



What's Working:

Invasive Species Control

February 2015

Spotted Knapweed Control

- The following are considerations for managing spotted knapweed in a native prairie remnant. Herbicides with soil residual are undesirable as they impact non-target species. We are having good success in dry prairie with a combination of hand-pulling in targeted areas (typically small isolated populations), spot-spraying basal rosettes in late fall with glyphosate, prescribed burning to reduce vegetation cover (and then spray basal rosettes afterwards), and knapweed root weevils. Seedhead weevils help too, but root weevils are best. But it took about five years to see the impacts of biocontrol, so meanwhile we worked on the perimeter to slow the spread. Ultimately the biocontrol has done the most, but the other methods helped to control the knapweed until the bug population reached adequate numbers (Karen Schik, Friends of the Mississippi River).
- The following information documents biocontrol efforts for spotted knapweed around Bemidji west to Bagley and north to Turtle River in 2006 and 2007. When the knapweed began moving in I was astounded at how quickly it became dominant. I thought it would take some time, but it took over completely within just a year or two, so something had to be done quickly. We even got inquiries from state legislators asking what we were going to do about it. So, I began releasing weevils here and there in the hopes that we could get control of the situation. I followed up with releases of seedhead weevils later at the same locations. I monitored the release sites every year after the fact, and hardly found any weevils (other than seedhead weevils which were everywhere), so I gave up thinking it was a complete failure. However, the amount of knapweed kept declining on Highway 2 until a few years ago I noticed it was almost totally gone. I thought that Mn/DOT had simply gone around town and sprayed it out. However, I received an email written by Monika Chandler (MDA) indicating that she was convinced that the weevils were responsible for the decline of knapweed on Highway 2 in the Bemidji area. If she is correct, then it has been a huge success. There is almost no knapweed in many places along Highway 2 and the population of knapweed is being reduced every year. We had several good years for the weevils to grow, so they should have done well in the locations where I put them, but I never found many at all. Maybe they had moved to other locations from where they were released? I tried to put them in very dense populations of knapweed so they wouldn't need to travel far, but maybe they dispersed farther than I was expecting. Regardless, it looks like this was a good success and it happened much quicker than I was expecting it to. Best hopes for biocontrol (Lawrence Puchalski, U.S. Army Corps of Engineers)!
- Pulling individual plants before flowers develop. Pull when soils are moist to avoid breaking roots.



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- Application of Clopyralid or Aminopyralid herbicide on rosettes in the fall and early spring and mature plants in late spring early summer prior to flowering (Tony Cortilet, Minnesota Department of Agriculture)
 - Information about biological control for spotted knapweed can be found on the MDA website at:<http://www.mda.state.mn.us/en/plants/badplants/knapweed.aspx> (Tony Cortilet, Minnesota Department of Agriculture).
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