
EFFECTS OF FISH RESTORATION PRACTICES ON AMPHIBIANS IN YELLOWSTONE NATIONAL PARK, WYOMING

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Throughout the Western United States, fisheries managers are attempting to restore native cutthroat trout (*Onchorynchus clarkii*) populations by removing nonnative fish species. A new formulation of the EPA approved piscicide rotenone (CFT Legumine) is increasingly being used as a method to accomplish this removal. Because fish restoration projects bring about an abrupt change to aquatic environments, it is important to consider their immediate and long-term effects on non-target species, such as amphibians. We assessed the effects of fish removal on amphibians in Yellowstone National Park (YNP) by investigating the toxicity of rotenone to and the long-term impacts of removing fish on local amphibian populations. CFT Legumine (5% rotenone) was applied to High Lake in YNP (2006) to remove stocked Yellowstone cutthroat trout (*O. c. bouvieri*). To determine toxicity, amphibian surveys were conducted immediately prior to the treatment to obtain pre-treatment tadpole population estimates. Post-treatment surveys were conducted both immediately, for assessing treatment-related mortality (during and after application), and 1, 2, and 3 years following to obtain tadpole abundance estimates in the years after application and to address the long-term effects of fish removal and reintroduction. The results of the toxicity trials revealed that in the 24 hrs following application, rotenone was lethal to gill-breathing amphibian tadpoles and non-lethal to non-gill breathing metamorphs, juveniles, and adults. In the years following, tadpole repopulation occurred at levels above the pre-treatment abundance estimate, though both tadpole abundance and distribution appeared correlated with fish presence.