

Becker County Cooperative Weed Management Area  
Management Plan  
May 2009

## INTRODUCTION

The Becker County Cooperative Weed Management Area (BCCWMA) in Minnesota was begun in 2006 as a multi-agency and community effort to coordinate and implement management and control of invasive terrestrial and aquatic plants. Once organized, a part time position was initially funded through a National Fish and Wildlife Foundation (NFWF) grant under the Pulling Together Initiative. The purpose of this grant and the associated position was to begin control efforts for species agreed upon by the group in an agreed upon focus area. This management plan is meant to expand upon the initial efforts of the group to expand invasive species coordination and control to the entire county and to formulate a plan to ensure the long term persistence of the Becker County CWMA.

## PURPOSE AND BACKGROUND

This plan is meant to clearly define the BCCWMA objectives and priorities and some of the strategies for meeting those objectives. A long term commitment and plan is needed to effectively deal with invasive species and to continue this cooperative effort. Invasive species will likely be a continual threat to Minnesota ecosystems and long term planning will minimize these threats. Monitoring of initial efforts and follow up treatment are essential to ensure those efforts are not wasted. We can learn from mistakes and continue control if a long term effort is made. Follow up treatments, along with early detection, are also more cost effective than returning to the problem years later. In addition, a plan is needed to determine what vegetation is desired that will maintain a healthy ecosystem and keep invasive species in check. Planning for the desired condition may at the same time allow for more effective long term invasive species control.

This management plan is meant to provide a framework for continuing cooperative weed management efforts in Becker County into the future, and is part of the objectives of grants received thus far (see below). The BCCWMA is committed to Integrated Pest Management including mechanical, chemical, biological, and cultural methods of control. As new invasive species threats, control methods, and priorities emerge, this document may be modified.

The initial objectives and associated strategies of the BCCWMA under NFWF grants in 2006 and 2007 were as follows. New objectives for this plan (later in the document) were based on these beginning objectives. The core focus area has been the townships of Cuba, Hamden, Lake Park, Audubon, Riceville and Carsonville and Pine Point added 2009 in Becker County for these invasive plants: crown vetch (*Coronilla varia*), common tansy (*Tanacetum vulgare*), spotted knapweed (*Centaurea maculosa*), leafy spurge (*Euphorbia esula*), wild parsnip (*Pastinaca sativa*) added May 2009 buckthorn (*Rhamnus cathartica*, *Rhamnus frangula* L.).

### Objectives of NFWF grant projects

- 1) The IPM treatment of 1,000 acres located within the focus area and the county, isolating existing and emerging weed locations and preventing the continued spread into uninfested grasslands. Many of these treatments will target the successful isolation/possible elimination of emerging weed threats in the County such as crown vetch, wild parsnip and tansy.
- 2) The development and implementation of a long-term comprehensive management plan for the Becker County Weed Management Area.
- 3) Continue the implementation of an invasive species baseline inventory/GIS spatial dataset from which to measure future success.
- 4) Host several field tours, media events, and legislative tours to highlight successful IPM treatments within the core focus area as well as within the county. Develop county Invasive Species Website, brochures, presentations, newsletters, and newspaper articles.
- 5) The BCCWMA steering committee comprised of Federal and State agencies, county government, township officials, private corporations, non-profit conservation groups, and university experts will facilitate information transfer and foster a more collaborative approach to targeting weed management efforts. This will increase efficiency and enable the prioritizing of weed management target treatments.

### Strategies for NFWF and BWSR grant projects

**TREATMENT.** The cooperative partners will be implementing an integrated IPM approach using biological, chemical, mechanical, and cultural control methods. IPM treatments will be prioritized and coordinated through the collaborative efforts of the partnerships and steering committee. Provide early detection and rapid response to manage and control the spread of existing and emerging invasive species infestations.

**PLANNING AND MANAGEMENT.** BCCWMA planning and management will utilize, through meetings and communication, the steering committee to provide input into developing a comprehensive IPM/invasive species management plan. The development and utilization of the GIS spatial dataset is absolutely critical for the BCCWMA steering committee to successfully develop a comprehensive weed management plan or strategy. The plan will incorporate a collaborative targeting of invasive species and weed management effort.

**INVENTORY AND MAPPING.** Continue the implementation of a baseline inventory/GIS spatial data set/layer using GPS and GIS software and the Minnesota Department of Agriculture Weed IPM Mobile Weed Mapping System. This baseline spatial data will be used to prescribe targeted treatments and develop IPM strategies from which to measure future success. The inventory and mapping will give the partners and Becker County the knowledge of weed infestation locations and severity. The partners

and Becker County will also gather weed information in the form of pen and paper maps with the help of townships and concerned citizens. This information will then be entered into the GIS spatial data layer. The collection and integration of the invasive species data layer will be available in a GIS mapping system for the public to report new weed locations and to be used by partners to share information, and prescribe and conduct treatments.

**EDUCATION.** The BCCWMA is partnering with the University of Minnesota Extension Service, collaborative partners, and the County to provide and disseminate valuable weed identification, reporting, and prevention information. The BCCWMA will be hosting field tours, media days, and legislative tours highlighting successful IPM techniques and treatments. The development of a Becker County Invasive Species Website will be useful in promoting and disseminating information to a large number of concerned citizens and will be an excellent communication tool. Information in the form of brochures, newsletters, reports, videos, pictures, and newspaper articles will also be provided. It will be beneficial in having the public be involved with the BCCWMA project. As the public becomes active in the project we will be seeking volunteers to help further our educational efforts.

**IMPROVED EFFICIENCY.** Schedule meetings to incorporate the collaboration of ideas, planning, and transfer of information. The partnership will have an improved efficiency in coordinating activities such as educational efforts, targeting treatments and results, refining IPM treatments, and prioritizing weed management efforts and controls. The BCCWMA's cooperative partners will be able to collectively leverage our resources in a coordinated effort to control invasive species in the diverse landscape of Becker County.

### Becker County Landscape and Features

The BCWMA is located in northwest Minnesota and contains several jurisdictions of ownership including many units of the National Wildlife Refuge System, State Forest and Wildlife Management Areas, The Nature Conservancy preserves, County and Watershed properties, White Earth Indian Reservation, and private lands. Located in the Northern Tallgrass Prairie portion of the Prairie Pothole Region, the BCCWMA encompasses some of the most imperiled habitats in the United States. Rare prairies currently found in Becker County include some of the best examples in Minnesota. Mesic tallgrass prairie, wet blacksoil prairie, and sedge meadow/ calcareous fen prairie habitats found within the County are especially unique, and vulnerable to invasive species. This area in northwestern Minnesota lies in the zone between the forest to the east and the prairie to the west. The transect crosses the Pine Moraines and Outwash Plains, Hardwood Hills, and Red River Prairie subsections. The woodlands of Becker County shift from pine-hardwood forests in the east to maple-basswood forests and oak savanna in the west. Row crop agriculture and raising of livestock occur primarily in the western part of the County. Lake country tourism is a major industry in Becker County.

Several species inhabiting this region are federally threatened (western prairie-fringed orchid), or are rare species/species of concern. Plant species found here include the small

white lady slipper, and single-spiked sedge. Rare fauna species include the Henslow's sparrow, upland sandpiper, marbled godwit, Bairds sparrow, sharp-tailed sparrow, spragues pipit, loggerhead shrike, chestnut-collared longspur, and greater prairie chicken. Other species of national concern found here include the black tern, northern harrier, upland sandpiper, sedge wren, grasshopper sparrow, and many other grassland nesting bird species.

Invasive species have already degraded many remnant native grasslands to the detriment of these ecological communities. The remaining healthy prairie grasslands found within the BCCWMA are currently threatened from the ever increasing spread of invasive species found on adjacent lands. Forested areas are also threatened from this spread.

In addition to the biological/conservation need for this project addressed above, there are compelling social and economic needs addressed by this endeavor. Leitch (1994) estimates that leafy spurge alone is responsible for over \$130 million dollars in annual economic losses in the northern great plains. Within the BCCWMA, leafy spurge, spotted knapweed and Canada thistle alone have resulted in economic losses to the community through direct impacts to grazing and agricultural lands, as well as indirect impacts to recreation and tourism. The reduction of established invasive species, and elimination/prevention of emerging threat weeds will have a positive economic impact to the local community over the long term.

#### ADMINISTRATIVE FUNCTION

The partners of the BCCWMA at this time are Becker County Agriculture Inspector, Becker County Soil and Water Conservation District, Becker County Townships, Becker County, Buffalo-Red watershed district, BASF, City of Detroit Lakes, DOW Agro Sciences, Dupont, Minnesota Department of Agriculture, Farm Service Agency, Minnesota Department of Natural Resources, Minnesota Department of Transportation, Nature Conservancy, Pelican River Watershed District, University of Minnesota Extension, White Environmental Service, White Earth Indian Reservation, Woods & Wheels ATV Club, U.S. Fish and Wildlife Service . The lead for the BCCWMA, where a part time employee (Becker County Assistant Ag Inspector) is housed, has been the Becker County Soil and Water Conservation District. This role will continue at least as long as the NFWF and BWSR grant cycle through 2010. The lead role for the BCCWMA may change depending on availability of staff and funding. However, the SWCD has functioned well in this role and is a logical administrative home for the BCCWMA.

The BCCWMA has thus far functioned with informal partner participation and all are encouraged to participate. However, current grants require letters of commitment from partners. Some CWMA's develop formal MOU's. That will be decided among the group.

Other CWMA's have been formed or are in the process of being formed in northwest Minnesota. The BCCWMA will coordinate with these groups to facilitate their progress and invasive species control in the region.

## GOALS AND OBJECTIVES

The primarily goal of the BCCWMA is to prevent the establishment and spread of invasive species in order to conserve the natural ecosystems of the county and prevent economic impacts to agricultural and recreational lands. The core focus area has been the townships of Hamden, Lake Park, Audubon, and Riceville in Becker County. Smoky Hills state forest was recently added as a focus area as well along with Carsonville and Pine Point Townships. The focus species of the BCCWMA at this time are wild parsnip, crown vetch, tansy, leafy spurge, spotted knapweed. European buckthorn (*Rhamnus cathartica*) was added in 2009. A subcommittee met to determine objectives for this management plan for the BCCWMA. Subcommittees will be formed to formulate specific plans to carry out the strategies for meeting these objectives. These objectives are as follows:

1. Inventory and map invasive plant infestations to aid in planning for control efforts. Mapping will help to prioritize control efforts and allow a method of tracking progress. Some mapping has already occurred in the focus area and will eventually be expanded to other parts of the county. As of 2008, 12 of 40 townships in the county have some level of inventory completed for wild parsnip, crown vetch, tansy, leafy spurge and spotted knapweed. Some of the partner agencies have European buckthorn locations mapped, but further mapping needs to be completed for this species. These inventories will need to be periodically updated.

Strategies: Ultimately, the inventory information will be in a GIS system available to all members of the BCCWMA. It may eventually be available to the public via the internet so that they can also report invasive species locations. The information will include UTM coordinates, date of inventory, who recorded the infestation, the extent of the infestation, plant common and scientific names. The Becker County SWCD will develop and maintain the GIS database. The BCCWMA will work with the townships to record on a paper map or with GPS the known locations of the above six species and to complete road inventories of unknown areas.

2. Develop a prevention and early detection program for invasive species not yet occurring in Becker County or occurring in low infestations.

Strategies: Identify which species to watch for based on nearby known locations in Minnesota or North Dakota, the aggressiveness of the species and its habitat, and known level of difficulty of control. Develop identification and training materials that can be easily distributed to agencies and the public. Work with extension, schools, etc. to conduct outreach to the public. Work with local nurseries and Minnesota nursery inspectors to ensure target invasive species are

not sold in Becker County. Develop an early response team that can eradicate a species if it is found.

The species currently on the BCCWMA watch out list are cut-leaved teasel (*Dipsacus laciniatus*), oriental bittersweet (*Celastrus orbiculatus*), black swallow-wort (*Vincetoxicum nigrum*), flowering rush (*Butomus umbellatus*), Eurasian water-milfoil (*Myriophyllum spicatum*), Japanese knotweed (*Polygonum cuspidatum*), toad flax (*Linaria vulgaris*), birds foot trefoil (*Lotus corniculatus*), and yellow hawkweed (*Hieracium caespitosum*) 2009 add houndstongue (*Cynoglossum officinale* L.).

3. Conduct education and outreach to increase awareness of the impacts of invasive species. Awareness will ultimately aid in increasing resources to address the problem.

Strategies: Determine priority audiences and develop educational programs and outreach tools for Becker County landowners, land managers, and communities. Specify which partners have the ability and time to do outreach with these materials. Possible materials and avenues include websites, brochures, presentations, displays, schools, workdays, legislative tours.

4. Determine means for getting long term funding and resources to the appropriate entities for invasive species control. Funding may go through the BCCWMA in the next few years, but may also need to include funding to townships and agencies that can do on the ground control work.

Strategies: Future funding will be sought from grants through the Minnesota Board of Water and Soil Resources, NFWF, MN DNR, and other sources. A BCCWMA subcommittee will make a plan for future funding needs and other funding avenues. Outreach to the public and legislators regarding the need for funding for invasive species control are also needed.

5. Using an integrated approach, the BCCWMA will develop a cooperative control plan for each of the six species below that were identified as priorities by the group. The BCCWMA recognizes that they may not be able to eradicate species, but rather control them at levels that do not have significant economic or ecological impacts. Therefore, goals for containment and management of certain species will be established. For example, keep spotted knapweed confined to western Becker County at x number of infestations or keep tansy confined to x townships. A subcommittee will be established to develop these goals. The BCCWMA priority species are wild parsnip, spotted knapweed, crown vetch, common tansy, leafy spurge and European buckthorn.

Thus far the BCCWMA has worked in the focus area to release a biological control agent for spotted knapweed and leafy spurge, begun chemical control of wild parsnip and spotted knapweed by experimenting with herbicides to

determine the best means of control, and educating townships about the proper time to mow so as not to spread weeds.

Strategies:

Biological: available for leafy spurge and spotted knapweed, and a biological control is currently being developed for common tansy.

Chemical: Herbicide application is sometimes the only practical and effective way to control an invasive species. Many considerations must go into the use of a herbicide and specific plans will be made for each species on herbicide use. Herbicide use has been shown to be effective on wild parsnip in Becker County.

Mechanical: Manual and mechanical techniques such as pulling, cutting, mowing or otherwise stressing plants and preventing seed from forming can be useful for some species, particularly if populations are small. Grazing may also be appropriate for some species. Mechanical control methods such as pulling will work for small infestations of the target species. Health hazards exist from physical contact with parsnip, knapweed, and leafy spurge. Mowing can be effective on crown vetch if timed correctly and can prevent seed production on parsnip, tansy, and knapweed. Mowing can also spread seed if done at the wrong time. Mechanical controls are not likely to be as effective as other methods for the target species.

Cultural: This may include fire, flooding, smothering, or desirable species plantings that can compete with invasive species.

6. Determine the desired vegetation for roadsides, natural areas, erosion control projects, landscaping, etc. in Becker County in order to promote a healthy ecosystem in which opportunities for invasive species to take hold are limited.

Strategies: Research historic vegetation conditions to learn what plant community will do best in a particular part of the county. Most of western Becker County was prairie and these species have been shown to compete well with non-native plants once established. Compile information from natural resource agencies and others on the successes and failures of their efforts to restore native vegetation in relation to invasive plant problems. Use and promote the use of native vegetation, primarily prairie plants, for roadsides and natural areas where appropriate in the county.

Annual work plans will be completed to address specific activities related to this management plan with the PTI committee or other steering committee formed after grant completion.