

## THREAT LEVEL

### IDAHO FISH & GAME

**Critically Imperiled:**  
*very high risk of extirpation*



### US ENDANGERED SPECIES ACT

**Endangered**



### CANADA SPECIES AT RISK ACT

**Endangered**



## CALL TO ACTION

- ▶ Identify locations with stable and consistent populations
- ▶ Restore habitat from obstructions, sedimentation, and nutrient loss
- ▶ Operate dams sustainably to encourage natural recruitment
- ▶ Maintain Tribal hatchery operations and research



# Kootenai River White Sturgeon

*Acipenser transmontanus*

Photo Credit: Kootenai Tribe of Idaho

## OVERVIEW

White sturgeon are threatened by degraded habitat in the Kootenay River. Native fish, like sturgeon, are not adapted to survive warmer water temperatures, especially in early life stages. They thrive in colder water and increasing water temperatures present a risk to their survival. Streamflow is disrupted and water quality is impaired by dams, river modification, and development near waterways. These changes in streamflow negatively impact sturgeon during key stages of their lifecycle. Protections and additional research on natural recruitment patterns are vital for restoring the sturgeon population.

## CONSERVATION CONSIDERATIONS

### VULNERABILITY RANKING

CLIMATE

High

NON-CLIMATE

High

CONFIDENCE

High

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

- ▶ Adults can thermally adapt to warmer temperatures, but cold-water temperatures are required for spawning
- ▶ Sturgeon are sensitive to low streamflow, which contributes to habitat loss and can lower recruitment rates

### 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

Alterations to aquatic ecosystems caused by dams, development, and agriculture has reduced viable habitat, especially for spawning, through increased sedimentation, runoff, diking, and channeling. Changes in streamflow can impact spawning and reduce suitable habitat. Runoff from development and agricultural activities impact water quality, introducing chemicals and toxins that can impact mortality.

## Climate Change

- ▶ White sturgeon are sensitive to warmer water, and increasing temperatures could impact spawning and increase the risk of disease and mortality.
- ▶ Shifting precipitation and decreasing snowpack are altering the timing and temperature of streamflow.



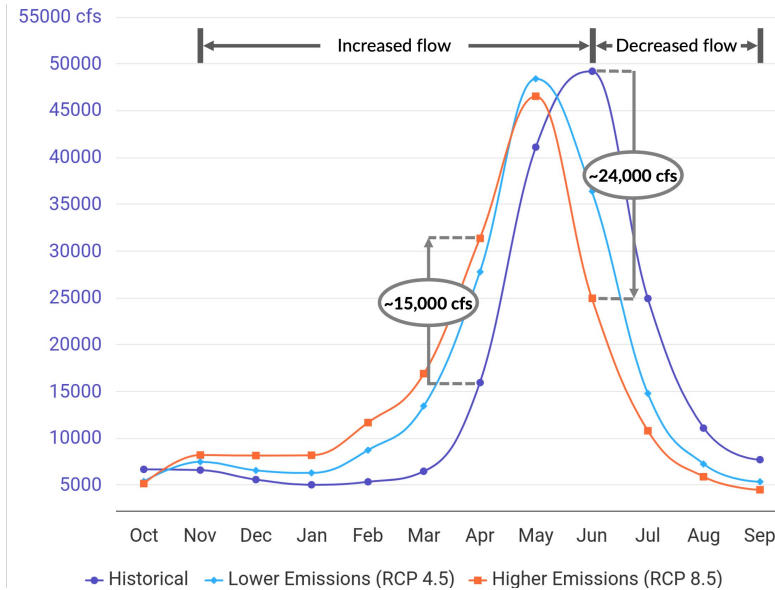
Photo Credit: Kootenai Tribe of Idaho

## PROJECTED AVG AUGUST STREAM TEMPERATURE (°C)

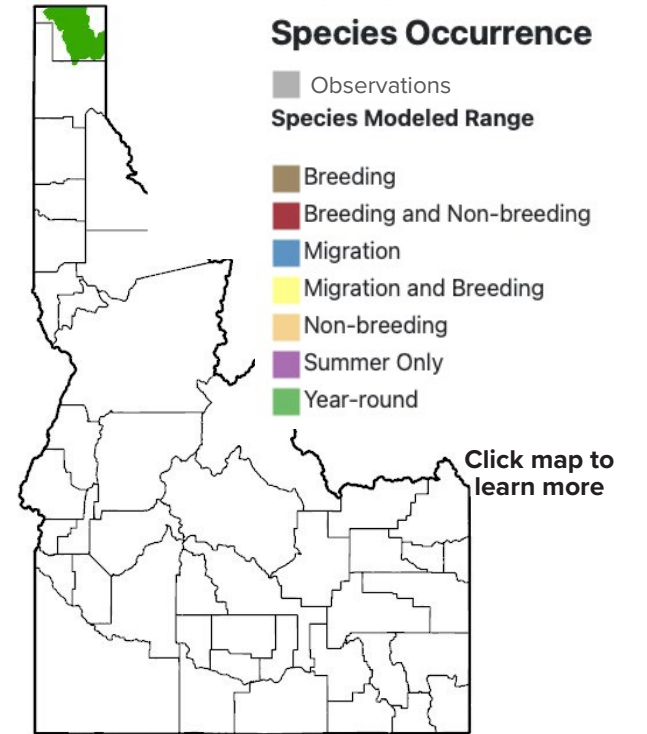
Stream location	Historical	Mid century (2040)	Late century (2080)
Boundary Creek, at Saddle creek	10.6	12.3	13.2
"Lower" Smith Creek	14.1	15.5	16.5
"Upper" Smith Creek	11.0	12.2	13.2
Kootenai River, Copeland Rd. crossing	16.2	17.7	18.7
Kootenai River, Nimz ranch	16.0	17.4	18.5
"Upper" Myrtle creek	10.3	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



Source: Idaho Fish & Game

## REFERENCES

- Idaho Fish & Game. *Acipenser transmontanus* (White Sturgeon). <https://idfg.idaho.gov/species/taxa/15794>.
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**PRIORITY AT-RISK SPECIES**  
**KOOTENAI TRIBE OF IDAHO**