Early Detection and Rapid Response (EDRR) to New Plant Invaders

Early detection and rapid response (EDRR) means looking for newly invading weeds and acting quickly to eradicate or contain them before they can establish and spread. By identifying populations when there are only a few plants on the landscape, managers can use cheaper, low-impact methods like hand-pulling or spot-spraying to eradicate them. Contrast this to the economic and environmental impacts of treating large populations that have spread over hundreds or thousands of acres, and the potential of EDRR is clear.

In this brochure you’ll find:
- why EDRR is a key element in weed management
- how to determine when EDRR is a realistic management goal
- an example of an EDRR success story
- three things you can do to contribute to EDRR efforts

Resources

Weed Identification and Management:
- Montana Weed Control Association. www.mtweed.org
- Montana Noxious Weed Education Campaign. www.weedawareness.org
- View dried samples of Montana’s noxious weeds at county weed district offices

Help for identifying unknown plants:
- MSU Schutter Diagnostic Lab. http://diagnostics.montana.edu for mailing address and instructions on submitting samples, or call 406-994-5150 for information
- Submit records of new invaders to: EDDMapS. http://www.eddmaps.org/mrwc/

Plant invasion starts as a few plants scattered here and there (above). If detected at this time, invasive plants may be eradicated with minimal economic and environmental hardship. Unfortunately, if people aren’t actively watching for new invasions, they don’t become aware of them until they’ve had a number of years to establish, develop a seed bank, and expand into adjacent areas. At this time, eradication is typically not possible and management shifts to containment or restoration, which are more expensive and environmentally detrimental over the long-term. If someone had noticed and reported the few plants when they first showed up, the invasion may have been avoided with simple hand pulling or spot spraying.

Native plant community in north-central Montana. Pristine range and wildlands can be protected from invasive plants through EDRR. Photo by Jane Mangold.

This project was funded in part by the USDA National Institute of Food and Agriculture through the Western Integrated Pest Management Center.
When is EDRR a realistic management goal?

Early detection and rapid response is most effective prior to widespread occurrence of a weed in a particular area. Many state noxious weeds lists are organized by geographic distribution of a species across the state. For example, in Montana, Priority 1A and 1B weeds are not present at all or have very limited presence; these weeds are targeted for EDRR across the entire state. Priority 2A weeds are common, but only in isolated areas of Montana; EDRR is a reasonable goal in areas where the weed is not common. Priority 2B weeds are abundant across much of Montana; EDRR is not a reasonable goal on a statewide level, but may still be appropriate at a smaller scale (e.g., county, individual ranch or management unit).

Dyer’s Woad in Montana: An EDRR Success Story

Dyer’s woad was first identified in Montana in 1934. Increasing concern over its expansion in Montana prompted Montana to develop the Montana Dyer’s Woad Cooperative Project. The project manages and monitors existing infestations and educates land managers and the public on identification and management. In 2005, the economic benefit of the program was assessed. Program costs over a 20-year period (1985-2005) were $225,000. Costs of herbicide application in 2005 to spray the predicted area infested given the absence of EDRR would have been $1.9 million. Since 2005, dyer’s woad populations across the state have decreased by nearly 95 percent, and in 2013, dyer’s woad was moved from the Priority 2A to the Priority 1A list, a testament to the success of this program.

How can I contribute to EDRR?

In order for EDRR to be effective, people across the state need to do three things:
1. learn to identify weeds,
2. look for weeds,
3. tell the appropriate person about finding any new weeds.

LEARN Because most candidates for EDRR are probably not weeds you have seen before, it is very important to learn what they look like. See Resources listed in this pamphlet and contact your local Extension and weed district offices for help with weed identification.

LOOK Once you know what Montana noxious weeds look like, you need to look for them. Look for weeds intentionally and keep them in mind during your daily activities. For example, do you spend a lot of time in your vehicle for work? Keep your eyes open for the high priority weeds growing along the road. Likewise, if you camp, hunt, ride your horse or partake in other recreational activities, be on the lookout for high priority weeds.

TELL Finally, if you’ve found a high priority EDRR weed, tell someone about it. Usually the most appropriate person to contact is your local Extension agent or weed coordinator. Communicating will help to ensure the infestation is managed appropriately and people in nearby counties can also be alerted. If you want to go a step further, learn how to submit a record to EDDMapS.

The relatively small efforts of many people who are willing to learn, look, and tell about noxious weeds can go a long way to maintain weed-free areas. Do your part and get involved!

What weeds should I look for?

Statewide, here are a few high priority weeds...

- Yellow starthistle
- Dyer’s woad
- Rush skeletonweed

For more information, visit the Montana Department of Agriculture (agr.mt.gov) for the state noxious weed list, the Montana Weed Control Association (www.mtweed.org) for information on identifying them and and the resources section on the back page of this pamphlet.