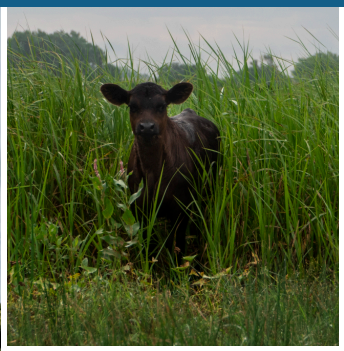
LANDOWNER GUIDE

to Habitat Improvements in Rainwater Basin Wetlands



Many landowners with privately-owned wetlands are interested in improving habitat for wildlife on their property. In the Rainwater Basin region, wetlands once dominated the landscape and the plants within them produced food for the millions of migratory waterbirds that passed through. Approximately 240 species of plants grow in and adjacent to Nebraska's Rainwater Basin (RWB) wetlands. These wetland plant communities can be varied and dynamic depending on the amount of disturbance and existing plant composition. They are influenced by the interaction of several factors, including soil type, water depth, duration of ponding, weather, and climate (deluge and drought), fire, grazing, human alterations to the wetland and the watershed, and frequency of management. Historically, these wetlands would have received significant annual disturbance by grazing animals.

In RWB wetlands, bare soil, which may include mudflats and shallow open water areas, is an early successional state that typically develops into a productive moist-soil plant community. Moist-soil dominated wetland plant communities are desirable because of the large amount of seeds produced, which are a high-quality waterfowl food. Some of the plants comprising this community include smartweeds, barnyard grass, spikerush, coreopsis, and beggarticks. Late successional plant communities, such as stands dominated by invasive cattail, river bulrush, or reed canarygrass, provide fewer seeds that waterfowl feed on, and encroach on open water areas that are needed for roosting and loafing.

RAINWATER BASIN
JOINT VENTURE
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DOES MY WETLAND NEED MANAGEMENT?

A wide array of management tools are available to manipulate RWB wetland vegetation communities, including grazing, prescribed fire, herbicide application, mechanical tree removal, disking, rototilling, and haying/shredding/mowing. This brochure provides information to assist landowners in conducting a self-evaluation to determine if their wetlands are ready for management to enhance wetland function.

Moist Soil Plant Community: Contains a variety of plants, bare soil, and shallow open water.

Cattail/Bulrush Invaded Community: Plant community dominated by cattails/bulrush with very little to no bare soil or open water.

Grassy/Tree Invaded Community: Plant Community dominated by reed canarygrass/trees with very little/no bare soil or open water.

INVASIVE PLANT IDENTIFICATION

There are several species of plants in the Rainwater Basin that are considered to be invasive and can greatly alter the plant communities. The most prevalent and harmful invasive species include hybrid cattail, river bulrush, reed canarygrass. These undesirable plant species provide fewer seeds for waterfowl to feed on, and they encroach on open water areas that are needed for waterfowl roosting and loafing.

HYBRID CATTAIL

Characteristics

Leaf Blades: flat & linear (36 inches long)
Flowers: Numerous tiny flowers packed into a cylindrical spike
Seeds: tiny seeds, wind dispersed
Roots: reproduces vegetatively by under ground rhizomes

RIVER BULRUSH

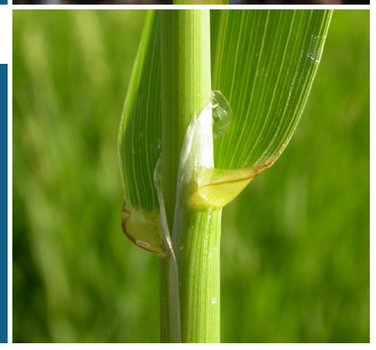
Characteristics

Leaf Blades: flat or folded (12 inches long)
Rootstalks: creeping and horizontal
Stems: sharply triangular
Inflorescence: clusters of 1-4 spikelets

REED CANARY GRASS

Characteristics

Leaf Blades: flat or slightly keeled
Rhizomes: large rhizomes enable the plant to grow in bunches
Inflorescence: compact, narrow panicle
Flowers: densely clustered single florets ranging from green to purple



WETLAND ASSESSMENT

If you feel your wetland may need management, you should conduct basic assessments of the vegetative community during the summer months to evaluate if treatment may be warranted the subsequent fall. Complete the blanks below to determine the current composition of your wetland. It is recommended that you complete this simple assessment each year to determine if vegetative communities are changing. If the amount of cattails/bulrush and/or reed canarygrass has increased on your property, management is needed. Or if the percentage of cattails/bulrush and/or reed canarygrass is higher than the percentage of moist-soil communities, management is likely needed.

Desirable Wetland Conditions	Current Conditions
Percent of open water (when present): ≥50%	% of open water on the site's wetland:_____
Percent of site in moist-soil plants: ≥30%	% of the site's wetland in this Plant Community:_____
Percent of site in reed canarygrass: ≤5%	% of the site's wetland in this Plant Community:_____
Percent of the site in river bulrush/cattail: <10%	% of the site's wetland in this Plant Community:_____

WETLAND MANAGEMENT TECHNIQUES

Determining the wetland management tool(s) to be used depends on the vegetative community, wetness of the site, and the landowner's resources. More importantly, the timing of the management action(s) will determine whether there is an increase in the desired plant community. Successful wetland management often involves applying a combination of treatments over consecutive years. This addresses the above ground plant growth and the root system response.

MANAGEMENT TREATMENTS FOR A CATTAIL/BULRUSH INVADED COMMUNITY

Herbicide Treatment

- For invasive wetland plants, such as cattail and river bulrush, a systemic herbicide approved for use over water, applied between mid-August and mid-September is most appropriate. The plant should be actively growing in order to draw herbicide down into its root system.
- Herbicide is best used after a pre-treatment such as grazing, haying/shredding, disking, and prescribed burning, to maximize leaf-herbicide contact.

Grazing

- Heavy grazing in wetlands is encouraged to create bare soil for early succession plant establishment. Grazing, following a prescribed burn, will increase palatability, nutritional value, and utilization.
- Grazing at the onset of cattail and river bulrush growth, even with water present, is encouraged

Prescribed Fire

- Burning is often used as a pretreatment to other management practices and can be conducted during the spring, fall, or winter.
  - Spring burning prior to mid-May will remove the litter layer and stress actively growing plants. Heavily graze the site after green up.
  - Winter and fall burning will remove the litter layer and prepare the site for a spring herbicide treatment.
- Burning during the non-growing season and without another management action will not impact established cattail and bulrush communities.

Disking/Tilling

- Disk in fall or winter to expose residual root mass to freezing temperatures following a pretreatment (burning, shredding, or grazing) and earlier herbicide treatment. Follow disking with spring/summer spot spraying or grazing in the subsequent year.

MANAGEMENT TREATMENTS FOR A GRASSY INVADED COMMUNITY

Herbicide Treatment

- Reed canarygrass requires treatment prior to the plant going dormant for the season, usually in October. The plant should be actively growing in order to draw herbicide down into its root system. It is more effective if sprayed in consecutive years.

Grazing

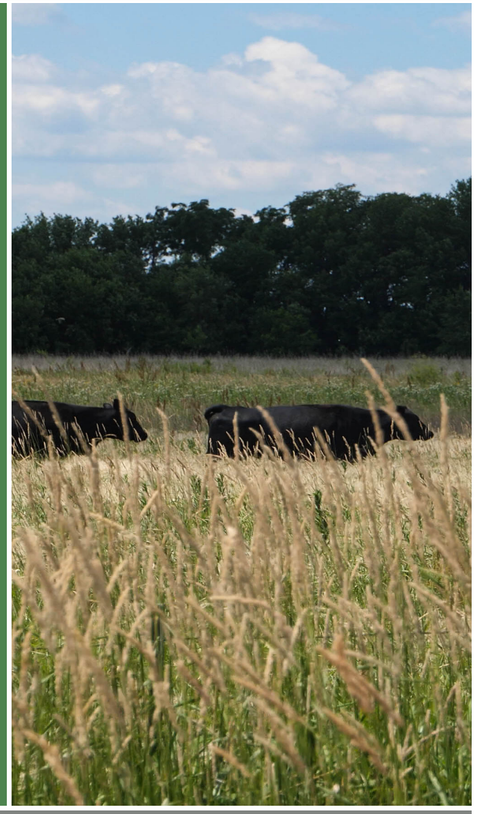
- Heavy grazing in wetlands is encouraged.
- Grazing at the onset of reed canarygrass growth (April) until mid-June will stress the plant but allow any new vegetative growth to occur. Grazing intensity and duration may need to be extended through July if the reed canarygrass infestation is severe and/or grazing can be focused in the wetlands. Conducting a follow-up herbicide treatment in the fall will aid in killing or reducing the plant.

Prescribed Fire

- Prescribed fire can be effective in the spring (particularly before an herbicide treatment).

Disking/Tilling

- Disk in fall or winter, or whenever the site is adequately dry. Follow disking with an herbicide treatment/grazing.



MANAGEMENT TREATMENTS FOR A TREE INVADED COMMUNITY

Herbicide Treatment

- Deciduous trees can be foliar treated in mid-June to maximize plant stress. Depending on the species, two treatments may be needed in one season to fully treat individual plants.

Grazing

- Heavy and season-long grazing in wetlands canreduce the presence of some species of trees, when small. However, grazing is not considered a primary tree control option.

Mechanical Tree Removal

- All stumps of cut deciduous trees should be treated within 15 minutes of cutting.
- Larger trees can be pulled out with an excavator if a cut stump is undesirable.

Prescribed Fire

- Prescribed fire can be effective at killing smaller trees (deciduous trees less than 18" tall and coniferous trees less than 24" tall) and may be effective at killing larger trees depending on the temperature of the fire.
- Periodic burning can keep growing points near ground level.

Haying/Shredding/Mowing

- Periodic haying/shredding/mowing to keep growing points near ground level and follow up with a foliar herbicide treatment.

GET ADDITIONAL ASSISTANCE

If you have assessed your wetland and find that your wetland is ready for management, there are resources available to assist you with the management process and potential cost-share for certain activities at www.rwbjv.org/wetland-management. Biologists can also answer questions and assist with technical guidance in evaluating your wetland and potential treatment alternatives. Funding may be available to complete management on wetlands in the Rainwater Basin.

If you would like assistance in adapting your management strategies, please contact the following people and organizations for assistance.

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