

Main Dam Spillway Spill Schedule

- Good right side attraction and holding conditions at all spill levels
- Greater turbulence at left side



Fishway Feasibility Study

Three Alternatives:

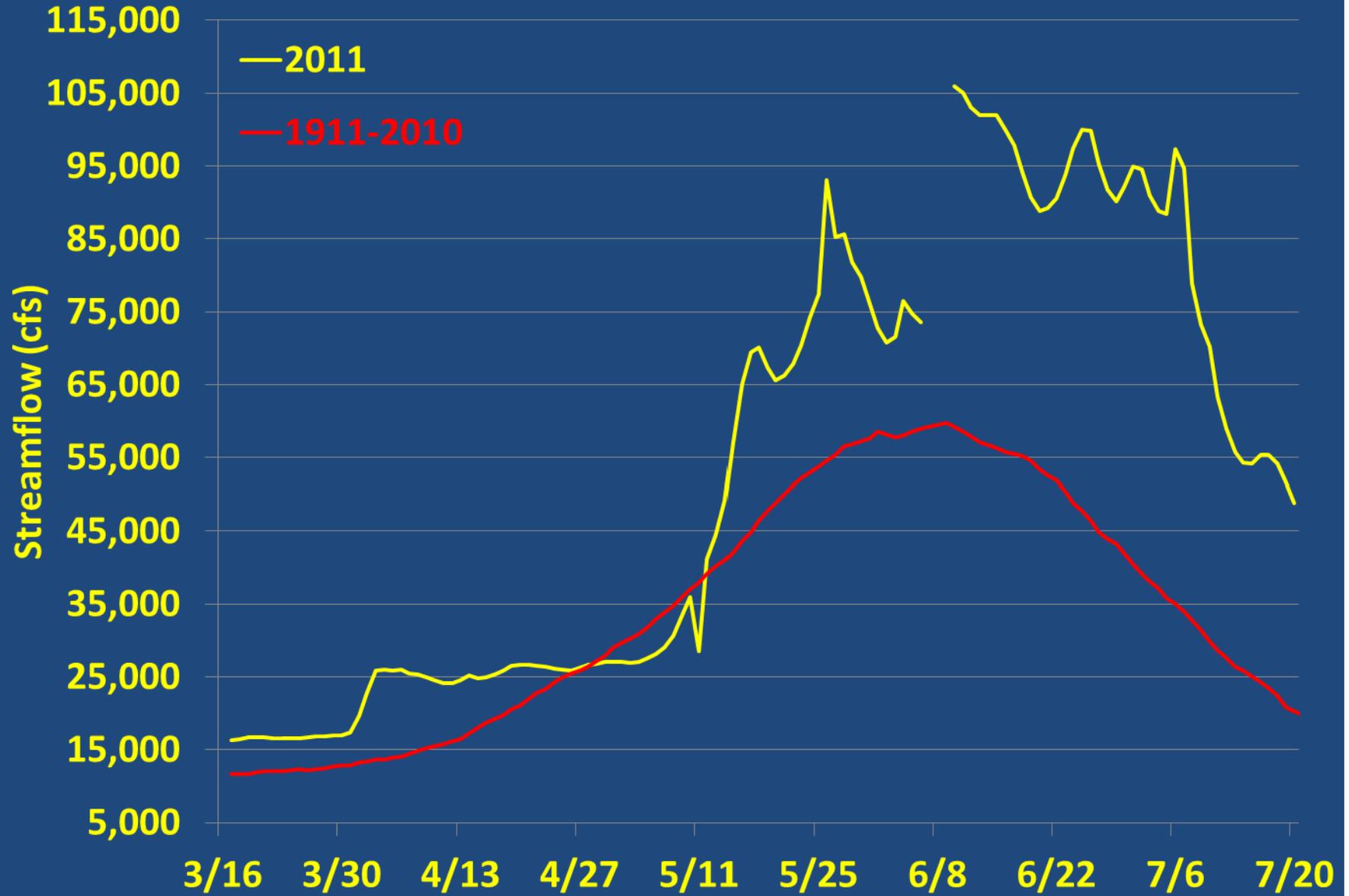
1. Right Bank Fish Lock
2. Left Bank Full-Height Ladder (Revised)
3. Right Bank Full-Height Ladder

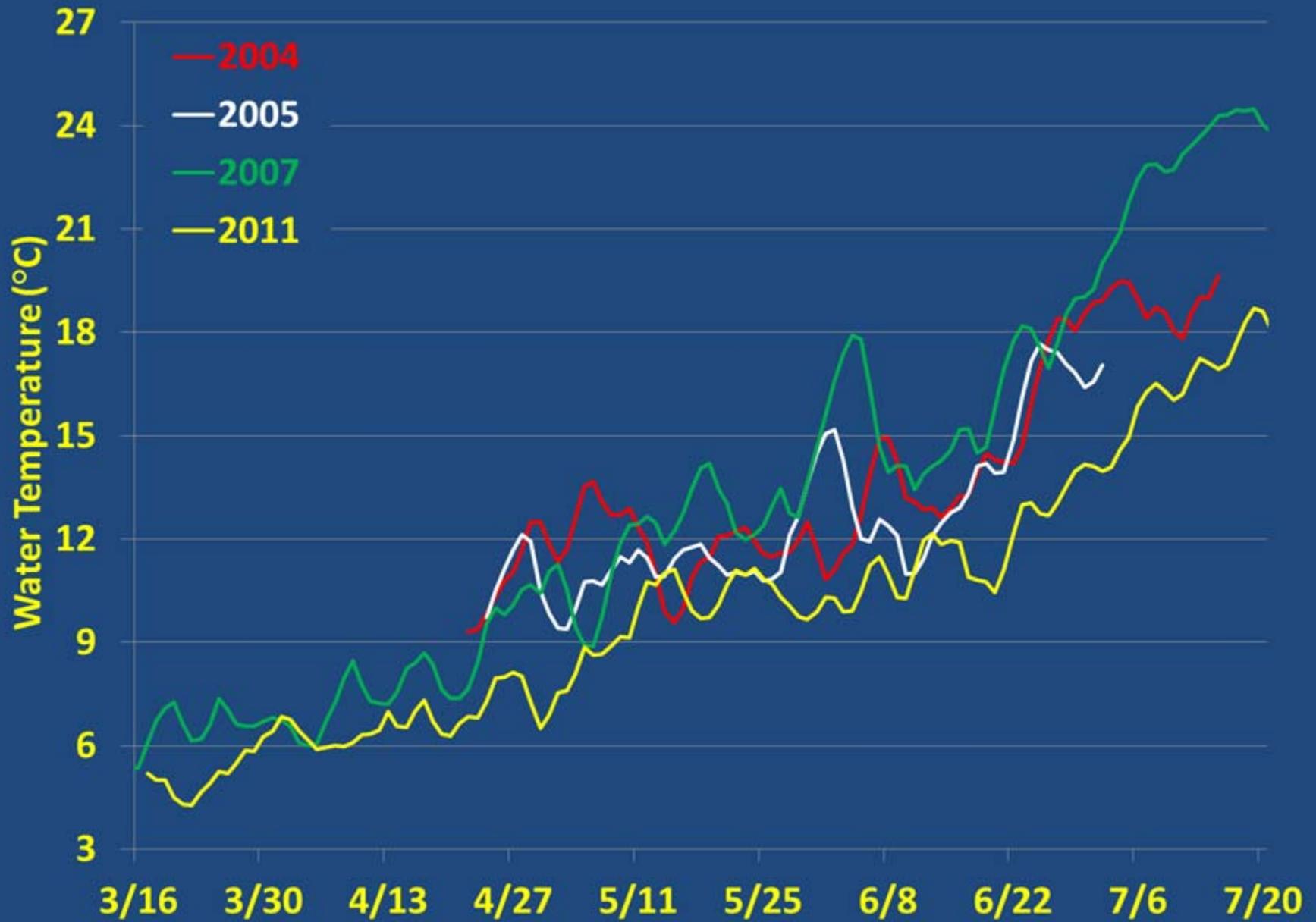
Preferred Alternative:

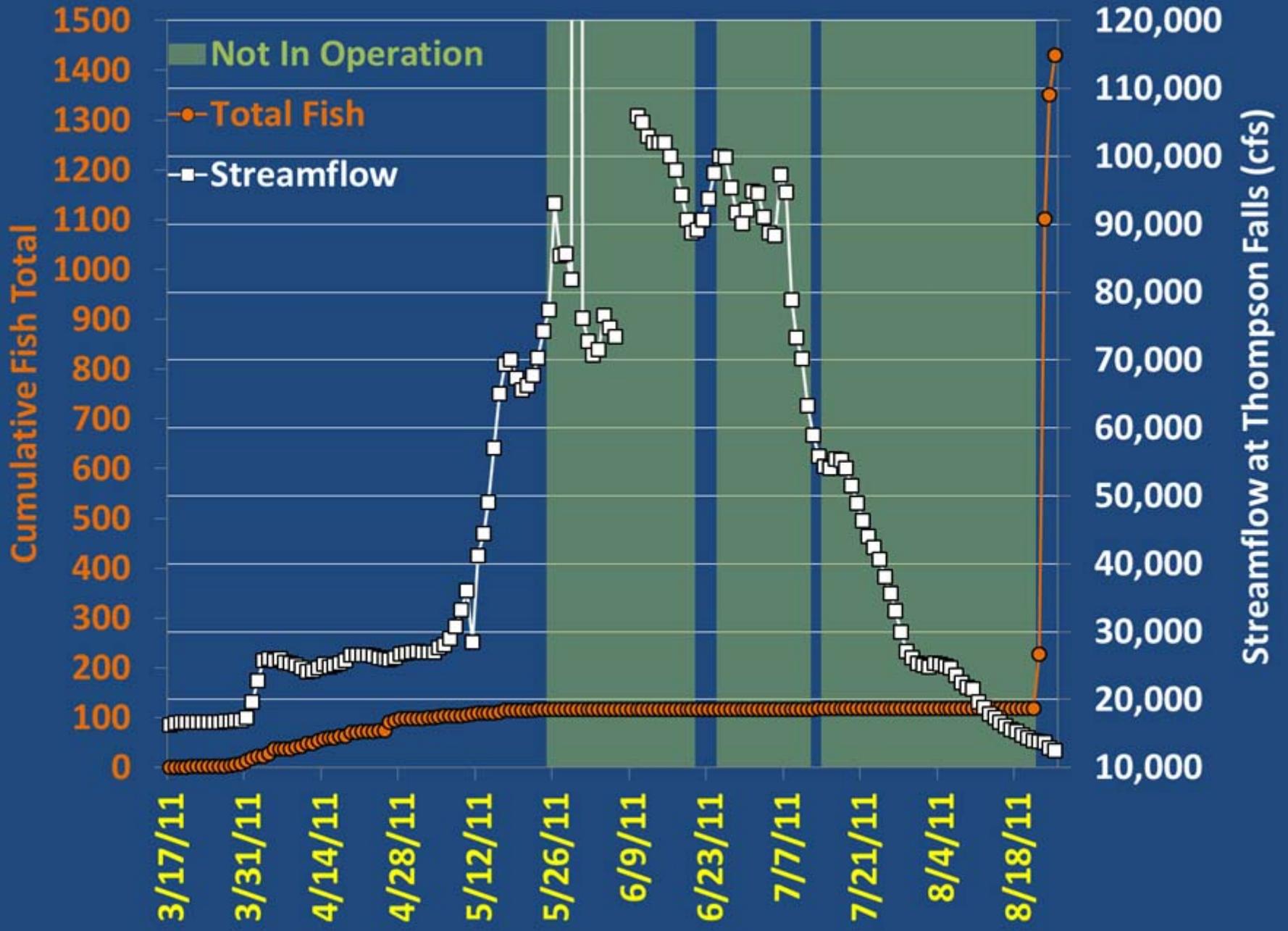
*Right Bank Full-Height Ladder, with
Sample Facilities*



USGS Gage in Plains, Clark Fork River







Total Catch as of Aug 25, 2011

Salmonids

Rainbow	Rainbow X Cutthroat	Cutthroat	Brown	Bull	Lake
87	5	13	7	2	1

Non-Salmonids

LN Sucker	LS Sucker	NP Minnow	SM Bass
2	393	843	71

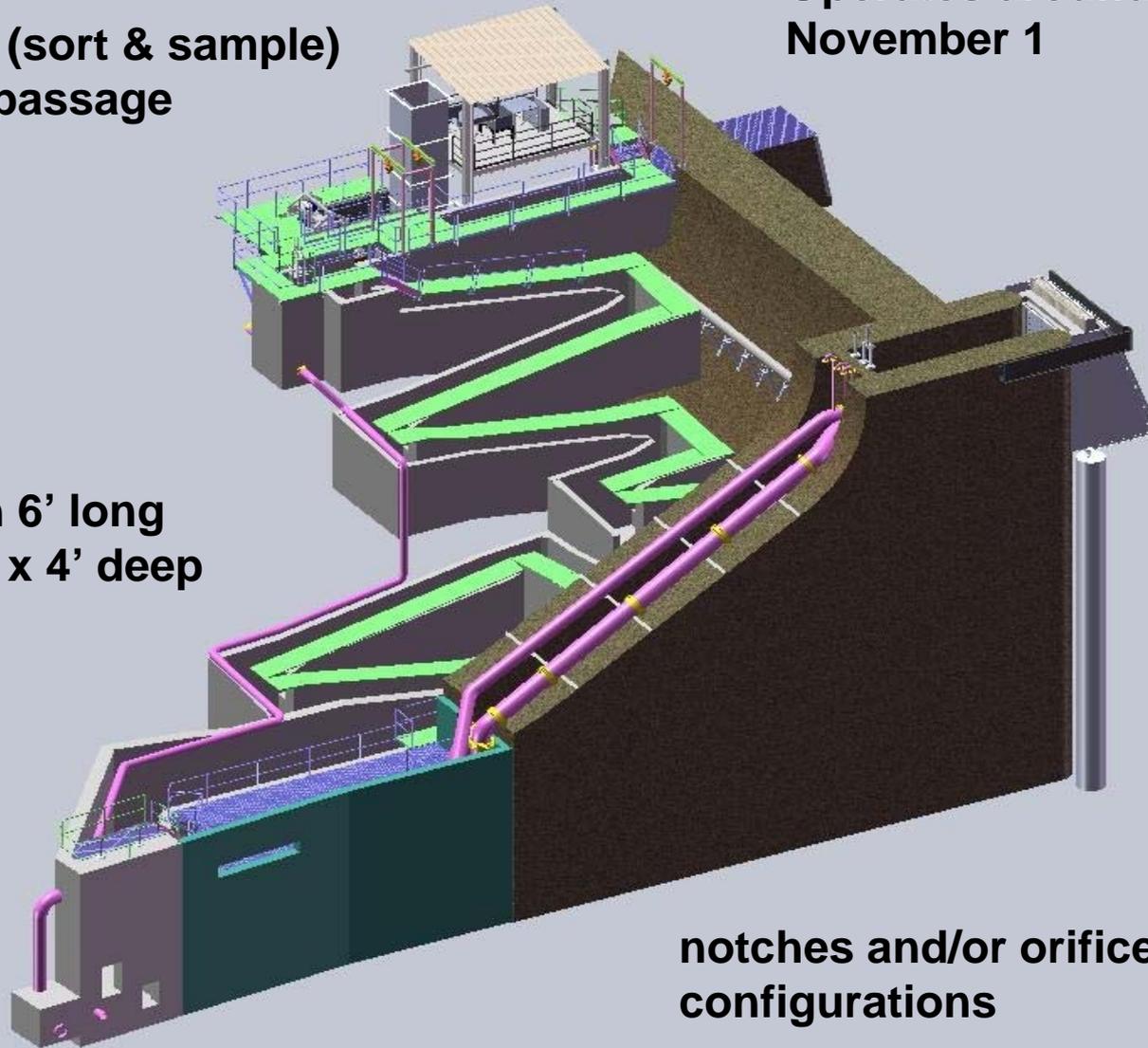
Thompson Falls Fish Ladder Construction

**48 Steps to Bull Trout
Restoration
2009-2010**

**Hydraulic lift (sort & sample)
or volitional passage**

**Operates around March 1 to
November 1**

**48 pools each 6' long
x 5' wide x 4' deep**



**notches and/or orifice ladder weir
configurations**

6 cfs ladder flow w/ 60 cfs attractant flow & 20 cfs attraction jet



2,500 tons of rock removed

July 2009



800-foot work bridge

Up to 28 feet high

September 2009



September 2009



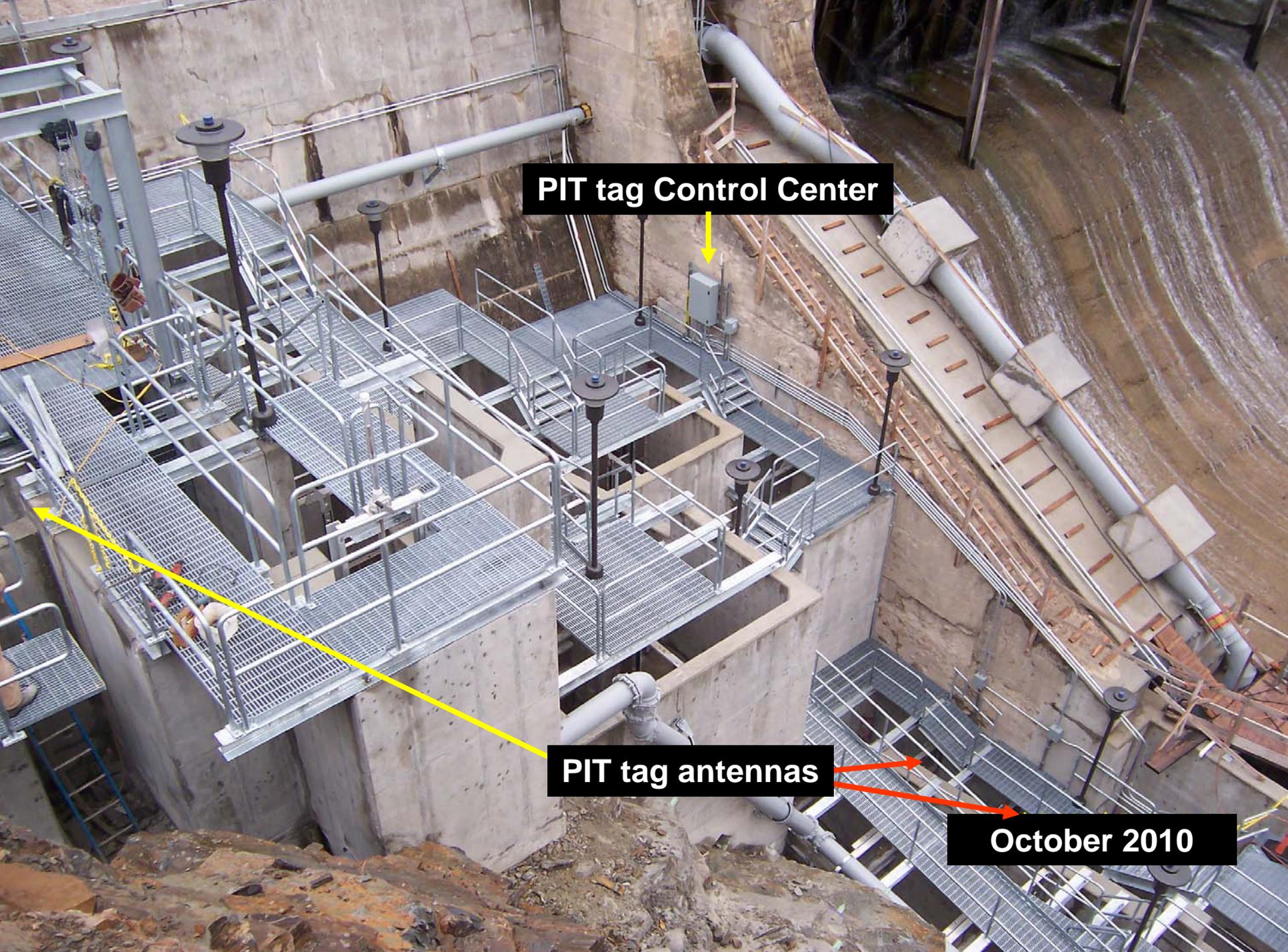
1,600 CY concrete



June 2010



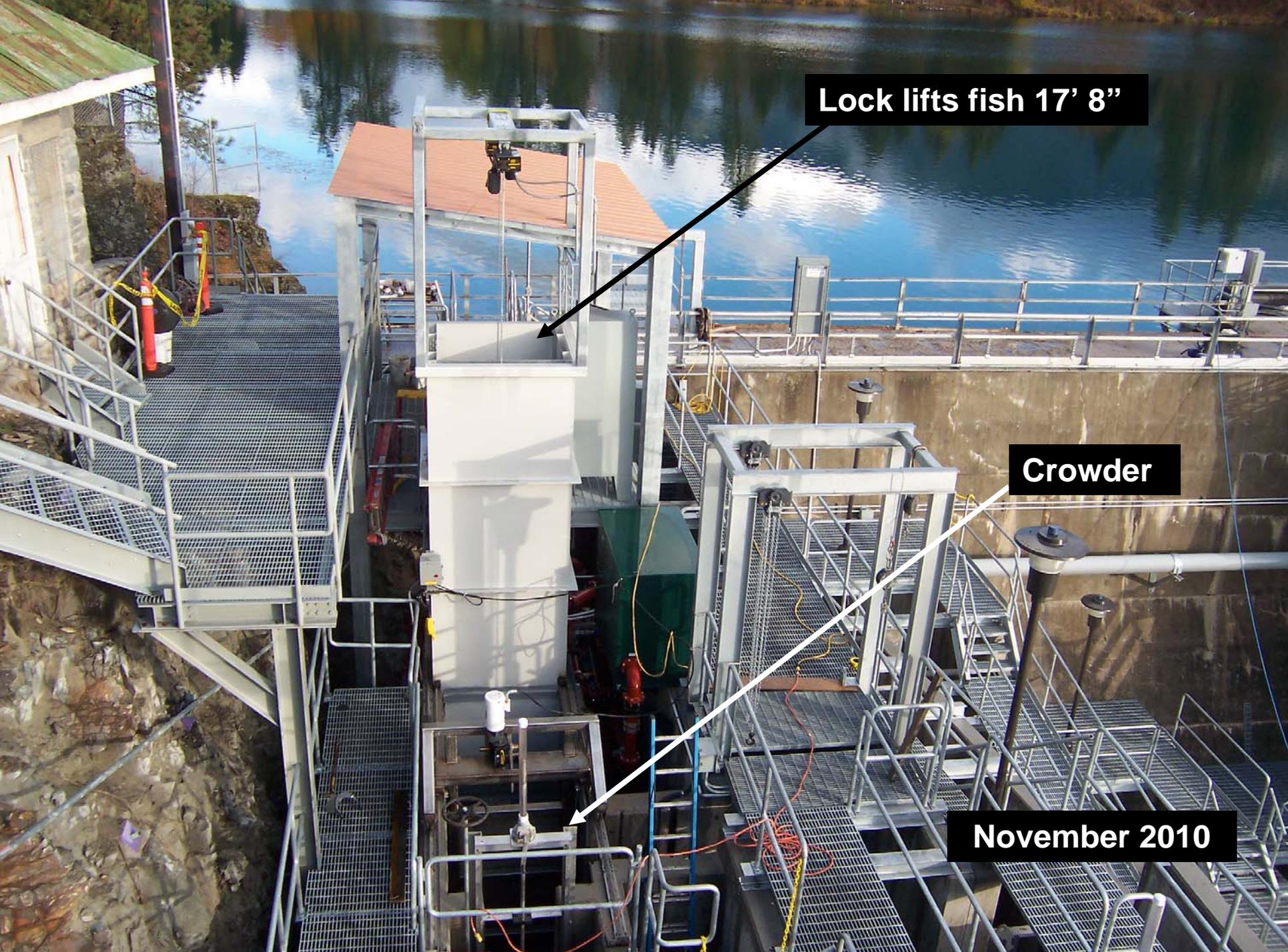
June 2010



PIT tag Control Center

PIT tag antennas

October 2010



Lock lifts fish 17' 8"

Crowder

November 2010

Control Panel

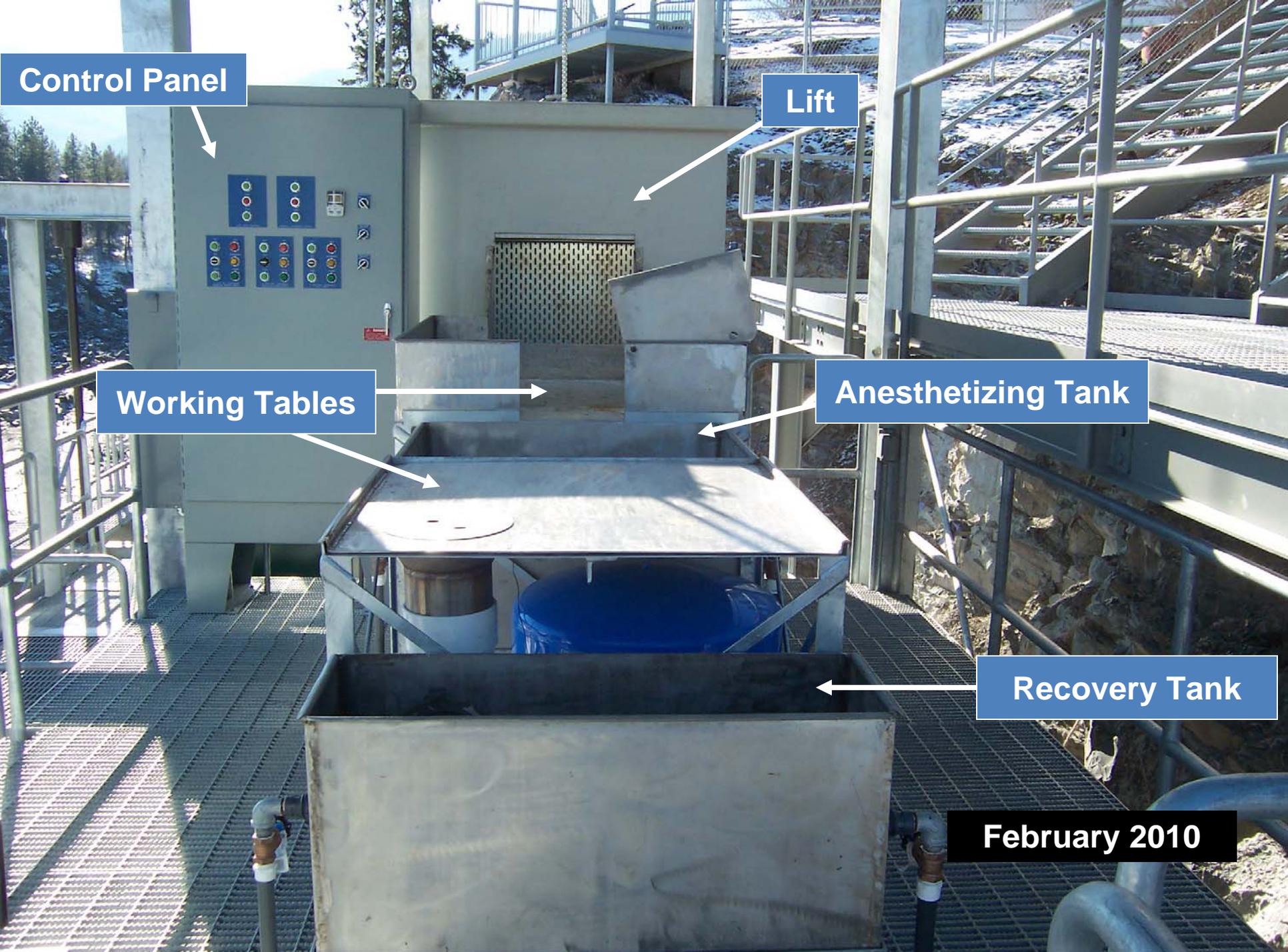
Lift

Working Tables

Anesthetizing Tank

Recovery Tank

February 2010





**20 CFS
ATTRACTANT
FLOW**

November 2010



2-year project

Cost = \$7.5 million

**Over 250 people involved with
construction**



FERC Fish Passage Workshop Case Studies Willamette Falls (FERC 2233) Powerhouse Downstream Passage

David Heintzman

PGE Hydro Licensing

&

Tim Shibahara

PGE Environmental Services

September 21, 2011



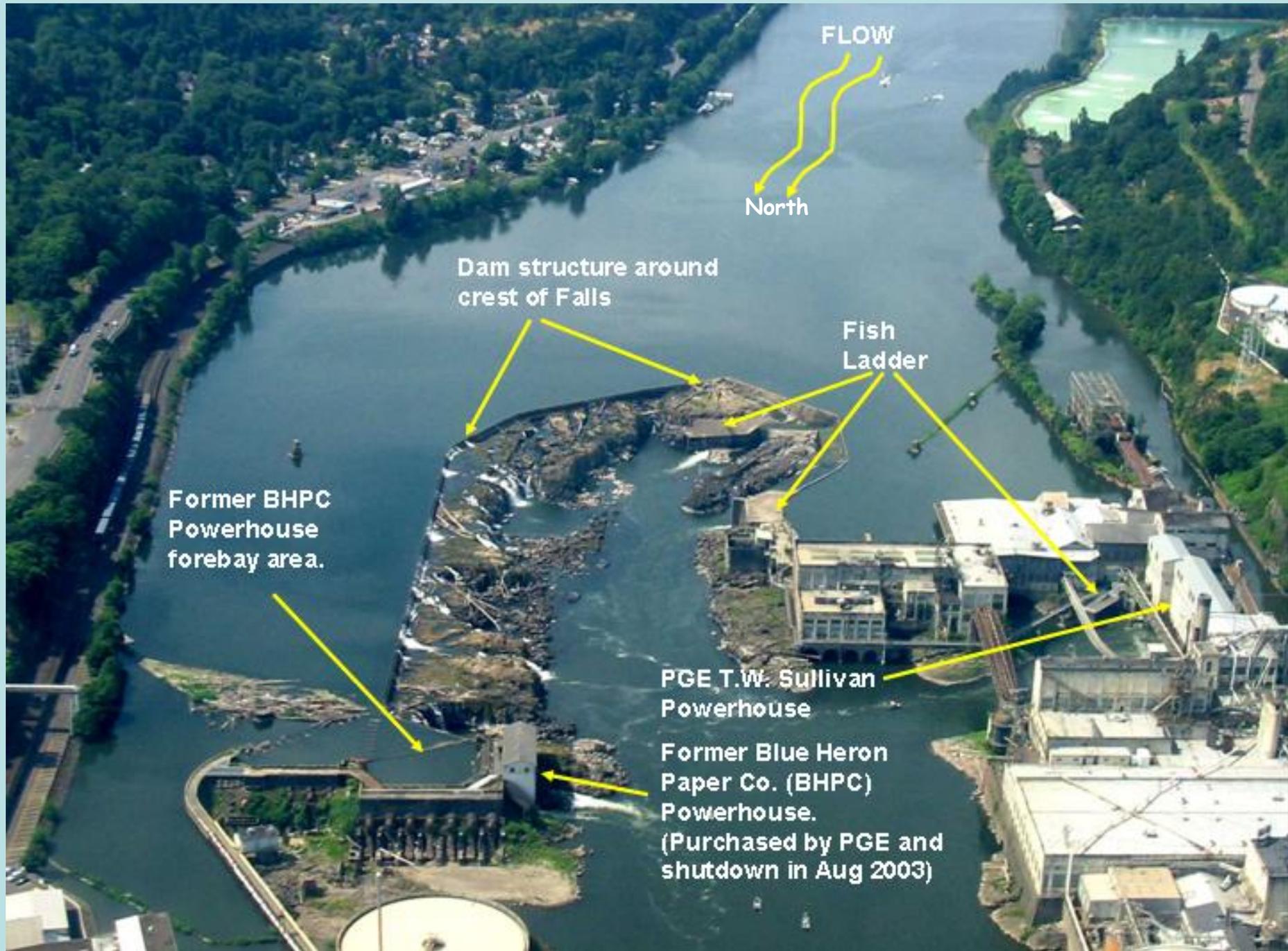
The Project

Willamette Falls Hydroelectric Project

- Located at Natural Water Falls/Barrier
- Location Highly modified over 150 years,
 - Physical development (other industry)
 - Fish resources (State fish ladder, hatchery ops)

End of prior 50-year license

- Totally different landscape
 - Resource management
 - Relicensing process and expectations



FLOW

North

Dam structure around crest of Falls

Fish Ladder

Former BHPC Powerhouse forebay area.

PGE T.W. Sullivan Powerhouse

Former Blue Heron Paper Co. (BHPC) Powerhouse.
(Purchased by PGE and shutdown in Aug 2003)

To be, or not to be?

Criteria Screening of Powerhouse intake of design basis of 7,000cfs and large (15+ ft) entrance elevation changes and heavy debris loads.

or

Something else to achieve Goal (99.5%)