

THREAT LEVEL

IDAHO FISH & GAME

Critically Imperiled:
very high risk of extirpation



WASHINGTON DEPARTMENT OF FISH & WILDLIFE (PRIORITY HABITAT & SPECIES PROGRAM)

**Species of Greatest
Conservation Need**



CALL TO ACTION

- ▶ Research adult population viability after hatchery release
- ▶ Identify and protect key cold-water habitat
- ▶ Protect burbot from overfishing



Burbot

Lota Lota

Photo Credit: Kootenai Tribe of Idaho

OVERVIEW

Burbot are a cold-water species and seek cooler water in warmer months. As average water temperatures increase, burbot may face challenges finding areas with sufficiently cold water. Burbot are slow to mature, which makes it difficult to evaluate how environmental changes will impact the species at different life stages. The Tribal hatchery has been successful in restoring the burbot fishery. However, additional research and monitoring is important for ensuring natural reproduction and survival. Protections to avoid overfishing are vital if burbot populations remain open to fishing. Identifying and protecting key cold-water habitats can support burbot as water temperatures rise.

CONSERVATION CONSIDERATIONS

VULNERABILITY RANKING

CLIMATE

MODERATE-HIGH

NON-CLIMATE

MODERATE-HIGH

CONFIDENCE

MODERATE

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

- ▶ Burbot rely on cold water temperatures for spawning.
- ▶ Slow maturation rates can limit their ability to rebound from over-fishing and other contributors to habitat loss.



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

Changes in stream temperature due to alterations in the Kootenai River, including from Libby Dam, caused significant harm to burbot over the 20th century. A lack of knowledge and management for burbot's thermal requirements and continued harvesting contributed to burbot decline.

Climate Change

- ▶ Burbot rely on cold water for spawning and survival. Increasing water temperatures impact habitat suitability during key phases of their life-cycle.
- ▶ Decreased snowpack and shifting precipitation patterns are impacting the timing and volume of water in streams and rivers.



Photo Credit: Kootenai Tribe of Idaho

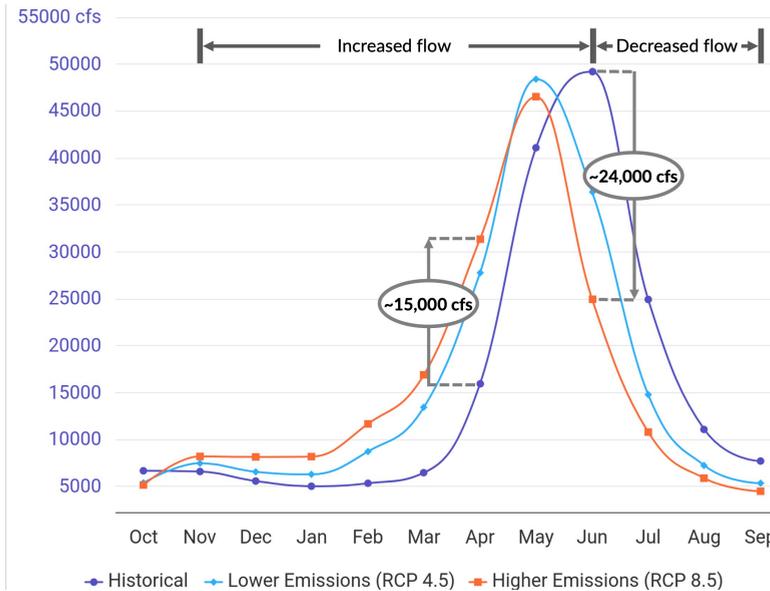
PROJECTED AVG AUGUST STREAM TEMPERATURE (°C)

Stream location	Historical	Mid century (2040)	Late century (2080)
Boundary Creek, at Saddle creek	10.6	12.3	13.2
"Lower" Smith Creek	14.1	15.5	16.5
"Upper" Smith Creek	11.0	12.2	13.2
Kootenai River, Copeland Rd. crossing	16.2	17.7	18.7
Kootenai River, Nimz ranch	16.0	17.4	18.5
"Upper" Myrtle creek	10.3	11.5	12.4
"Lower" Myrtle creek	13.5	14.8	15.7
Deep Creek, where Pine Island Rd ends	15.2	16.7	17.7
Kootenai River, Leonia	17.0	18.5	19.6
Deep Creek, at Ruby creek	14.5	15.9	16.9

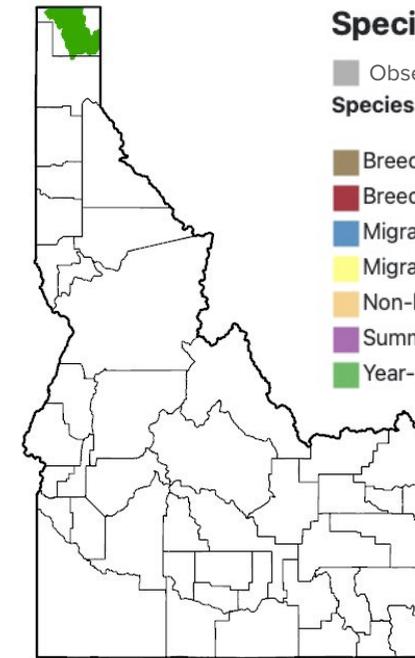
Source: US Forest Service

PROJECTED NON-REGULATED STREAMFLOW (2070-2099)

KOOTENAY RIVER AT BONNERS FERRY, ID



Source: Climate Toolbox. Accessed on December 14, 2024



Click map to learn more

Source: Idaho Fish & Game

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PRIORITY AT-RISK SPECIES
KOOTENAI TRIBE OF IDAHO