Wetlands and Dugout Placement

Beneficial Management Practices

Alberta NAWMP Partnership

Alberta Sustainable Resource Development

Alberta Environment

Alberta Agriculture, Food and Rural Development

Nature Conservancy Canada

Environment Canada Canadian Wildlife Service

Agriculture and Agri-Food Canada Prairie Farm Rehabilitation Administration

Ducks Unlimited Canada Canada's Conservation Company

Environmental Issue

This Best Management Practice addresses three main issues.

1. Placement of dugouts too close to wetlands;
2. Excavating wetlands to create a deeper storage area eliminating the wetland; and
3. Spoil material heaps.

Traditionally, dugouts were often placed either too close, or directly in, existing natural wetlands. Such placement has the potential to negatively impact many of the ecological functions provided by wetlands, including flood attenuation and groundwater recharge. It can also break the natural soil seal of the wetland thereby removing its ability to retain and cleanse runoff water. Also, spoil material excavated from the dugout could erode and finds its way back into the dugout or wetland, resulting in sedimentation and reduced water quality.

Societal Issue

Wetlands and their associated riparian and upland areas provide beneficial functions that are largely accrued to society as ecological goods and services. Any management practices that negatively impact the integrity and function of wetlands compromise their ability to provide these societal benefits.

Dugout Considerations

Access to a reliable supply of water is an essential part of any agricultural operation. The adoption of appropriate dugout construction and location practices can effectively address this need.

Benefits to the producer of appropriate dugout location include:

- Improved water quality and quantity;
- Reduced risk of contaminants such as manure, pesticides and fertilizer reaching the dugout and other water bodies;
- Reduced sedimentation, thus extending the useful life of the dugout;
- Improved livestock performance and herd health;
- Reduced livestock mortality due to dugout access issues.

Design dugouts in accordance with "Quality Farm Dugouts" – Agdex 716 (B01).

- Use dugout shapes and orientation to minimize effects of wind and sun erosion;
- Back slope sides and ends to reduce erosion;
- Level the excavated material from the dugout to prevent siltation of the dugout and nearby wetlands or water courses;
- Provide a 10 - 30 metre wide strip of erosion tolerant grasses for the dugout banks and surrounding the dugout. It is also recommended to plant shrubs around the dougout starting at 20 metre from the dugout edge. The shrubs may overlap with the grasses and in combination will help to increase water quality and trap snow;
- Consider using trees and shrubs or other wind and sun shelter to minimize wind and sun evaporation, but avoid wood vegetation buffers in native grasslands;
- Consider using native species mixtures to promote biodiversity;
- If excavated material from the dugout is to be piled (spoil pile), ensure that the pile is a minimum 5 - 10 metres from the edge of the dugout. Spoil material placed on soils, such as peat or sand, may weaken and cause a slide of the spoil material back into the dugout.

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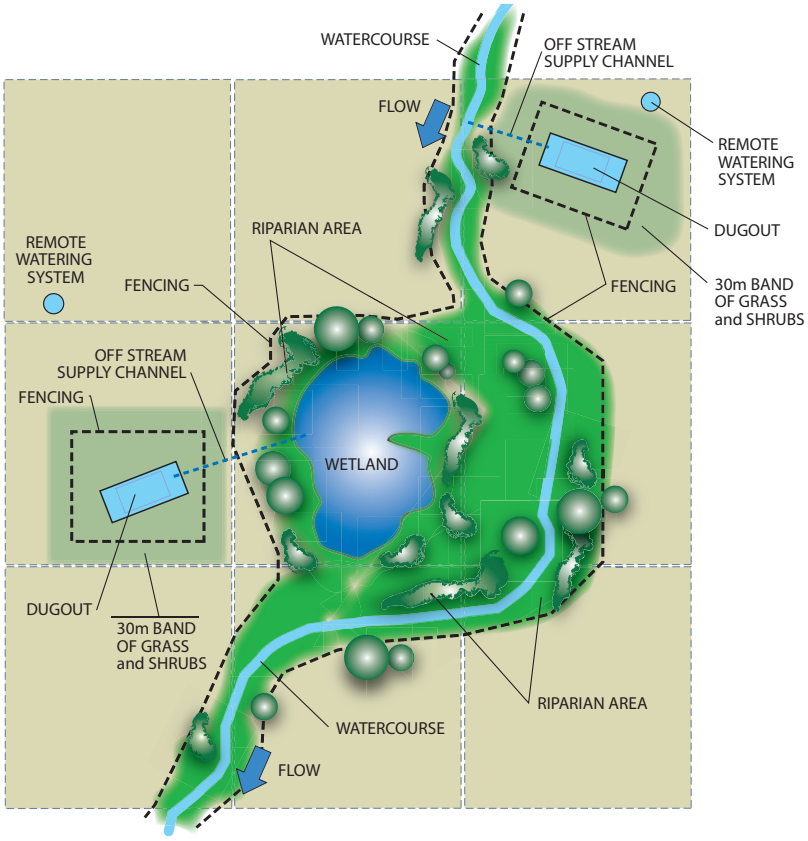

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- Do not place dugouts within watercourses and wetlands. Sloughs and marshy areas with high organic growth are not suited for proper development and maintenance. Test holes should be drilled to determine if the soil is high in organic material. Placing dugouts in materials, such as, peat, gravel seams or sand will result in leakage from the dugout, especially if the dugout is placed higher than the wetland;

- Place dugouts where soil types and slopes are less likely to cause erosion;

- Place dugouts outside of the riparian area;

- Provide remote watering systems while excluding livestock from both the dugout and wetland area. Remote watering systems should be constructed appropriately and located to prevent runoff contamination to the dugout and other water bodies and to prevent uncontrolled damage to areas around the watering trough;

- When brackish water exists within a wetland, place the dugout upstream of the wetland system to improve water quality within the dugout. Otherwise, place the dugout downstream to improve water quality through natural water purfication of the wetland.

Current Beneficial Management Practices

Beneficial Management Practices (BMP's) that support wetland and riparian stewardship as well as proper dugout location and construction practices are available through the Canada-Alberta Farm Stewardship Program (CAFSP) and include the following sections:

D – Farmyard Runoff Control
I – Riparian Area Management
J – Erosion Control Structures (Riparian)
K – Erosion Control Structures (Non-Riparian)
R – Enhancing Wildlife Habitat and Biodiversity
V – Grazing Management Planning

For more information regarding the Canada-Alberta Farm Stewardship Program, producers can contact Alberta Environmental Farm Plan at 1-866-844-2337 or (780) 436-2339, or visit the Web site at www.albertaefp.com.

Definition

Riparian Area is the land adjacent to wetlands where the vegetation and soils are strongly influenced by the presence of water.

(Source: Caring for Alberta's Rural Landscape: Tips and References for Owners of Small Farms and Acreages publication)

Information

Quality Farm Dugouts – AAFRD – Agdex (B01)
http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/eng4696?opendocument

Pasture Water Systems for Livestock
http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex644

Proper Site Selection For Dugouts To Maintain Water Quality
http://www.agr.gc.ca/pfra/water/dugoutwq_e.htm

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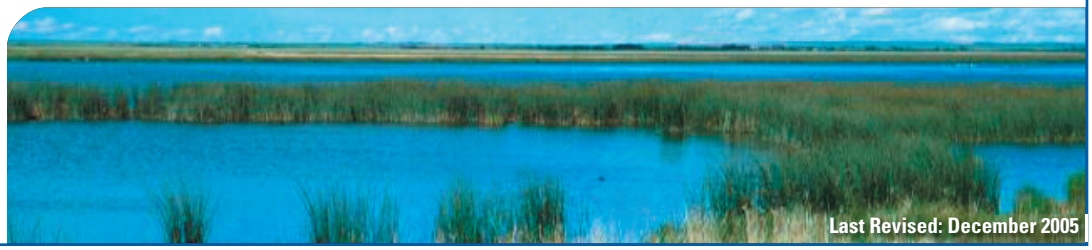

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