

# Priest Lake Coldwater Bypass Feasibility Assessment

Idaho Fish and Game  
Virtual Public Meeting  
September 22, 2021

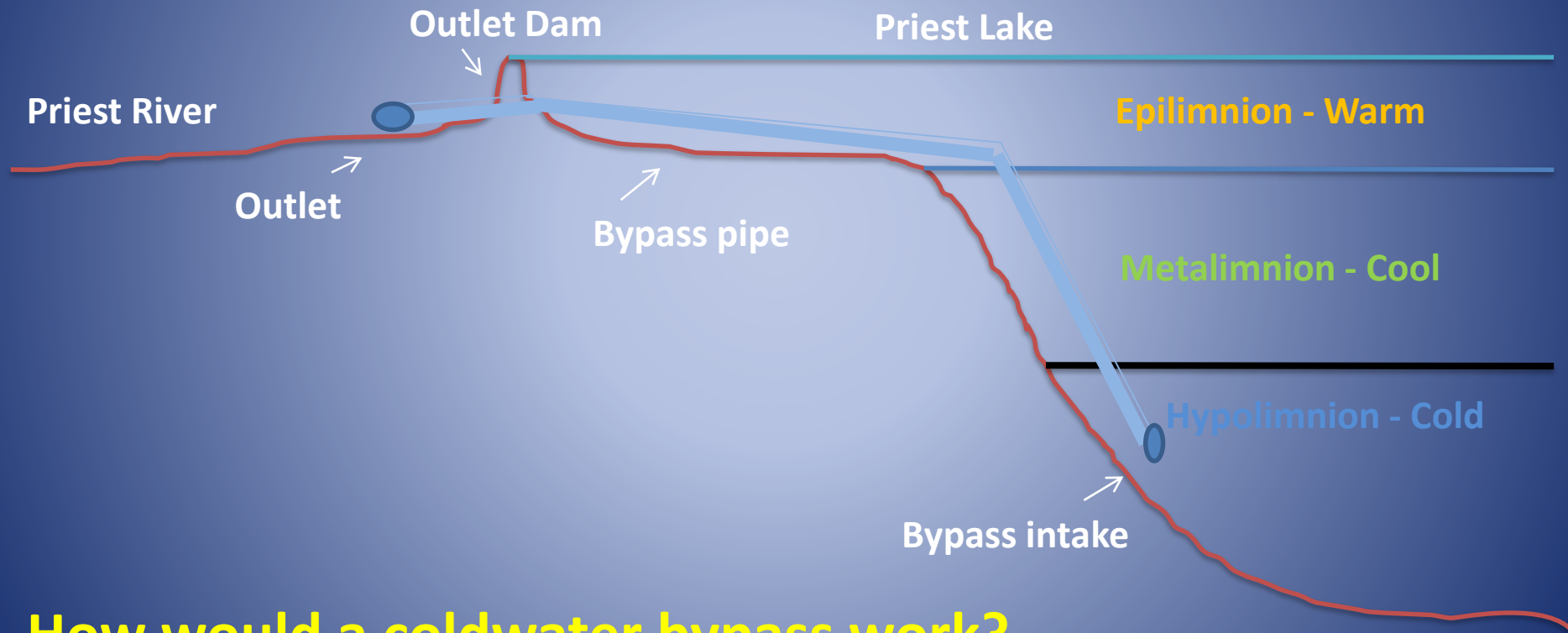




# Background Information

- What is the coldwater bypass concept?
- Why are we considering it?
- What is the process?
  - What steps have already been taken?
  - What comes next?

# Coldwater Bypass Concept



## How would a coldwater bypass work?

By replacing a portion of the warm water outflow from the surface of the lake with cold water from the hypolimnion

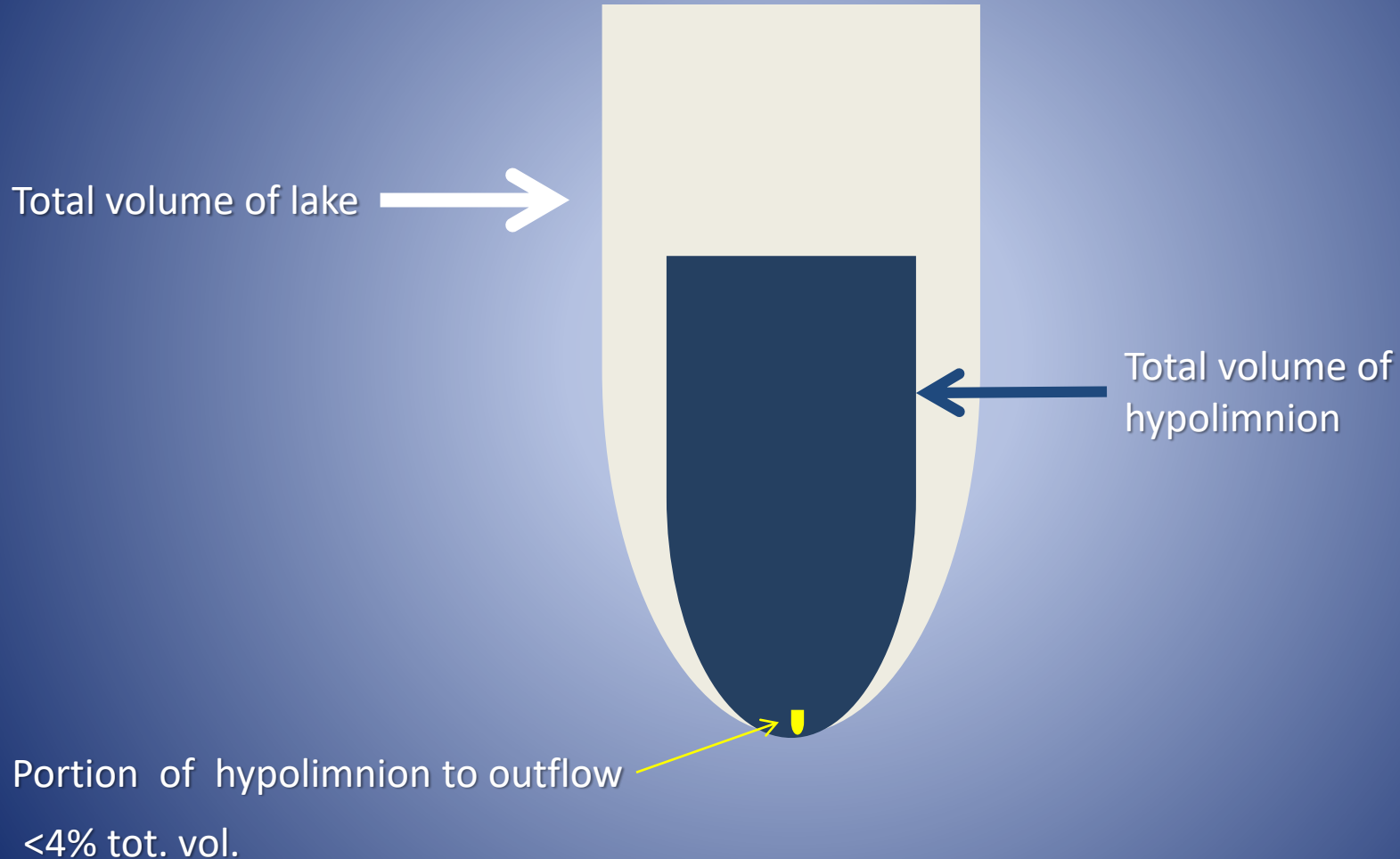
# Would this change the lake level?

NO...



Outflow volume would be unchanged. Priest Lake would remain at the same level it is currently maintained, as per Idaho Water Right and Plan

# Will it affect the lake?





# Why consider coldwater bypass?

- *IDFG mission (Idaho Code Title 36):* All wildlife, including all wild animals, wild birds, and fish, within the state of Idaho, is hereby declared to be the property of the state of Idaho. It shall be preserved, protected, perpetuated, and managed. It shall be only be captured or taken at such times or places, under such conditions, or by such means, or in such manner, as will preserve, protect, and perpetuate such wildlife, and provide for the citizens of this state, and as by law permitted to others, continued supplies of such wildlife for hunting, fishing and trapping.

# Why consider coldwater bypass?



## Fisheries Management Plan

2019-2024

A Comprehensive Guide to  
Managing Idaho's Fisheries Resources



*This document was adopted by the*  
IDAHO DEPARTMENT OF FISH AND GAME COMMISSION  
*June 2019*



**4. Objective: Seek opportunities to improve the coldwater fishery in Priest River.**

**Strategy:** Conduct feasibility analysis (social, biological, fiscal) of a coldwater bypass from Priest Lake to improve coldwater habitat in the Priest River. If feasible, pursue development of a coldwater bypass.

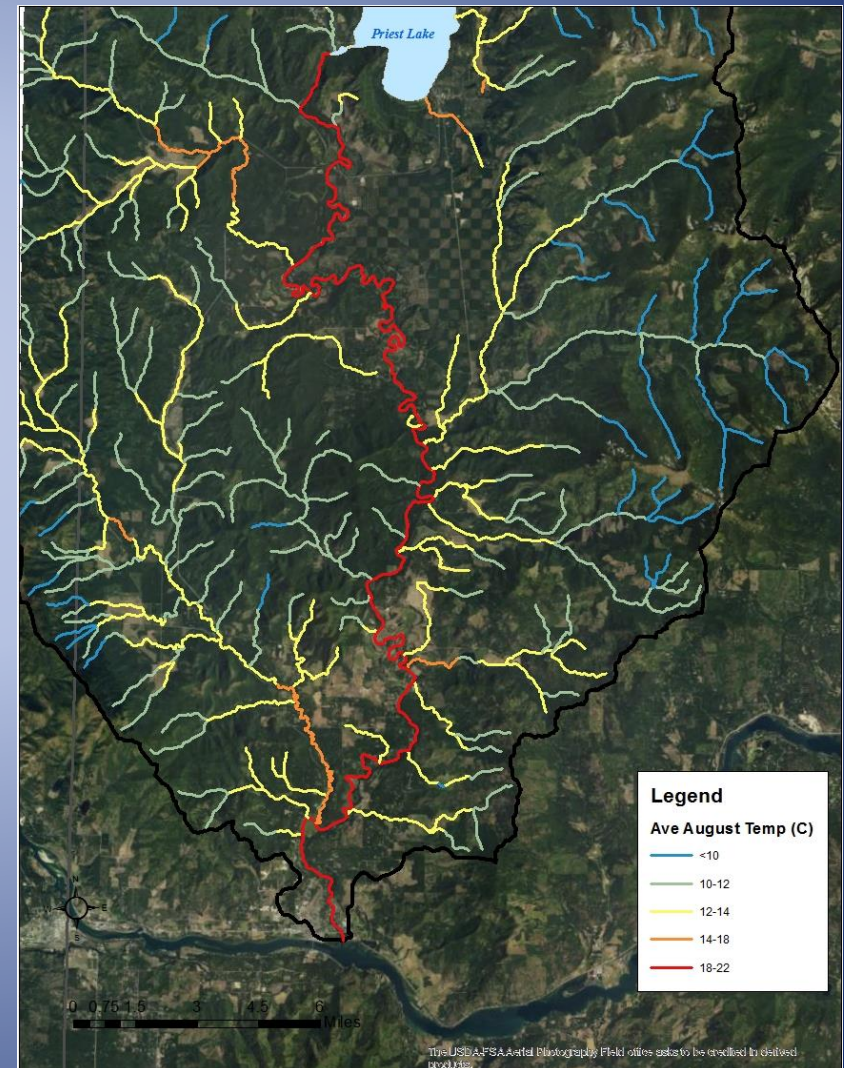


# Why consider coldwater bypass?

Summer temperatures in Lower Priest River often get too hot for year-round use by coldwater aquatic life

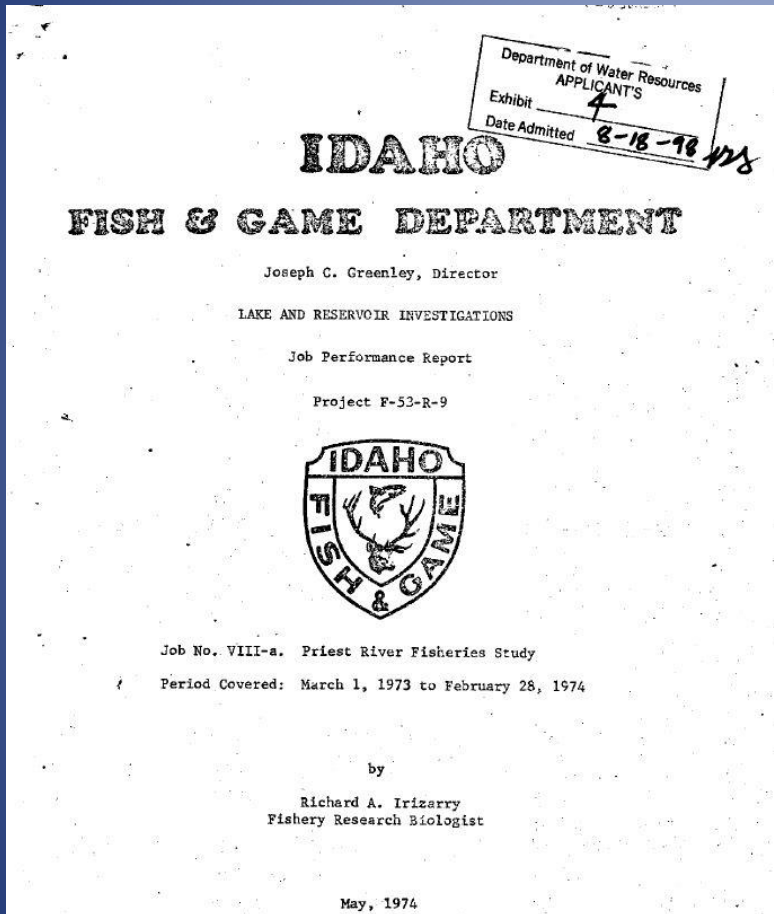
Lower Priest River is 303(d) designated “Water Quality Impaired – Temperature” under the Clean Water Act

Climate modeling predicts further warming





# History of the Priest River fishery

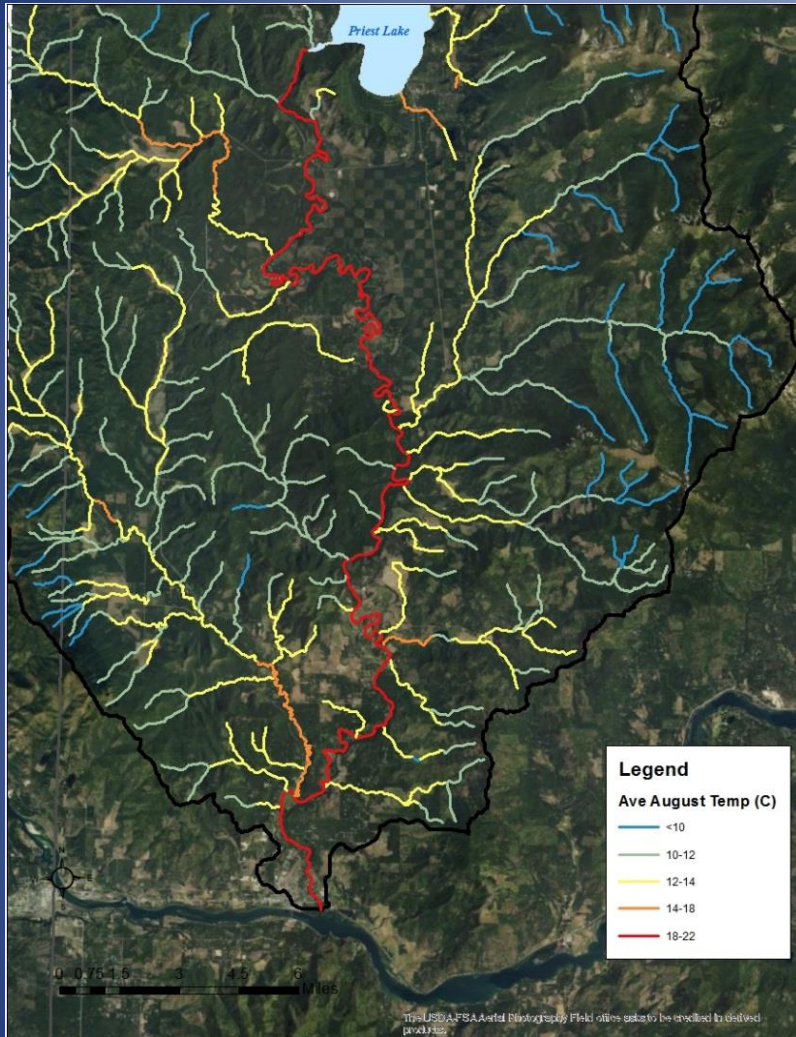


- Native fishes in lower Priest River include Westslope Cutthroat Trout, Bull Trout, and Mountain Whitefish; all are recognized as “coldwater fishes”
- Anecdotaly, an excellent historical Westslope Cutthroat Trout fishery
- “Lower Priest River is a scenic stream providing limited recreational use. Endemic fish stocks have declined with construction of the dam (1950) and loss of habitat, but fishery values may be reestablished through careful planning and management.”

*Irizarry, 1974*

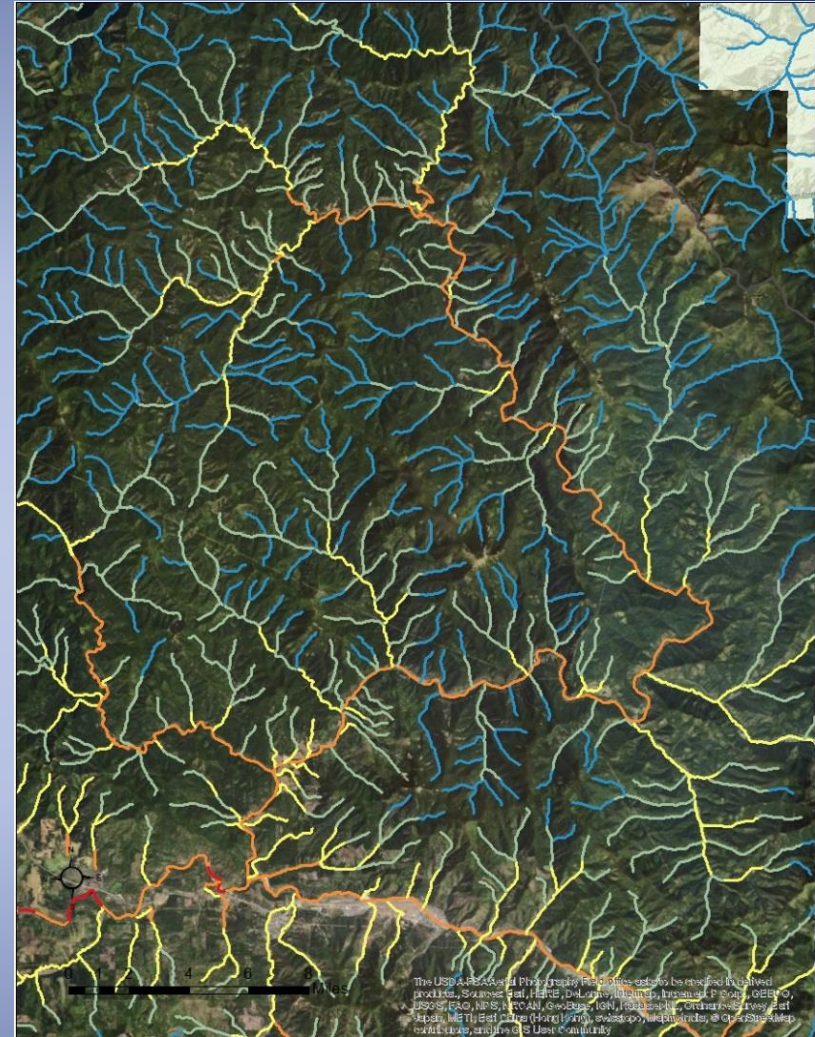
***Priest River is an underperforming coldwater fishery***

## Priest River



Westslope Cutthroat Trout  
**0.02** cutthroat trout/100m<sup>2</sup>

## North Fork CDA River



Westslope Cutthroat Trout  
**1.93** cutthroat trout/100m<sup>2</sup>



# Why consider coldwater bypass?

- Like other Idaho stream systems connected to Lake Pend Oreille and the Clark Fork River, Priest River provides spawning and rearing habitat for bull trout that use LPO.
- Priest River bull trout have a unique life history





# Why consider coldwater bypass?



➤ Conserve native fish

➤ Improve water quality



➤ Make fishing better

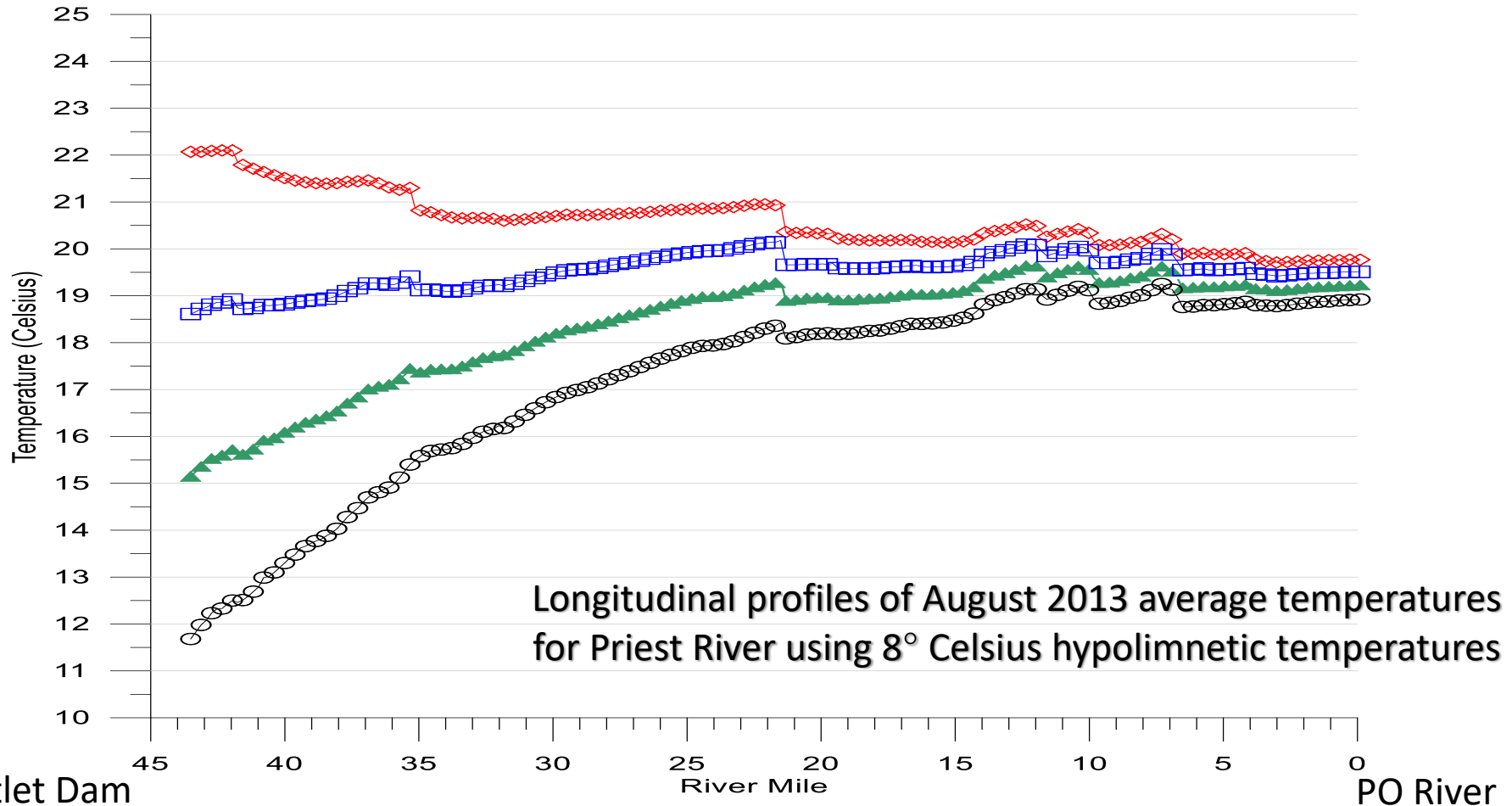


# Phase I: Temperature Modeling Study

Portland State University

Longitudinal Temperature Profiles for Priest River  
August, 2013 Average

- Existing
- 25% Hypolimnetic Water
- 50% Hypolimnetic Water
- 75% Hypolimnetic Water



# Phase II: Engineering Alternatives

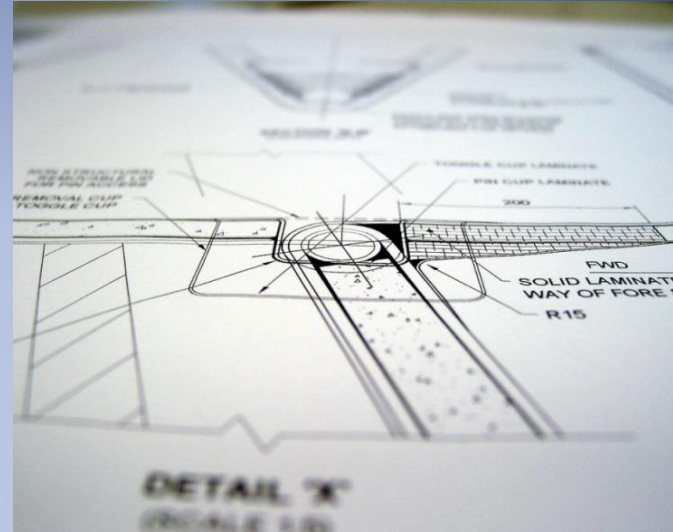
McMillen Jacobs Associates

## Alternatives must maintain:

- Statutory lake level
- Aquatic species protection
- Water quality
- Existing public uses

## Initial Evaluation Criteria

- Cost
- Installation & construction
- Operations & maintenance
- Sizing
- Screening
- Aesthetics
- Navigation
- Safety



Evaluated both hypolimnetic withdrawal and groundwater pumping  
**Best alternative was hypolimnetic gravity withdrawal**



# Phase III: Limnology/Water Quality Study

## Advanced Eco-Solutions

- Current study to answer questions related to limnology and water quality
- Details to come in next presentation
- Primary purpose of tonight's meeting is to share these results and answer questions

# Process

**We are here**

Information gathering

- Hydrology
- Biology
- Engineering

Public scoping  
& review

- Economic feasibility
- Information sharing
- Public comment solicitation

Funding &  
permitting

- Only if all of the above are acceptable
- Regulatory agency formal review



# What happens next?

- Share information from Phase III of feasibility assessment and answer questions
- IDFG will review all information gathered to date and determine next steps