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June 6, 2023

MEMORANDUM

TO: Fish Committee Members

FROM: Kerry Berg

SUBJECT: Montana Resident Fish Mitigation Update

BACKGROUND:

Presenter: Matt Boyer, Hydropower Mitigation Coordinator, Montana Fish, Wildlife & Parks

Summary: Hungry Horse Mitigation is a long-term effort to offset fisheries losses caused by the construction and operation of Hungry Horse Dam. The project supports applied research and monitoring used to guide project implementation, quantify progress toward objectives, and adaptively inform future mitigation program direction. The overarching goal is to understand, maintain, and maximize ecosystem integrity and resilience, thereby conserving self-sustaining fisheries, native fish assemblages and the habitats they occupy. Work prioritization follows the mitigation framework adopted by the Council in the 2004 Flathead Subbasin Plan, addressing three primary limiting factors: 1) impoundment and hydrosystem operations; 2) physical habitat alteration; and 3) non-native species interactions. Some of the major accomplishments include eradication of hybridization threats from nonnative trout in the South Fork Flathead watershed and conservation of local Westslope Cutthroat Trout genetic stocks, acquisition, protection, and restoration of critical habitat for native focal fish species, and completion of applied research projects with peer-reviewed publications that inform conservation management actions. Goals and objectives in this project build on past work and lessons

learned. Projects are identified for implementation based on their ability to deliver high conservation value for focal fish species, offer a high likelihood of success, and provide sustainable outcomes over a discrete time frame.

Relevance: The Council's Fish and Wildlife Program calls for mitigation for resident fish and other aquatic species impacted by the hydrosystem.

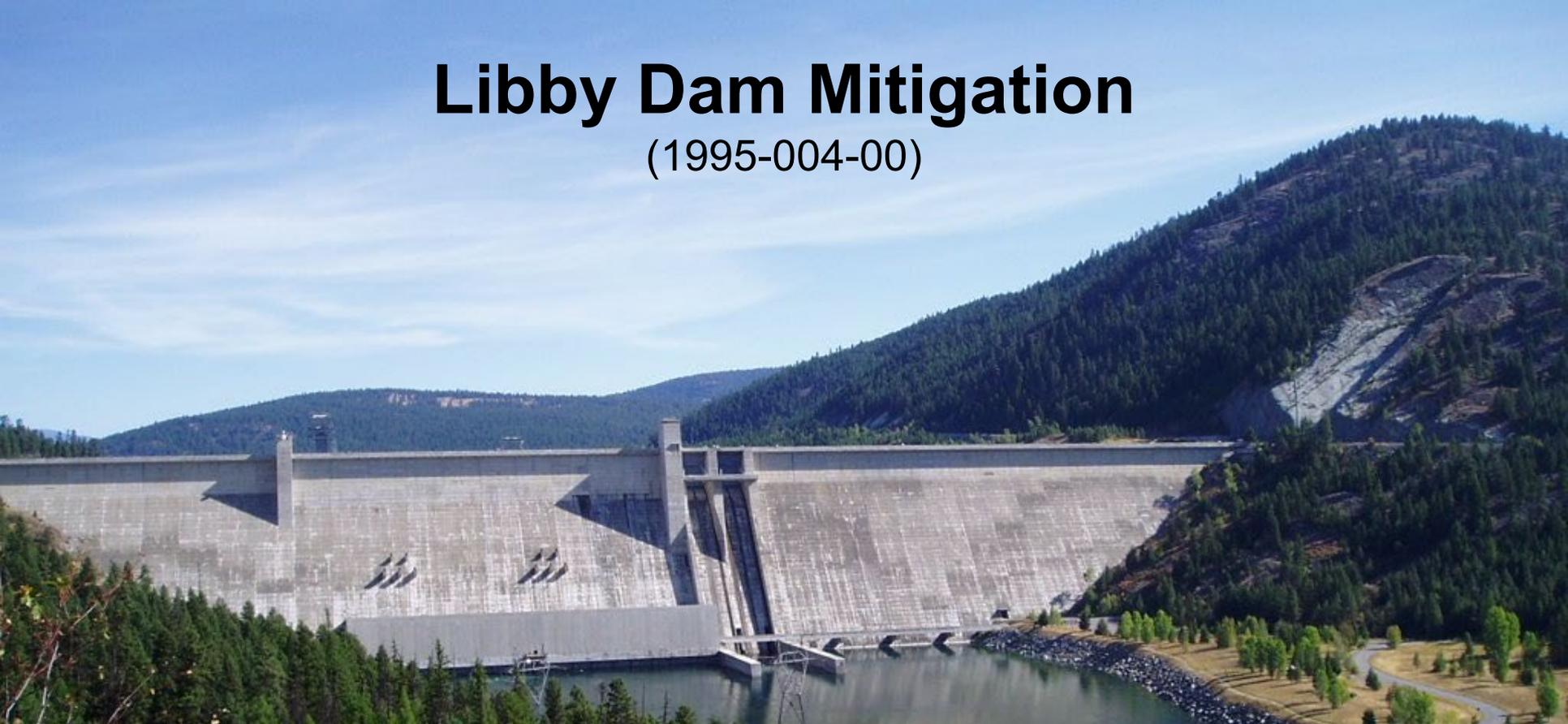
Flathead and Kootenai Subbasins, MT

**NPCC
Fish & Wildlife Committee Meeting
13 June 2023**



Libby Dam Mitigation

(1995-004-00)



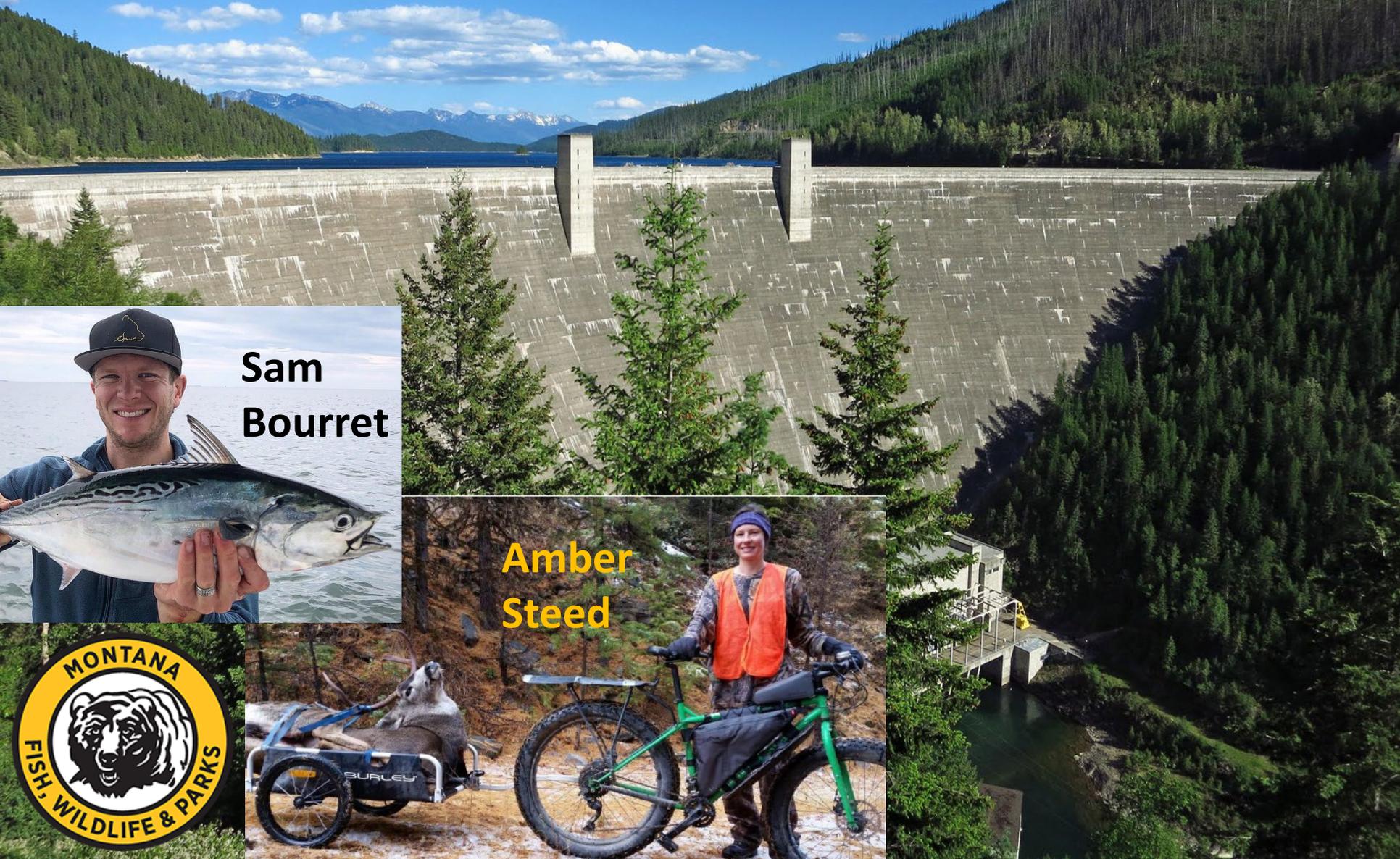
Jim Dunnigan



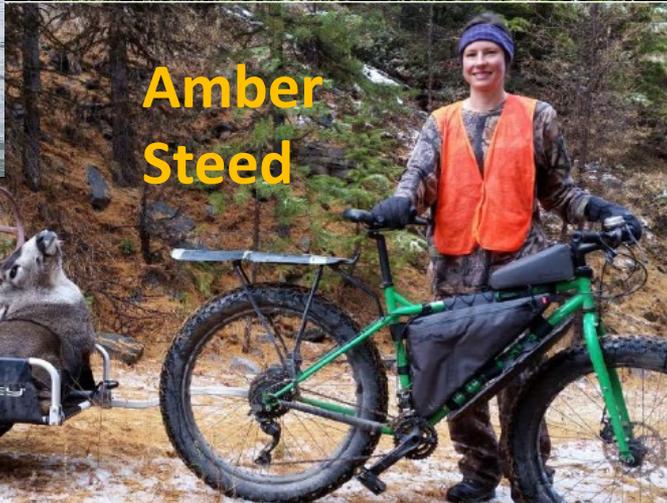
Ryan Sylvester

Hungry Horse Dam Mitigation

(1991-019-03)



**Sam
Bourret**



**Amber
Steed**



Sekokini Springs Conservation Hatchery

2019-001-00



CRSO resident fish mitigation in Montana



*Hungry Horse Dam construction completed in 1953 - operated by BOR

*Fisheries Mitigation Program formalized in 1991



*Libby Dam construction completed in 1972 - operated by ACOE

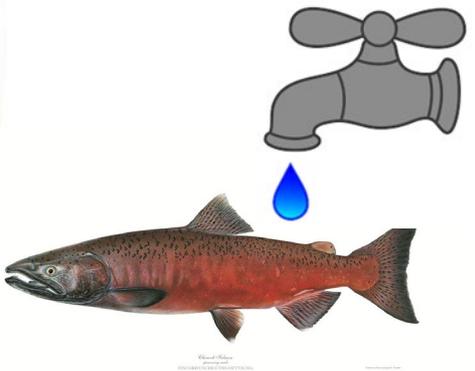
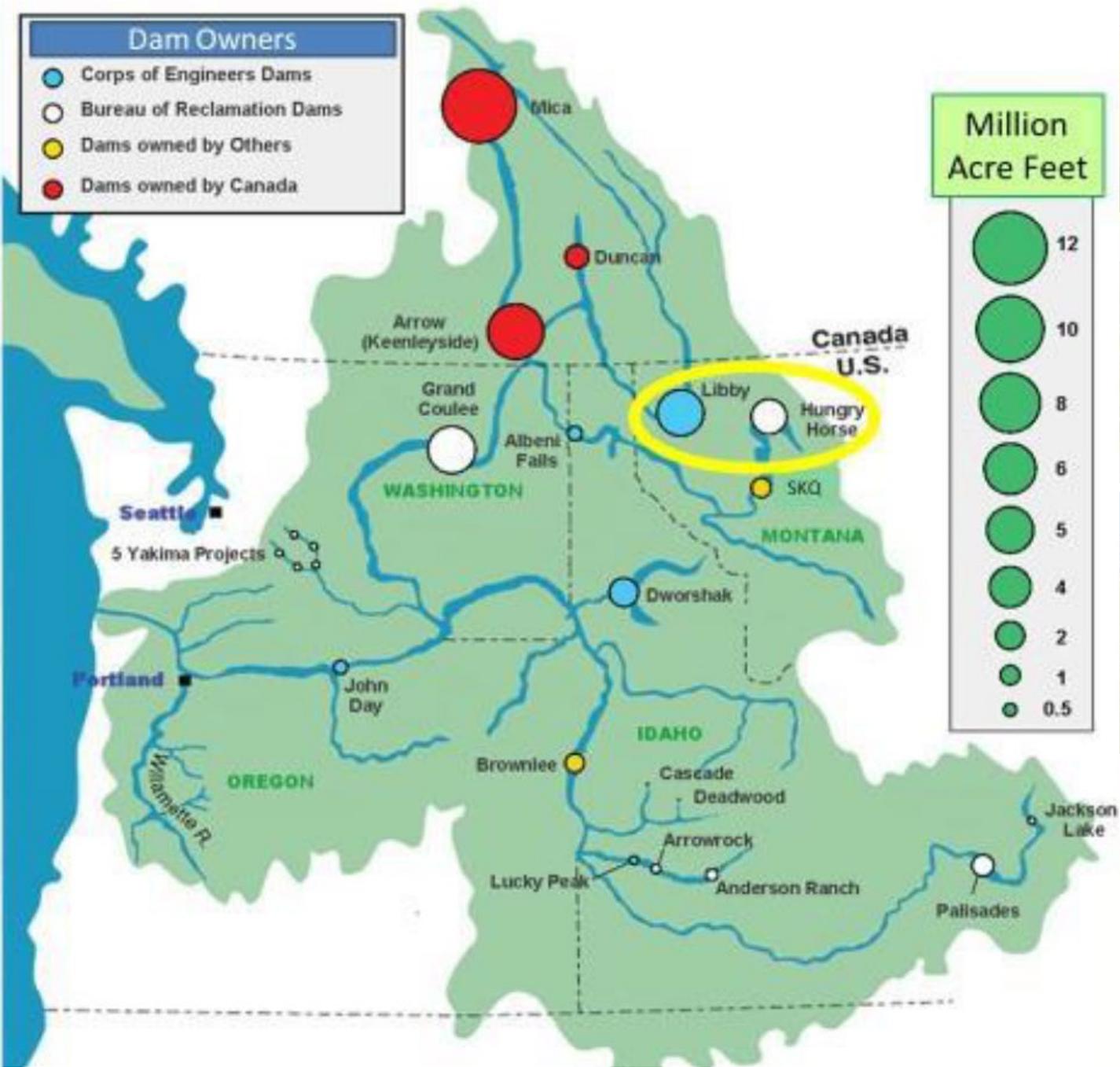
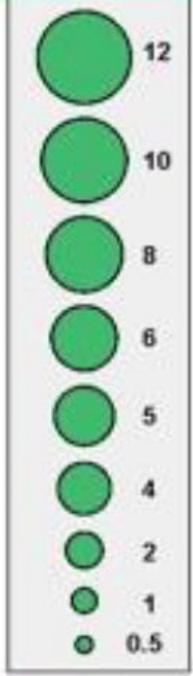
*One of four dams constructed through the 1964 Columbia River Treaty between US and Canada

*Fisheries Mitigation Program formalized in 1994

Dam Owners

- Corps of Engineers Dams
- Bureau of Reclamation Dams
- Dams owned by Others
- Dams owned by Canada

Million Acre Feet



**FISHERIES MITIGATION PLAN FOR
LOSSES ATTRIBUTABLE TO THE CONSTRUCTION
AND OPERATION OF HUNGRY HORSE DAM**

**FISHERIES MITIGATION AND IMPLEMENTATION
PLAN FOR LOSSES ATTRIBUTABLE
TO THE CONSTRUCTION AND OPERATION
OF LIBBY DAM**

**MONTANA DEPARTMENT OF FISH,
WILDLIFE & PARKS**

**CONFEDERATED SALISH AND
KOOTENAI TRIBES**

KOOTENAI TRIBE OF IDAHO

**Montana Department of
Fish, Wildlife & Parks**

1420 E. Sixth
Helena, MT 59620
Ph. 406-444-2449 FAX 444-4952
P.O. Box 67 Kalispell, MT 59903
Phone (406) 752-5501
FAX (406) 257-0349

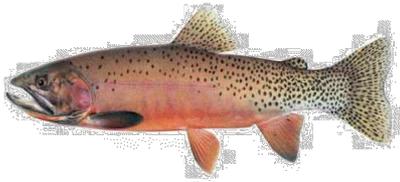
**Confederated Salish
& Kootenai Tribes**

P.O. Box 278
Pablo, MT 59855
Phone (406) 675-2700
FAX (406) 675-2806



March 1991

1998



FLATHEAD RIVER SUBBASIN MANAGEMENT PLAN



A Report prepared
for the Northwest
Power and
Conservation
Council

A vision, guiding principles, management objectives and strategies, and a research, monitoring, and evaluation program to protect, mitigate, and enhance fish and wildlife resources of the Flathead River Subbasin



Northwest **Power** and
Conservation Council

**Reservoir impoundment
/hydro operations**

Habitat loss/alteration

Non-native species
interactions

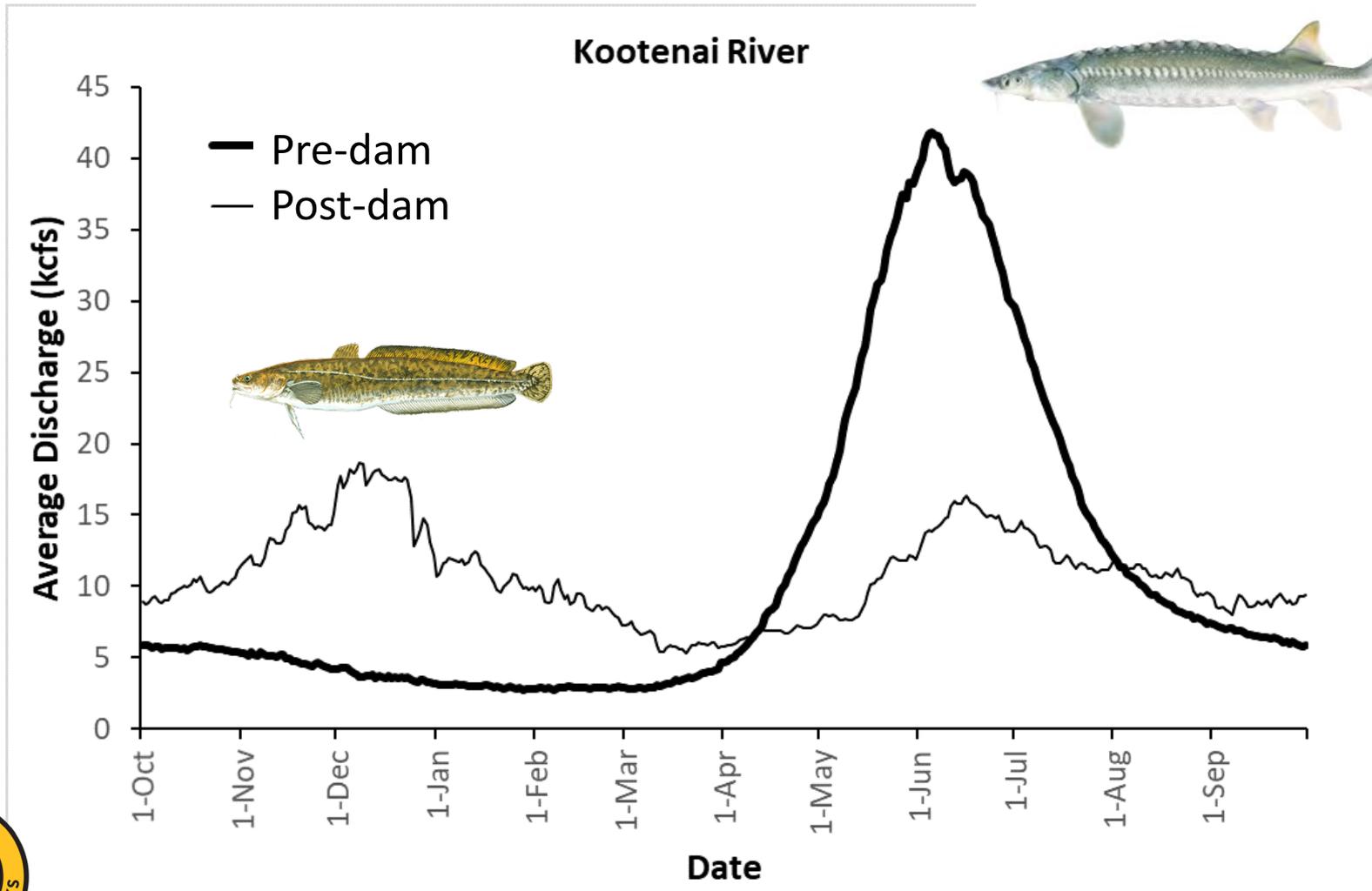




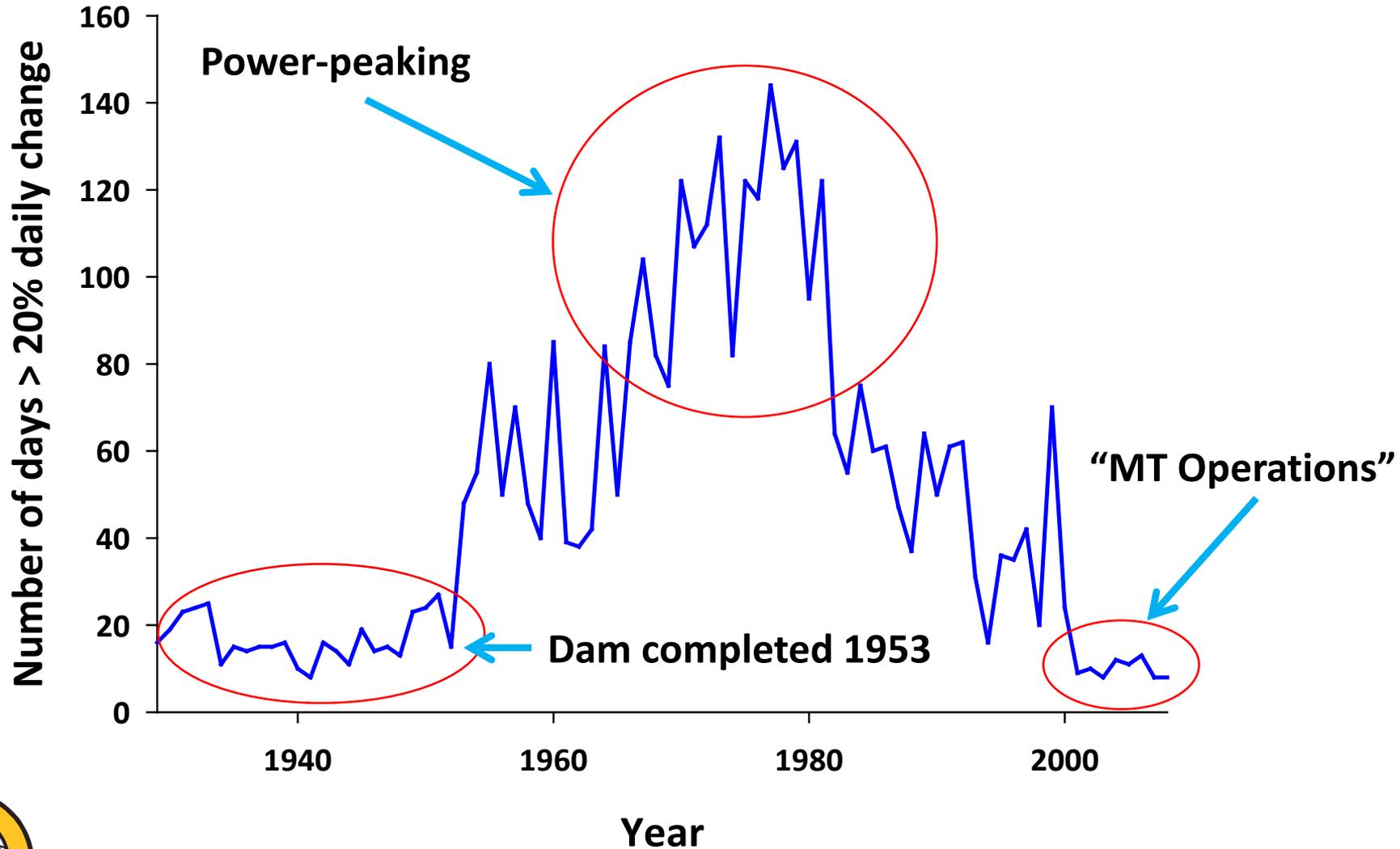
- Improved reservoir refill and biological productivity



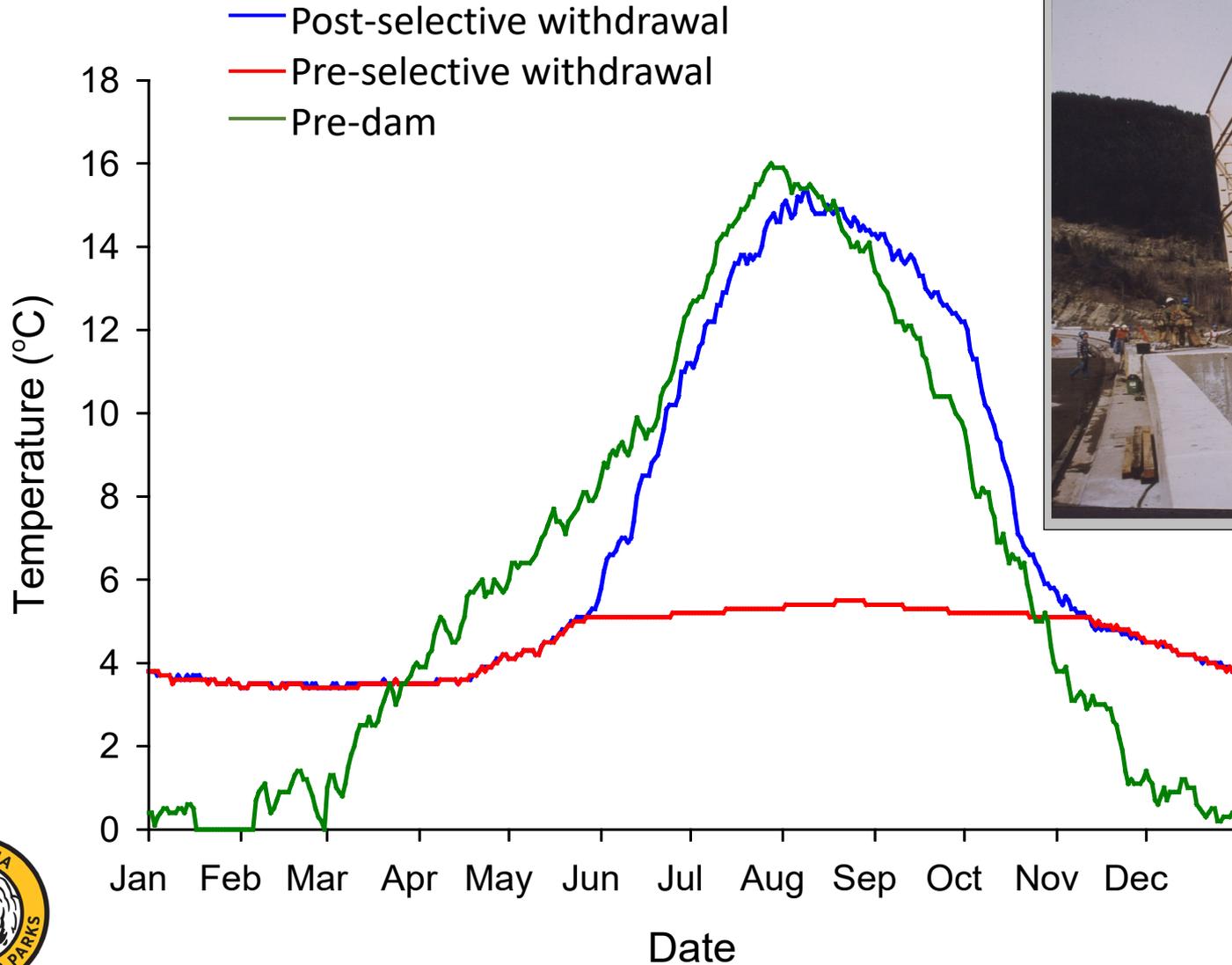
Dam-altered hydrograph



Evolution of Hungry Horse Dam operations



Temperature management



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Habitat Protection - Acquisition

Whitefish Lake Watershed Project

- 21 Section (~14,000-acre) acquisition
- BPA funded portion protects 3,200 acres of Swift Cr. riparian corridor



Habitat Protection - Acquisition

Foys Bend Fisheries Conservation Area

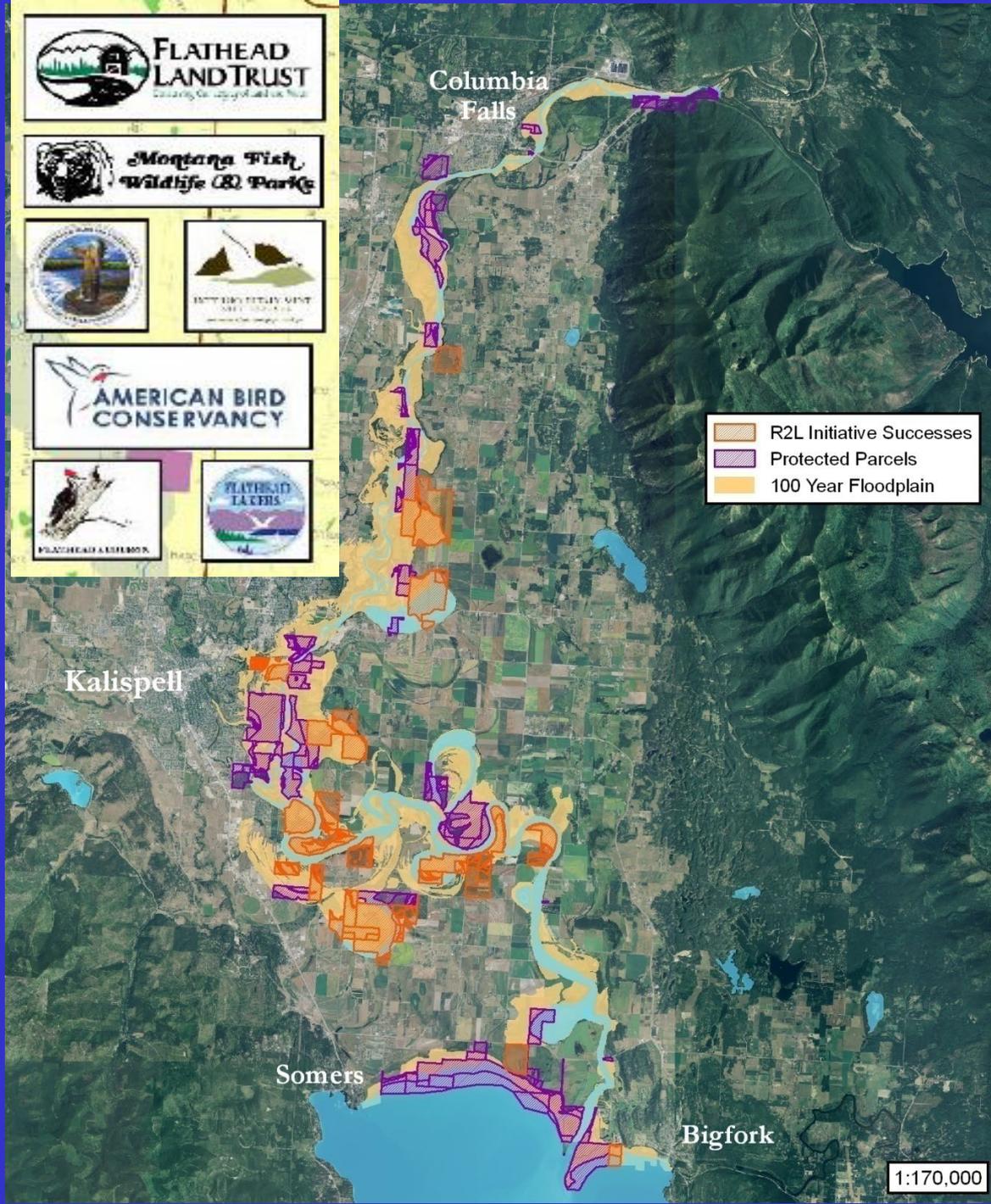
- 245 acres (60% wetland/riparian forest)
- 2 miles river frontage



Habitat Protection - Conservation easement

River to Lake Initiative

- 45 projects (10 BPA funded)
- 29% of mainstem Flathead River protected (7 miles)
- 49% of ecological floodplain protected (5,000 acres)
- 4 miles of restoration projects completed
- 51% of wetlands protected
- Important shallow aquifer protected



Addressing Habitat Loss/Alteration

Continuity & Alignment

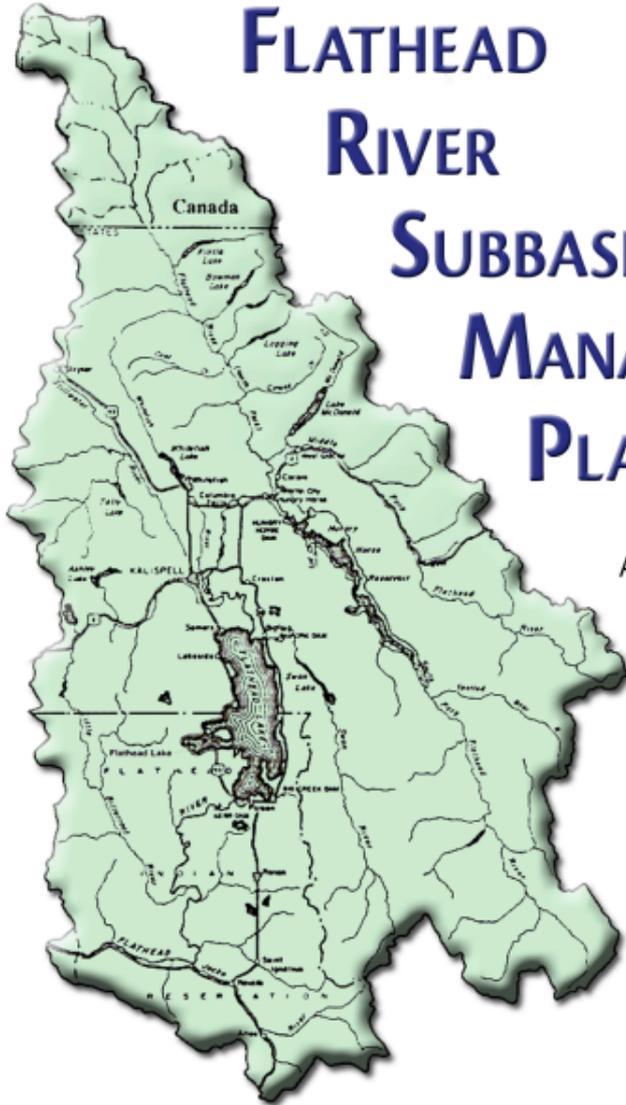


Felix Cr., Hungry Horse Reservoir



Swift Cr. drainage

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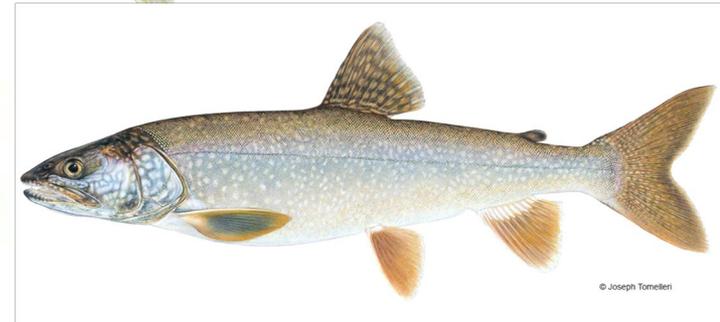
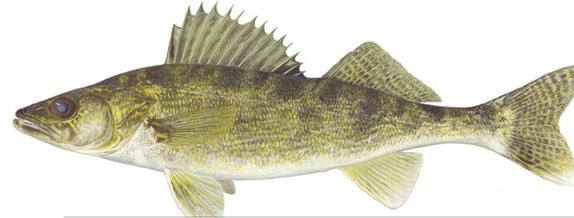


Reservoir impoundment
/hydro operations

Habitat loss/alteration

**Non-native species
interactions**

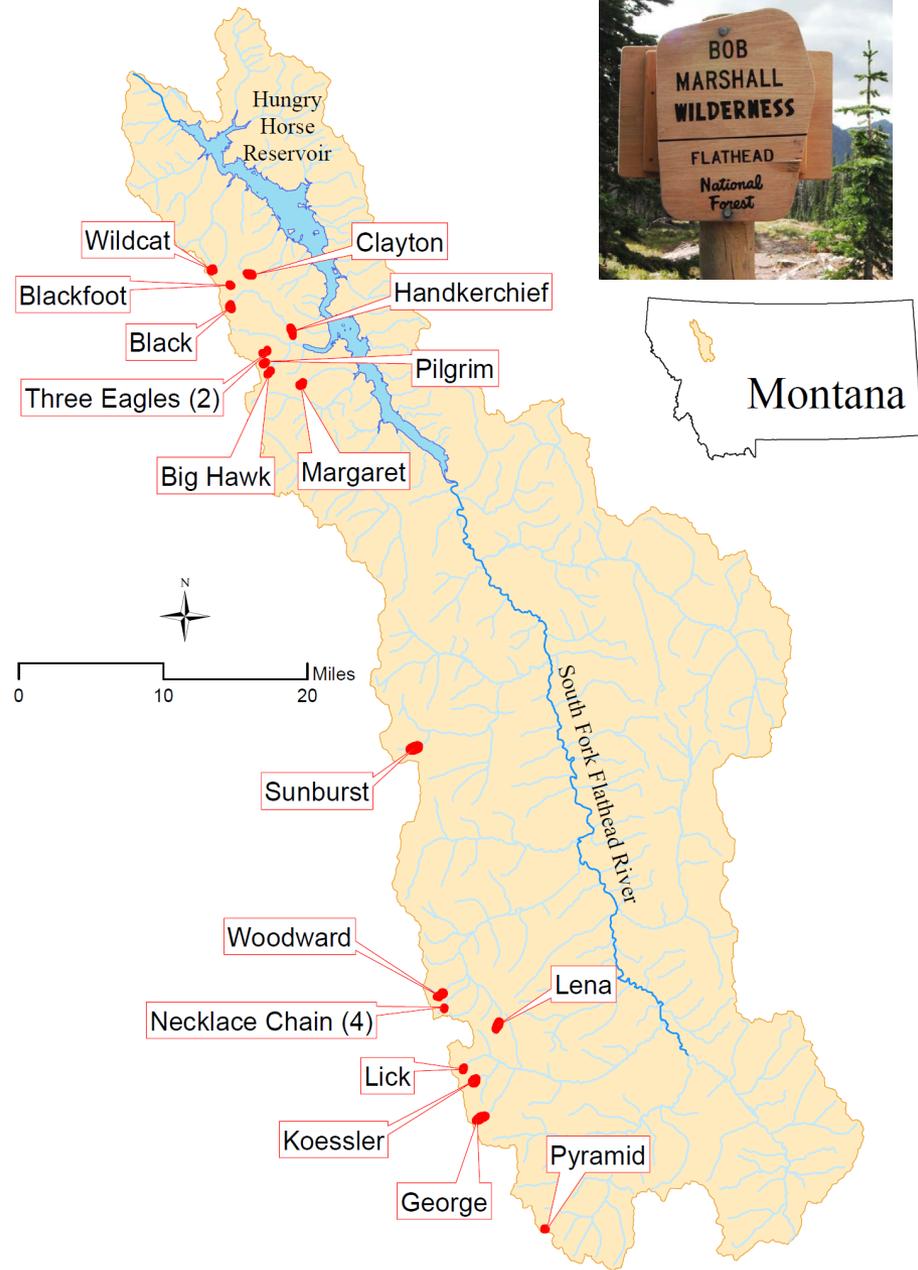
Non-native Species Interactions



- High conservation impact
- Reasonable likelihood of success
- Sustainable outcome over a discrete time frame



South Fork Flathead Westslope Cutthroat Conservation

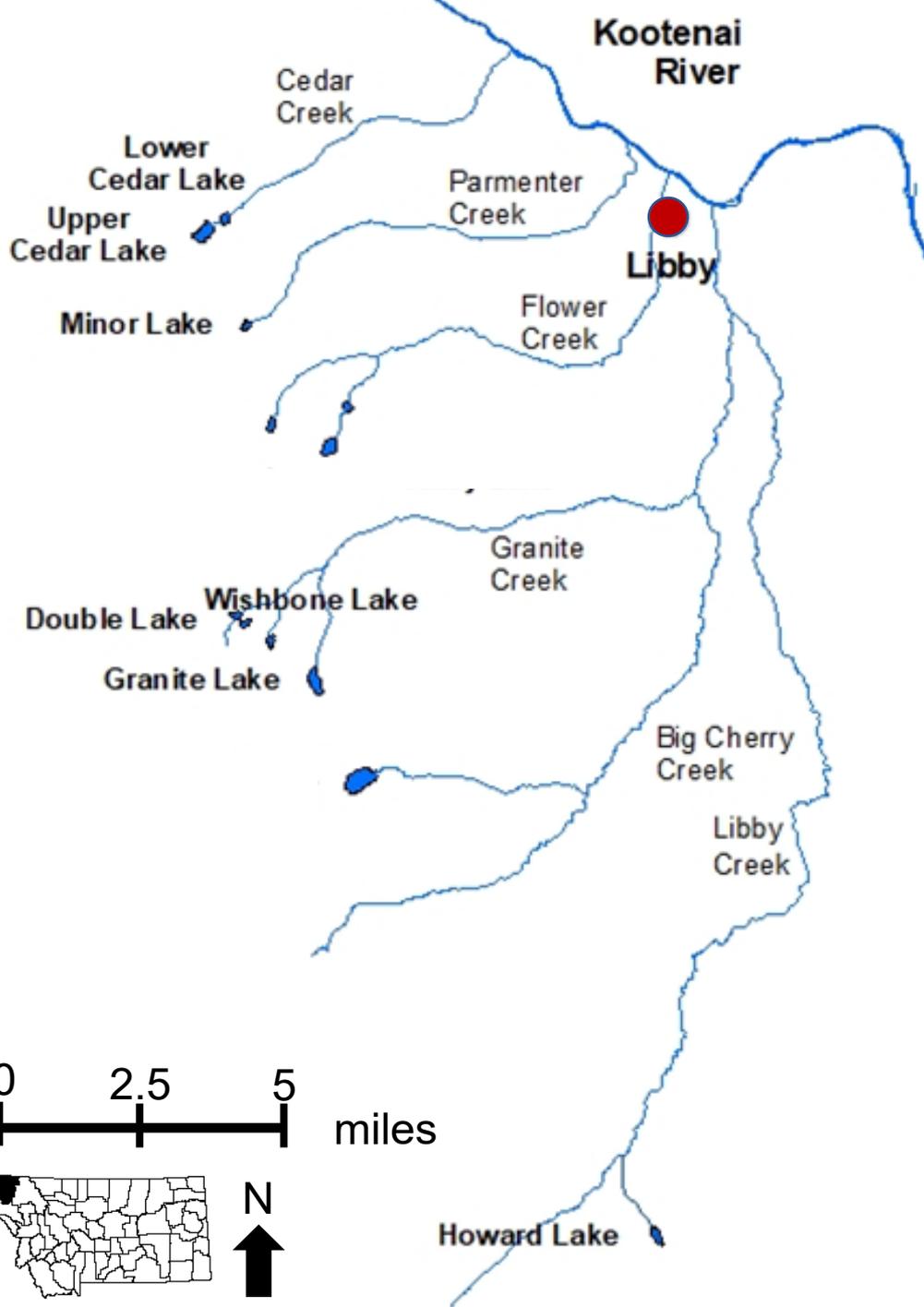


Sunburst Lake: Flathead National Forest



Lake Evangeline, Camas Lake, and the Camas Watershed: Glacier National Park





Redband Trout Conservation Opportunities 7 Lakes in 4 Tributaries



Granite Lake



Moose Creek fish passage barrier

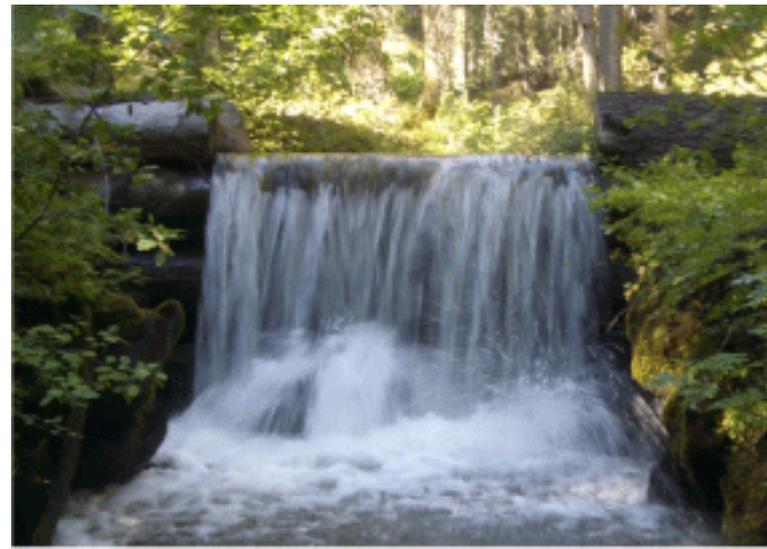
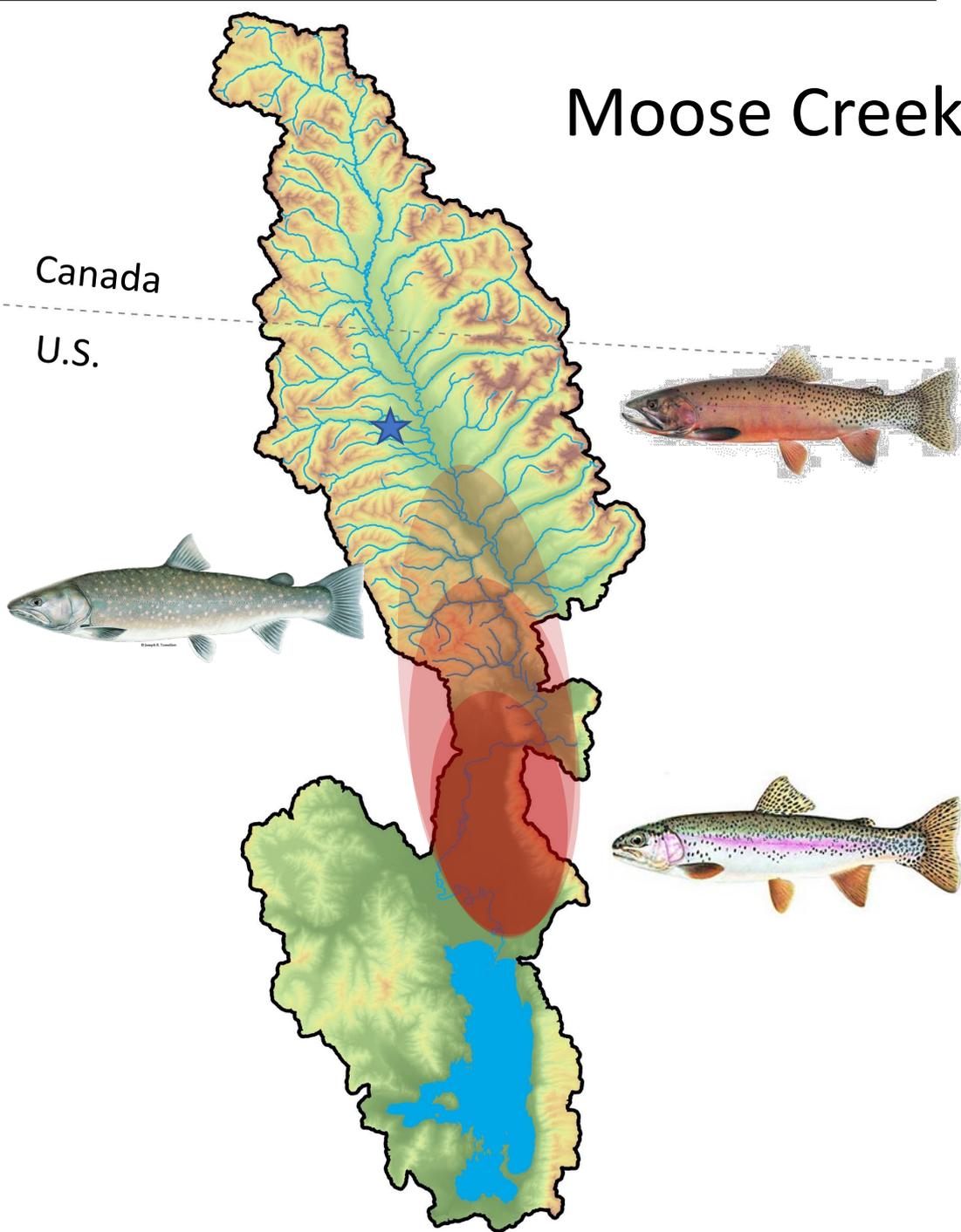




Photo credit: Joel Sartore/National Geographic stock with Wade Fredenberg