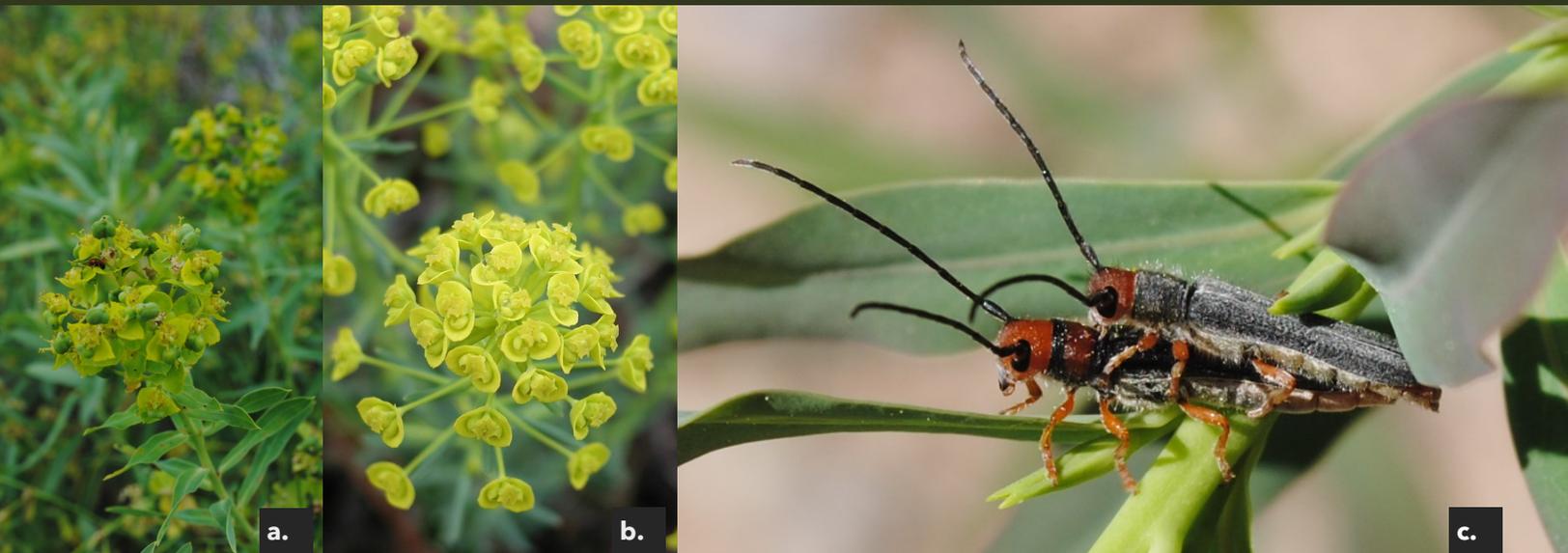


# BIOCONTROL OF LEAFY SPURGE

## RED HEADED LEAFY SPURGE BORER BEETLE *OBBEREA ERYTHROCEPHALA*



### LEAFY SPURGE (*EUPHORBIA ESULA*) PLANT GUIDE

| Life Cycle | Root   | Leaves  | Stems  | Flower   | Seed/Fruit   | Toxic                  |
|------------|--|---|--|--|--|------------------------|
| Perennial  | Taproot and rhizomes brownish with pink buds | Alternate, narrow, 1 to 4 inches long; leaves contain a milky sap | Up to 3 feet tall; stems contain a milky sap | 7 to 10 yellowish-green flowers in small clusters; the inconspicuous flower is surrounded by showy, heart-shaped yellow bracts | Oblong, grayish to purple, and borne in a three-celled fruit | Horses, cattle, humans |

#### BIOCONTROL AGENT DESCRIPTION

- Larvae are slender, segmented and white with a yellow head capsule, reaching up to 22mm (3/4in) long
- Adult beetles are very slender, and 10-12mm (1/2in) long with long dark antennae, red heads, dark grey wings, light grey bodies, and yellowish brown legs (image **c.**)

#### BIOCONTROL AGENT IMPACT

- Larval feeding on the roots and stems causes damage to the plant; this damage hinders the plant's ability to uptake nutrients which causes plant mortality
- Females girdle the stem, chew a hole, and deposit a single egg on the lower part of the plant stem; once the larvae hatch, they mine their way down the stem to the roots
- Stem girdling can reduce seed production

| LIFE CYCLE                           | Jan | Feb                  | Mar | Apr     | May | Jun       | Jul    | Aug     | Sept | Oct                  | Nov | Dec |
|--------------------------------------|-----|----------------------|-----|---------|-----|-----------|--------|---------|------|----------------------|-----|-----|
| LEAFY SPURGE                         |     |                      |     | Bolting |     | Flowering |        | Seeding |      |                      |     |     |
| RED HEADED LEAFY SPURGE BORER BEETLE |     |                      |     |         |     | Adults    |        |         |      |                      |     |     |
|                                      |     |                      |     |         |     | Eggs      |        |         |      |                      |     |     |
|                                      |     |                      |     | Larvae  |     |           | Larvae |         |      |                      |     |     |
|                                      |     | Overwintering Larvae |     |         |     |           |        |         |      | Overwintering Larvae |     |     |
|                                      |     |                      |     |         |     | Pupae     |        |         |      |                      |     |     |

## MONITORING

- During mid-spring to mid-summer, sweep net leafy spurge infestations for adult beetles
- In early spring, pull up and dissect roots and examine for larvae

## How to Use

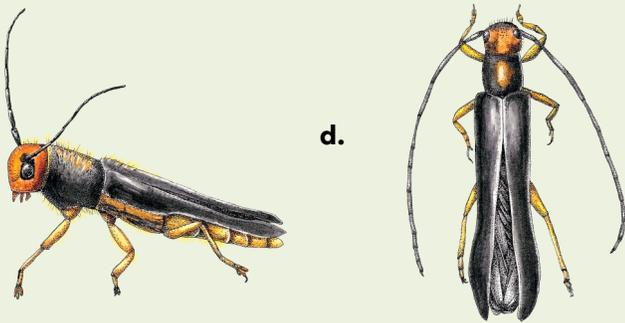
- Release 50+ adult beetles on warm, open to partially shaded areas with a minimum of 1 acre infestation (infestations of 5 or more acres are preferable)
- These beetles are strong fliers and will rapidly disperse throughout the infestation

## NOTE

- This insect may only attack specific biotypes of leafy spurge, therefore limiting its efficacy in some areas
- This biocontrol works well in conjunction with leafy spurge flea beetles (*Aphthona* spp.)

## IN MONTANA

- These insects are well-established in western and southwestern Montana and are present throughout the majority of the state



### IMAGE KEY

- a.** Leafy spurge infestation (Montana Biocontrol Coordination Project)
- b.** Leafy spurge flowerhead close-up (Leslie J. Mehrhoff, University of Connecticut, Bugwood.org)
- c.** Adult red headed leafy spurge borer beetles (Montana Biocontrol Coordination Project)
- d.** Adult red headed leafy spurge borer beetle (not to scale)
- e.** Bolting leafy spurge visible in spring
- f.** Flowering leafy spurge seasonal changes; bolting in spring and early summer (left), mature flowers in summer (center), seeding in fall (right)
- g.** Red headed leafy spurge borer beetle larvae in leafy spurge taproot (not to scale)

Illustration Credit: **d-g.** Evelyn Neel, [www.evelynneel.com](http://www.evelynneel.com)

