



WASHINGTON STATE
UNIVERSITY
EXTENSION



BIOCONTROL OF NOXIOUS WEEDS

BY THE NUMBERS

- Average: 584 biocontrol releases per year.
- Average: More than 205,000 biocontrol agents released per year.
- Average: 15 biocontrol agent species released to control 11 weed species.
- Average: 17 presentations per year.
- Almost \$2 million in funding secured over last 10 years.
- More than 2,900 acres are controlled per year on average using biocontrol, based on the USFS standard that proposes 5 acres are controlled by 1 release.

2015

ISSUE

Washington State is facing an invasion of non-native, highly invasive noxious weeds, including diffuse, meadow and spotted knapweed, purple loosestrife, tansy ragwort, St. Johnswort, Scotch broom, and Dalmatian toadflax. Noxious weeds destroy biological diversity, decrease forage, increase erosion potential, and decrease land values across the state and western USA. Healthy habitats are vital for wildlife, livestock, and the people of Washington.

Biological control, or biocontrol, is the intentional use of one living organism to control or suppress another organism. In weed biocontrol, this primarily includes the use of organisms such as insects, mites, and pathogens. Washington State land managers often do not have the time, funds, or expertise to implement biocontrol as part of their own integrated weed management strategies.

RESPONSE

Biocontrol needs are addressed by WSU through the Integrated Weed Control Project (IWCP) and Douglas County Extension, which closely collaborate but are independent programs. The IWCP is the primary contact for biocontrol information and applied research, and has statewide responsibilities. Douglas County Extension provides assistance at the regional level, serving Chelan, Douglas, Kittitas, and Okanogan Counties. Both programs promote and facilitate the use of integrated weed control methods by providing biological control agents to those with appropriate release sites, and educating and engaging land managers and landowners to increase understanding of invasive weed issues and the importance of prevention, early detection/rapid response, integrated management tools, and restoration to solve their own weed problems.

Biocontrol work through WSU involves:

- Education activities, including presentations and development of educational outreach materials;
- Implementation, including collecting and releasing biocontrol agents across the state, and long-term monitoring to assess their efficacy; and
- Research activities that are relevant to Washington land managers, including host-specificity testing of the Scotch broom gall mite, and leading the flowering rush biocontrol consortium for biocontrol agent research and development.

extension.wsu.edu/impact/

For more information, please contact Jennifer Andreas, Integrated Weed Control Project Lead, WSU Extension - Puyallup Research Center, 2606 W Pioneer, Puyallup, WA 98371, call: 253-445-4657 or email: jandreas@wsu.edu, or Dale Whaley, Integrated Weed Management/Agriculture Regional Extension Specialist, WSU Douglas County Extension, PO Box 550, Waterville, WA 98858, call: 509-745-8531 Ext. 6352 or email: dwhaley@wsu.edu.



QUOTES

"I was wrong when I said there is 'No way that an insect is going to clean up this weedy mess.'"

"Virtually everything I know about biological control of weeds was learned from IWCP presentations, particularly new agents and changes in release protocols and research."

"I have learned to evaluate a site for land use and economic impact of noxious weeds and revegetation goals in determining when to use bios. I have learned to use bios as part of an integrated pest management approach. If we know weeds, insect life cycles, and environmental conditions, it is possible to combine other types of controls with bios for a better result than a single suppression control might provide."

FUNDING

The U.S. Forest Service is the primary funding source. Supplemental funding is provided by WA Dept. of Agriculture, County Noxious Weed Control Boards, WA Dept. of Fish and Wildlife, WA Dept. of Natural Resources, WA State Noxious Weed Control Board, Conservation Districts, Public Utilities, and Tribal Nations.

IMPACTS

- 99% of attendees learned new information at IWCP presentations/workshops.
- 69% of attendees made changes to their weed management practices as a result of what they learned at IWCP biocontrol presentations.
- 51% of attendees indicated that their use of biocontrol has increased, 48% said their use stayed the same, and 1% reported a decrease.
- On average, 92% of Douglas County Extension workshop/presentation program participants enhanced their knowledge about biological weed control and integrated weed management.
- On average, 65% of Douglas County Extension workshop/presentation program participants applied this newly acquired information and added this tool to their existing weed management plan.
- 79% of survey respondents report that their understanding about the principles of biocontrol has improved after interacting with the IWCP.
- 76% consult IWCP for their biocontrol questions at least occasionally.
- 66% of respondents stated that biocontrol use is a very important or extremely important part of their integrated weed management plans.
- 65% of respondents indicated that their use of biocontrol has increased since they began interacting with the IWCP.
- 54 respondents reported that a total of 46,865 acres per year have been treated using biocontrol since they began working with the IWCP.
- 39 respondents noted that a total of 79,644 acres per year are estimated to have reduced weed densities as a result of biocontrol agents.
- 25% of respondents noted that their use of biocontrol resulted in decreased use of pesticides, 72% found no change in their pesticide use, and 3% reported increased use of pesticides. These results may indicate that respondents' use of biocontrol has allowed them to reallocate their herbicide use to other areas or weed species, ultimately resulting in increased weed control across the landscape.
- IWCP met the biocontrol needs to a great extent for 68% of respondents.
- 87% of survey respondents reported that they were very satisfied with their interactions with the IWCP.