
****INVESTIGATING COEXISTENCE BETWEEN TROUT AND LONG-TOED
SALAMANDERS AND THE INDIRECT EFFECTS OF FISH PREDATORS**

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In many, formerly fishless lakes in western North America, trout have been introduced for recreational fishing, replacing native amphibians as top predators. Trout are associated with reducing the abundance of amphibians and have extirpated populations of long-toed salamanders (*Ambystoma macrodactylum*). Salamanders and trout may coexist in some lakes, as larvae often are able to alter foraging behavior, use of open water, and time in refugia in response to predatory cues. However, salamanders are still subject to attacks and may have different body morphology in environments with fish. We sought to estimate minimum population sizes of long-toed salamanders, as well as investigate indirect effects of fish on salamander morphology. We sampled lakes with and without fish in northwestern Montana during the summers of 2012 and 2013. We caught salamander larvae using minnow traps, took several body measurements, and compared capture rates and morphological measurements between lakes with and without fish. Preliminary results suggest that more salamanders were captured per trap in lakes with fish (1.8 salamanders/trap, 95% CI = 1.3-2.4), compared to lakes without fish (0.58 salamanders/trap, 0.36-0.81), which could reflect higher population sizes or increased use of traps as refugia. However, salamanders in lakes with fish were smaller: they weighed less, had shorter snout-vent lengths, and had shorter and narrower tails. Even if salamanders are more abundant in lakes with fish, growth may be reduced. Further research into the coexistence of long-toed salamanders and trout may aid in developing conservation strategies for these and other amphibians affected by novel predators.