



Projects examine dynamics of reed canary grass and map spread of invasive species

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by Lauren Brown

Over the last decade, reed canary grass has established a robust presence in the Harney Basin. While ag producers may disagree on whether this is good or bad, a pair of projects spearheaded by the Harney Basin Wetlands Collaborative (HBWC), a collaborative of the High Desert Partnership, will examine a variety of habitats where the grass is present and what practices might be employed to manage it. A third project involves mapping the basin to see where various kinds of vegetation, including reed canary grass, are growing and how pervasively they are spreading.



HBWC partners Tony Svejcar, a retired rangeland scientist and research leader with the U.S. Department of Agriculture and Esther Lev, a wetland ecologist are working with Bird Alliance of Oregon and Malheur National Wildlife Refuge on the reed canary grass projects for the collaborative. According to Oregon State University's Solve Pest Problems Guide, reed canary grass is a native, perennial grass that emerges in early spring and grows from seeds, stem fragments, and creeping rhizomes. It establishes and thrives in sites with wet, saturated, or nearly saturated soils. It forms dense stands that suppress other plants. There is some debate as to whether the reed canarygrass currently in the flood

meadows is the native variety. This species is used as a pasture grass in the eastern portion of the U.S. and these strains may have been introduced into our area.

Pictured: Botanists Bruce Newhouse and Dick Brainerd at the Eastern Oregon Agricultural Center installing reed canary grass test plots. Photo by Brandon McMullen.

Svejcar noted that reed canary grass can grow to be 6 feet tall. "You can get lost in a reed canary grass stand because you can't see above it," he said. In one of his reed canary grass test plots, it took quite a while to find a meter measuring stick that was attached above a fence post because the grass had grown taller than the stick and was covering it. "We knew about where it was. We had been there three or four times, and it took us probably 15 minutes to find it once the reed canary grass got that tall because it just totally obscured everything."

Reed canary grass is an aggressive spreader, and it crowds out most other plant species, according to Svejcar. "It gets so tall that often in the thicker stands, it'll shade itself out. The lower part of the canopy will turn brown, and the leaves will just drop off because they're not getting enough light to support themselves."

The productive nature of the plant is both a good and bad thing for ag producers. It grows many tons to the acre, but the quality of the hay it produces is not great, especially when producers have to wait to cut it. "If you could get out there early and cut it, it would be fine," Svejcar said. "But when you're spreading floodwater, and you have to let the ground dry out before

you can hay it, that means it is going to be late in the season when you're going to get out there, so the quality is not very good. Among the ag producers, there's a mixed opinion about it."

Early in the season, when the seed head is compressed, reed canary grass has a red hue. But as the plant opens up, and the seed head expands, it takes on a beige color. Svejcar noted that sometimes because of the difference in color, people will mistake the plant for a different variety, but it is the same plant, just another stage of development.

Reed Canary Grass and Birds



The Reed Canary Grass and Birds project will look at three different levels of reed canary grass composition at four different sites in the Harney Basin. Svejcar, Lev, and Teresa Wicks, a biologist with the Bird Alliance of Oregon (formerly Portland Audubon) based in Harney County, and Travis Miller of Malheur National Wildlife Refuge are working on this project together.

The three different vegetation structures are areas with solid reed canary grass, areas with some reed canary grass that may overtime become completely invaded and areas that don't have much reed canary grass at all. They will compare plant diversity, insect and bird species presence and uses within these three different stands of plant composition at four different locations.

Pictured: A song meter at the Malheur National Wildlife Refuge. Photo by Teresa Wicks.

Song meters, which record bird songs and early morning bird surveys, are being used to help biologists identify species of birds present within the different vegetation communities and locations.

The project will cover a period of several months and look at different heights and densities of reed canary grass and which birds and macroinvertebrates are using those areas, Lev said. She noted that an example of how this study might help inform biologists studying birds is looking at whether birds would want to nest in the areas with reed canary grass. "If you cut it down at this period of time, or grazed it early, could you manage the height of it so that maybe it helps certain birds?" Lev said. "It's easy to hate monocultures, but we don't really know."

This study will help determine how a monoculture of reed canary grass, a mix of vegetation and little to no reed canary grass each affect birds and macroinvertebrates in those areas. "Perhaps there are birds using the reed canary grass, but then there is a period that bird use is dropping off. Is there a way to do vegetation management, too?" Lev said. These are the types of questions this project addresses.



Testing Management Options for Reed Canary Grass

The other project looking at the management of reed canary grass will involve test plots at the Eastern Oregon Agricultural Research Center. This work will allow researchers to test out different strategies to try and inhibit reed canary grass from producing a monoculture.

Pictured: Esther Lev installing a reed canary test plot at the Eastern Oregon Agricultural Research Center. Photo by Brandon McMullen.

With the test plots, "we'll actually cut it at different times, and see what it does to the stand structure," Svejcar said. "We want to do things to disfavor it, but if we have to live with it, what can we do to alter the stand structure so that maybe it

isn't quite so overwhelming and doesn't just form an absolute monoculture.”

Svejcar cut some test plots early in May and again at the end of May. For each of those cuttings, he will look at how much biomass was produced, how many pounds to the acre came off in each clipping and how much regrows by the middle of July. This project will help answer questions such as if you cut the reed canary grass early or grazed it, could one still get a hay crop off it? “We just don’t have information on that sort of thing,” Svejcar said. He and Lev believe these projects will provide more vital information on reed canary grass, which has rapidly expanded its presence in the basin within the last decade. “There hasn’t been much thought given to it. There’s really been no work done on what we can do with this stuff,” Svejcar said. “How can we make it either more productive for the ag producers or better habitat [for wildlife]?”

Mapping Vegetation of Harney Basin Wetlands

Reed canary grass has been around for a long time, according to Svejcar. “It’s like a lot of these species. They’re around. You see them. You don’t think much of them. It was in the ditches, along the roadside. You see it along the canals,” he said. “It’s around for a long time, and then some 20 or 30 years later, it just takes off.”

Lev said that it was about 10 years ago that reed canary grass started having a healthy presence in the basin, and it has become very noticeable within the last three to five years. That is why the mapping project, also headed by Lev and Svejcar, is important. The collaborative has contracted with Open Range Consulting to develop a vegetation map of the Silvies Valley, Diamond, and Riley/Silver Creek to match the existing map used on the Malheur National Wildlife Refuge. The project will create a map that will become the base map for tracking Harney Basin change over time in response to the collaborative’s projects and investments.

“This will help with decisions about infrastructure. For example, where do you clean ditches and where do you need to spread the water a little bit more because you’re not getting the kind of meadow vegetation that you should have,” Svejcar noted. “It’ll help people make decisions about using their water and controlling weeds” This project will help to maintain a desirable habitat in the wild flood-irrigated wet meadows.

Svejcar said the result will be “a very precise map of vegetation in the Harney Basin.” In addition, with the use of remote sensing, they will be able to develop models for previous years. For example, if they wanted to see how much reed canary grass was present in 2010 or 2014, they would be able to see that from the mapping. With this information, they can look at a variety of vegetation growing throughout the basin including perennial pepperweed, greasewood, and saltgrass.

Lev said that a new invasive species, smooth brome, has reared its head and potentially the mapping will be able to track how it is growing and spreading as well, allowing them to see changes over time. “It helps us prioritize where to start working,” Lev said. Having a solid foundation of information can help the Harney Basin Wetlands Collaborative decide where to put its resources and which outcomes are the most fruitful. Smooth brome is another species that is good for some uses, such as hay productions, but may not be as good for wildlife habitat.

The Harney Basin Wetlands Collaborative’s reed canary grass and mapping projects will offer important information on how invasive grass species could be managed to provide ag producers with more bountiful harvests and wildlife with better habitat.

This article is provided by High Desert Partnership; a Harney County nonprofit convening and supporting six collaboratives including the Harney Basin Wetlands Collaborative.

