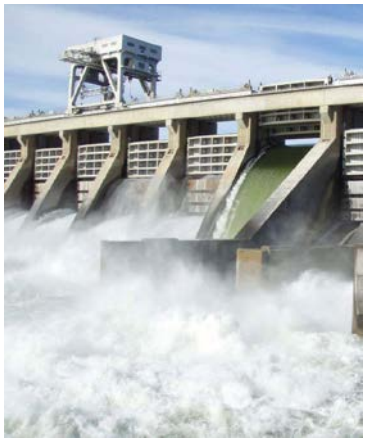
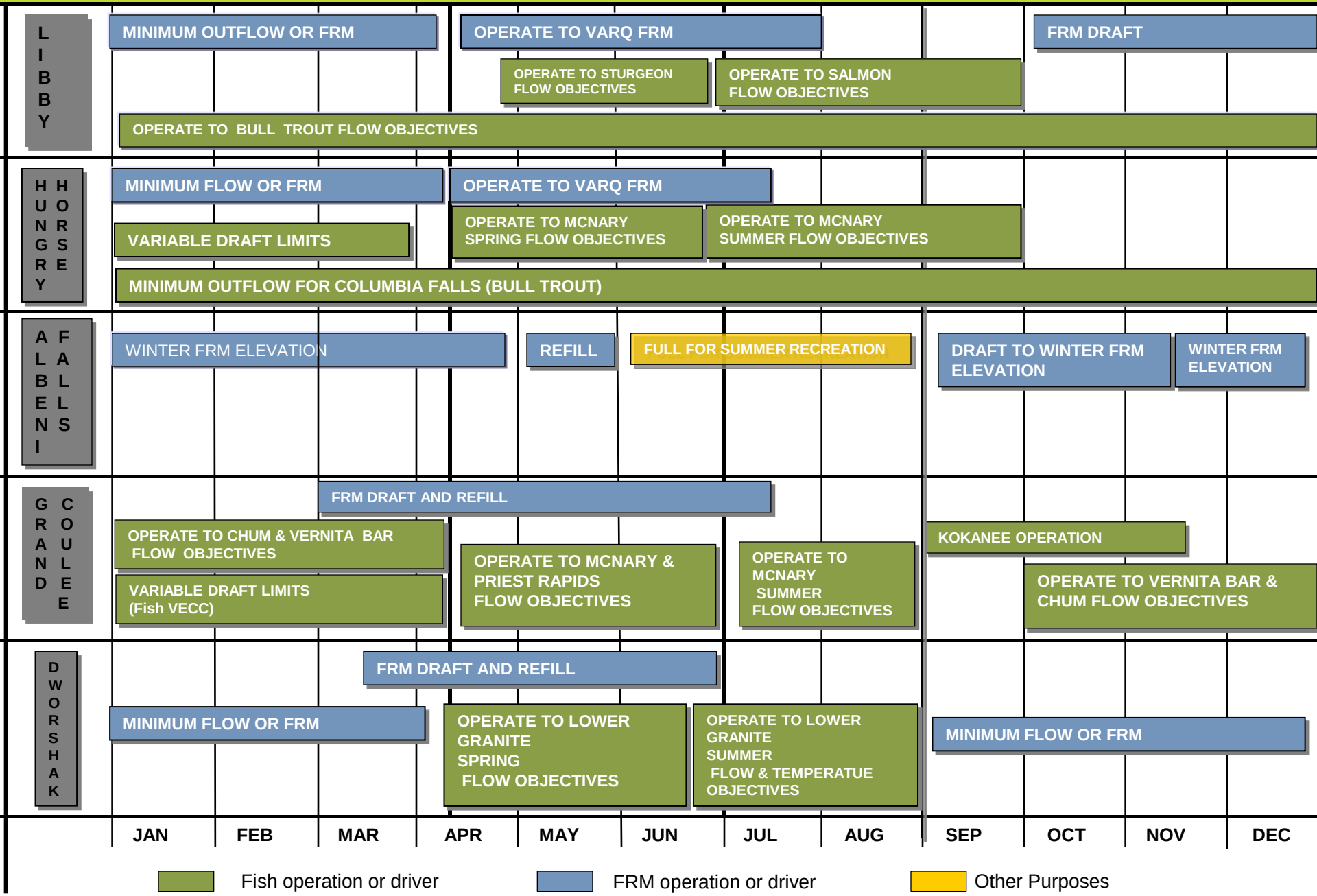
BONNEVILLE POWER ADMINISTRATION

FCRPS Overview of Operational and Structural Modifications for Fish Passage and Water Quality

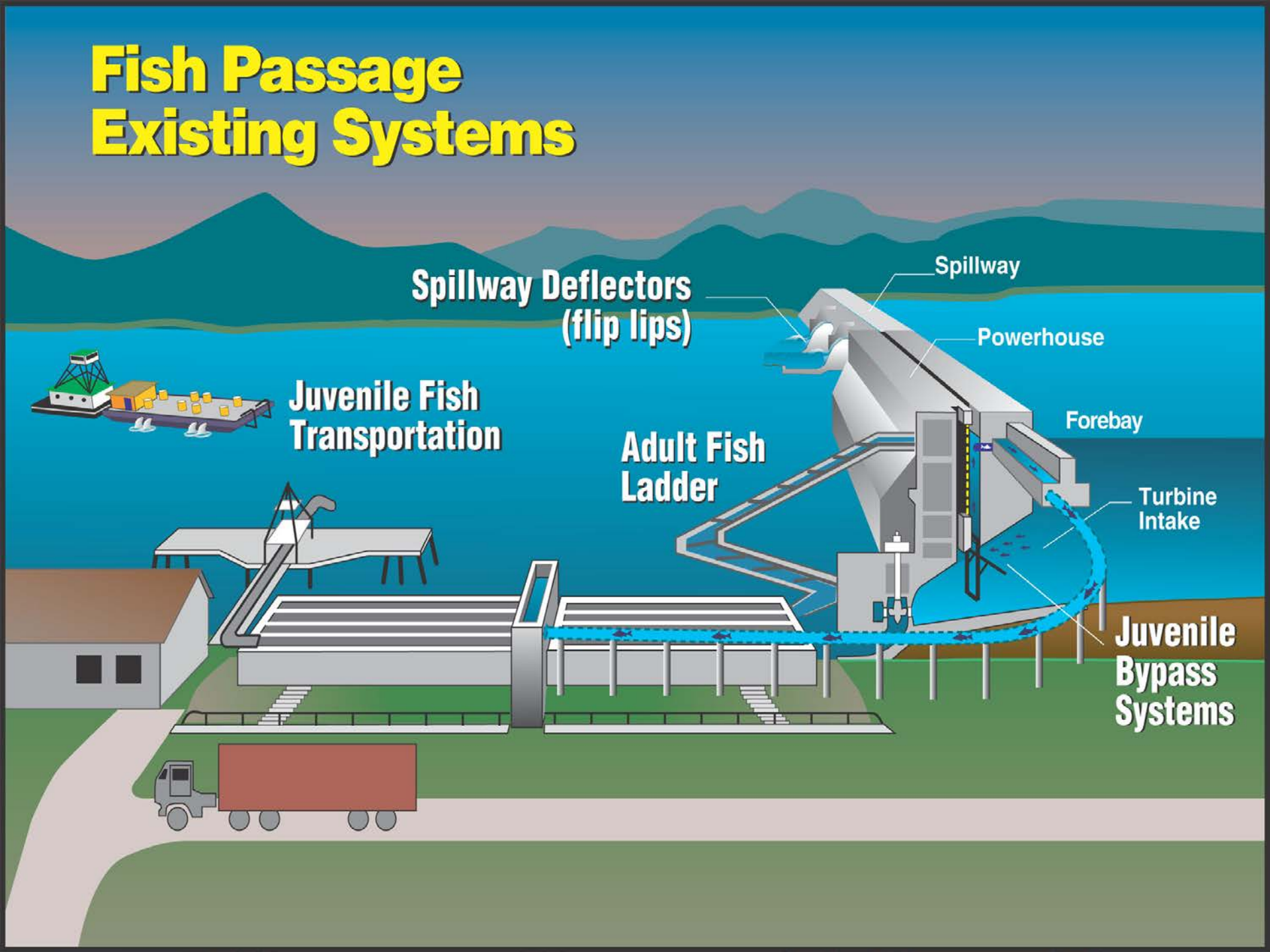


Implementing the 2008 NOAA Fisheries BiOp

- **Hydro**: Achieve 96% dam survival for migrating spring fish and 93% for summer fish.
- **Habitat:** Restore high priority habitat in tributaries and the estuary (more than $50 m per year).
- **Hatcheries**: Manage hatcheries to support and not impede recovery of listed fish.
- **Predator management**: Managing predation from non-native fish, birds, and marine mammals.
- **Harvest**: "Companion" BiOps with abundance-based sliding-scale harvest numbers.

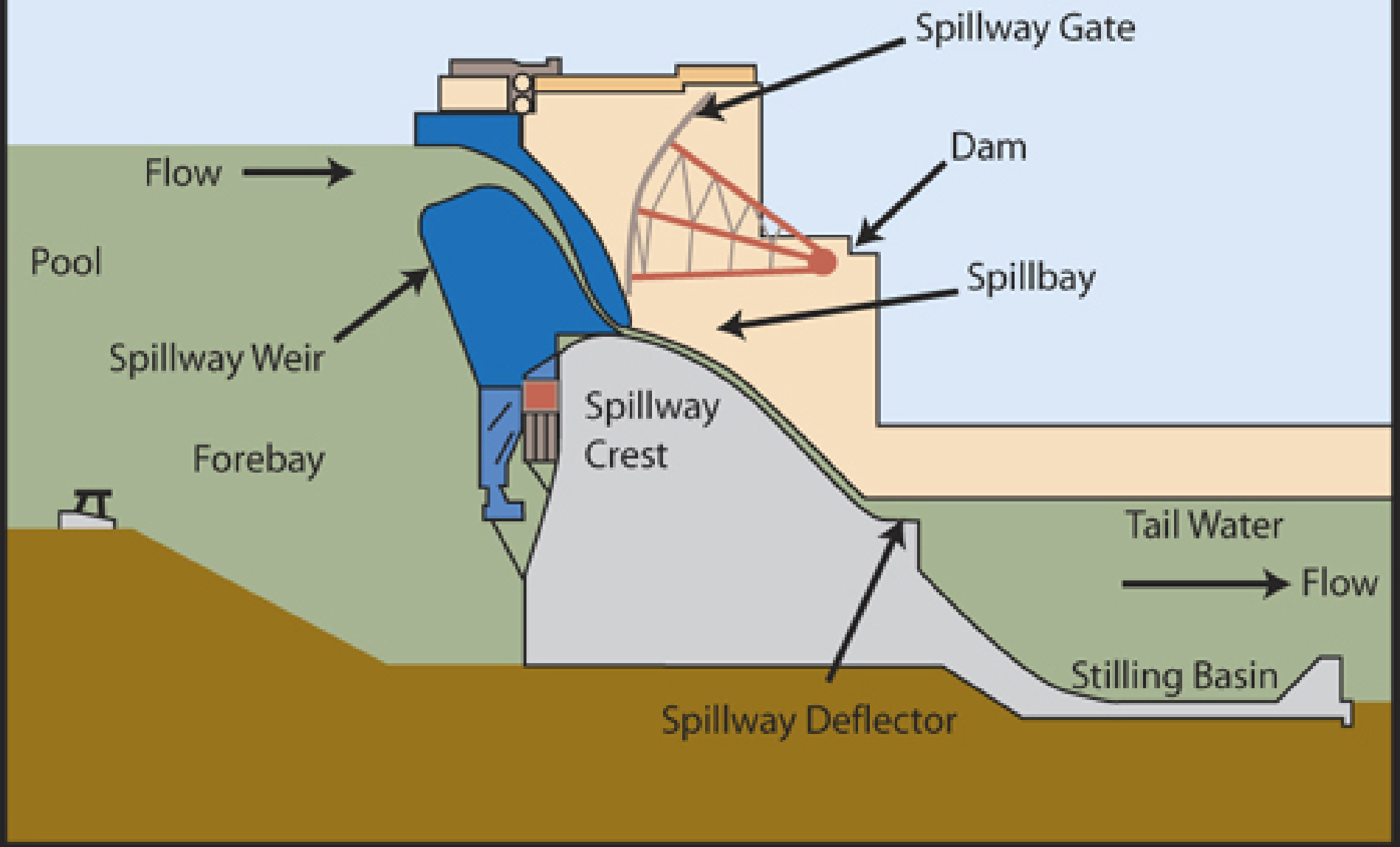

LIBBY
MINIMUM OUTFLOW OR FRM
OPERATE TO VARQ FRM
FRM DRAFT
OPERATE TO STURGEON FLOW OBJECTIVES
OPERATE TO SALMON FLOW OBJECTIVES
OPERATE TO BULL TROUT FLOW OBJECTIVES
HUNGRY HORSE
MINIMUM FLOW OR FRM
OPERATE TO VARQ FRM
VARIABLE DRAFT LIMITS
OPERATE TO MCNARY SPRING FLOW OBJECTIVES
OPERATE TO MCNARY SUMMER FLOW OBJECTIVES
MINIMUM OUTFLOW FOR COLUMBIA FALLS (BULL TROUT)
ALBENI FALLS
WINTER FRM ELEVATION
REFILL
FULL FOR SUMMER RECREATION
DRAFT TO WINTER FRM ELEVATION
WINTER FRM ELEVATION
GRAND COULEE
FRM DRAFT AND REFILL
OPERATE TO CHUM & VERNITA BAR FLOW OBJECTIVES
VARIABLE DRAFT LIMITS (Fish VECC)
OPERATE TO MCNARY & PRIEST RAPIDS FLOW OBJECTIVES
OPERATE TO MCNARY SUMMER FLOW OBJECTIVES
KOKANEE OPERATION
OPERATE TO VERNITA BAR & CHUM FLOW OBJECTIVES
DWORSHAK
FRM DRAFT AND REFILL
MINIMUM FLOW OR FRM
OPERATE TO LOWER GRANITE SPRING FLOW OBJECTIVES
OPERATE TO LOWER GRANITE SUMMER FLOW & TEMPERATUE OBJECTIVES
MINIMUM FLOW OR FRM
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
Fish operation or driver
FRM operation or driver
Other Purposes

Fish Passage Existing Systems



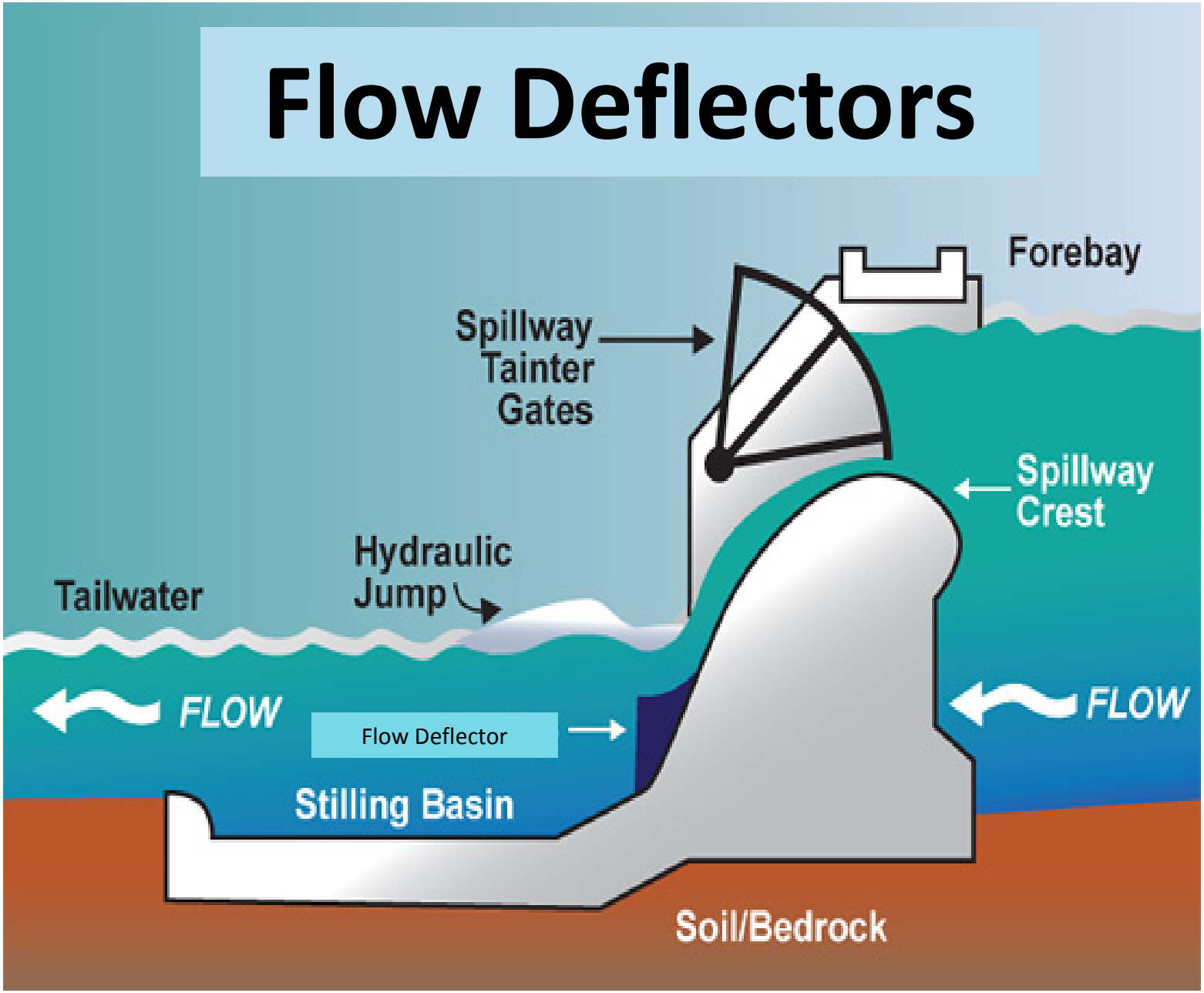
Turbine Intake Screens

Spillway Weir in Operating Position

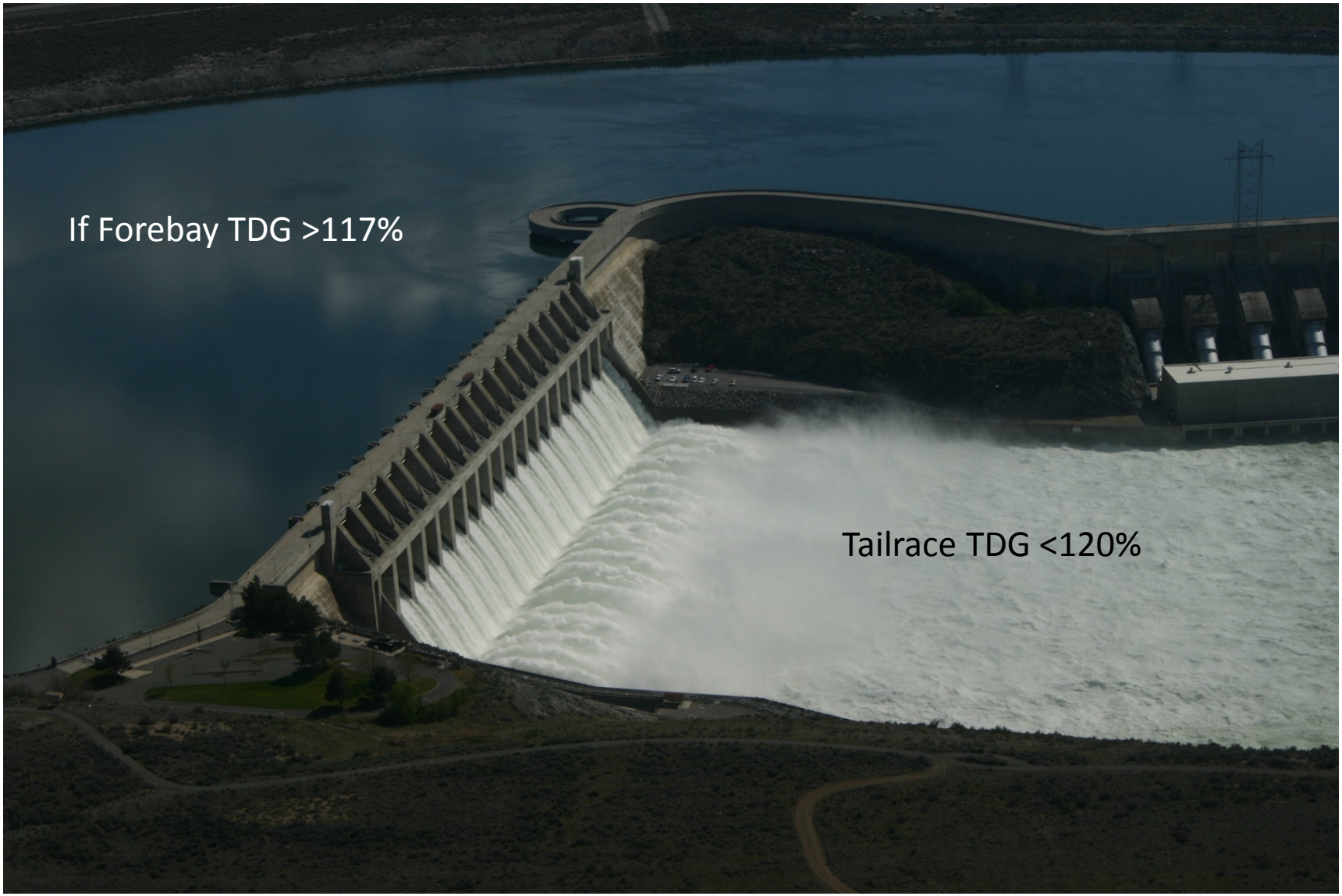


Vertical Slot Spillway Weir

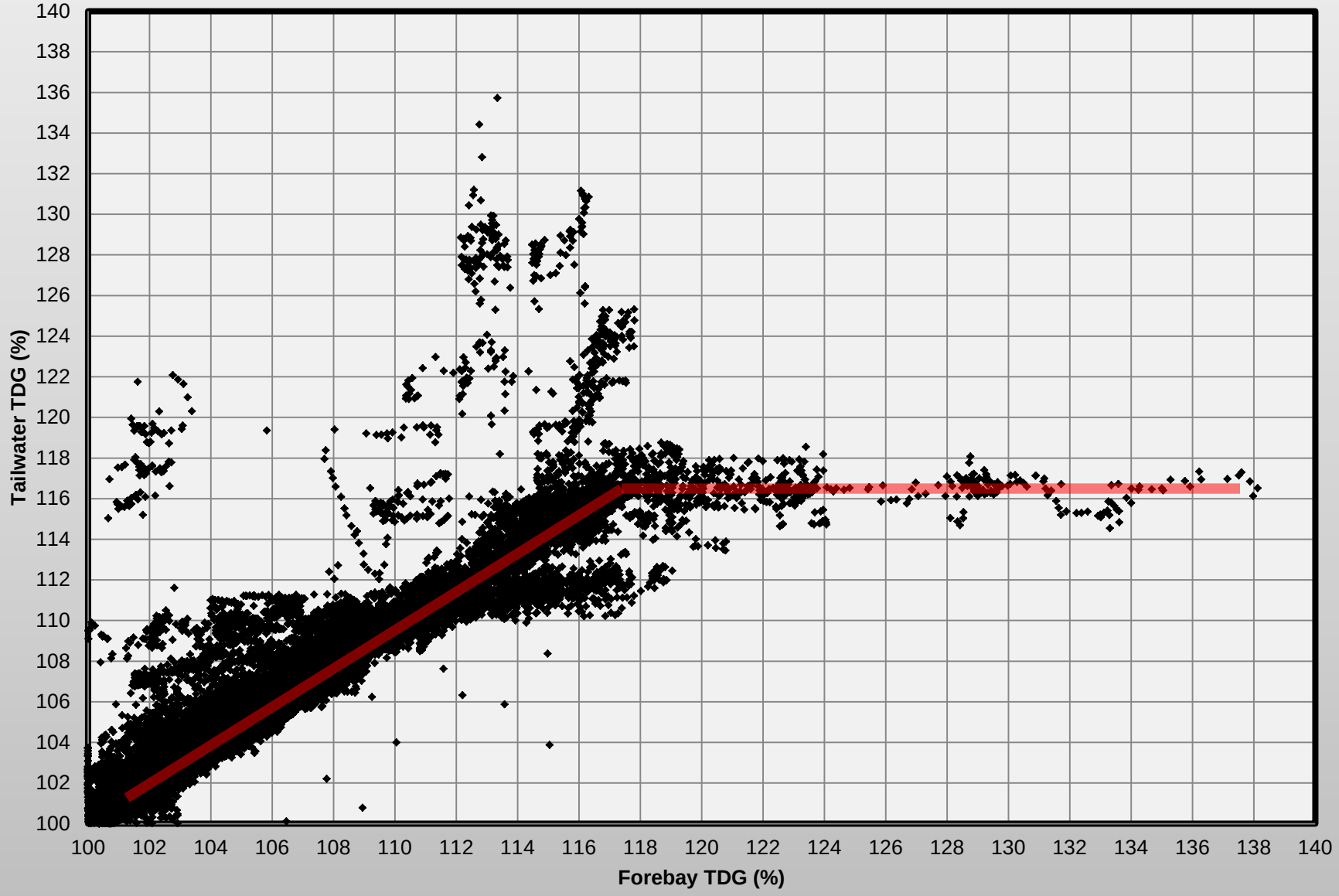
Flow Deflectors



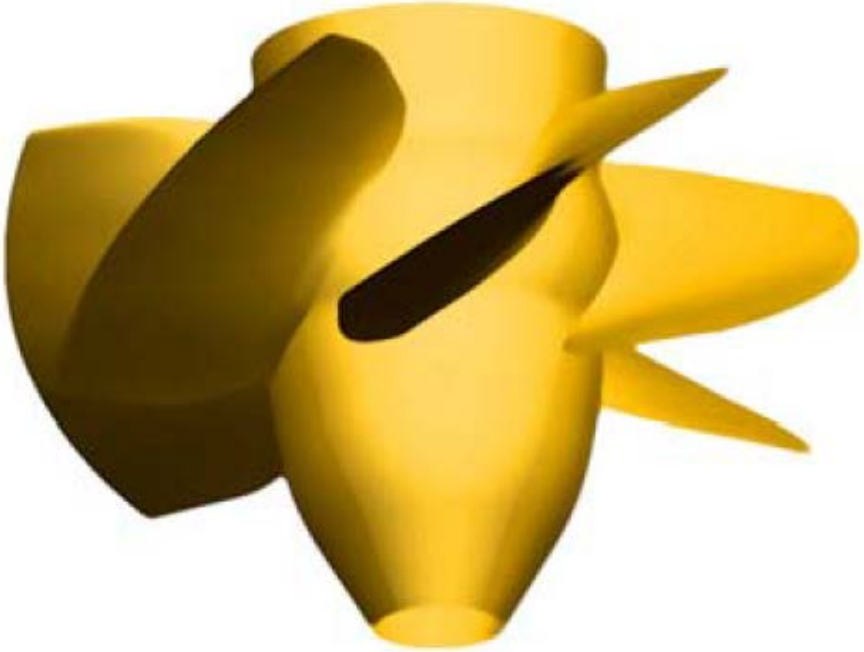
Chief Joseph Dam Flow Deflectors



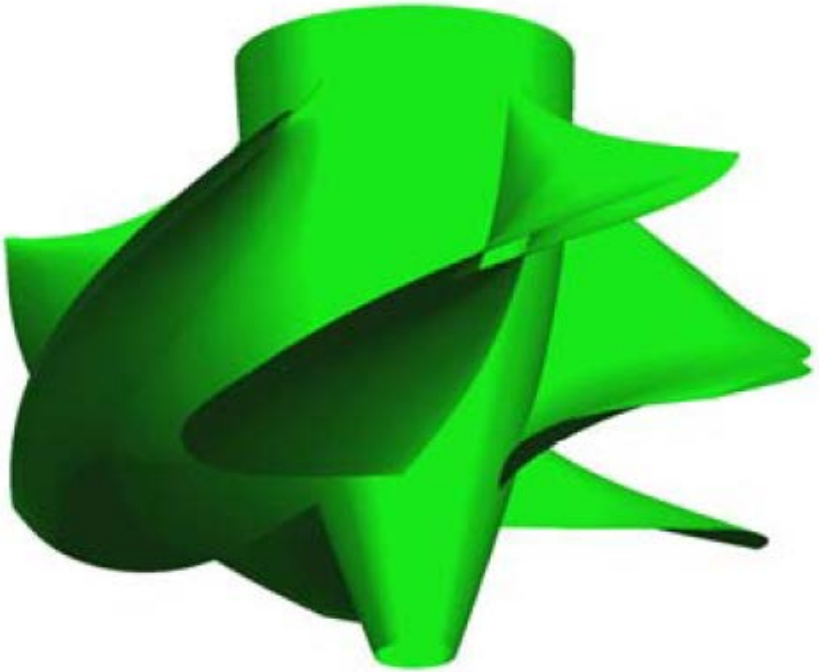
Chief Joseph Dam Tailwater TDG vs. Forebay TDG



Fish Friendly Turbines

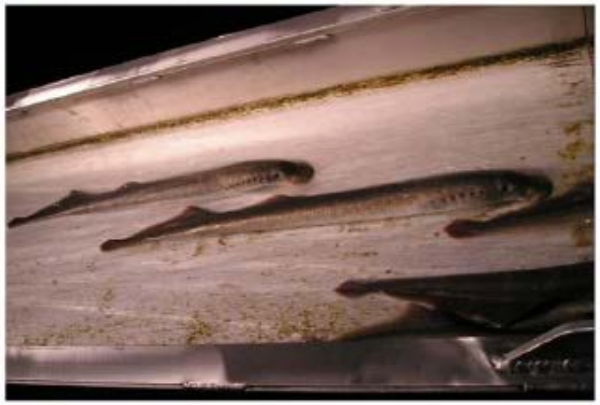


Kaplan-style
Existing Runner

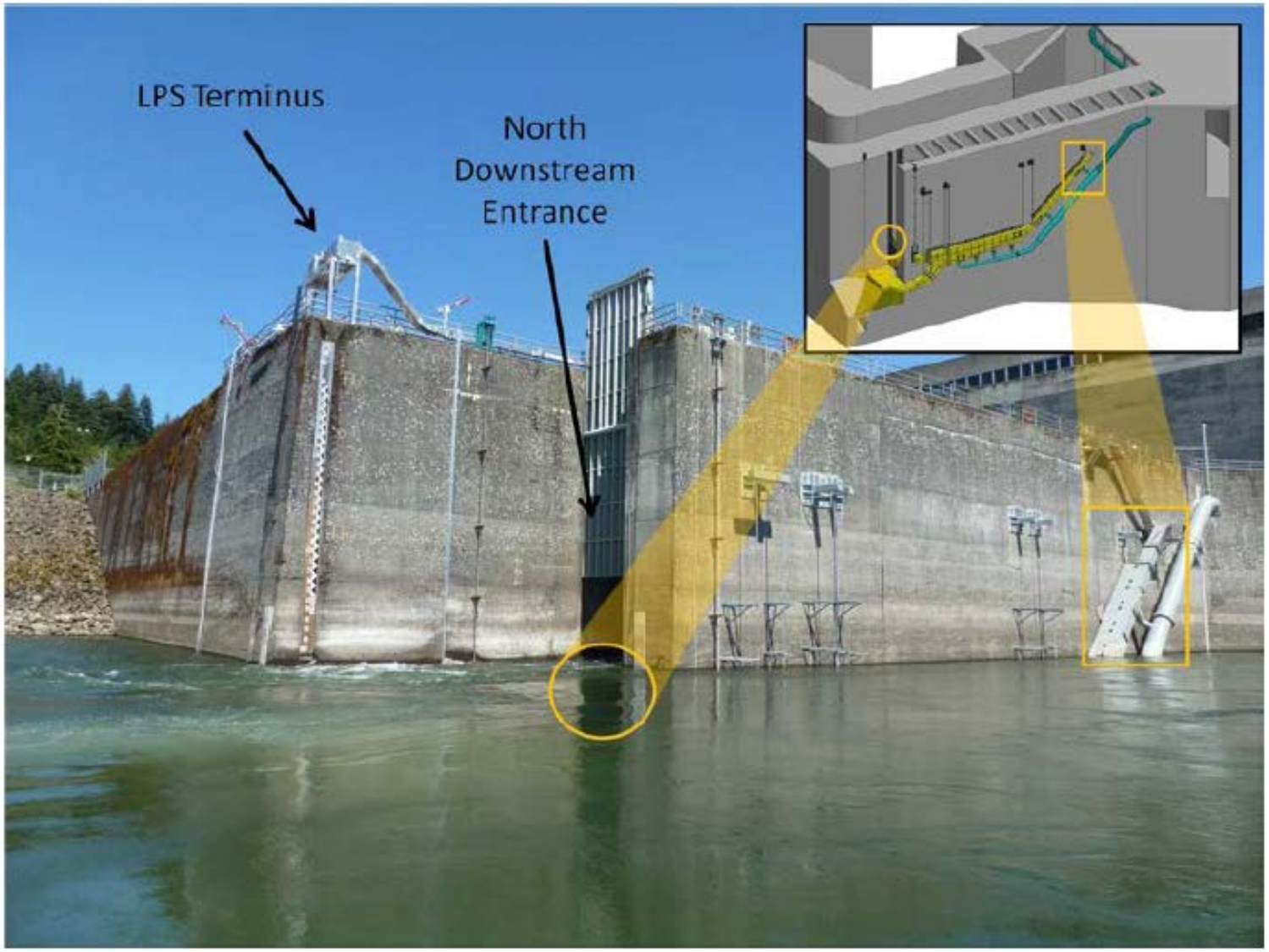


Advanced-design
Fixed-blade Runner

Lamprey Passage

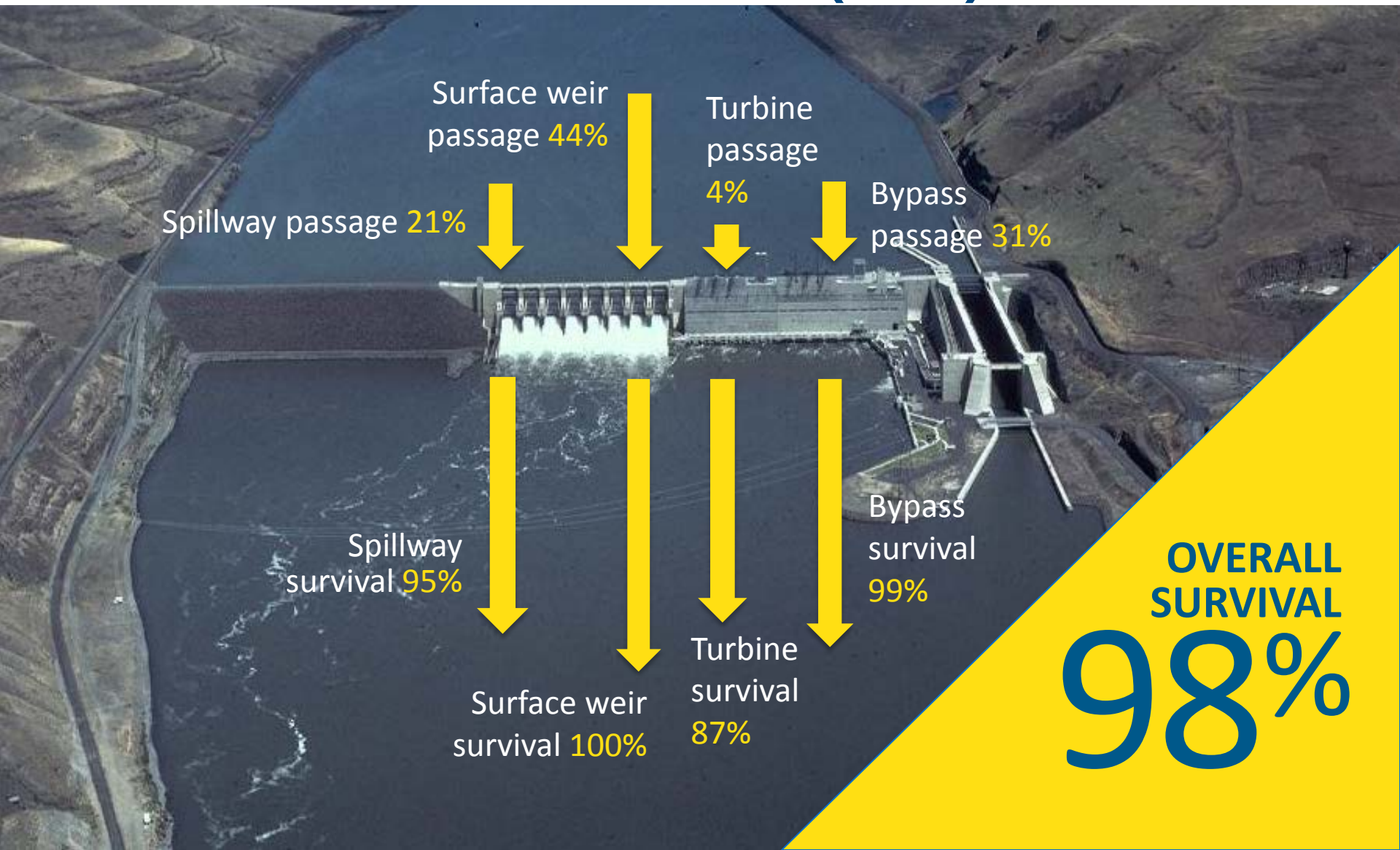


Lamprey Passage

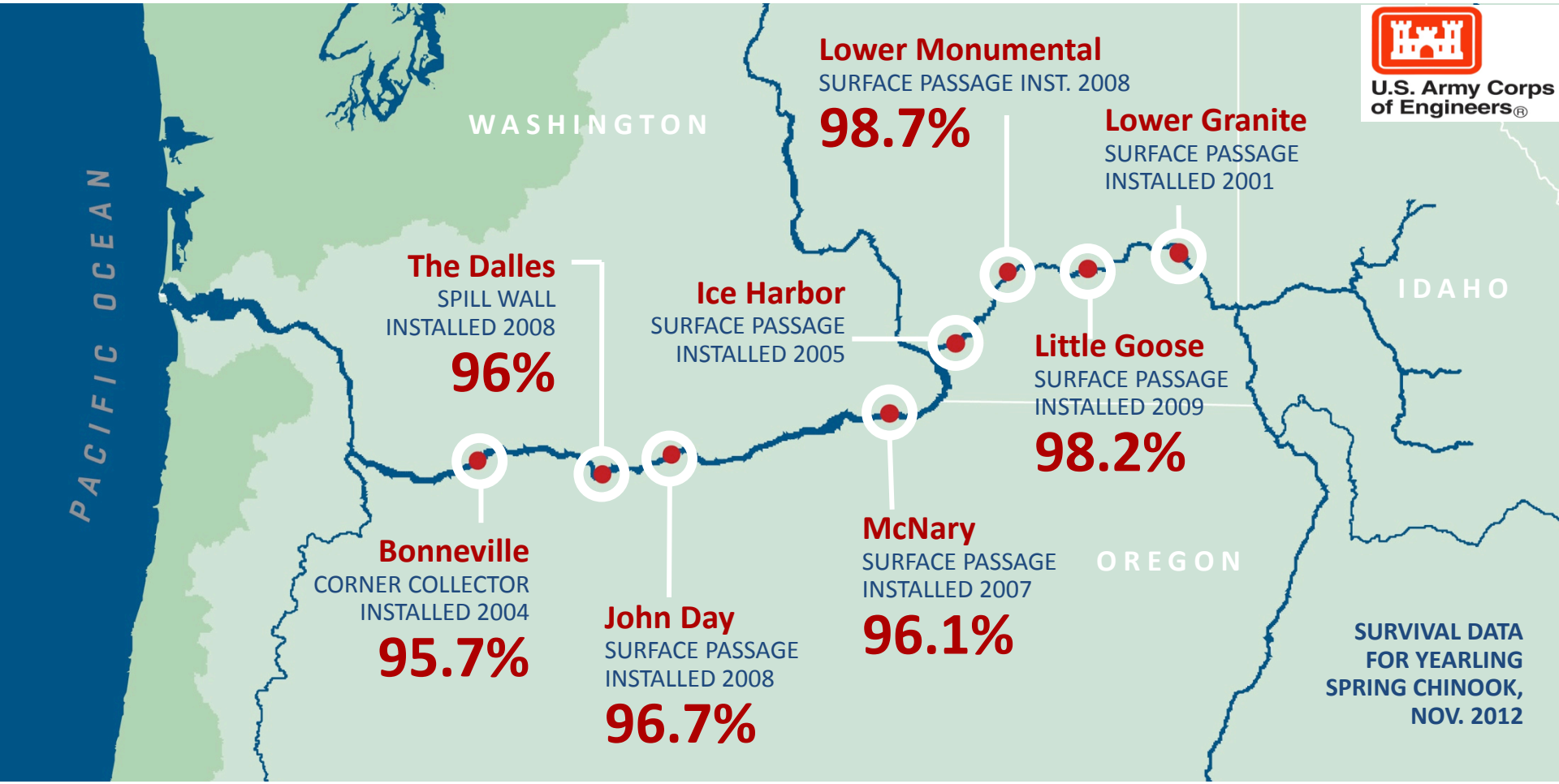


Lamprey Passage

Little Goose Dam passage and survival Chinook Salmon (2012)

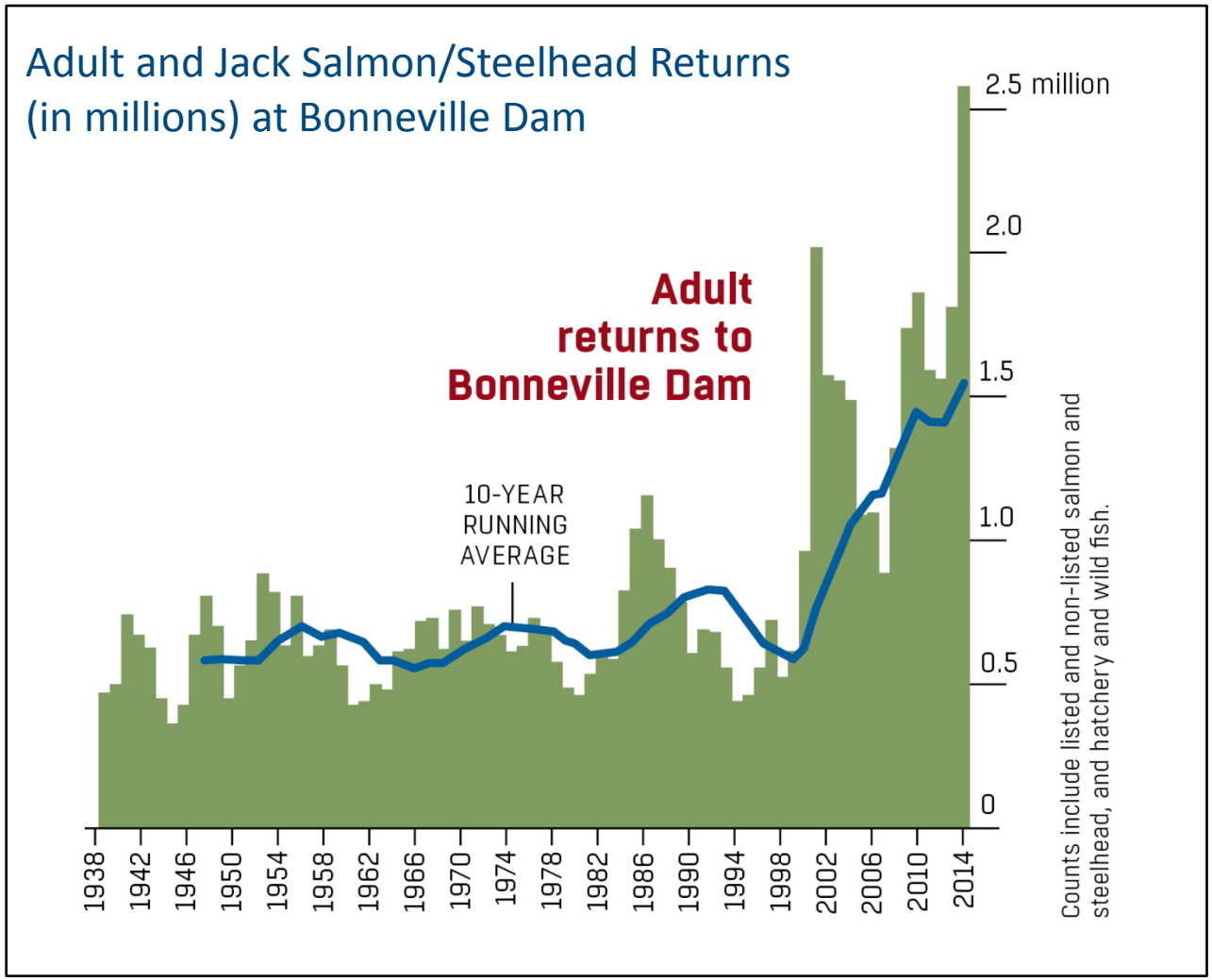


Results for fish – optimizing fish passage through dams



- **Dams are on track to meet performance standards of 96% average survival for spring and 93% for summer migrating fish.**
- **Fish travel times and survivals per kilometer are approaching those for an undammed river.**

How are the fish doing? Abundance of salmon and steelhead



Of the 49 Columbia Basin **wild** fish populations where data are available, 48 have increased in abundance since ESA listings.

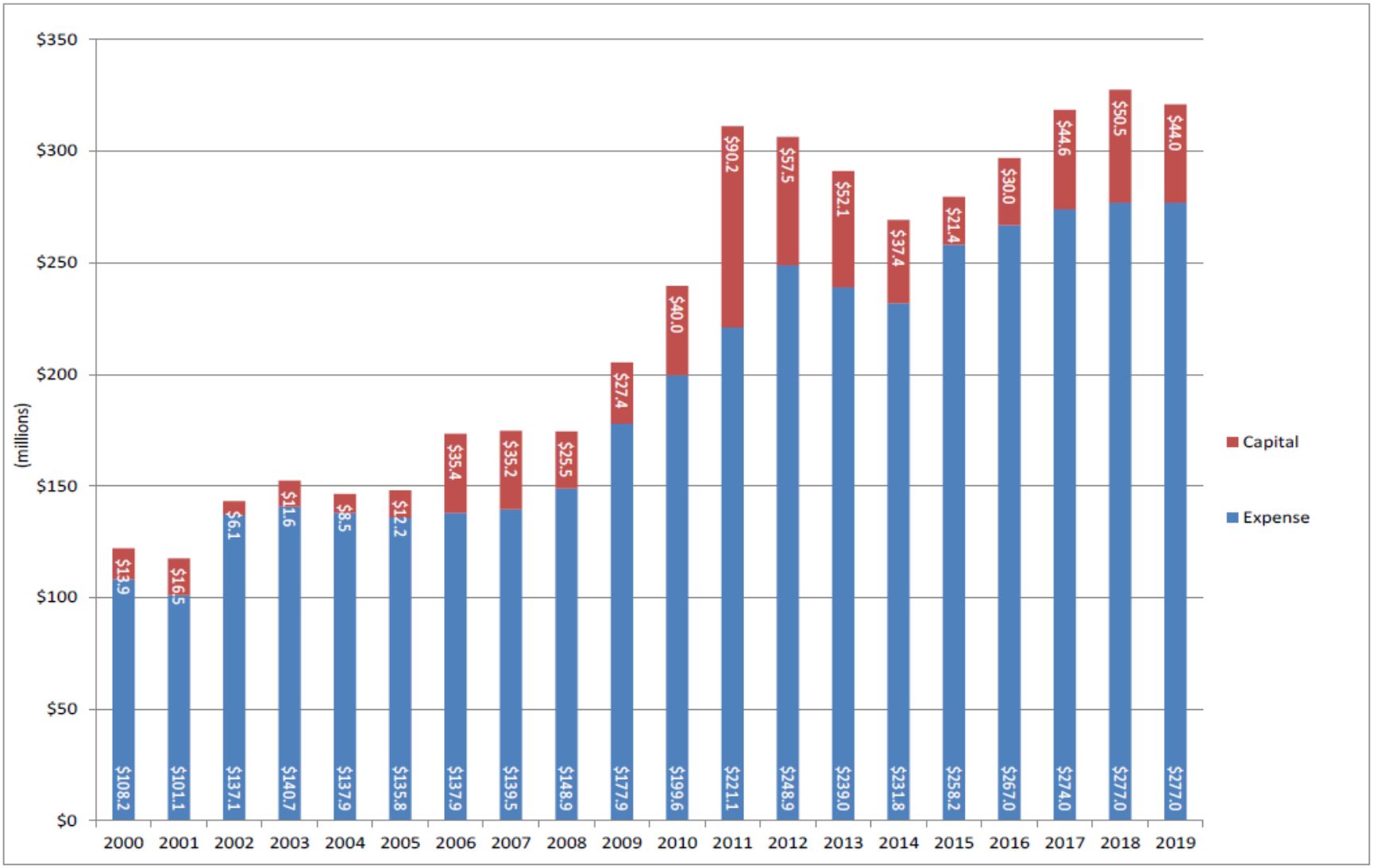
On average, abundance levels of **wild** Chinook salmon and steelhead have more than doubled.

NOAA has concluded that combined hatchery and wild fish numbers indicate that operation of the system is “not likely to affect” Southern resident orcas.

Total annual average cost of BPA fish and wildlife actions

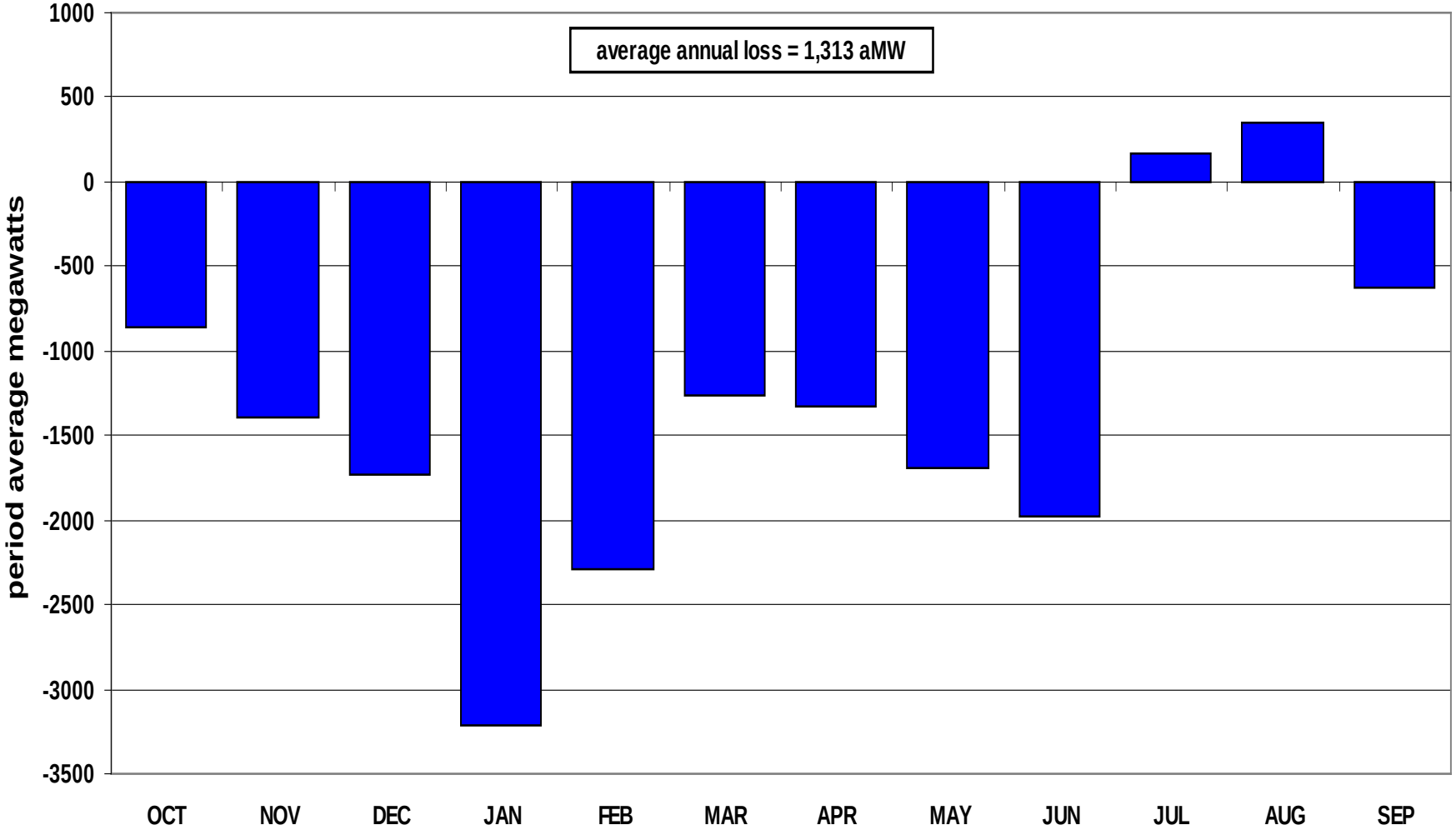
	Percentage of Spending Categories Allocated to F&W	FY 2014-2015 Actuals ($ in Millions)	FY 2016-2017 BP-16 Final Proposal ($ in Millions)	FY 2018-2019 2016 Initial IPR ($ in Millions)
Integrated Program	100%	245	271	277
NWPCC – Annual Average	50%	5	6	6
US Fish & Wildlife Service – Annual Average Lower Snake Compensation Plan	100%	31	33	34
Corps of Engineers O&M – Annual Average	~19%	47	49	50
Reclamation O&M – Annual Average	~4%	5	6	7
UNSLICED Annual Average Hydro Operations Effects (Power Purchases & Foregone Revenues)		291	200	TBD
Depreciation & Interest on COE / Reclamation / USF&WS Capital F&W Investments (based on Plant in Service)		146	171	152
Total $		**770**	**736**	**526**
Depreciation & Interest on BPA Direct Program Capital F&W Investments				

Fish & Wildlife annual expenditures



FCRPS Energy Effect of Hydro Operations for Fish

(average of 50 water conditions)



Summary of court ruling

- On May 4, 2016, the U.S. District Court for the District of Oregon issued a decision invalidating NOAA Fisheries' latest Biological Opinion for the federal dams.
- The Court also ruled that the Corps and Reclamation failed to comply with the National Environmental Policy Act (NEPA) when they issued decision documents to adopt and implement the BiOp.
- NOAA will issue a new BiOp by December 31, 2018, and the Action Agencies will continue to implement the current BiOp until then.
- BPA and its partnering federal agencies will issue a Columbia River System Operations (CRSO) EIS by March 2021.

CRSO EIS

- Issues include flood risk management, irrigation, power generation, fish and wildlife, navigation, recreation, dam breaching, and cultural resources.
- Scoping and comment period ended February 7th. Sixteen public meetings, two webinars in four states.
- Status report to the court, Fall 2017.
- Draft EIS in Spring 2020, and final EIS/BiOp in Spring 2021.

Questions?

Resources:

http://www.crso.info/
https://www.salmonrecovery.gov/