Biological control agents for several of Montana's most widespread noxious weeds have been released across the state for the past 30 years. Although there have been many successes, there are many things we still do not know about these insects that we have been releasing. For a land manager, one of the most important things to know is if these species are affecting the weed populations like we hoped and if so, where can I get some.

In general, Montana has done a good job of spreading available releases of these insects around. However, most of these releases have not been monitored for establishment, effectiveness, and last but not least, collectability. Much of this is due to the busyness of the Montana field season where weed districts, agencies, and landowners are racing around to try to accomplish all that needs to be done in what seems to be a few short months. Knowing what and when to look for to see if the insects are established can sometimes be a little intimidating as well. As a result, we have seen a lot of effort to get different insects from known sources outside of Montana, when we should really be looking in our own back yards for the ability to collect these same agents.

The USDA-APHIS-PPQ, MT Dept. of Ag, and the Bureau of Land Management have developed a ***biological control monitoring project*** to help solve this problem. Four counties were originally identified for our pilot effort based on pro-active cooperators and geographic distribution throughout the state. Our goal was to monitor for the presence or absence of the stem weevil for Dalmatian toadflax. The reason for selecting this insect was the interest across Montana on acquiring additional agents for release. The counties in the initial project were: Lewis & Clark, Blaine, Lincoln, and Yellowstone. As the season progressed the project expanded to include monitoring of sites in Musselshell, Big Horn, Broadwater, Jefferson and Cascade counties and included multiple species of biological control agents and their target weed species. **As of August 10, 2009 the project had monitored over 230 sites covering 9 counties.** The noxious weeds we targeted were; Dalmatian toadflax, spotted and diffuse knapweed, leafy spurge, and St. Johnswort. The insects we were looking for were the toadflax stem weevil (*Mecinus janthinus),* and toadflax moth (*Calophsia lunula)* on Dalmatian toadflax; The knapweed root weevil (*Cyphocleonus achates),*lesser knapweed flower weevil *(Larinus minutus),* sulfur knapweed moth *(Agapeta zoegana),* and the bronze knapweed root borer (*Sphenoptera jugoslavica)* on spotted and diffuse knapweed; and the flea beetle complex (*Aphthona spp*.), leafy spurge red headed stem borer *(Oberea erythrocephala),* leafy spurge hawk moth (*Hyles euphorbiae)* on leafy spurge, and the klamathweed beetles (*Chrysolina spp*.) on St. Johnswort. The following information is a quick summary of the projects accomplishments:

The following insect numbers are not final; more exact numbers will be available later this year.

Results Summary:

- Dalmatian toadflax - General observation is that approximately 60-70% of the toadflax stem weevil sites we visited, we found the presence of adult feeding damage. One noted exception was Musselshell County where presence was about 50-60%. Some of the toadflax stem weevil sites that did not have any adults or feeding damage were revisited because of weather and timing.
    - five sites had collectible populations of the toadflax stem weevil

    - three areas had low to medium populations of toadflax stem weevil that could produce limited collections Three sites had low populations that could possibly produce limited collections
    - Most sites not demonstrating establishment were recent releases
    - Some sites not demonstrating establishment had plants 10 feet or more apart, maybe indicating the site selection process could have been better
    - Weather possibly had an effect on the low numbers observed at some sites
    - 4,600 insects were collected from Missoula County and 4000 were imported from Spokane WA. Broadwater, Powell, Jefferson and Musselshell Counties received insects with help from this project
- Spotted knapweed – if there was sufficient plant populations and that insect had been released in the area, there generally are collectable numbers of the knapweed root weevil, lesser knapweed flower weevil, and sulfur knapweed moth.
    - 2,500 spotted knapweed root weevils were collected from Ravalli and Lewis & Clark Counties and distributed to sites in Broadwater and Lewis & Clark Counties, and provided to USDA APHIS PPQ in New York, and the University of Missouri. These last 2 recipients also received 5000 of the lesser knapweed flower weevil and 70 of the knapweed sulfur moths collected from Jefferson County
- Leafy spurge – if there was sufficient plant populations and that insect had been released in the area, there would be collectable numbers of flea beetles. It would appear that the leafy spurge red headed stem borer numbers are increasing.
    - The project helped the Spokane Unit of the USDA APHIS PPQ in collecting over 417,000 flea beetles and some of these were distributed to several counties in Montana, and several other states.
    - The project helped the Whitehall High School War on Weeds program collect over 200,000 more flea beetles that were distributed to other Montana counties.
    - 1400 of the leafy spurge red headed stem borer were collected from Lewis & Clark and Jefferson Counties and redistributed within Montana.

Want help with your insects? Do you have a patch of weeds for these six legged critters to call home? Do you already have collectible sites? Regardless of your experience with biological control, we would like to help you through this project. We have funding to continue monitoring work for the summer of 2010, and we may be able to assist with a cooperative collection day or two. We are also interested in what information about these insects land managers would find useful in their management programs. If you are interested in participating in this project, **have your county weed district coordinator or agency weed personnel** contact Jay Cole with APHIS-PPQ at 406 449-5210 for more information. We would like to keep our activities coordinated through the local weed districts as much as possible. We would appreciate a response by March 31st, 2010 so that we can plan appropriately.