

## Northern Pikeminnow Management Program Summary

Since 1991, thirteen population groups of salmon and steelhead in the Columbia and Snake River Basins have been listed for protection under the Endangered Species Act. Among other factors, the development and operation of the Columbia River Hydropower System has been identified as a major contributor to the decline in these populations. The hydropower system altered the freshwater habitat of salmon and steelhead and one ongoing consequence of this action is increased susceptibility to predation. The habitat alteration has allowed for increases in the abundance of Northern Pikeminnow, a native fish, which preys heavily on juvenile salmon and steelhead. The dams of the Columbia and Snake Rivers slow the travel time of out migrating salmon, increase the water temperature and subsequently the metabolic rate of predatory fish, and disrupt the orientation of out migrating smolts, all which contribute to increases in predation and loss in survival for salmon and steelhead. Research has shown that Northern Pikeminnow are one of the primary predators contributing to salmon loss and that larger sized Northern Pikeminnow in particular consume high numbers of salmon and steelhead, eating millions each year.

The Northern Pikeminnow Management Program was developed to help address this issue and partially mitigate for the impacts of the dams via removal fisheries for Northern Pikeminnow. The program is a collaborative effort between the Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife and the Pacific States Marine Fisheries Commission, with funding from the Bonneville Power Administration. The goal of the program is to reduce predation on out migrating salmon and steelhead by suppressing the population of native Northern Pikeminnow and removing the largest individuals; it is not an eradication program.

Based on studies conducted in the 1980's, the concept behind the program is that an annual 10 to 20% exploitation rate Northern Pikeminnow greater than 11-inches in length will shift the population structure toward smaller fish that tend to consume fewer juvenile salmon; over time reducing predation by Northern Pikeminnow by up to 40 percent. Thus, relatively modest reductions in the predator population can result in substantial benefits to endangered salmon. Success of the program depends on maintaining harvest rates within the 10 to 20% range each year; a target that has been achieved in 23 of the 27 year program history. The early studies also determined that this harvest rate would not jeopardize the viability of the native Northern Pikeminnow population.

Because Northern Pikeminnow are not considered game fish, fisheries managers provide anglers an incentive to harvest them in the form of a sport-reward fishery. Each year, from May-September, the angling public are recruited to fish for Northern Pikeminnow. Registered anglers are paid a sum of money based on the number of large, older pikeminnow they harvest. The reward for the first 25 fish harvested by an angler is \$5 per fish. An angler who harvests between 26 and 200 fish will be paid at a rate of \$6 and all Northern Pikeminnow harvested beyond 200 are worth \$8 per fish. Each year a number of Northern Pikeminnow are tagged with visible spaghetti or t-tags to help us calculate exploitation rates, if harvested these fish are worth \$500. In 2020, the top-twenty anglers caught an average of 2,351 fish per angler and averaged reward payments of \$20,414 each for the 5 month season. The highest paid angler earned \$48,501. Also, because Northern Pikeminnow seasonally congregate near dams in the Columbia and Snake rivers, teams of personnel administered by the Washington Department of Fish and Wildlife are paid to fish for them from select dams. Collectively these fisheries have removed over 5 million Northern Pikeminnow since program inception.