Dalmatian Toadflax Stem Weevil
(*Mecinus janthiniformis*)

DALMATIAN TOADFLAX BIOLOGICAL CONTROL

IMPROVING BIOCONTROL SUCCESS

STORING

- Collect weevils in breathable containers, place in a cooler on top of ice packs
- Place a towel/newspaper between ice packs and weevil containers to prevent freezing insects
- Insects can be kept in the refrigerator at a moderate temperature, in breathable containers for **up to 3 days**

MONITORING

- Spring - sweep or look for adults, 6 weevils per most stems in the area means you can safely collect for redistribution
- Summer - dissect stems and look for larval feeding damage (tunnels filled with sawdust), larvae, or pupae
- Fall-spring - dissect stems looking for adults
- Take photos, mark and record GPS coordinates for release locations
- Monitoring forms are available through the MT Biocontrol Project at mtbiocontrol.org

RELEASING

- Release 100+ weevils in the spring per site, scatter the insects close together
- A minimum of a 5 acre infestation is ideal
- If the infestation is on a hill, release the weevils at the bottom of the hill
- **Ensure that the *Mecinus spp.* you are releasing was collected off of the same toadflax species you are releasing it on**

COLLECTING

- Spring - tap insects from the stems into a container, carefully removing all other insects and plant material
- Sweep netting is also an option but if you break the stems while sweeping, eggs laid on those stems will not survive
- During collection:
  - 100-300 weevils per container
  - **Add toadflax foliage to containers (no flowers or seeds)**
  - Cover any openings that the weevils could escape from
  - **Immediately store** as described in storage section
- **It is important to not transfer other weed seeds from the collection site to the release site**

BACKGROUND

BIOLOGY

- One generation per year
- Adults emerge from last year's stems in early spring
- Females lay eggs in stems
- Larvae feed in tunnels chewed in stems
- Larvae pupate then become adults by late summer
- Adults overwinter inside the pupal chamber
- All development, from egg to adult, occurs in the same stem

IMPACT

- Adult feeding stunts shoots and suppresses flowering and seed production
- Larval mining impairs water/nutrient transport causing desiccation and reduces resources stored in the roots

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