

Status of Biological Control Agents Used for Managing Invasive Plants in Colorado

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Diffuse and Spotted Knapweed (*Centaurea diffusa*, *C. maculosa*)

Larinus minutus (Coleoptera: Curculionidae)

Common Name: Lesser knapweed flower weevil

Habit: Larvae develop as a seed feeding weevil that can extensively damage seed head. Adult feeding, particularly early in the season, can cause extensive damage to plants and reduce growth.

Colorado Status: Currently well established at most locations where released and significant effects on knapweed have been seen at some sites. First released in 1998.

Availability: Available for sale through the Request-a-Bug program of the Colorado Department of Agriculture. Deadline for 2009 requests was June 3.

Urophora affinis (Diptera: Tephritidae)

Common Name: None. Sometimes called “banded gall fly”.

Habit: Produces galls in seed head; effects cause some reduction in seed production. May be displaced by the more substantial damage to seed heads produced by the above species (*Larinus minutus*).

Colorado Status: Common throughout the state.

Availability: Not available for further redistribution.

Urophora quadrifasciata (Diptera: Tephritidae)

Common Name: UV knapweed seedhead fly

Habit: Produces galls in seed head; effects cause some reduction in seed production. May be displaced by the more substantial damage to seed heads produced by the above species (*Larinus minutus*).

Colorado Status: Common throughout the state.

Availability: Not available for further redistribution.

Cyphocleonus achates (Coleoptera: Curculionidae)

Common Name: Knapweed root weevil

Habit: A large weevil that develops tunneling the roots. Potentially can cause extensive root damage.

Colorado Status: Common in the near vicinity of some Front Range release sites but is flightless and does not spread readily on its own.

Availability: Available for sale through the Request-a-Bug program of the Colorado Department of Agriculture. Deadline for 2009 requests was June 3.

Sphenoptera jugoslavica (Coleoptera: Buprestidae)

Common Name: Bronze knapweed root borer

Habit: Root boring flatheaded borer that weakens plants and reduces competitive ability.

Colorado Status: Common in many areas around release sites.

Availability: Not available.

Leafy Spurge (*Euphorbia esula*)

Aphthona cyparissiae (Coleoptera: Chrysomelidae)

Common Name: Brown dot leafy spurge flea beetle

Habit: Root feeding flea beetle. The leafy spurge flea beetles have been quite successful in controlling spurge at many sites.

Colorado Status: The most common *Aphthona* species associated with leafy spurge. Natural spread is occurring but is slow.

Availability: Available for redistribution through CDA managed release programs.

Aphthona nigriscutis (Coleoptera: Chrysomelidae)

Common Name: Black dot spurge flea beetle

Habit: Root feeding flea beetle. The leafy spurge flea beetles have been quite successful in controlling spurge at many sites.

Colorado Status: Originally released in 1992. Now well established in many areas of the state and the 2nd most common *Aphthona* species associated with leafy spurge. Natural spread is occurring but is slow.

Availability: Available for redistribution through CDA managed release programs.

Aphthona czwalinae/lacertosa (Coleoptera: Chrysomelidae)

Common Name: Black leafy spurge flea beetle/Brown-legged spurge flea beetle

Habit: Root feeding flea beetle. The leafy spurge flea beetles have been quite successful in controlling spurge at many sites.

Colorado Status: Originally released in 1993. Now well established in many areas of the state. The third most common *Aphthona* species now found in the state. Natural spread is occurring but is slow.

Availability: Available for redistribution through CDA managed release programs.

Aphthona flava (Coleoptera: Chrysomelidae)

Common Name: Copper leafy spurge flea beetle

Habit: Root feeding flea beetle.

Colorado Status: Originally released in 1989. Now well established in many areas of the state.

Availability: Available for redistribution through CDA managed release programs.

Aphthona abdominalis (Coleoptera: Chrysomelidae)

Common Name: Minute spurge flea beetle

Habit: Root feeding flea beetle.

Colorado Status: Originally released in 1996, not established.

Availability: Not available.

Oberea erythrocephala (Coleoptera: Cerambycidae)

Common Name: Leafy spurge stem boring beetle

Habit: Stem boring roundheaded borer. Larvae bore into the stem and root crown, potentially causing serious plant injury. Adults cause minor foliar feeding.

Colorado Status: Released in 1992 and generally established at release sites. Spread appears to be slow and this beetle is not usually recovered in large numbers. The CDA is working on establishing larger collectable populations.

Availability: Limited availability for redistribution through CDA managed release programs.

Dalmation and Yellow Toadflax

(*Linaria genistifolia* ssp. *dalmatica*, *L. vulgaris*)

Mecinus janthinus (Coleoptera: Curculionidae)

Common Name: Dalmatian toadflax stem weevil

Habit: Stem boring weevil associated with Dalmatian toadflax.

Colorado Status: Well established in many sites following introduction but uncommon outside release areas. *Mecinus janthinus* has had substantial effects on Dalmatian toadflax in some locations. However, at present impacts following release have been less dramatic than in other western states.

Availability: Available for sale through the Request-a-Bug program of the Colorado Department of Agriculture.

Calophasia lunula (Lepidoptera: Noctuidae)

Common Name: Toadflax brocade

Habit: Foliage feeding climbing cutworm.

Colorado Status: Widely established in state but rarely reaches population densities great enough to reduce toadflax growth and spread.

Availability: Limited availability for redistribution through CDA managed release programs.

Rhinusa antirrhini (Coleoptera: Curculionidae)

Common Name: Toadflax seed weevil

Habit: Seed and flower feeding weevil. Adults and larvae feed on flowers, destroying some seeds.

Colorado Status: Common in the state on both Dalmation and yellow toadflax.

Availability: An unintentional introduction. Not approved for release or redistribution.

Rhinusa linariae (Coleoptera: Curculionidae)

Common Name: Toadflax root-galling weevil

Habit: Adults feed on foliage and larvae feed within galls formed on the roots of the plants

Colorado Status: Introduced in Colorado by the CDA in 2008; establishment has not yet been confirmed.

Availability: Not presently available.

Brachyterolus pulicarius (Coleoptera: Kateridae)

Common Name: Toadflax flower eating beetle

Habit: Adults and larvae feed on flowers, destroying some seeds.

Colorado Status: Common in the state on both Dalmatian and yellow toadflax.

Availability: An unintentional introduction. Not approved for release or redistribution.

Field Bindweed (*Convolvulus arvensis*)

Aceria malherbae (Acari: Eriophyidae)

Common Name: Bindweed gall mite

Habit: Leaf-galling eriophyid mite that distorts new growth and may retard growth..

Colorado Status: First released in 1998, it has spread naturally and is now common and abundant over wide areas of the state. May have dramatic impacts on dry, non-irrigated sites.

Availability: Available for sale through the Request-a-Bug program of the Colorado Department of Agriculture. Deadline for 2009 requests was May 29.

Tyta luctuosa (Lepidoptera: Noctuidae)

Common Name: Field bindweed moth

Habit: Caterpillars develop by feeding on leaves of field bindweed..

Colorado Status: Established but uncommon. Populations of sufficient size to reduce bindweed growth have not been observed to develop.

Availability: Limited availability for redistribution through CDA managed release programs.

Canada Thistle (*Cirsium arvense*)

Urophora cardui (Diptera: Tephritidae)

Common Name: Canada thistle stem gall fly

Habit: Stem gall producing gall fly. A large rounded gall is produced in stems. Although conspicuous, these galls have minimal effects on plant growth.

Colorado Status: Well established and may be locally common.

Availability: Available for sale through the Request-a-Bug program of the Colorado Department of Agriculture.

Ceutorhyncus litura (Coleoptera: Curculionidae)

Common Name: Canada thistle stem weevil

Habit: Larvae mine the stems and root crown; adults cause minor leaf feeding.

Colorado Status: Established at a few locations; not widespread.

Availability: Not available. Large, reproducing populations are not yet present in the state for redistribution efforts.

Bull Thistle (*Cirsium vulgare*)

Urophora stylata (Diptera: Tephritidae)

Common Name: Bull thistle gall fly

Habit: Larvae develop on seeds of bull thistle.

Colorado Status: Has been released and overwintering survival has been observed. Very limited establishment within the state at present.

Availability: Not available.

Musk Thistle (*Carduus nutans*)

Trichosirocalus horridus (Coleoptera: Curculionidae)

Common Name: Musk thistle rosette weevil

Habit: Larvae develop in the crown of the plant killing the flowering stalk.

Colorado Status: Established in some locations and populations are sufficient at some locations to allow further redistribution.

Availability: Available for sale through the Request-a-Bug program of the Colorado Department of Agriculture.

Rhinocyllus conicus (Coleoptera: Curculionidae)

Common Name: Musk thistle head weevil

Habit: Larvae develop in seed heads, decreasing production of viable seed.

Colorado Status: Introduced over 30 years ago and now commonly found throughout the state. Attacks several species of thistles.

Availability: Not available. This species is already found widely; furthermore, there are concerns that this insect is damaging some native thistles.

Puncturevine (*Tribulus terrestris*)

Microlarinus lareynii (Coleoptera: Curculionidae)

Common Name: Puncturevine seed weevil

Habit: Feeds on the developing seeds of puncturevine.

Colorado Status: Has been released and is well established in many locations.

Availability: Available for sale through the Request-a-Bug program of the Colorado Department of Agriculture.

Microlarinus lypriformis (Coleoptera: Curculionidae)

Common Name: Puncturevine stem weevil

Habit: Feeds on the developing seeds of puncturevine.

Colorado Status: Has been released and is well established in many locations.

Availability: Available for sale through the Request-a-Bug program of the Colorado Department of Agriculture.

St. Johnswort (*Hypericum perforatum*)

Chrysolina quadrigemma, C. hyperici (Coleoptera: Chrysomelidae)

Common Name: Klamath weed beetles

Habit: Foliage feeding beetles. Adults and larvae cause extensive defoliation

Colorado Status: First released over 30 years ago, these beetles are now well established in the state and are common. St. Johnswort has been substantially suppressed by the activity of these insects in the state.

Availability: Not available.

Tamarisk/Salt Cedar (*Tamarix* spp.)

Diorhabda carinulata (= *elongata*) (Coleoptera: Chrysomelidae)

Common Name: Salt cedar leaf beetle

Habit: Foliage feeding leaf beetle. The larvae can cause extensive defoliation of plantings.

Colorado Status: Well established in many West Slope locations along riverways, and expanding range naturally. Multiple eastern Colorado sites have received recent introductions.

Availability: Not currently available.

For more information:

Colorado Department of Agriculture

Biological Pest Control Program/Insectary

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