

A
Conceptual Foundation
for the
Management of
Native Salmonids
in the Deschutes River

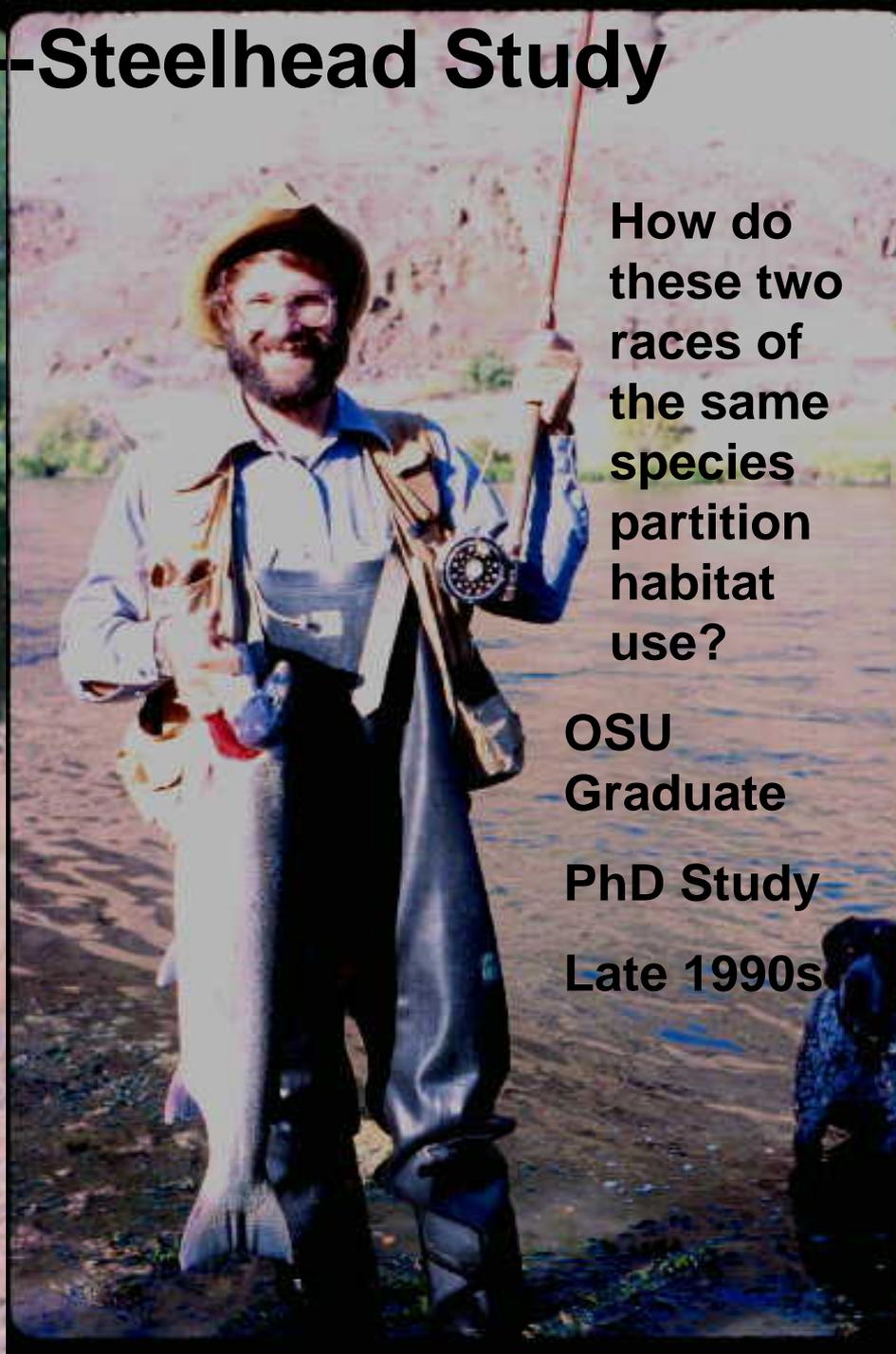
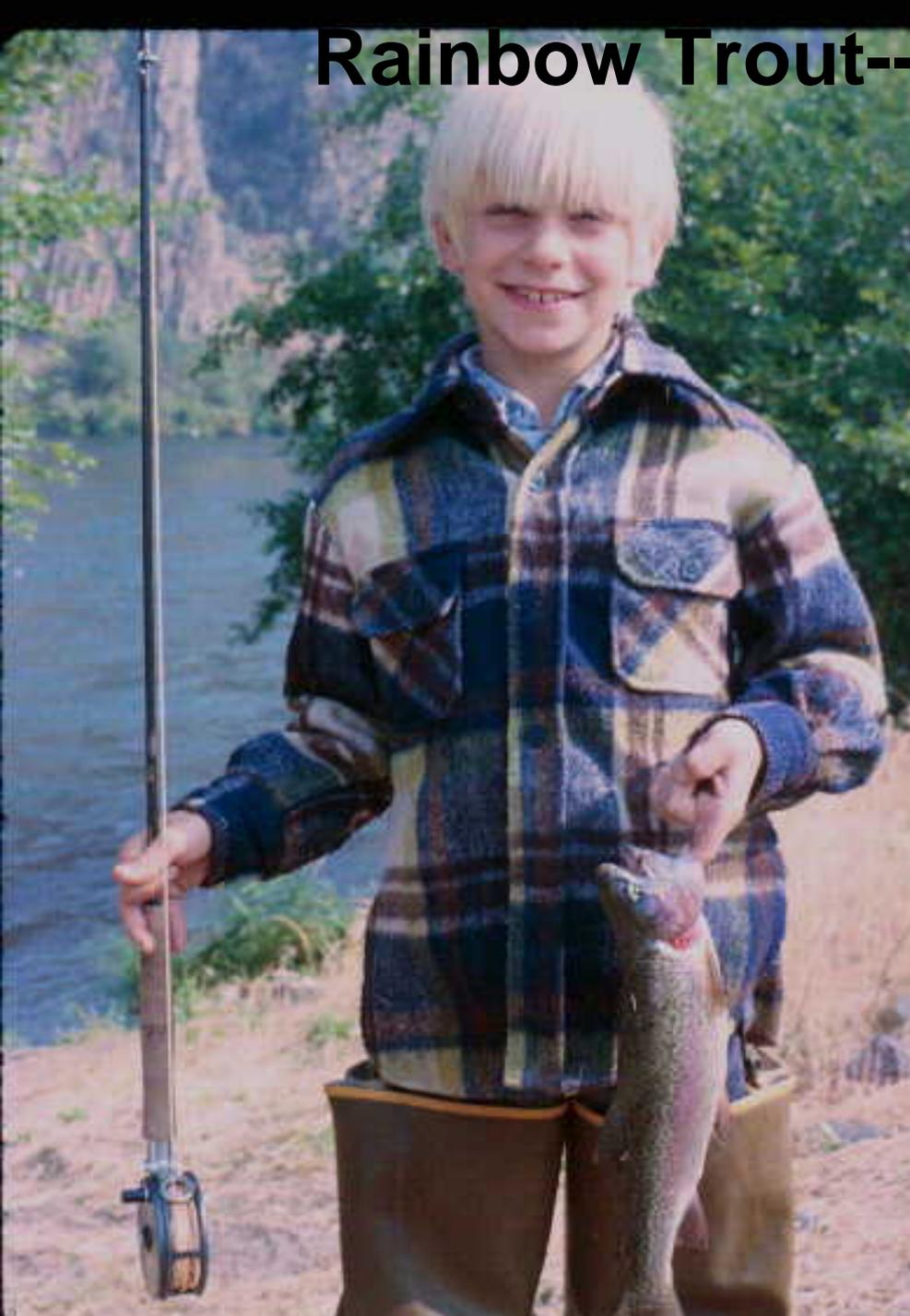
1998

Principal Investigator, Jim Lichatowich

Alder Fork Consulting

182 Dory Road, Sequim, WA 98382

Rainbow Trout--Steelhead Study



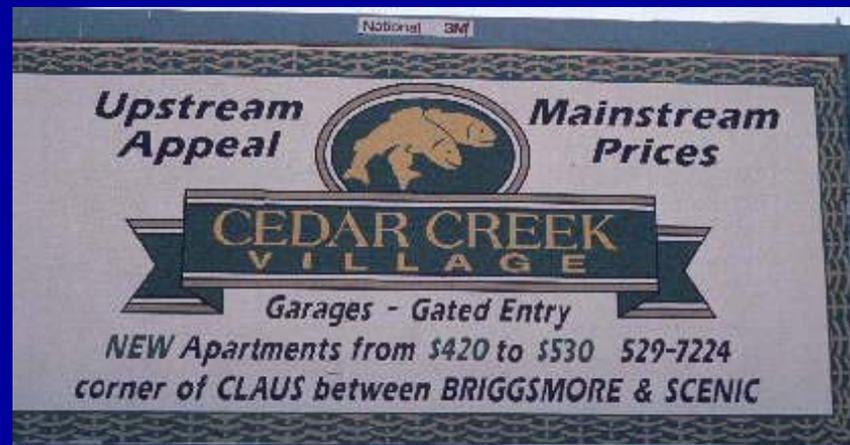
How do these two races of the same species partition habitat use?

OSU Graduate
PhD Study
Late 1990s

Distribution: Conclusions

Tributaries are important steelhead habitat

Juvenile fish community in mainstem is numerically dominated by resident rainbow trout



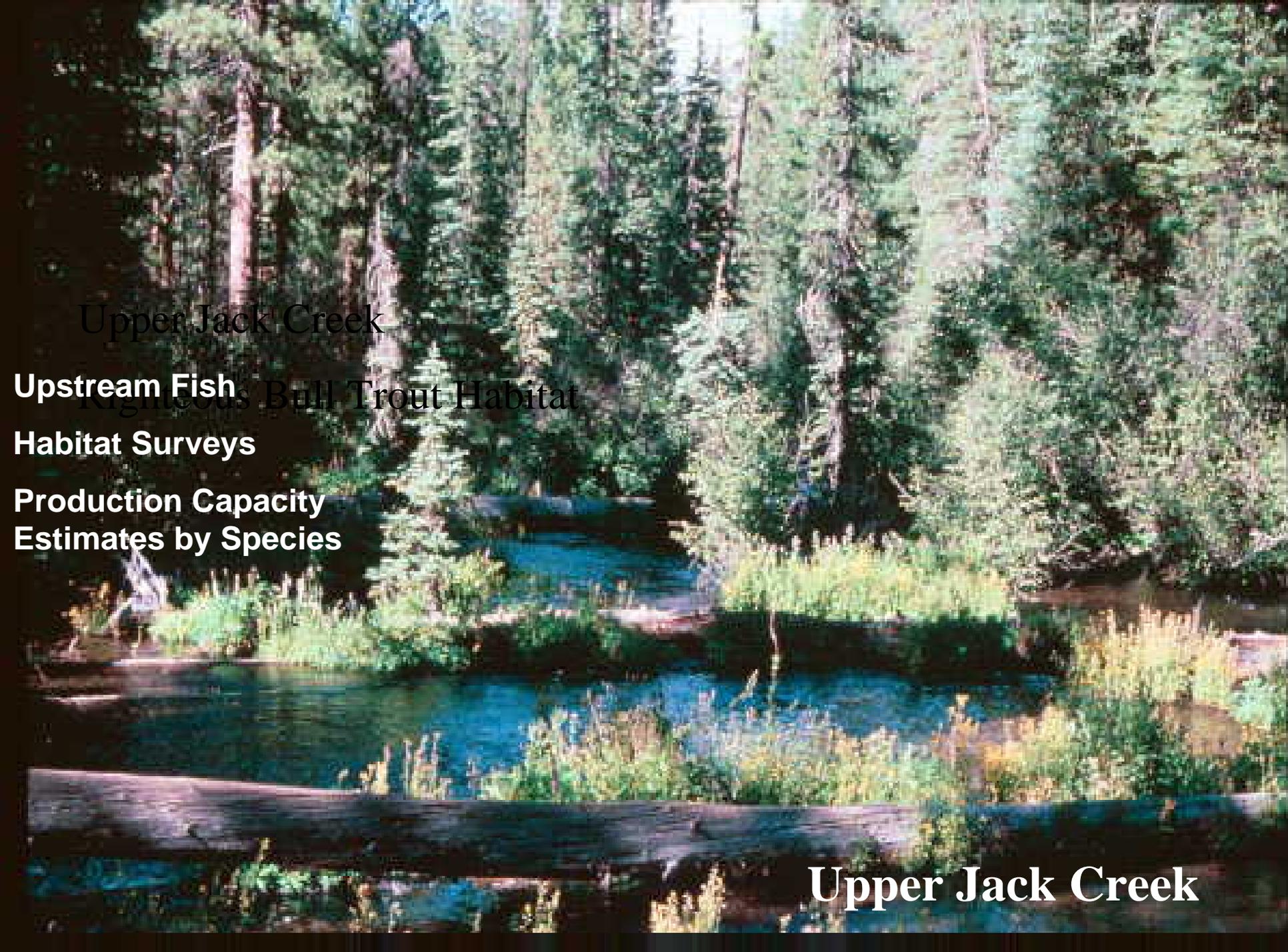
Lake Billy Chinook Kokanee - Sockeye Salmon Study

Conducted by ODFW from 1996 through 2000



- The Research Vessel Kokanee-Otter-Trawl Boat



A scenic view of a forest stream. The water is clear and blue, flowing through a dense forest of tall evergreen trees. In the foreground, a large, dark log lies horizontally across the frame. The background is filled with lush green foliage and tall, thin tree trunks.

Upper Jack Creek

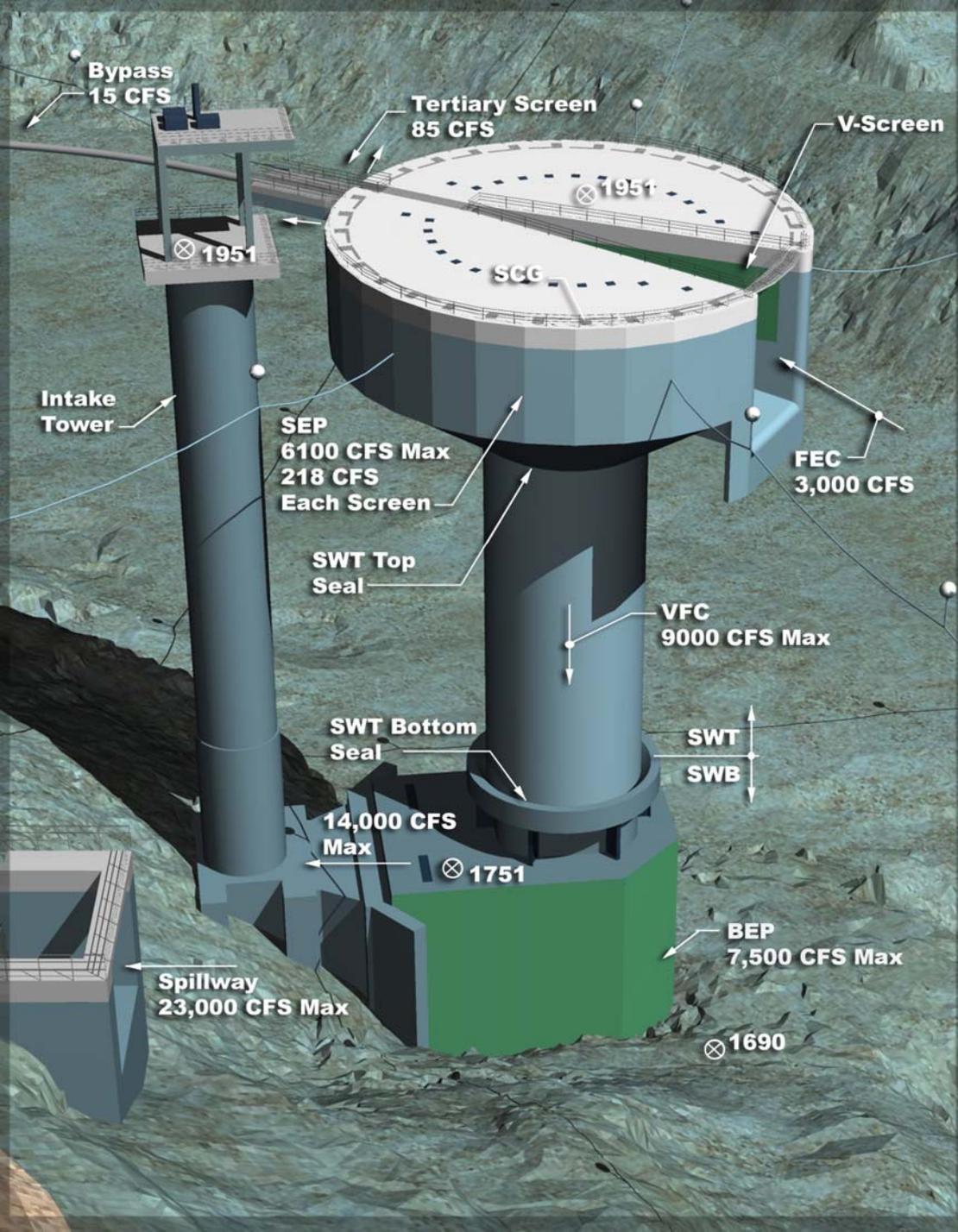
Upstream Fish
Righteous Bull Trout Habitat

Habitat Surveys

Production Capacity
Estimates by Species

Upper Jack Creek

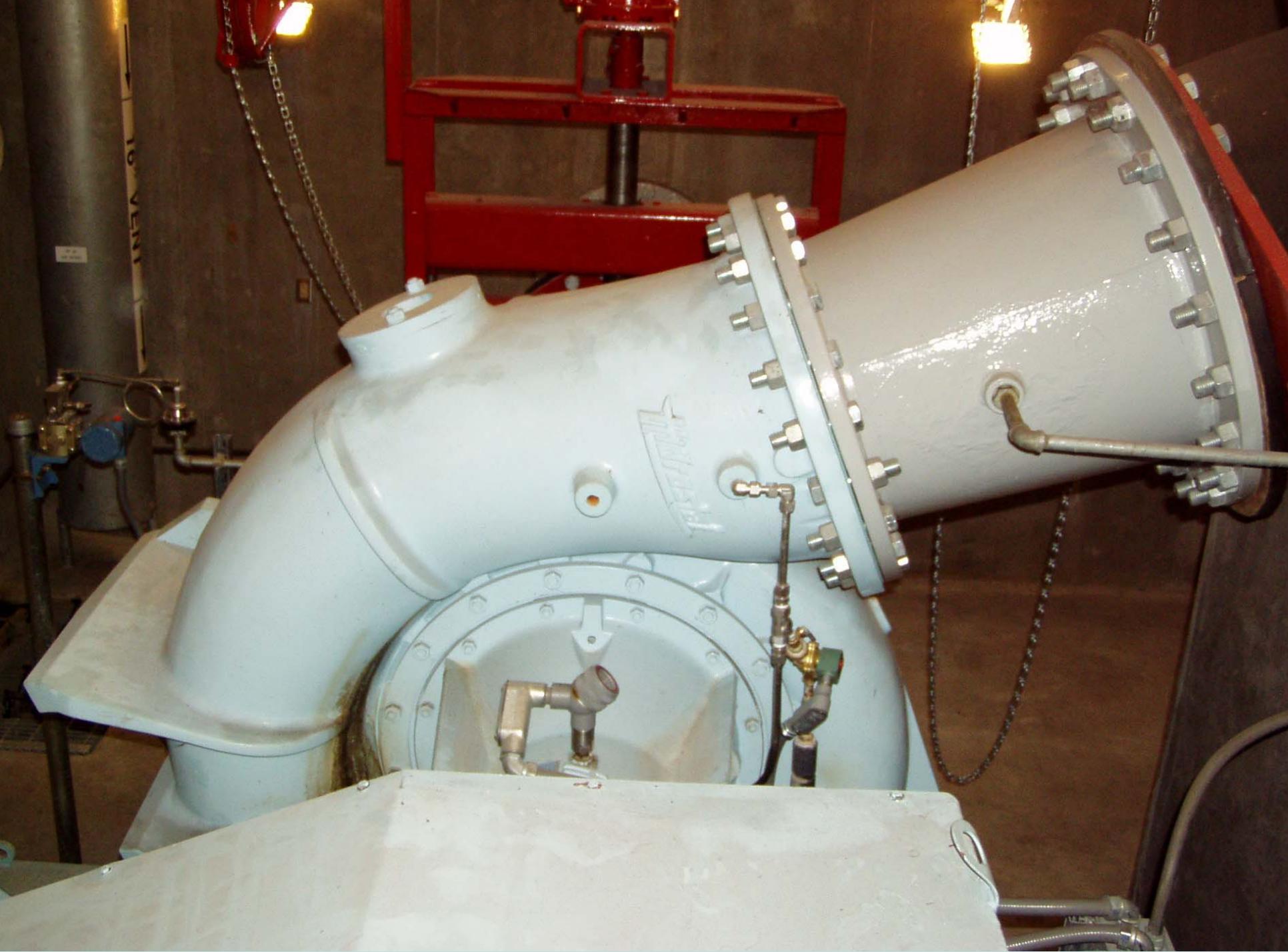
SWW Issues at 25% Design



- Cost
 - Steel: quantity & escalation
 - Enlargement of SWB footprint
 - Increase in number of SWT perimeter gates
 - dock and lay down area prep
 - flexi-float rental
 - perforated plate fabrication
 - bottom excavation quantity
 - bottom structure and template
- Operations
 - SWT perimeter gate complexity
 - Following powerhouse ramp rates
 - Exclusion plate cleaning
 - Balancing flows when operating at 75% bottom withdrawal
- Constructability
 - Complexity of underwater excavation

Upper Klamath Lake - A Canal Entrance





Control

5/11/2006

Bypass Pump



Reintroducing Salmon and Steelhead Renewing Fish Passage



Meanwhile:

**Reintroduction of Summer Steelhead
and Spring Chinook Salmon has been
ongoing using fed fry since 2008**

Steelhead into

Whychus Creek and Crooked River System

Spring Chinook into

the Upper Metolius River system

Upper Whychus Creek

the Crooked River above Prineville

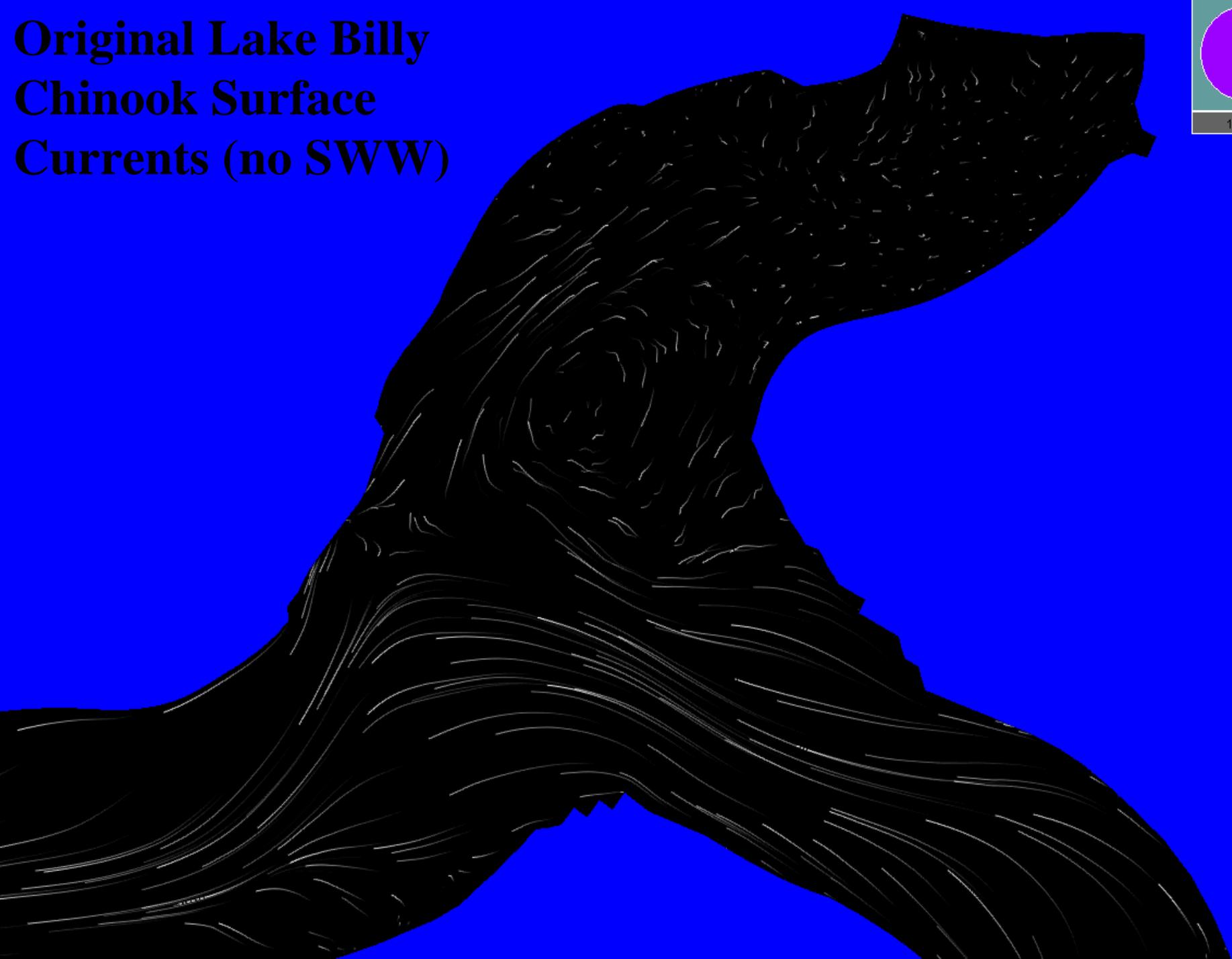


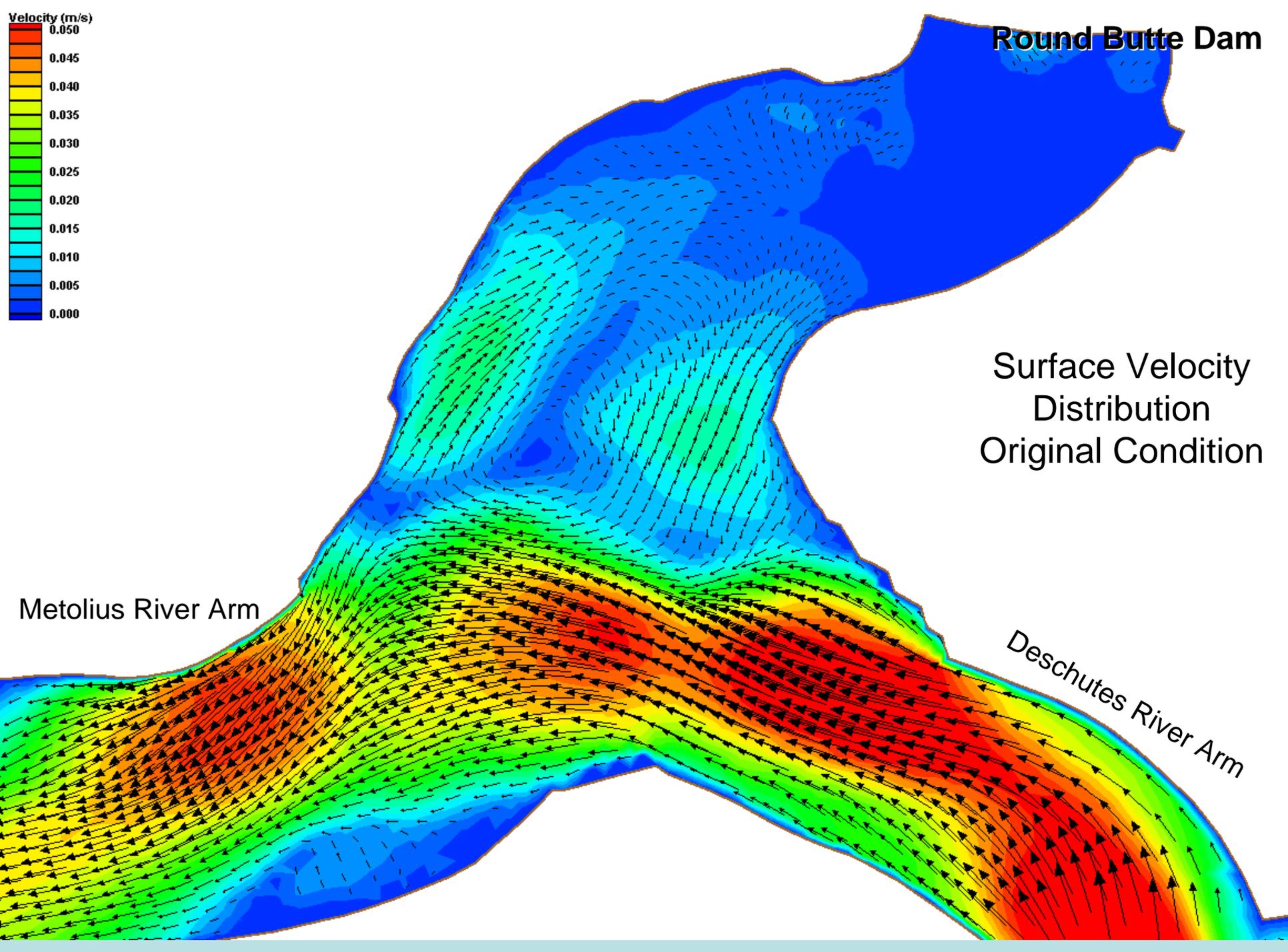
Round Butte Dam

Original
Construction
Photo
Jan 3, 1964

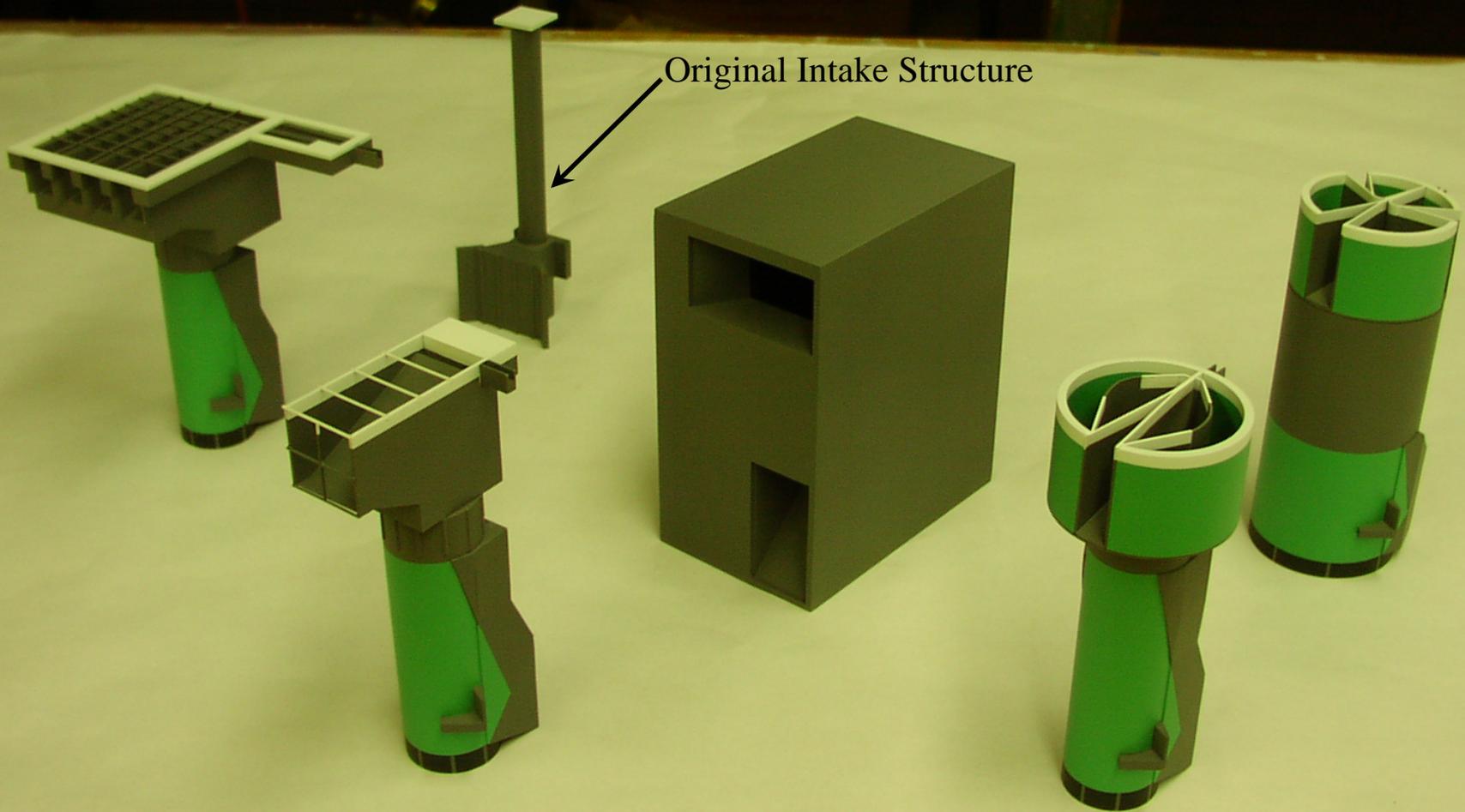


Original Lake Billy Chinook Surface Currents (no SWW)





Design Concepts Considered for the SWW



Round Butte Dam

SWW Structure

Physical Model

Scale 1 : 20.43



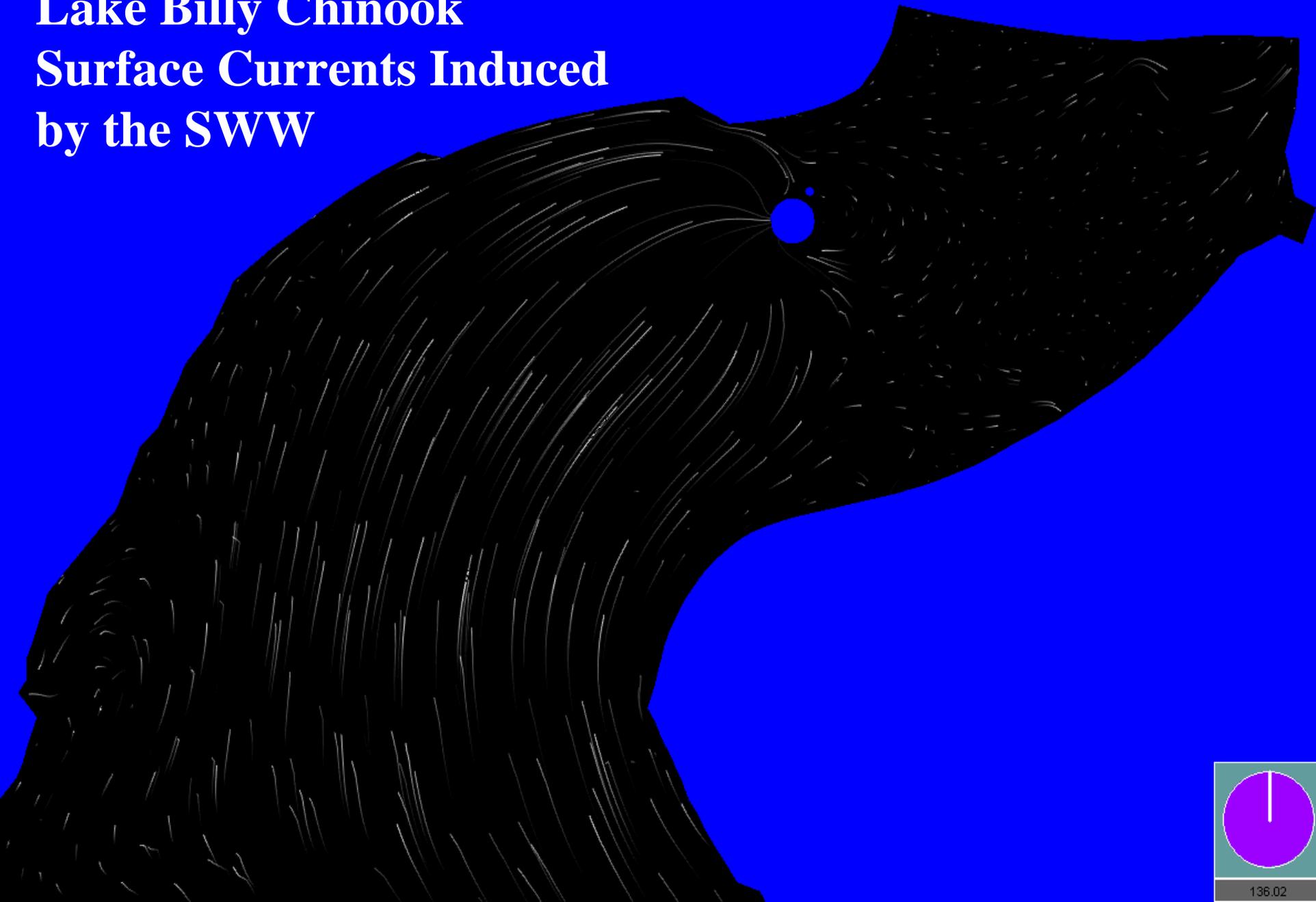
Round Butte Tertiary Screens and Fish Separator Model

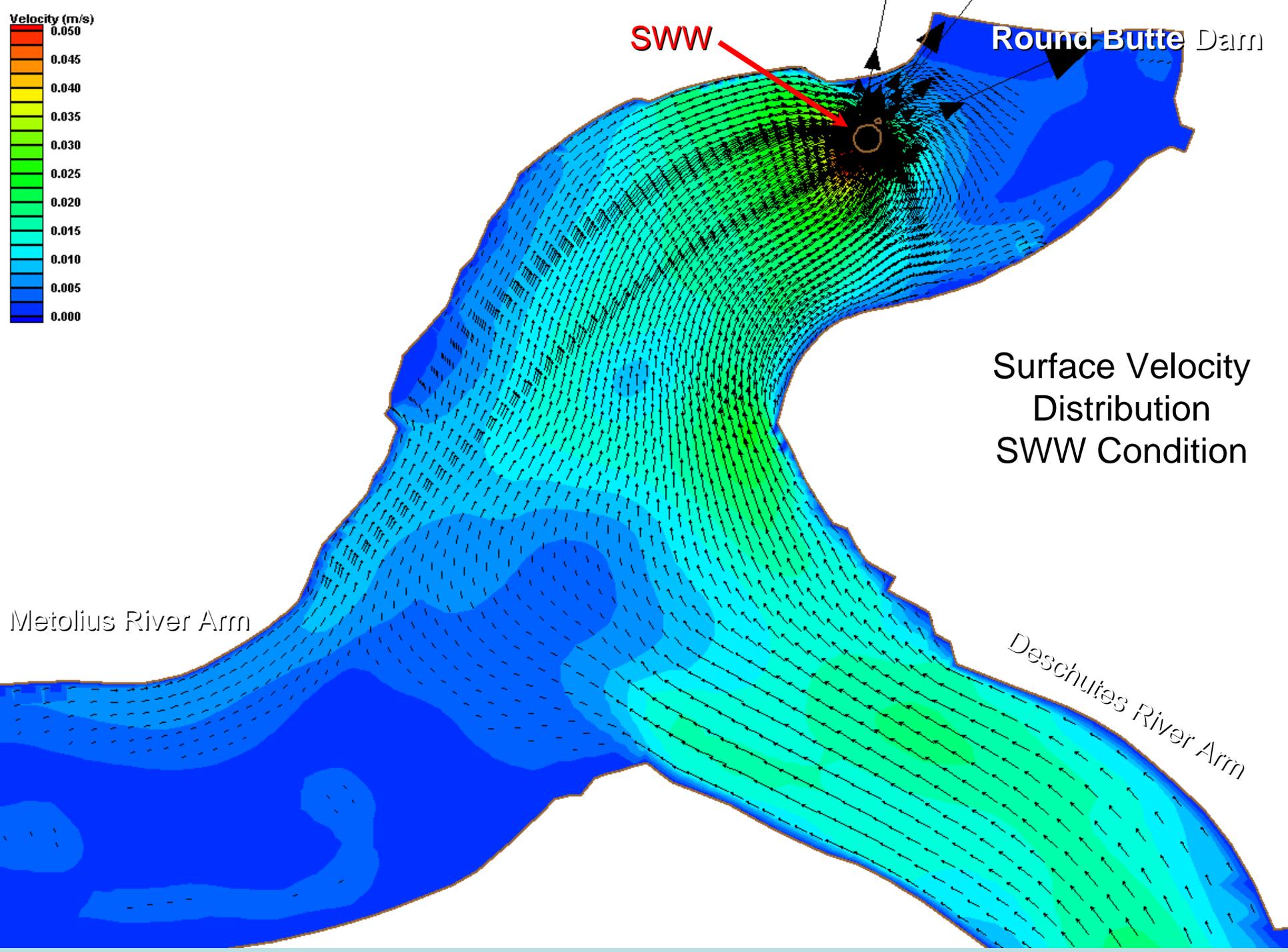
Scale 1 : 3.43



Lake Billy Chinook

Surface Currents Induced by the SWW





SWT - March 2008



SWT&SWB - July 2008

SWB Partially Submerged to Install BCGs

