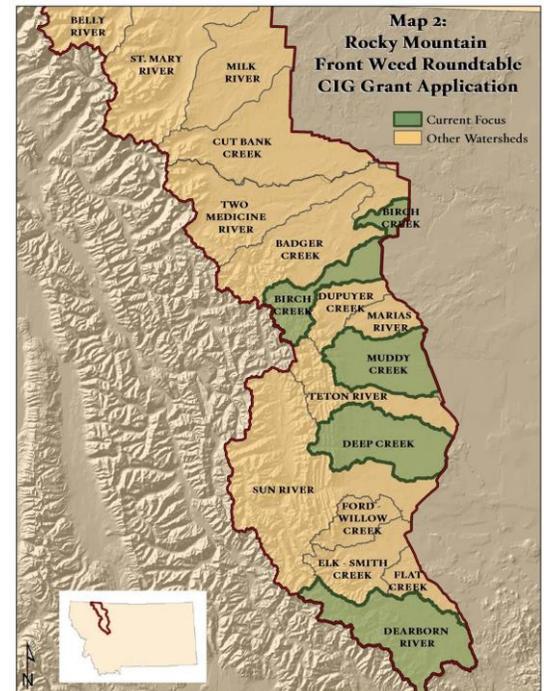


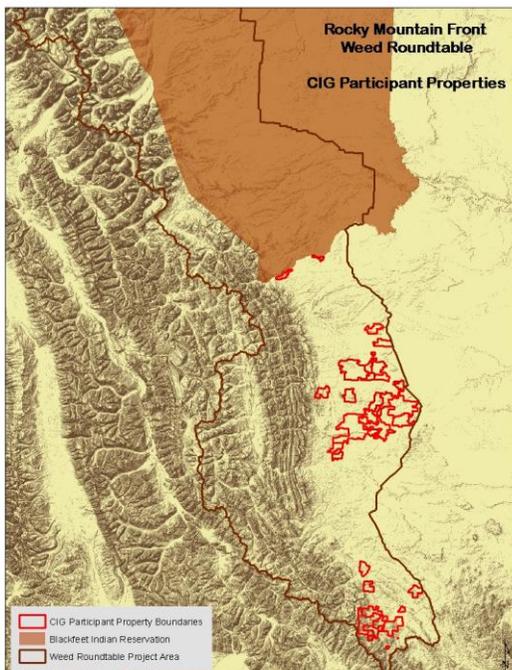
Conservation Innovation Grant Project – Changing Weed Management

(by Erin Fairbank, Executive Director, RMF Weed Roundtable, Choteau, MT; noxiousweeds@gmail.com)

Introduction: In September 2012 the Rocky Mountain Front Weed Roundtable (Roundtable) was awarded a \$220,000 Conservation Innovation Grant (CIG) from the Natural Resources Conservation Service, entitled “Implementation of a Cost-Effective, Broad-scale, Integrated Weed Management Model.” The Roundtable applied results from a 2011 study conducted by The Nature Conservancy that modeled weed spread across the Rocky Mountain Front over time (Frid et al. 2011, see link to paper at bottom of page 2). The study predicted weed spread and calculated the best management practices and most cost-effective methods to limit overall weed spread. The strategy is as follows: Emphasize prevention; control smaller isolated infestations; eradicate new outbreaks by appropriate aggressive treatment; and contain large established patches through a combination of perimeter spraying and an interior release of biological control agents. Beginning in 2013, Roundtable partners worked with EQIP-eligible private landowners in four drainages – Dearborn River, Deep Creek, Muddy Creek and Birch Creek (see map, right) - to implement these methods. The weeds addressed in the grant are spotted knapweed, leafy spurge, sulfur cinquefoil, hoary alyssum and perennial pepperweed.



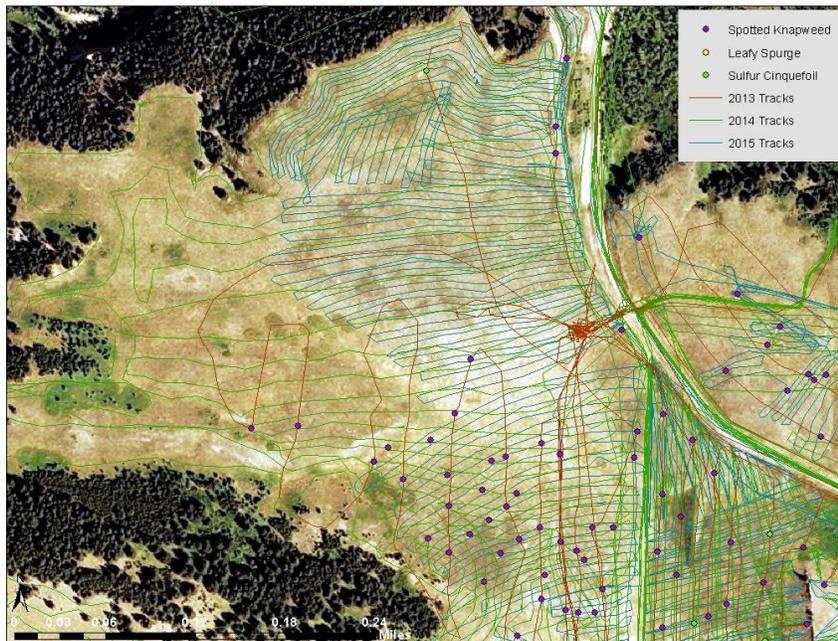
Commercial applicators were hired to treat participant properties. The grant paid for 75% of contracted work and the landowners paid a cost-share of 25%. Time spent on the project by Roundtable partners served as in-kind match as did any Roundtable Community Project, such as drainage-based spray days and weed pulls. The Roundtable also developed noxious weed maps, personalized weed management plans for each landowner, and overall drainage-wide weed management plans.



Preliminary Results: The project put nearly one-half million dollars (\$220K in cash plus a one-to-one match of in-kind and cash) on the ground across the Roundtable Project Area.

- 26 Landowners participated which included over 117,000 acres of private and public land (see map, left)
- Known noxious weed infestations cover 1,202 acres
- 3,030 mapped weed patches
- Percent infestation reduction varied by property – some increased as more land was surveyed and new patches were discovered while most showed up to a 97% reduction in weed infestations
- Herbicide costs greatly reduced during project, enabling more resources to be allocated to surveying for new weed patches
- Found and treated largest infestations of hoary alyssum and perennial pepperweed known on the Front
- Drastically reduced infestation levels of hoary alyssum, perennial pepperweed and sulfur cinquefoil
- Landowners pleased with project results and will likely continue with management strategy

Management implications: The Roundtable's CIG project differed from traditional weed management approaches by focusing on strategies that prevent expansion of weed infestations in order to maintain agricultural economic values. The project employed integrated weed management to focus on the priority actions necessary to achieve broad-scale success across watersheds, with positive economic return, and provided a framework for long-term sustainability. The modeled results indicated a treatment regimen different from what has been common practice: rather than chemically treating all patches equally, regardless of size and age and density, the study showed greatest success by *containing large established patches* (through a combination of perimeter spraying and an interior release of biological control agents), *controlling smaller isolated infestations*, and *eradicating new outbreaks* by appropriate aggressive treatment. It also targeted vectors, again suggesting aggressive treatment of roads and ditches, and containment of weeds within the riparian corridor alongside aggressive treatment at the upland interface.



CIG cooperator property map with work completed 2013-2015. Dots represent weed patch locations and lines are survey routes. Commercial herbicide applicators were hired to survey and map each property and chemically treat smaller/isolated patches of weeds. For large, well-established patches, the perimeter was treated with herbicide and the Roundtable released biological control insects within the interior of the patch. GPS mapping with tracks is important not only in treating and monitoring weed patches but also to prevent spread into known weed-free areas.

Read more about the Rocky Mountain Front Weed Roundtable at <http://www.rmfwweedroundtable.org/>. Final results and report on the CIG project will be available December 2016.

Frid, L., D. Hanna, N. Korb, B. Bauer, K. Bryan, B. Martin, and B. Holzer. 2011. *Evaluating the costs and benefits of alternative weed management strategies for three Montana landscapes*. Prepared by The Nature Conservancy of Montana, Helena, MT and ESSA Technologies Ltd., Vancouver, B.C., 56 pp. + appendices <https://www.conservationgateway.org/ConservationByGeography/NorthAmerica/UnitedStates/Documents/montanaweedmodel2011.pdf>.