering habitats adjacent to crops (e.g. field borders, hedgerows) or within crops (e.g. cover crops, beetle banks, insectary strips). Scouted habitat areas should be located in full sun and protected from pesticide applications.
<b>WHEN TO USE</b>	Twice per year, May – August <ul style="list-style-type: none"><li>• Visits separated by at least 2 to 3 weeks</li><li>• Visits between 10:00 AM and 3:00 PM</li></ul> Warm, sunny, and calm conditions <ul style="list-style-type: none"><li>• Temperatures &gt;60 °F (15.5 °C)</li><li>• Skies sunny to partly cloudy or bright but overcast</li></ul>

### HOW TO SCOUT

You will be conducting visual observations of insects on flowers along two 100 ft.-length transect lines (scouting paths) for 7.5 minutes per transect line. A transect line may be divided into shorter lengths for small habitat areas (see worksheet for more info). Before scouting, assess habitat area(s) to ensure that flowers are present to scout.

- Lay out measuring tape to define your transect lines. Use flags to mark them if needed.
- Set your timer for 7.5 minutes and ready your clipboard and worksheet.
- Begin your timer and slowly walk the designated transect line, observing and recording foraging flower visitors. Focus on beneficial insects listed (see photos to right). Record only those beneficial insects observed within a 3 ft. distance from the transect line.
- Walk slowly while scouting for insects. Avoid sudden movements and visual interference from your shadow that may scare off insects.
- Pace all transect walks to end simultaneous with the timer. If timer ends before you complete the entire transect distance, quickly assess the remaining length.
- *Consistency is key for good scouting!* When scouting between transects and scouting dates, try to use the same methods as much as possible.



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*Adapted from:* Ward, K., D. Cariveau, E. May, M. Roswell, M. Vaughan, N. Williams, R. Winfree, R. Isaacs, and K. Gill. 2014. Streamlined bee monitoring protocol for assessing pollinator habitat. 16 pp. Portland, OR: The Xerces Society.

# FLOWER SCOUTING WORKSHEET



Site Name: \_\_\_\_\_

Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

Observer: \_\_\_\_\_

Time: \_\_\_\_\_ AM / PM

Visit #: \_\_\_\_\_ of \_\_\_\_\_

Temperature: \_\_\_\_\_ °F

Skies (circle one): Clear / Partly Cloudy / Bright Overcast

Type of Habitat (circle): Cover Crop / Beetle Bank / Field Border / Hedgerow / Insectary Strip / Other: \_\_\_\_\_

## CHOOSE ONE OF THREE SURVEY OPTIONS BASED ON HABITAT TYPE OR HABITAT SIZE:

*Large habitat areas:* Survey two 100-foot transect lines for 7.5 minutes each. Transects should be located near the habitat center or edge and separated by at least 250 feet.

*Hedgerows:* Survey two 100-foot transects, located on each side of the hedge, for 7.5 minutes each

*Smaller, divided, or odd-shaped habitat areas:* Survey an equivalent of 200 feet of transect(s) for 15 minutes. The transect line may be divided, curved, etc. to meet the 200-foot requirement.

## DIRECTIONS:

Conduct observations between 10:00 AM and 3:00 PM, when temperatures are over 60°F, skies are clear, partly cloudy or bright overcast, and wind speeds are gentle. For each transect, record the number of flower flies, lacewings, lady beetles, wasps, ambush bugs, soldier beetles, and other predators visiting flowers within 3 ft. of your transect line. See flower scouting protocol for further details. If interested in pollinators, note bees observed in the Notes section.

Transect Number	Transect Length (ft.)	Start Time	End Time	# Flower Flies	# Soldier Beetles	# Lacewings	# Wasps	# Ambush Bug	# Other	Notes
Transect 1										
Transect 2										
Transect 3 <i>(if needed)</i>										
Transect 4 <i>(if needed)</i>										
<b>Total Length</b>	<i>(should be 200 ft)</i>									

ADDITIONAL OBSERVATIONS (Habitat area details, plant species in bloom, etc.):