



MONTANA
BIOCONTROL
COORDINATION
PROJECT

ANNUAL REPORT **2018**



PROVIDING THE LEADERSHIP, COORDINATION, AND EDUCATION
NECESSARY TO ENABLE LAND MANAGERS ACROSS MONTANA
TO SUCCESSFULLY INCORPORATE BIOLOGICAL WEED CONTROL
INTO THEIR NOXIOUS WEED MANAGEMENT PROGRAMS.

MOTHER NATURE DID NOT COOPERATE WITH US THIS YEAR!

Insect numbers were about 1/3 of what they have been the last few years and this was not due to a lack of trying. We spent 41 days collecting, an increase of 6 days (1.5 work weeks) from 2017 and numbers were still down! My best guess is the reduced number of insects was due to the long, cold winter followed by a cold, wet spring that made it feel like summer was never going to arrive. Luckily, land managers were interested in services other than insect releases this year. I travelled to 24 locations to give presentations or hold biocontrol workshops, this is an increase of 9 events from 2017! In addition to an increase in the number of days spent collecting and the number of presentations/workshops, I was able to travel to Switzerland for an international biocontrol symposium where I presented a poster on our predicted suitable habitat model and was able to visit the lab where much of the host-specificity and impact research is conducted prior to biocontrol agents being released in the US. This was a great experience and allowed me to come home with a plethora of new information and a much better understanding of the research that is conducted overseas. Here's to hoping that insect numbers will be restored and the collecting in 2019 will be easy and plentiful!

Melissa Maggio

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PARTICIPATION



24

Workshops/
Presentations



730

Workshop
Attendees

41

Days Spent
Collecting



420

Collection Day
Participants

9713

Miles Traveled for
Workshops and Collections



INSECTS



Species Collected

8220 Acres Treated



3

New Species
Released



Counties and
7 of 7 Reservations
Received Insects



States
Received Insects

755,000 Insects Distributed



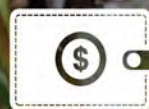
\$200,530

Market Value of Insects

2018 BREAKDOWN



Out-of-State
Coordination



9%

Fundraising



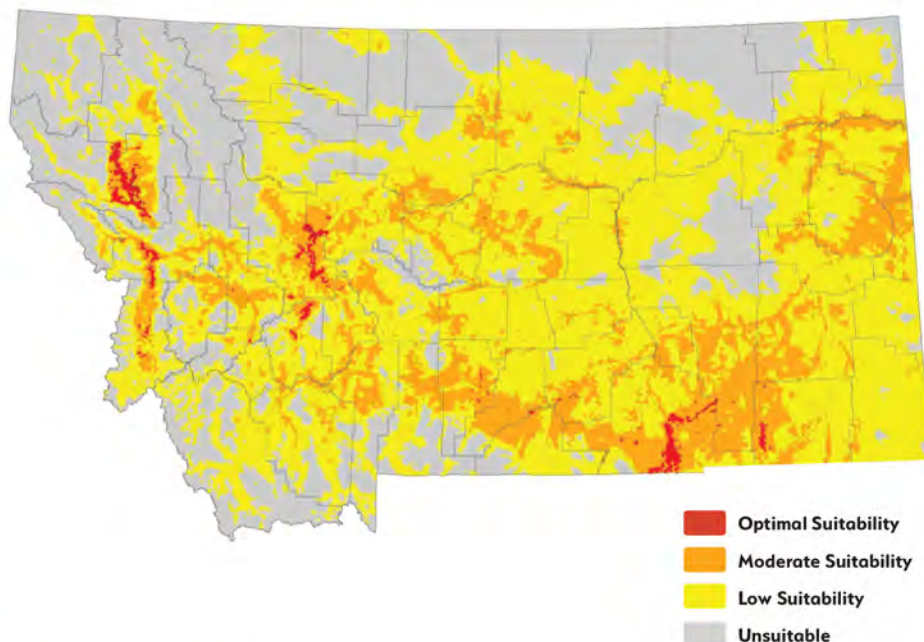
Workshops

28%

Collections



In-State
Coordination



THE DEVELOPMENT OF PREDICTED SUITABLE HABITAT MODELS FOR BIOCONTROL IN MONTANA

A major hurdle in a weed biocontrol program is the introduction and establishment of viable populations of agents. Site selection is one of the most important choices we can make at the beginning of a biocontrol

program. The majority of the information we have on best suited sites for successful weed management with biocontrol are based on anecdotal evidence. Most people assume that if the target weed is present, the agent can be released, but many other factors can negatively impact success. It is often difficult to identify and quantify reasons why biocontrol agents fail to establish. Factors such as soil, slope, aspect, shade or moisture could potentially all have an influence on successful establishment.

We provided the Montana Natural Heritage Program with data associated with known established populations of biocontrol agents (yellow and Dalmatian toadflax stem weevils, 2 species of leafy spurge flea beetles, the leafy spurge stem-borer, and the spotted knapweed root weevil) and they developed a predicted suitable habitat model for each of the associated biocontrol agents. These models allows us to determine the more ideal sites associated with successful establishment. This model helps to increase the efficacy of biocontrol by guiding land managers' releases of the insects to sites where they will most likely survive, establish, and assist in the management of the target weed species. In the long-term, this model will also increase the ecological and economic return for Montana. When insects are released in suitable habitat, they are more likely to reduce the weed infestation and build up their populations to the point that they can be collected and moved to new locations, or they will disperse themselves to nearby infestations. When managed properly, established populations of biocontrol agents are a renewable resource that can be utilized for cost effective control of their target weed.

These models are a work in progress. Additional known, established populations of insects and ground-truthing the current model output will add to the strength of these models in the future.



To view the complete model output for each species visit:
<http://fieldguide.mt.gov/displaySpecies.aspx?inv=BIOCNTL>



COORDINATION AND COMMUNICATION

As previously mentioned, 2018 was a busy year with increases in collection days and educational events!

We spent 41 days collecting with partners from all over

the state, which is over half of my time in the field season. I also traveled to 24 locations throughout MT (see map) for educational events. We inoculated 11 sites with the Canada thistle rust, 2 in the spring and 9 in the fall. Four of the 9 inoculations this fall were sites that we re-inoculated and 5 were new sites. There have been a total of 15 sites throughout MT that have now been inoculated with this rust. We did not see any above-ground sign of spores at the sites that were monitored in the spring (the ideal time to monitor) but this fall we noticed that the Canada thistle appeared to be stunted at many of the sites inoculated in 2017.

In addition to all of the in-state activities this year, we also helped 9 other states obtain insects, I traveled to an international biocontrol symposium and made biocontrol connections from all over the world, and have been asked to present on MTBCP at another state's annual conference. It has also become increasingly apparent that we need to seek novel sources of funding or encourage entities that have historically benefited from but not contributed to biocontrol research to begin funding research for potential new biocontrol agents. This is a topic that has been widely discussed but action is needed before we can begin to explore for and gain knowledge about potential new agents for invasives such as annual grasses.

Lastly, MT-PPQ-APHIS has been one of MTBCP's strongest supporters and partners from the beginning! One of the driving forces behind this support and partnership is Richard "Joe" Merenz and this fall he retired. We are all excited for him but sad for us! Thanks Joe for everything over these last 5 years!



Top: Joe Merenz helping to install a Canada thistle monitoring transect.

Bottom: APHIS and CO Department of Agriculture reading a monitoring transect.



PARTNERS PERSPECTIVE: JUDITH BASIN COUNTY WEED BOARD

By Katie Hatlelid,
Judith Basin County Extension Agent
& Weed Board Secretary

On behalf of the Judith Basin County Weed Board, I would like to thank the MT Biocontrol Coordination Project (MTBCP) and Melissa Maggio for traveling to Judith Basin County and presenting at 4 sites in the past three years.

Each of the workshops began with a classroom style presentation on the common misconceptions of biocontrol, followed by several different species of weeds and their respective biocontrol options. Through different locations and years, this program has reached roughly 75 people directly involved in land stewardship, and many more indirectly related. Those seasonal land users (hunters, anglers, ATV users, etc.) that this effort will benefit are much more numerous.

Many years previous to the current MTBCP, the Geyser area in JB County released some seed head weevils (*Larinus* spp). During the field portion of the workshop, we were able to find some seed heads that had recently been exited by a mature *Larinus* insect, demonstrating how long-term these control agents can be. Adding another species of control to the weeds will help control even more of the knapweed in future years. Judith Basin County has had over 4,500 spotted knapweed biocontrol agents released over the last 3 years in order to establish insectaries of the *Cyphocleonus achates*, a root weevil.

Spotted knapweed is a prevalent noxious weed in certain areas of the county. Many of these areas are hard to access, or quite large in size. By fostering local insectaries with the help of Melissa and the MTBCP, we will be able to collect insects and release them in other affected areas more frequently. This year's workshop, in August 2018, we were able to collect a few agents for release on a neighboring landowner's property. Even though the weather was not conducive to a big collection on that day, there is a population established in the location that will be larger next year. Land owners and land users are excited about the prospect of this added tool to manage spotted knapweed, and have been in frequent contact with the JB County Extension Office to learn more about other biocontrol options for other weeds. The education that the MTBCP is able to provide through partnerships with other organizations throughout the state of Montana is key in winning the battle against invasive species.

The questions and interaction that has happened at these workshops has been key to helping long-time neighbors and landowners that have recently moved into the area gain a better understanding about what biocontrol is, how it works, and how working together can benefit everyone that is utilizing the land for different purposes.

Again, we thank Melissa for all her time and effort to make these programs a success!



COMING SOON

We are working with a local artist to create a Montana Biocontrol Poster that should be completed in 2019!

New biocontrol educational materials will be created in conjunction with NRCS!

A comprehensive MTBCP assessment will be sent out in early 2019. Please take the time to fill this out, as it will guide the direction of MTBCP in the future.

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US Postage Pd
Missoula MT
59801
Permit No. 402



THANK YOU!

A big THANK YOU for the financial and technical support we received in 2018! Without such supportive partners, the Montana Biocontrol Coordination Project would not be possible.

APHIS

Adam Sieges

BLM

Broadwater County Weed District

Carbon County Weed District

Cascade County Weed District

DNRC

Daniels County Weed District

FWP

Fergus County Weed District

Flathead County Weed District

Gallatin County Weed District

Glacier County Weed District

Golden Valley County Weed District

Hill County Weed District

Jefferson County Weed District

Lake County Weed District

Lewis & Clark Conservation District

Lewis & Clark County Weed District

Liberty County Weed District

Lincoln Conservation District

MDT

Mineral County Weed District

Missoula Conservation District

Missoula County Weed District

Missoula County Extension

Musselshell County Weed District

NWFW's Pulling Together Initiative

NWTF

Park County Extension

Park County Weed District

Powder River Conservation District

Powell County Weed District

Richland County Conservation District

Roosevelt County Weed District

Sanders County Weed District

Stillwater County Weed District

Stillwater Valley Watershed Council

Sweet Grass County Weed District

Teton Conservation District

Teton County Weed District

Toole County Weed District

USFS

Valley County Conservation District

Valley County Weed District

Wheatland County Weed District

Whitehall Biocontrol Project

Wibaux Conservation District

Wild Sheep Foundation

Majority of the technical support we receive comes from the MWCA Biological Weed Control Working Group. Thanks to all of the members for your support and assistance on a variety of topics!

