

Early Detection Rapid Response Program Targets New Noxious Weed Species in Washington State

Abstract

Early detection, rapid response is a critical component of invasive plant management. It can be challenging, however, to detect new invaders before they become established if landowners cannot identify species of concern. In order to increase awareness, eye-catching postcards were developed in Washington State as part of a noxious weed educational campaign. Plant identification, potential impacts, and current distributions are provided in a simple format for easy information consumption. Postcards are distributed across the state at various venues, thereby increasing the general public's exposure to little known but high risk species.

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Introduction

Early detection, rapid response (EDRR) is one of four key components to successful eradication programs, in addition to effective control methods, careful monitoring, and education (DiTomaso, 2000). If an infestation of a newly invading weed species is detected early and responded to rapidly, it is often still small in size and can be quickly treated with limited expense and a greater likelihood of successful eradication (Pokorny & Krueger-Mangold, 2007). EDRR is cost-effective, even when intensive treatments are applied to control new invasive weeds, because such treatments are made only to species that have already established self-perpetuating populations and because such invaded habitats rapidly recover from control efforts (Westbrooks, 2004). Examples of successful EDRR programs include Russian knapweed (*Acroptilon repens*) in Arizona (McReynolds, & Howery, 2001) and dyer's woad (*Isatis tinctoria*) in Montana (Pokorny & Krueger-Mangold, 2007) and Utah (Dewey, Gale, & Dorst, 1995).

In an effort to prevent the spread of invasive plant species in Washington State, a tiered noxious weed listing system was established that prioritizes species, in part on their known distribution within the

state, the most restrictive level being the Class A category. Washington Administrative Code (WAC) 16-750-003 defines Class A noxious weeds as "those noxious weeds not native to the state that are of limited distribution or are unrecorded in the state and that pose a serious threat to the state." By law, landowners are required to eradicate Class A noxious weeds from their property. As pointed out above, if an EDRR program is to be effective, weed populations need to be controlled while they are still of limited acreage. Because Class A weeds are relatively rare in the state, however, newly established populations frequently are not recognized while they are still small enough to be considered eradicable. Clearly, a program through which the general public could be educated about relatively rare noxious weed species and taught how to recognize them before they spread extensively through the state, was necessary.

Have You Seen This Invasive Plant?

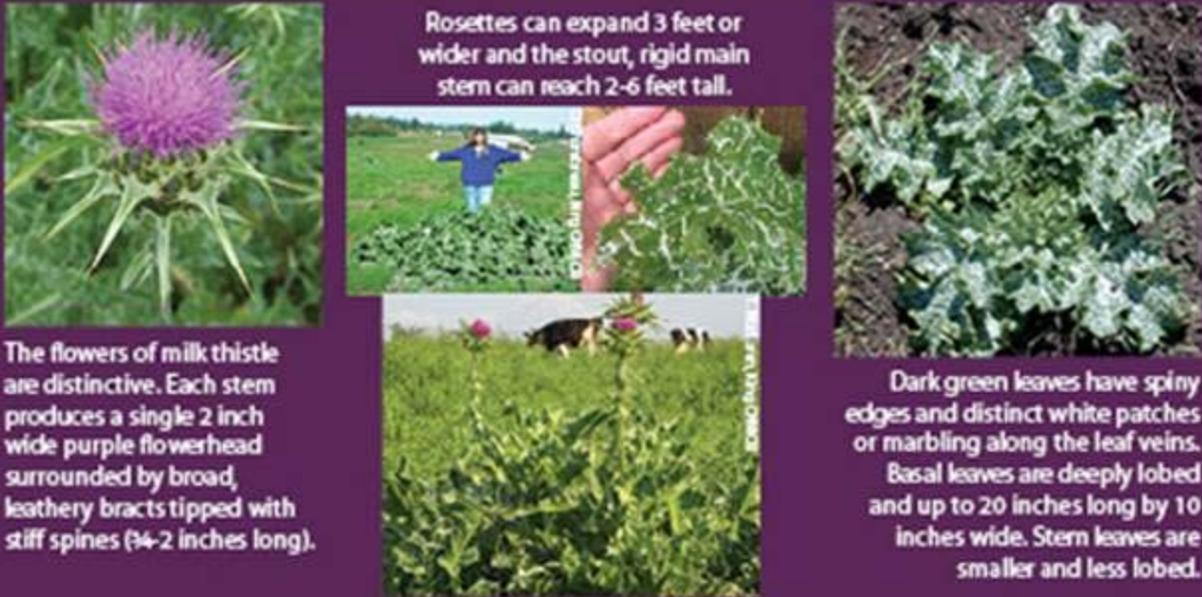
To improve the visibility of less-common noxious weeds with the general public, a series of 4- by 6-inch postcards was developed, each highlighting a different noxious weed. On the front of each brightly-colored postcard is the phrase "Have you seen this invasive plant?" set in bold lettering. An example (milk thistle, *Silybum marianum*) is provided in Figure 1. Photos are provided of the weed species, with close-ups and captions illustrating the distinct characteristics that can aid in recognition for that species. On the back of each postcard is key information about why the highlighted species was declared a noxious weed, the type of habitat in which the species is found, and where in the state the weed has established; when appropriate, a list of cautions about the plant which the public should know is provided (Figure 2). Clients are provided an email address for the Washington State Noxious Weed Control Board should they recognize an infestation of the weed near them.

Figure 1.

Front Side of Early Detection, Rapid Response Postcard

Have you seen this invasive plant?

Milk thistle is an annual or biennial weed that is toxic to livestock.
Learn more at www.nwcb.wa.gov



Rosettes can expand 3 feet or wider and the stout, rigid main stem can reach 2-6 feet tall.

The flowers of milk thistle are distinctive. Each stem produces a single 2 inch wide purple flowerhead surrounded by broad, leathery bracts tipped with stiff spines (1/4-2 inches long).

Dark green leaves have spiny edges and distinct white patches or marbling along the leaf veins. Basal leaves are deeply lobed and up to 20 inches long by 10 inches wide. Stem leaves are smaller and less lobed.

Figure 2.

Back Side of Early Detection, Rapid Response Postcard

Why is milk thistle (*Silybum marianum*) a noxious weed?

- The broad growth habit of milk thistle can displace a large number of native and forage species.
- Milk thistle can be lethal to livestock when ingested.

Where do you find milk thistle?

- This noxious weed prefers fertile soils and in Washington is often found in pastures with heavy disturbance and exposed soil.
- It can also be found in dense stands along roadsides, ditches and waste areas.

What can you do?

- Learn to identify this Class A noxious weed.
- Please note that eradication of this plant is required in Washington State to prevent it from gaining a foothold.
- Report any sightings to your county noxious weed control board or to noxiousweeds@agr.wa.gov.



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The state of Washington contains distinct climatic areas within its borders. Western Washington is

known for a cool and wet climate, most of central Washington is semi-arid rangeland, while dry forestlands dominate much of the remaining state. Postcards were therefore first distributed to county Extension educators and noxious weed control programs in the counties where particular weed species were either already known to occur or was most likely to be found. For example, giant hogweed (*Heracleum mantegazzianum*) primarily grows as a garden escape in riparian area in western Washington woodlands, while spurge flax (*Thymelaea passerina*) is only known to infest dry rangeland sites in north central Washington. Personnel from these and other counties have provided postcards to their citizens during educational programs, mailings, county fair booths, and from information boards in their offices. Space is provided on back of the postcard for the agency's contact information to be attached.

Most of the species for which postcards were developed are Class A noxious weeds in Washington. Others are Class B noxious weeds, defined in WAC 16-750-003 as those species "that are of limited distribution or are unrecorded in a region of the state and that pose a serious threat to that region." Because these weeds are fairly widespread in part of the state, control of Class B weeds is designated to occur in those portions of the state where the infestations are still small. Hence, EDRR is still appropriate for those species. For example, hoary alyssum (*Berteroa incana*) is a Class B noxious weed that is toxic to livestock and is particularly problematic in northeastern Washington but does sporadically occur elsewhere. Poison hemlock (*Conium maculatum*) is a Class B noxious weed that, while common in many areas of the state, is included in this project due to its deadly toxicity. Several human poisonings in Washington demonstrated the need for such an educational campaign. Postcards for selected species, flowering rush (*Butomus umbellatus*) for example, have also been printed in Spanish to expand their usefulness (Figure 3). All postcards may be viewed online at the Washington State Noxious Weed Control Board (<http://www.nwcb.wa.gov/>).

Figure 3.

Spanish Version of Early Detection, Rapid Response Postcard

¿Ha visto esta planta invasora?

La **Junco florido** (flowering rush en Inglés) (*Butomus umbellatus*) es una planta de agua dulce que puede colonizar rápidamente pantanos, orillas de acuñeros, ríos de caudal lento, y canales.

Para aprender más visite: www.nwcb.wa.gov



El pedúnculo o ramita que sostiene las flores puede crecer hasta 3 pies por encima del nivel del agua y produce un solo racimo de flores de color blanco a rosado, cada una con tres pétalos y tres sépalos. No todas las plantas florecen, por lo que, es importante el reconocer las hojas también.



Las hojas emergentes son carnosas, triangulares en la base y planas hacia las puntas. Tienen una leve torcedura espiral distintiva.



Las Junco florido pueden encontrarse disperso entre la vegetación en pantanos o áreas densas como estos. Las hojas pueden crecer por encima de la superficie del agua o pueden estar completamente sumergidas.

Conclusion

These educational postcards have provided good information to thousands of people in Washington State and raised the visibility of several noxious weeds of greatest concern. While the effectiveness of this EDRR program remains to be determined, the continued demand for copies and additional species indicates their popularity in weed education programs across the state. In addition, reports of possible high-priority weed species has spurred immediate responses from county and state agencies. For instance, several sighting of kudzu (*Pueraria montana* var. *lobata*), a serious weed in the southern U.S. that is known to grow in western WA, have been reported resulting in a rapid response from personnel from county noxious weed control programs, WA State Noxious Weed Control Board, WA Department of Agriculture, and WA State University. Fortunately, all reports have been misidentifications, but they demonstrate the increased awareness about critical species and that even mistaken reports provide learning opportunities. Surveys to assess the impacts of the postcards will help further determine their value.

Acknowledgments

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