Helping Aquatic Species at Risk

BIGMOUTH BUFFALO

ALUS Canada
A Weston Family Initiative

ALUS Projects Produce Ecosystem Services

Cleaner Water: ALUS riparian projects help farmers and ranchers produce cleaner water, critical for fish spawning areas.

Flood and Drought-Mitigation: ALUS wetland and riparian projects help farmers and ranchers store water on their land. This reduces flooding downstream during extreme rainfall events, while providing much-needed moisture during periods of drought.

Biodiversity: ALUS wetland and riparian projects allow farmers and ranchers to support numerous bird, insect, plant, mammal and aquatic species.

Benefits of ALUS Riparian Projects

• ALUS riparian projects act as filters to prevent soil sediment and agricultural nutrients from flowing into waterways.

• Deep-rooted riparian vegetation helps maintain bank structure and prevent erosion.

• Trees and shrubs planted in ALUS riparian projects drop branches, leaves and organic debris. This provides habitat for aquatic insects and an important food source for aquatic species, while helping to create shelter, pools, riffles and runs for fish.

• ALUS riparian projects provide shade over a stream, to help regulate water temperature and provide shady areas for fish.

The full series is available on ALUS.ca | Resources | Other Relevant Reports. https://alus.ca/resources/research/

What are Aquatic Species at Risk?

Canada is world-renowned for its majestic landscapes, copious freshwater lakes and wild rivers teeming with fish. And Canadians want to keep it that way. ALUS Canada helps farmers and ranchers steward their land for future generations, ensuring wildlife has the habitat it needs to thrive. With support from Fisheries and Oceans Canada (DFO), and through a strong collaboration with regional partners, local leaders and agricultural producers, the ALUS program will help multiple aquatic species at risk through practical solutions on farms and ranches in the southern Prairies.

How Can Agriculture Help?

Not surprisingly, water quality is a key factor for the survival of fish and other aquatic species. But did you know that healthy riparian areas are essential for healthy aquatic ecosystems? Crumbling riverbanks and soil erosion have a negative impact on what biologists term "critical habitat": the habitat that is vital to the survival or recovery of an aquatic species, such as an identified breeding site, nursery area or feeding ground that can make all the difference to a species at risk.

Riparian areas are typically harmed by recreational overuse, municipal waste, urban construction activities, mining and other industrial practices, as well as by agriculture. When herds of cattle and livestock regularly drink from a river, they damage the banks and foul the water.

But ALUS Canada helps farmers and ranchers provide alternative watering systems for their livestock, and wildlife-friendly fencing on both sides of the streams and rivers crossing their land. This protects the riverbank while also benefitting the livestock.

ALUS Canada also helps farmers and ranchers enhance these protected riparian areas by planting the appropriate native species of trees, shrubs, flowering plants and grasses. This is an effective way to produce cleaner water and to enhance wildlife habitat, including fish habitat.

In addition to their ALUS projects, agricultural producers can also use Beneficial Management Practices (BMPs) to help protect habitats for aquatic species at risk.

Fisheries and Oceans Canada | Pêches et Océans Canada | Canada

ALUS CANADA THANKS THE CANADA NATURE FUND FOR AQUATIC SPECIES AT RISK (CNFASAR) PROGRAM AT FISHERIES AND OCEANS CANADA FOR $983,000 IN FUNDING FOR ALUS PROJECTS IN EIGHT ALUS COMMUNITIES IN MANITOBA, SASKATCHEWAN AND ALBERTA, WHERE 32 FARMERS AND RANCHERS ARE MANAGING 1,325 ACRES OF RIPARIAN PROJECTS TO IMPROVE AQUATIC HABITAT IN THE SOUTHERN PRAIRIES REGION, AND FOR SUPPORTING AN AWARENESS-RAISING CAMPAIGN IN THESE COMMUNITIES.

ILLUSTRATION BY JOE TOMELLERI, USED BY PERMISSION.

Fact File: BIGMOUTH BUFFALO

NAME:
Bigmouth Buffalo *(Ictiobus cyprinellus)*

STATUS:
The Saskatchewan-Nelson River population is classified as Special Concern (SARA, 2011). Definition: May become threatened or endangered, because of a combination of biological characteristics and identified threats. The Great Lakes-Upper St. Lawrence population is not currently at risk.

DESCRIPTION
The Bigmouth Buffalo is a species of sucker fish characterized by a stout, deep body. It is olive or bronze along the top of its back, with a lighter olive or yellow colouration along its sides. Typically, it measures between 25 to 50 cm in length and weighs between 2 to 5 Kg. Females reach sexual maturity at 8 years; individuals can live in excess of 20 years.[2]

HABITAT
The Bigmouth Buffalo can be found in lakes and large, slow-moving rivers. It tolerates warm, murky waters and can even adapt to reservoirs and ponds. Its preferred spawning habitat is submerged vegetation in marshes or backwaters, such as that provided by spring flooding in the Prairies.

RANGE
In Canada, the Bigmouth Buffalo forms two genetically distinct populations: the Great Lakes-Upper St. Lawrence population (not at risk) and the Saskatchewan-Nelson River population. The latter has been found in three separate regions of Canada: in Ontario's Lake of the Woods; in Saskatchewan's Qu'Appelle River system, and in Manitoba's Delta Marsh, Lower Assiniboine, Red, La Salle and Seine Rivers, and southern parts of both Lake Manitoba and Lake Winnipeg.[1]

THREATS
Threats to aquatic habitat are key factors affecting the status of the Saskatchewan-Nelson River population of Bigmouth Buffalo in the Canadian Prairies:

• The main threat to the species is human intervention in Saskatchewan's Qu'Appelle River system, where an increased amount of water is being withdrawn for agricultural purposes, and dams are increasingly being used to regulate water flow and prevent flooding downstream. When the water level is lower, there is less submerged vegetation along the banks and shorelines to serve as suitable spawning habitat for the Bigmouth Buffalo.[2]

• In addition, this Bigmouth Buffalo population is faced with a number of naturally occurring pressures, including hybridization (cross-breeding species), drought conditions, parasitic infestations and aquatic invasive species, such as the Common Carp, which compete for food and habitat with this native species. Indirectly, Zebra Mussels could also reduce the resiliency of the Bigmouth Buffalo due to changes to the food web or water quality.[2]

AN ALUS RIPARIAN PROJECT IN ALBERTA, PART OF THE ALUS MOUNTAIN VIEW PROGRAM.

How can you help this unique species?

Through ALUS, farmers and ranchers can dramatically improve riparian areas on their land, which helps ensure that the water is cleaner when it joins streams, rivers and lakes downstream. In this way, ALUS projects help improve the region's overall aquatic ecosystem, for the benefit of local communities, the environment and wildlife, including aquatic species at risk.

Through ALUS, you can:

• Create riparian buffer zones between waterbodies and croplands

• Regenerate riparian vegetation on your land

• Protect riparian areas with wildlife-friendly fencing

• Install remote watering systems for cattle and livestock

• Manage riparian areas differently, as a unique pasture

Interested in putting ALUS on your land?

Contact your local ALUS program to find out how you could help aquatic species at risk on your farm or ranch. ALUS will help you plan the projects, organize the work, and share the establishment costs. It will also provide an annual, per-acre payment to manage and maintain your ALUS projects over the duration of your contract.

For more information, please contact your closest ALUS Program Coordinator. Info: **https://alus.ca/contact-us/**

About ALUS Canada

ALUS Canada, A Weston Family Initiative, is a national program helping farmers and ranchers enhance wetlands, windbreaks, riparian buffer zones and habitat for pollinators and other wildlife. ALUS projects are independently monitored, verified and audited to ensure they are producing valuable ecosystem services, such as cleaner air, cleaner water and increased wildlife habitat that benefit Canadian communities. For more information, please visit ALUS.ca

ALUS Canada

A Weston Family Initiative

References and Cited

1 COSEWIC. 2009. COSEWIC assessment and update status report on the Bigmouth Buffalo (*Ictiobus cyprinellus*), Great Lakes - Upper St. Lawrence populations and Saskatchewan - Nelson River populations, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 40 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

2 Fisheries and Oceans Canada. 2019. Management Plan for the Bigmouth Buffalo (*Ictiobus cyprinellus*) in Canada (Saskatchewan-Nelson River populations) (Proposed). Species at Risk Act Management Plan Series. Fisheries and Oceans Canada, Ottawa. iv + 21 pp.