Project title: Develop and test alternative methods for non-native fish species suppression/removal in Glacier National Park

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Project Description:

Develop practical alternatives, or ways to enhance the effectiveness of traditional netting approaches to removal of non-native lake trout. Lake trout are causing the decline and loss of native salmonid species in many places across the west, including Glacier National Park (Martinez et al. 2009, Fredenberg 2002). Yet the only practical approaches available to managers attempting to remove lake trout in most of these situations are angling removal and netting. These are expensive, labor intensive programs, and success has not been well documented. In addition, gill netting results in bycatch of native fish species resulting in some increased mortality of the species managers are attempting to conserve (e.g. bull trout). The success of such manual removal programs is largely dependent on massive amounts of effort to remove as much of the adult and juvenile lake trout population as possible, usually within a relatively small timeframe (i.e. 1-2 months/yr). Methods are needed to complement these more traditional approaches to lake trout reduction/removal. Managers and researchers have put forth the concepts of experimenting with pheromone attractants to increase the capture of adult lake trout, as well developing and testing lake trout egg destruction methods using electricity (and other methods) applied to deposited eggs after spawning. These methods would work to reduce lake trout spawning success, and "remove" lake trout before they reach sizes where they negatively impact native fish through mechanisms such as predation. Successful application of such techniques has the potential to target lake trout eggs/juveniles, while reducing adverse impacts to native fish. Bull and westslope cutthroat trout spawn and rear in streams and would not be subject to significant impacts from these experimental methods, applied in lakes on known lake trout spawning areas. We propose to develop alternative methods for lake trout removal in Glacier National Park using similar approaches. Lake McDonald is one potential study site within the park that would provide good access to lake trout spawning habitat/eggs/juveniles. In addition, lake trout spawning areas have been well documented within Lake McDonald. Development of such approaches would increase the potential for success in ongoing native fish conservation projects within the park, and also support broader efforts to develop effective methods for lake trout control across the West.

Estimated Cost: $100,000/yr

Estimated project duration: 3 years

Annual Budget:
- GS-9 or equivalent university staff for 22 ppds/yr ($65,000)
- Vehicle and fuel ($10,000)
- Equipment and supplies ($10,000)
- Consultation services ($15,000)