

LAKE MANAGEMENT PLAN

Updated April 29, 2020 – William Baker and Brian Walker

Water(s): McDowell Lake (Stevens Co.)

Location: McDowell Lake is located about 11.5 miles southeast of Colville, WA.

	Size:	Max. Depth:	Volume:
McDowell Lake¹	69 (39) acres	29 (21) ft	690 (220) acre feet

Water Source: Diversion from North Fork Bear Creek.

Outflow: **NO** - Lake discharges to swamp and eventually to Little Pend Oreille River, but can be drawn-down through a water management structure prior to treatment to hold rotenone-treated water until rotenone naturally detoxifies. Outflow will resume following rotenone detoxification.

Management History:

McDowell Lake is located on the Little Pend Oreille National Wildlife Refuge. Trout stocking began in 1972, and the lake has been planted exclusively with Rainbow Trout *Oncorhynchus mykiss* since that time. The lake has been managed under fly-fishing only regulations since 1974 and became a catch-and-release fishery in 1985.

McDowell Lake has been treated with rotenone five times (1973, 1984, 1988, 2006, 2014). Previous treatments all targeted Tench *Tinca tinca*, although the 2014 treatment also targeted Pumpkinseed Sunfish *Lepomis gibbosus*. Pumpkinseed Sunfish were either illegally introduced to McDowell Lake or immigrated from the swamp through the faulty water management structure. Yellow Perch *Perca flavescens* were also found to be present following the 2014 treatment. The 2014 treatment, primarily an aerial liquid application, did not successfully eradicate Pumpkinseed Sunfish or Tench. The populations have subsequently rebounded. Whether Yellow Perch were eradicated is unknown, but additional sampling in spring/summer 2020 will be conducted to determine fish species composition in the lake. The lake is proposed for rehabilitation in 2020 to control the Pumpkinseed Sunfish and Tench populations which are limiting trout growth and recruitment through interspecific competition. The water control structure was replaced in 2015, so re-invasion of the lake by undesirable species (e.g., Pumpkinseed Sunfish and Yellow Perch) following the 2020 treatment should not be possible.

¹ Size, depth and volume for McDowell Lake reflect drawdown to expected treatment water level (approximately 6 ft drawdown).

T&E Flora and Fauna: Professionals from resource agencies have visited this site many times during the last 50 years. No known report exists of any threatened or endangered species habitually found in or near this lake. There is a Bald Eagle *Haliaeetus leucocephalus* nest located near the southern end of the lake. However, chicks are expected to have fledged prior to treatment. The McDowell Lake treatment area is located within the home range of the Dirtyshirt Pack of wolves *Canis lupus*, but wolves are unlikely to be present in the area during treatment due to increased human presence, traffic, and activity in the days surrounding treatment. Multiple species of birds, including waterfowl, are also expected to be present, but are not expected to be impacted by the project due to high mobility and short duration of treatment.

Current Management Objectives:

McDowell Lake is a lowland lakes opener (4th Saturday in April to October 31), fly-fishing only, catch-and-release trout fishery. The lake is managed to produce high catch rates of carryover and fry-plant rainbow trout.

Stocking Objectives following lake rehabilitation:

Year post-Rehabilitation	Species	Number of Fish Stocked			Planting Month
		Total	/Acre	/Pound	
Year 1	Rainbow	1,725	25	2.5	April
	Rainbow	1,500	22	100	May
Year 2	Rainbow	1,000	14	100	May
Year 3	Rainbow	1,000	14	100	May

Management Strategy:

- A. Plant rainbow trout catchables (2.5 fpp) during spring 2021. Plant rainbow trout spring fry (100 fpp) annually to maintain fishery.
- B. Assess growth of overwintered fry plant; Total length should average 11 inches; adjust stocking density as necessary.
- C. Monitor annually with Opening Day creel and periodically with gill netting and/or electrofishing.
- D. Control undesirable species with rotenone when trout survival is inadequate to produce an acceptable fishery.