

BIOLOGICAL WEED CONTROL: MONITORING FOR SUCCESS

Montana is developing a standardized biological control monitoring technique.

by Melissa Maggio

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Biological weed control involves the use of a living organism to reduce a weed infestation by recreating a balance between plant species and their natural predators. One reason exotic invasive species can gain a competitive advantage in their new environment is because of the absence of natural predators from where the plant originates. Biological control is an important component of an integrated weed management strategy. It may not be appropriate for all landowners or every type of land, but when utilized with other management tools, biological weed management can decrease the abundance of invasive plants over time.

Biological weed control is best suited for long-term weed management because it could be 5-10 years before seeing signs of decrease in the target weed population when using this tool. The length of time until seeing a beneficial impact depends on many variables (e.g., number of insects released/present, site characteristics, climatic variables, etc.).

Therefore, when utilizing biological weed control as a management tool, many questions can arise. How can released biological control agents be monitored for the desired effect on the plant community being managed? Is the insect population increasing or decreasing? Are treated weeds really going away? More importantly, is the desired vegetation returning and out-competing other weedy invasive species? These questions can be answered by an easy, yet often overlooked step of vegetation management: monitoring and evaluation.

Monitoring is an essential component of any successful vegetation management program. A simple form and consistent collection of data can be used to document changes in vegetation that occur over time, allowing for knowledgeable decisions on whether to continue or adjust management. This allows for more efficient utilization of resources and time, which will lead to a healthier plant community. The information collected can also be very useful to weed professionals that are working to make determinations concerning best management practices for the insects being used.

There are variables to consider when monitoring the effects of biological control. For example, knowing what time of year the insects will be present in the desired life stage, knowing how weather can affect the presence of the insects, and knowing the difference between desired and undesirable vegetation can aid in collecting information. The monitoring process can seem intimidating and appear to be time-consuming, but going through the process once will demonstrate that for about an hour of time, once a year, enough necessary information can be learned for making weed management decisions on a property.

Learning how to use the SIMP near Missoula.





PHOTO BY NORMAN REES, BUGWOOD.ORG

Russian knapweed

As Montana's Statewide Biological Weed Control Coordinator, I will conduct biocontrol workshops throughout the state this summer and monitoring will be a part of all workshops. One of the goals of the Montana Bio-Control Coordination Project is to implement a standardized monitoring technique. Idaho had a similar goal which led to the development of a protocol with all land managers in mind. This monitoring method does not require scientist level skills for correct data collection. The protocol developed, the Standardized Impact Monitoring Protocol or (SIMP), is what we would like to implement in Montana. Utilizing this protocol will allow us to involve anyone interested in collecting this important information and will also allow us to compare information with Idaho. Other neighboring states are also considering switching to SIMP. If monitoring techniques align regionally, there will be a larger pool of data from which to compare and draw conclusions.

This data collection process will enable landowners to make informed decisions concerning the effectiveness of biological weed control on their properties. It will also make it possible to make conclusions on best management practices, in general, including determining the best site conditions and release methods for various biocontrol agents.

If you are currently utilizing biological weed controls or are planning on utilizing them in the future, attending a workshop in your area would be helpful for understanding the function and proper use of this monitoring tool. Workshop planning has begun with partners throughout the state but dates have not yet been set. Dates will be advertised through local area partners, or contact me for workshop dates, general biocontrol questions, or specific questions about biocontrol monitoring or to receive the monitoring forms (mmaggio@missoulaeduplace.org or 406-258-4223).



A monitoring frame.

PHOTOS BY MELISSA MAGGIO