**Evaluation of Herbicide Treatments in a Large Oligotrophic Lake to Reduce Aquatic Invasive Species

Ian McRyhew, Salish Kootenai College
*Indicates Presenter
**Indicates Student Presentation

The goal of our research is to develop a herbicide prescription to reduce the abundance of flowering rush (*Butomus umbellatus*), and stop the advancement of infestation downstream into the Columbia River Basin. Flowering rush is an invasive aquatic plant introduced to North America from Eurasia, and was observed in Montana, on the northwest shore of Flathead Lake in 1964. Since then, flowering rush has become well established in Flathead Lake and spread downstream through the Selish, Ksanka, Qlipse (SKQ) Dam to the lower Flathead River and Clark Fork Rivers, and has established in Lake Pend Oreille; furthermore, moving into Washington and Oregon to the McNeary Dam region. Environmental impacts of flowering rush include threats to native fisheries that have considerable cultural importance to the indigenous people of the region. Habitat changes from open water system to closed water system favor invasive species of fish. The alterations to the food web affect macro invertebrates and algae production. In addition to native plants and animals, flowering rush invasions impact property values and recreation, degrade water quality, increase sedimentation, and reduce irrigation water delivery capacity. Two aquatic herbicides, Imazapyr (Habitat®) and Imazomox (Clearcast®), have been applied to bare ground in mid-April, annually, approximately three weeks before inundation. Sprout counts and rhizome weights have been collected in 2017, 2018, and 2019, and compared with existing data for their efficacy. Results have shown that sequential application of aquatic herbicides is an effective means to reduce and deplete the rhizome of flowering rush.