THREAT LEVEL

IDAHO FISH & GAME

Species not yet assessed

CALL TO ACTION

- Increase federal and state protections
- Conserve riparian areas and floodplains

Black Cottonwood

Populus balsamifera ssp. trichocarpa

Photo Credit: extension.oregonstate.edu

OVERVIEW

The black cottonwood is widespread throughout northern Idaho and is found along rivers, streams, and lakes. These trees rely on high water levels and flooding for the dispersal of seeds. Black cottonwood stands have experienced long-term decline due to changes in riparian habitats and disruptions to floodplains. Climate change is shifting flood patterns, which poses significant threats over time. Protecting key habitats and expanding research on projected shifts in streamflow are important for conservation.

CONSERVATION CONSIDERATIONS

VULNERABILITY RANKING

CLIMATE	NON-CLIMATE	CONFIDENCE
MODERATE - HIGH	MODERATE - HIGH	MODERATE

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

- Black cottonwoods are intolerant of drought and require consistent access to water and moist soils
- While black cottonwood stands are widespread and large, individual tree growth is relatively slow

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

Black cottonwoods rely on consistent water sources and flooding, and hydrologic disruptions hinder seed dispersal. Dams, water management regimes, and water use alter streamflow and flooding that black cottonwoods depend on for survival.

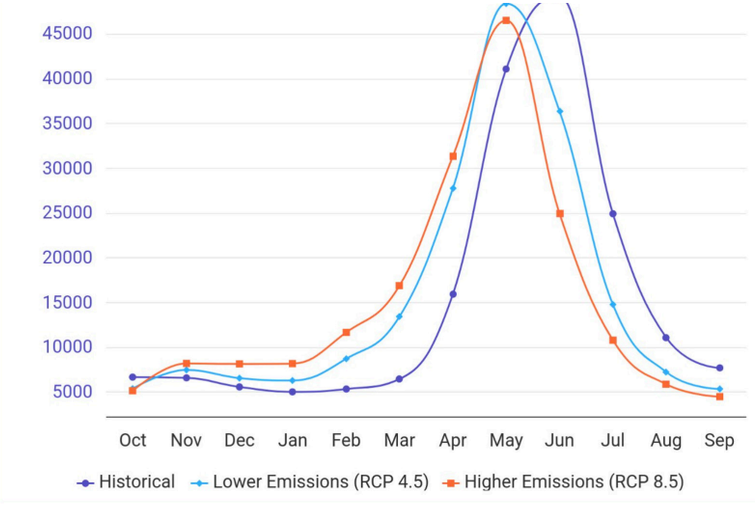
Climate Change

- Warming temperatures are projected to shift peak streamflow to earlier in the year. Earlier peak streamflow could lead to early seed dispersal, which could reduce successful seed establishment and result in sparse, poorly developed stands..
- Heavy flooding can increase tree mortality, especially for young trees.
- Prolonged drought conditions greatly increase young tree mortality. In drought conditions, water levels may drop faster than roots can grow, leaving tree roots unable to reach their main water source.

Photo Credt: Linda Swartz

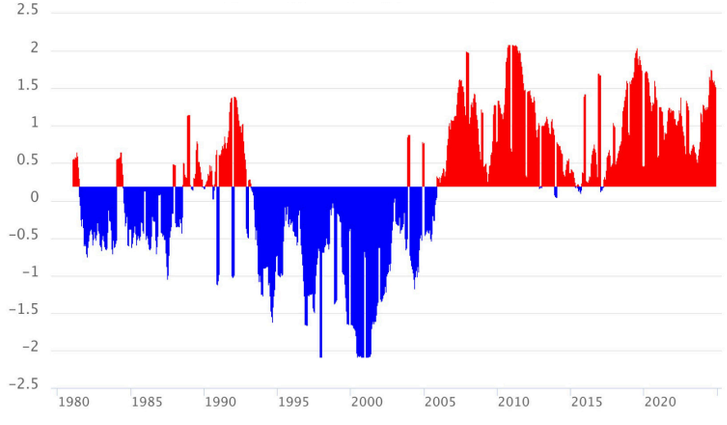
PROJECTED NON-REGULATED STREAMFLOW (2070-2099)

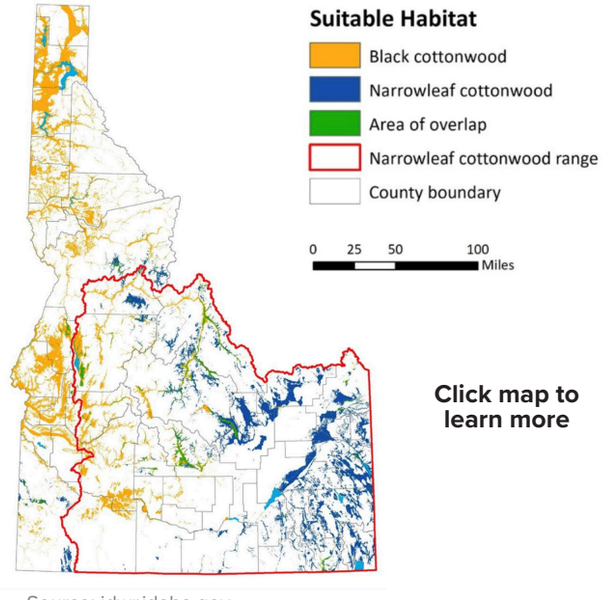
KOOTENAY RIVER AT BONNERS FERRY, ID



2-YEAR EVAPORATIVE DROUGHT DEMAND INDEX (EDDI)

BOUNDARY COUNTY, ID, AVG (1980-2024)





Click map to learn more

Source: idwr.idaho.gov

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Drought chart: Source: Hegewisch, K.C. and Abatzoglou, J.T..’ Historical Climate Tracker’ web tool. Climate Toolbox (https://climatetoolbox.org/) accessed Nov. 7 2024.

Streamflow chart: Hegewisch, K.C., Abatzoglou, J.T., ‘ Future Streamflows’ web tool. Climate Toolbox (https://climatetoolbox.org/) accessed Apr. 30 2025.

Linda Swartz. U.S. Forest Service, https://www.fs.usda.gov/wildflowers/plant-of-the-week/populus_balsamifera.shtml

PRIORITY AT-RISK SPECIES

KOOTENAI TRIBE OF IDAHO