

## **Alberta Conservation Association 2016/17 Project Summary Report**

**Project Name:** Isle Lake Fisheries Restoration

**Fisheries Program Manager:** Peter Aku

**Project Leader:** Brendan Ganton

**Primary ACA staff on project:** Brendan Ganton and Britt Schmidt

### **Partnerships**

Alberta Environment and Parks  
Environment and Climate Change Canada – Environmental Damages Fund  
Lake Isle & Lac Ste. Anne Water Quality Management Society  
Parkland County and Lac Ste. Anne County Alternative Land Use Services Program  
Sturgeon River Watershed Alliance

### **Key Findings**

- We continued partnerships with a variety of stakeholders interested in fisheries restoration at Isle Lake, including Parkland County, Lac Ste. Anne County, and the Sturgeon River Watershed Alliance.
- We captured video of riparian health condition of Isle Lake.
- We supported a fencing and solar-powered watering system project on the north shore of Isle Lake.

### **Introduction**

Eutrophication and deteriorating water quality of lakes in developed areas of Alberta are common problems. In recent decades, changes in watershed land use have resulted in increased nutrient runoff, particularly phosphorus, into many lakes, including Isle Lake. Increased phosphorus in aquatic systems can result in substantial increases in phytoplankton production and algal blooms, especially blue-green cyanobacteria blooms. Aside from aesthetic concerns, algal blooms have been linked with anoxic water conditions and toxic or harmful impacts to fisheries, human health and recreation. Over the last decade, recurring algal blooms have become more prevalent in Isle Lake, resulting in degradation of water quality, and summer and winter fish kills. These fish kills have decimated what used to be a popular recreational sport fishery. This multi-year project is focused on working with local community groups and landowners in surrounding watersheds to reduce nutrient loading to Isle Lake in a bid to improve water quality and restore the fish community and associated sport fishery. In 2016, the second year of the project, we focused on continuing to develop partnerships throughout the Isle Lake watershed and delivering on-the-ground habitat restoration projects.

## **Methods**

We maintained numerous partnerships with key stakeholders in support of the project throughout the Isle Lake watershed. We provided technical guidance and recommendations to Parkland and Lac Ste. Anne counties' Alternative Land Use Services (ALUS) programs, delivering on-the-ground restoration activities in collaboration with local agricultural producers. We continued our work with the Technical Advisory Committee of the Sturgeon River Watershed Alliance, which allowed us to provide information on the health of these systems directly to the communities, municipalities and organizations that make up this committee.

On August 9 and 10, 2016, we captured video of the shoreline of Lake Isle to assess the condition of riparian habitat. We used a DJI Phantom 3 unmanned aerial vehicle (drone) flown over the lake, with its camera facing the shore. We flew the drone along the perimeter of the shore while the pilot and a spotter followed behind by boat.

## **Results**

Through our participation on the ALUS project advisory committee, we have been able to help guide the delivery of numerous on-the-ground projects throughout the Isle Lake basin. The projects delivered in 2016 focused primarily on cattle exclusion fencing and alternative watering systems. These projects have contributed to the rehabilitation of 160 acres of marginal agricultural land, allowing it to provide increased water filtration, nutrient uptake, habitat value and other ecological services while reducing erosion and flooding—all benefiting the Isle Lake basin. Of these projects, one was delivered with financial support from Alberta Conservation Association through administration of funding from the Environmental Damages Fund. This project involved installing 800 feet (244 m) of fence and a solar-powered watering system to prevent cattle from accessing a waterbody along the north shore of Isle Lake. Furthermore, by providing clean water in a trough, cattle loafing, bank erosion and nutrient runoff will be reduced at three other smaller waterbodies.

We successfully used a drone to capture high-resolution video of the Lake Isle shoreline. This video has been helpful in assessing riparian health and communicating potential project ideas to landowners. Preliminary results of the riparian health assessment have been shared with numerous stakeholders, including public members and agricultural producers at Parkland County and Lac Ste. Anne ALUS outreach events. A final report on the assessment is pending.

## **Conclusions**

We will continue to work with local community groups and landowners in surrounding watersheds to reduce nutrient loading to Isle Lake in a bid to improve water quality and restore the fish community and associated sport fishery.

## **Communications**

Presentations were made to the Sturgeon River Watershed Alliance (Technical Advisory Committee) and at Parkland County and Lac Ste. Anne ALUS outreach events.

## **Acknowledgement**

This project was undertaken with the financial support of the Government of Canada.  
Ce projet a été réalisé avec l'appui financier du gouvernement du Canada.

## **Literature Cited**

None

## **Photos**



A drone returns to the boat after capturing video of the Isle Lake shoreline. Photo: Britt Schmidt



The transition from developed shoreline to a natural shoreline at Isle Lake. Greater numbers of rooted plants and shrubs can increase bank stability, reduce erosion, and filter water runoff to the lake. Photo: Brendan Ganton



On parts of the shoreline of Isle Lake, free cattle access to the lake appears to have led to bank compression and collapse, formation of hummocks, and increased sediment and nutrient runoff to the lake. Photo: Brendan Ganton