

# Weed biocontrol agent recovery report

USDA-ARS-PPQ  
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Bozeman, MT 59717

## Weed Biocontrol Agent RECOVERY REPORT

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WEED:  Leafy spurge  Spotted Knapweed  Diffuse knapweed

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Release Site Location: \_\_\_\_\_ (Lab: ref. No.: \_\_\_\_\_)  
Site name: \_\_\_\_\_  
State: \_\_\_\_\_ County: \_\_\_\_\_  
Latitude: \_\_\_\_\_ N Longitude: \_\_\_\_\_ W  
Date of original release: \_\_\_\_\_ CAGED or  OPEN release

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### AGENT RELEASED-

#### Leafy spurge agents:

- Flea beetle *Aphthona nigriscutis*
- Flea beetle *Aphthona flava*
- Flea beetle *Aphthona cyparissiae*
- Flea beetle *Aphthona czwalinae*
- Long-horned beetle *Oberea erythrocephala*
- Gall midge *Spurgia esulae*

#### Knapweed agents:

- Root-boring moth *Agapeta zoegana*
- Root-boring weevil *Cyphocleonus achates*
- Root-boring moth *Pterolonche inspersa*
- Root-boring beetle *Sphenoptera jugoslavica*
- Seedhead gall flies *Urophora affinis* and *Urophora quadrifasciata*
- Seedhead moth *Metzneria paucipunctella*

Number of:

Net sweeps: \_\_\_\_\_

TOTAL number of insects collected: \_\_\_\_\_

TOTAL number of seed heads collected: \_\_\_\_\_

Visual observation of insect?  YES  NO

DATE OF COLLECTION: \_\_\_\_\_

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

Affiliation: \_\_\_\_\_

Phone: \_\_\_\_\_

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## General instructions

**Sweep net sampling:** Five sampling points will be swept along four lines in N, S, E, and W direction from release point (20 points total). For each line, begin as close to the release point as possible. Using a 15-in diameter sweep net, make four sweeps in front of you (back and forth twice). Each net sweep should proceed in a downward arc, so that the

net moves vigorously through the vegetation as close to the ground as possible. Carefully examine the net and count the biocontrol insects present, then empty the net to release counted insects. Move 5 to 6 feet out and repeat above steps. Continue until five points have been sampled, then repeat over the remaining cardinal directions. A diagram of the sampling procedure and a chart in which to record insect counts is provided below.

During the sweeping process, collect a maximum of 15 beetles from the site and place them in 70% alcohol in a glass vial. Label the vial with the site name, date, and send specimens to the Bozeman Biocontrol Facility along with this form. If no specimens are collected, return only the completed form.

Using the diagram below, sketch out any weed mortality that is visible around the release point.

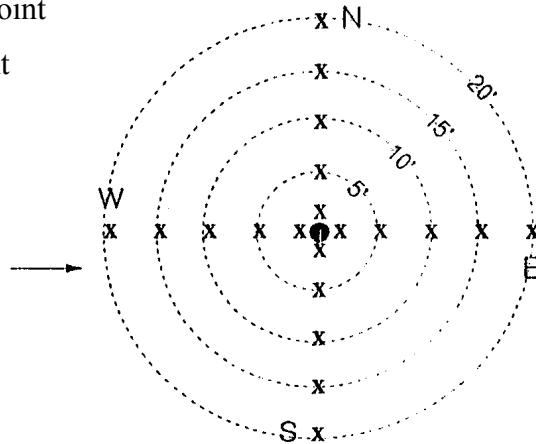
**Knapweed seed head sampling:** To determine recovery of *Urophora* spp. and *Metzneria paucipunctella*, collect two seed heads from each of 100 plants selected randomly throughout the site (200 seed heads total). Send seed heads to the Bozeman Biocontrol Facility for examination. Refer to pp. 23-24 of the Diffuse and Spotted Knapweed Training Manual for further details.

**SWEEP NET SAMPLING**

X = sampling point

• = release point

Sketch weed mortality on this diagram



**INSECT COUNTS**

	N	S	E	W
0'				
5'				
10'				
15'				
20'				