

FISH, AMPHIBIAN, AND REPTILE INVENTORY FOR THE  
BIGHORN CANYON NATIONAL RECREATION AREA

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Objectives

This study was designed to inventory fish, amphibian, and reptile populations inhabiting the Bighorn Canyon National Recreation Area using standard sampling techniques and field observations in order to determine species composition, distribution, relative abundance, and habitat associations.

Methods

Fish populations were sampled using electrofishing gear, seines, and minnow traps. Sampling was concentrated in the perennial tributaries of Bighorn Canyon. Habitat measurements (wetted width, depth, temperature, discharge, substrate type, and quality of riparian habitat) were taken in streams where fish were captured.

Because the Wyoming Game and Fish Department and the Montana Department of Fish, Wildlife, and Parks have sampled Yellowtail Reservoir extensively, no fish sampling was done on the reservoir during our 1985 field season. Previously compiled data from these agencies were used to determine species composition and relative abundance of fishes in Yellowtail Reservoir.

Techniques used for sampling amphibian and reptile populations included: transects and intensive searches conducted on foot; road transects (driven primarily at night); drift-fencing and pitfall traps; salamander and turtle traps set in aquatic environments.

Results

Twenty-eight fish species were documented to occur within the Recreation Area. Most species inhabited Yellowtail Reservoir. Sampling during the 1985 field season indicated that 4 species (brown trout, brook trout, longnose dace, longnose sucker) inhabited small coldwater tributaries entering the Bighorn Canyon; flathead chubs were captured during seining in the Bighorn River. Four coldwater streams contained trout. Seventeen fish species present are native to the area. Two fish species (plains killifish, sturgeon chub) are rare. The

abundance of many game species has been affected by stocking programs.

Six amphibian species and thirteen reptile species have been found in the Recreation Area. Two species (plains spadefoot toad, pale milk snake) are rare. Rarity probably results from the small area of suitable habitats within the Recreation Area. Wetland, riparian, and grassland habitat types had the highest diversity of herptile species. All herptile species present are native to the area.

#### Management and Research Recommendations

1. Maintain water quality and riparian zones associated with streams containing trout.
2. Determine whether streams not containing fish have potential as trout streams or as "refuges" for rare or endangered native species.
3. Discourage the introduction of exotic species.
4. Survey the headwaters of the four trout streams for the presence of native cutthroat trout.
5. Protect riparian and wetland habitats because of their importance to terrestrial vertebrate species.
6. Encourage the Bureau of Reclamation to manage water levels in Yellowtail Reservoir for the benefit of fish, amphibian, and reptile populations, especially in the spring when breeding activities occur.
7. Minimize human impact on reptile, especially rattlesnake, populations. Encourage the reclamation of land on which bentonite mining has occurred.

#### Summary

A total of 306 vertebrates species are known to occupy the Bighorn Canyon National Recreation Area: 28 fish, 6 amphibians, 13 reptiles, 212 birds, 47 mammals (Patterson et al. 1985).

#### Literature Cited

Patterson, C. T., S. H. Anderson, and W. A. Hubert. 1985. A Bird and Mammal Inventory for the Bighorn Canyon National Recreation Area. U.S. Fish and Wildl. Serv., Laramie, WY.