Northwest **Power** and **Conservation** Council

June 3, 2025

MEMORANDUM

TO: **Council Members**

FROM: **Kerry Berg, Policy Analyst, Montana Office**

SUBJECT: **Presentation on the Montana Operations at Libby and Hungry Horse Dams**

BACKGROUND:

Presenter: Brian Marotz, Marotz Enterprises, and Matt Boyer, Region 1 Science Program Supervisor, Montana Fish, Wildlife & Parks.

Summary: Located in northwestern Montana, Libby and Hungry Horse dams provide about 40 percent of U.S. water storage in the Columbia River Basin. During the last three decades, operations at these dams have changed to reduce their negative effects on ecosystem function and fish populations in the reservoirs and rivers immediately downstream of these projects.

Prior to these changes, headwater dam operations significantly altered the natural river hydrography by storing water during spring runoff to manage flooding, and then releasing water, primarily during the fall and winter, to produce electricity. These operations also included an unnatural pulse of water out of the dams in the summer that impacted both the reservoirs and rivers.

Relevance: Since the 1990's the Northwest Power and Conservation Council has adopted various provisions related to improving the operations at Libby and Hungry Horse dams. This includes the 2003 Mainstem Amendments that supported implementation of VarQ flood control operations and Integrated Rule Curve

operations as well as a change to summer operations to stabilize the reservoirs above, and rivers below, both dams.

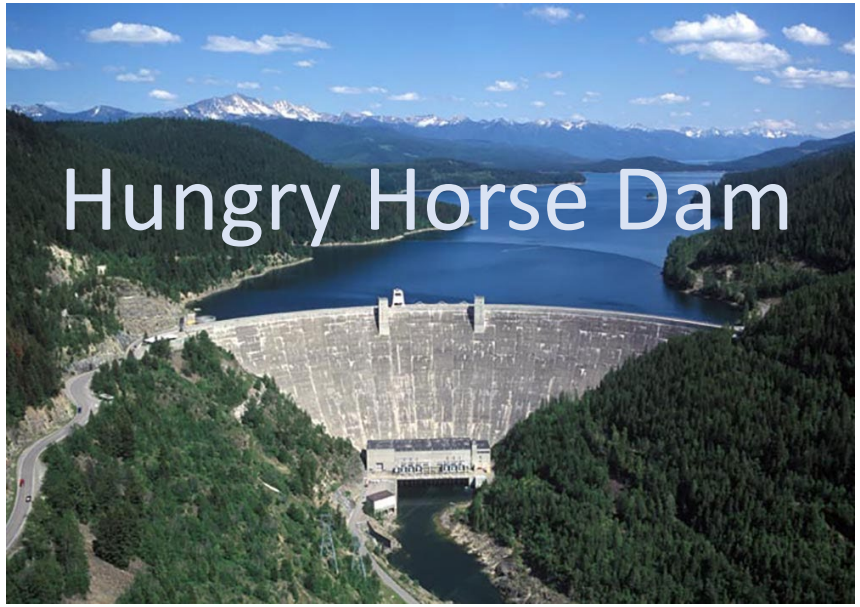
Background: For a detailed background of the Montana Operations please see the documents below. While in need of an update they provide a wealth of information.

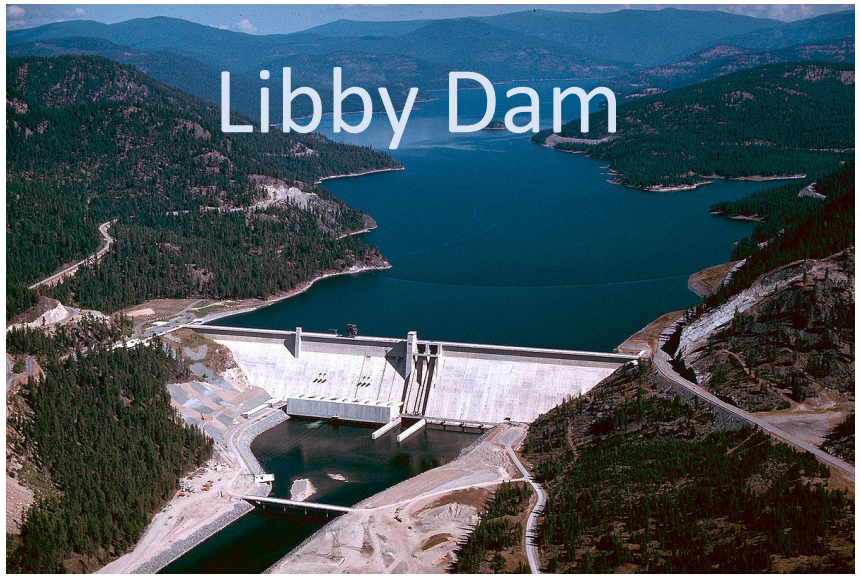
More info: VarQ Flood Risk Management:
https://www.nwcouncil.org/media/filer_public/ea/f8/eaf8b7f4-0c83-4052-a597-2497b0a6624e/2013-10VarQ_0.pdf

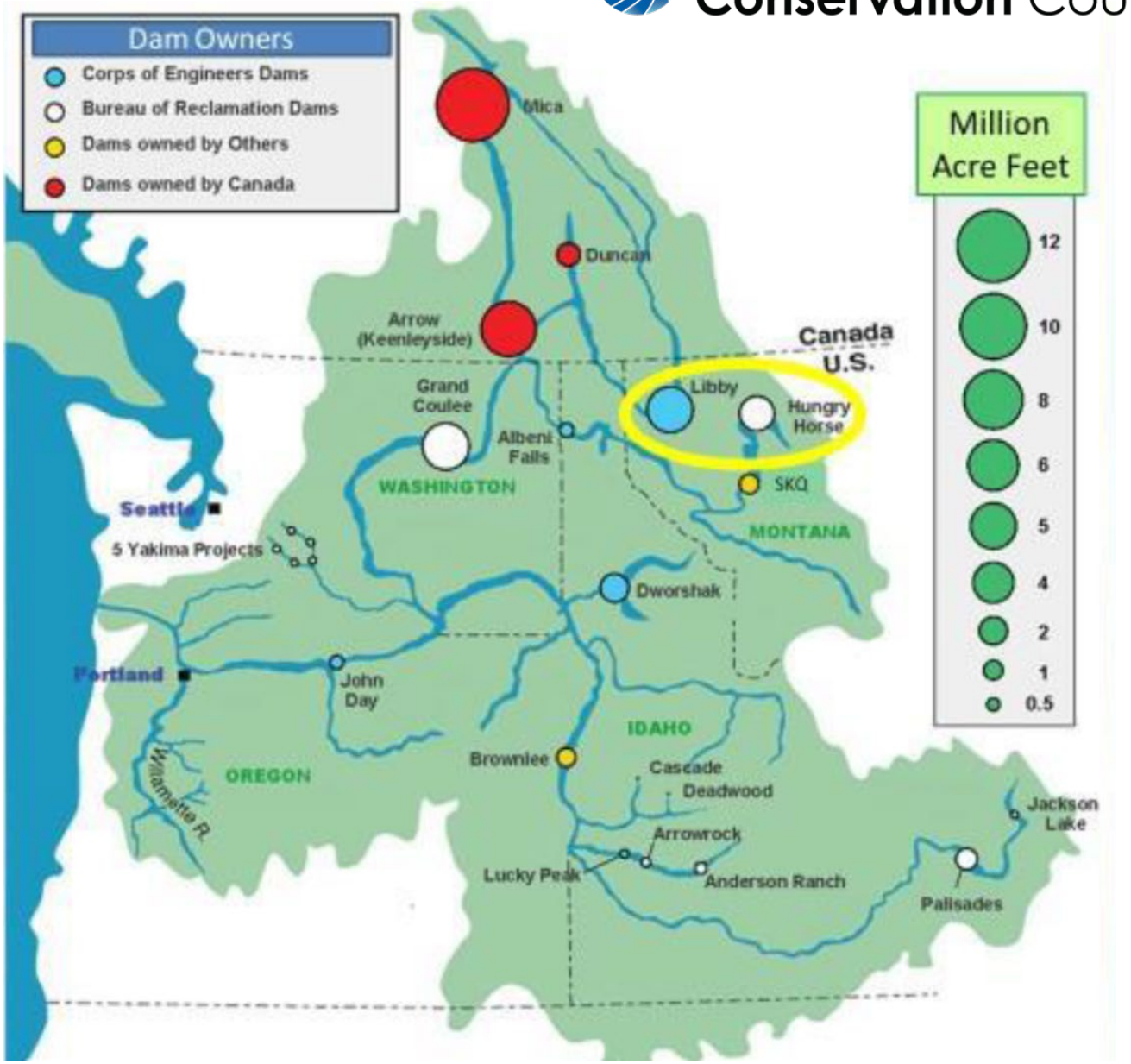
Montana Operations at Libby and Hungry Horse Dams:
https://www.nwcouncil.org/media/filer_public/82/11/82112134-9e66-4fc7-b72e-4dbcbadd5eda/2017mtops.pdf

Montana Operations

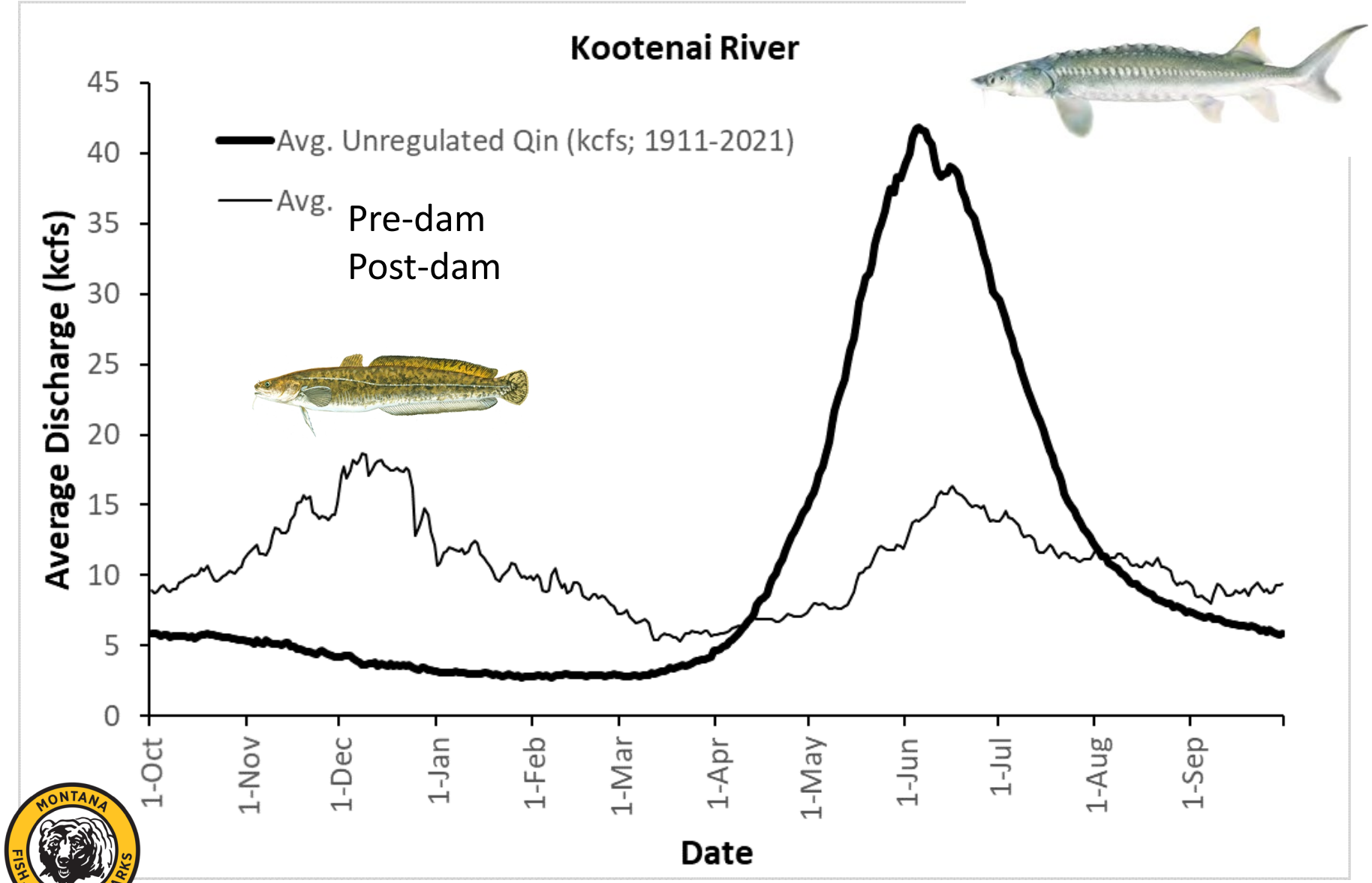
Northwest **Power** and **Conservation** Council





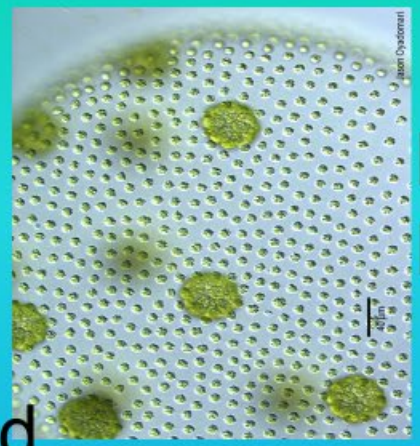


Altered River Flows

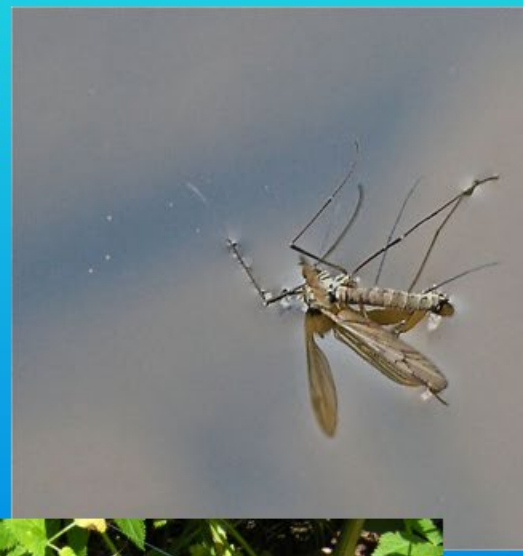


Montana Reservoir Models

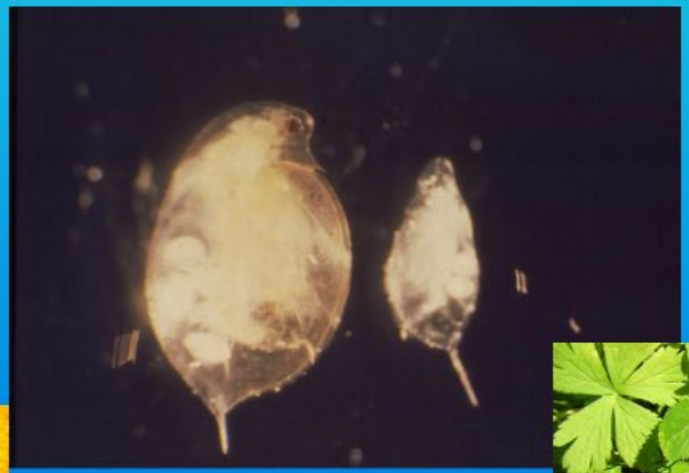
Phytoplankton Production and Washout Loss



Benthic Insect Production

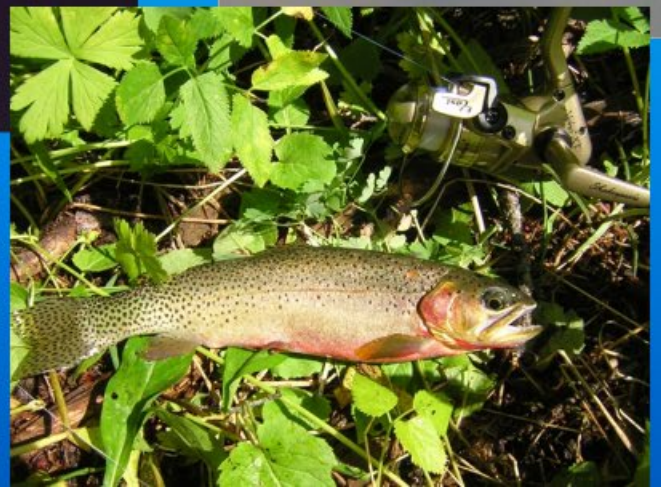


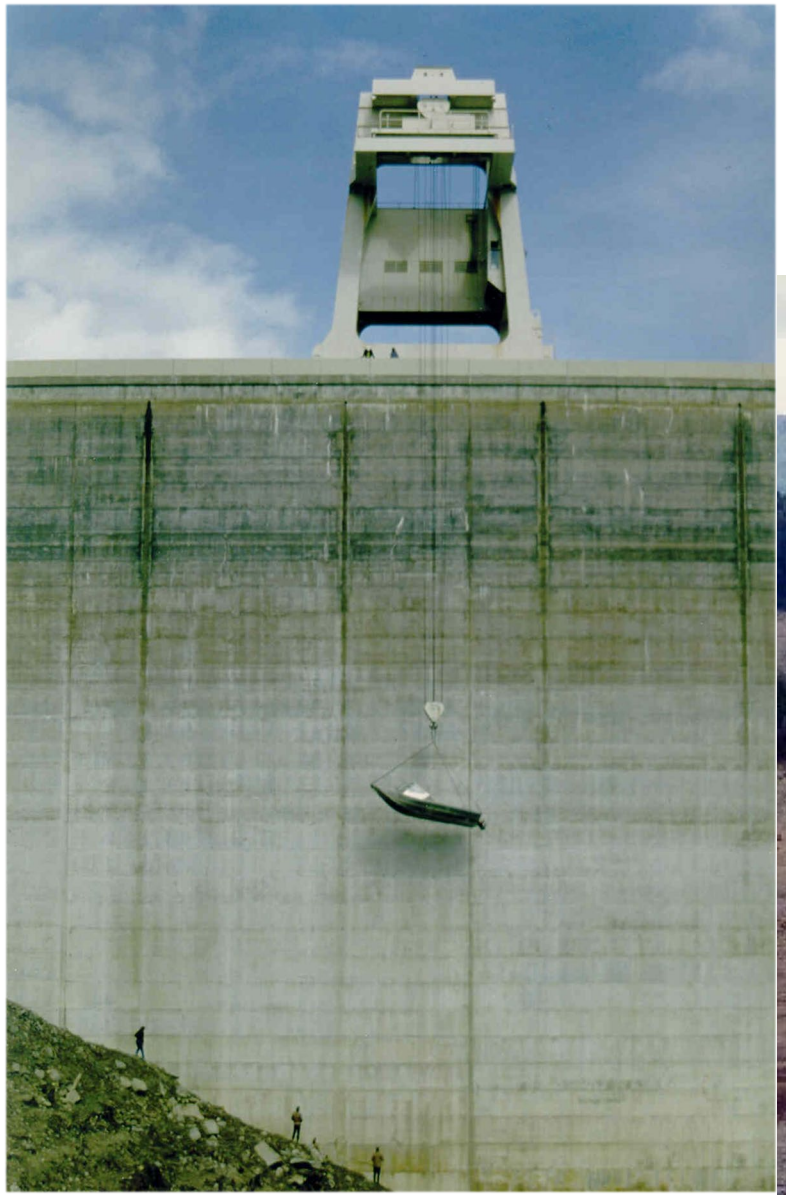
Zooplankton Production and Washout Loss



Terrestrial Insect deposition on the reservoir surface

Fish Growth





VarQ Flood Risk Management

Controlling Dam Discharge Temperature