

THREAT LEVEL

IDAHO FISH & GAME

Apparently Secure (S3):

Moderate risk of extinction, restricted range, few populations



WDFW PRIORITY HABITAT AND SPECIES PROGRAM

Species of Great Conservation Need



CALL TO ACTION

- ▶ Increase research on both local and wide-ranging threats
- ▶ Track migration patterns to better identify key tributaries and habitats



Mountain Whitefish

Prosopium williamsoni

Photo Credit: idfg.idaho.gov

OVERVIEW

The mountain whitefish is a widespread species, found primarily in cold lakes and fast-running streams. Dams and water diversions disrupt migration pathways and reduce streamflow, making it difficult for whitefish to access spawning grounds. Whitefish prefer cold water, and rising temperatures driven by climate change will decrease spawning success and increase mortality among mature fish. Pollution from development and agriculture degrades water quality, threatening food resources and overall health. Little is known about localized threats to this species, highlighting the need for continued research on threats and migration routes.

CONSERVATION CONSIDERATIONS

VULNERABILITY RANKING

CLIMATE

HIGH

NON-CLIMATE

MODERATE - HIGH

CONFIDENCE

HIGH

Physiological, phenological, or ecological factors to consider when planning conservation projects:

- ▶ Cold, clean water habitats are critical for mountain whitefish spawning and survival
- ▶ Mountain whitefish populations are large and widespread, though some localized populations may face greater threats than others

Vulnerability Rankings Methodology

These priority species have been assessed for climate and non-climate vulnerability using a process adapted from the Washington Department of Fish & Wildlife's Methodology for ranking the Climate Change Vulnerability of Species. WDFW's approach includes rating each species' climate sensitivity and exposure. These two rankings are then averaged for a climate vulnerability ranking. The Tribe developed a non-climate vulnerability ranking to capture species' relative risk and adaptability to factors such as human-caused development, predator/prey relationships, or low population numbers. Confidence rankings were assessed based on the availability of scientific research.

KEY THREATS

Habitat Degradation & Loss

Dams and other water diversions impact streamflow, increase sedimentation, and change stream and river habitats, all of which can increase fish mortality rates. Contaminated runoff from urban development and agriculture can poison fish and their food sources.

Climate Change

- ▶ Warmer temperatures reduce dissolved oxygen levels, physically stressing fish and increasing mortality rates.
- ▶ Mountain whitefish travel to spawn, and altered streamflows may prevent access to shallow tributaries needed for successful reproduction.

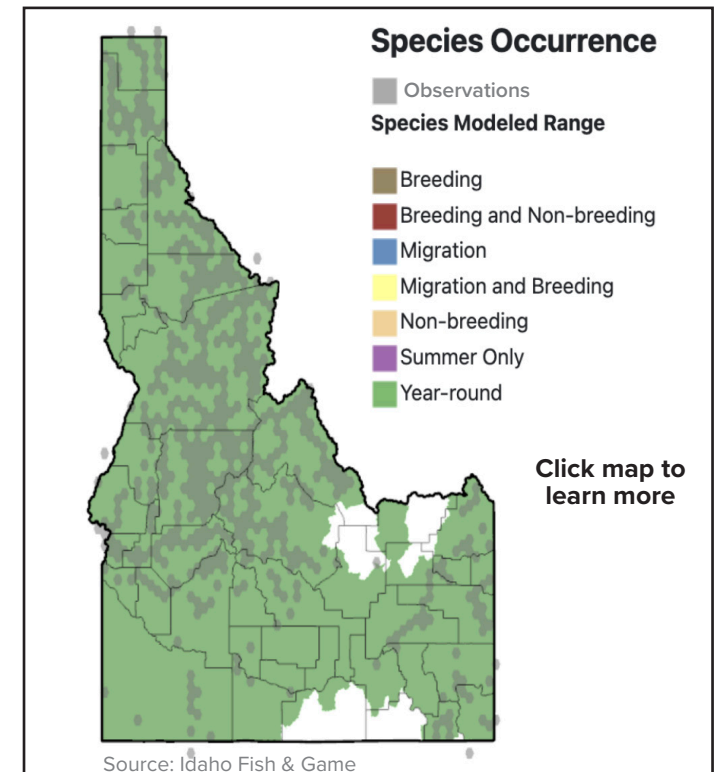
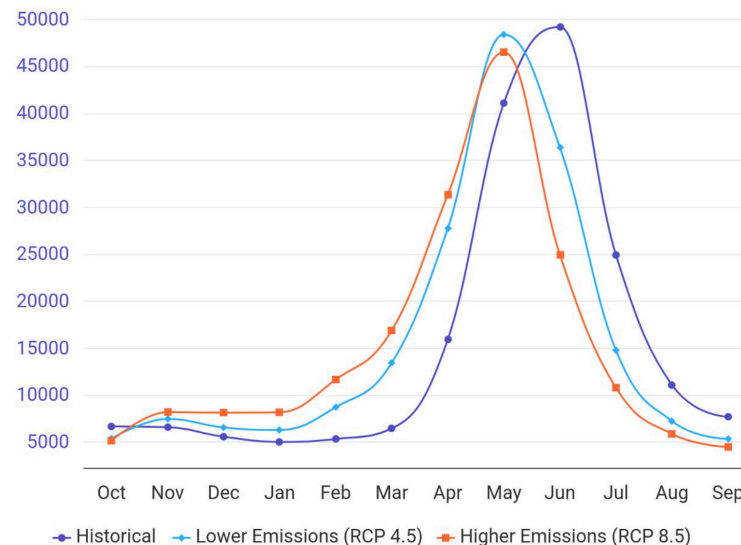


Photo Credit: Oregon State University

PROJECTED AVG AUGUST STREAM TEMPERATURE (°C)

Stream location	Historical	Mid century (2040)	Late century (2080)
Boundary Creek, at Saddle creek	10.58	12.32	13.24
"Lower" Smith Creek	14.13	15.51	16.52
"Upper" Smith Creek	10.98	12.24	13.15
Kootenai River, Copeland Rd. crossing	16.20	17.67	18.74
Kootenai River, Nimz ranch	15.97	17.43	18.48
"Upper" Myrtle creek	10.25	11.48	12.37
"Lower" Myrtle creek	13.45	14.81	15.74
Deep Creek, where Pine Island Rd ends	15.22	16.65	17.69
Kootenai River, Leonia	17.03	18.53	19.62
Deep Creek, at Ruby creek	14.46	15.86	16.87

PROJECTED NON-REGULATED STREAMFLOW (2070-2099) KOOTENAY RIVER AT BONNERS FERRY, ID



REFERENCES

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- “NatureServe Explorer 2.0.” Explorer.natureserve.org, explorer.natureserve.org. Accessed May 14 2025.
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PRIORITY AT-RISK SPECIES

KOOTENAI TRIBE OF IDAHO