



Hope for Orcas

Ken Balcomb & Jim Waddell



Jim Waddell, Jim Fetter & EPA Region 10

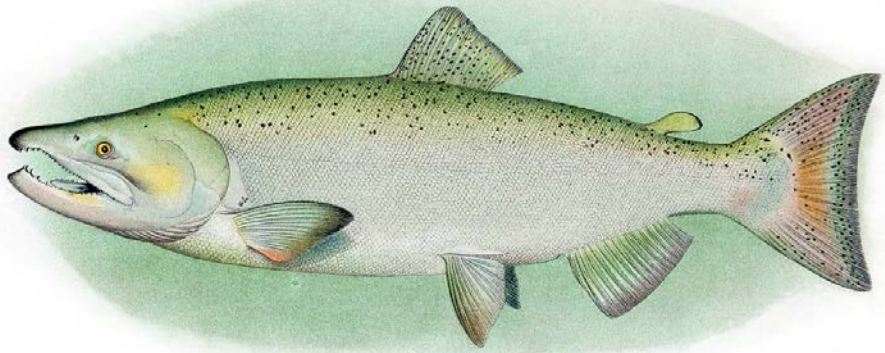


Credit: Center for Whale Research, Ken Balcomb

Save Salmon, Save Money, Save Orca

Jim Waddell, Retired Corps of Engineers

Salmon and the 4 Lower Snake River Dams



Lower Granite



Lower Monumental



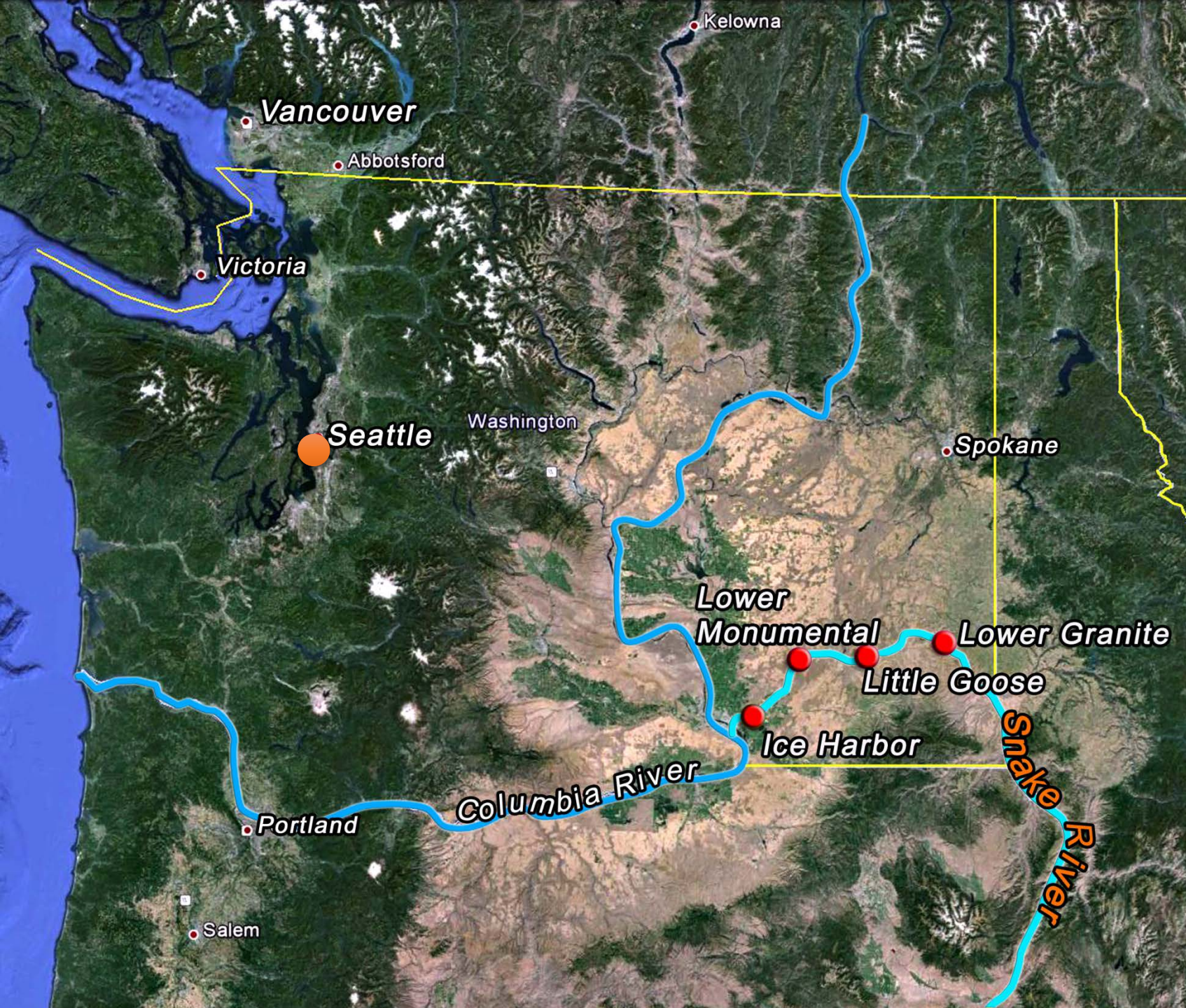
Chinook - Female




Little Goose

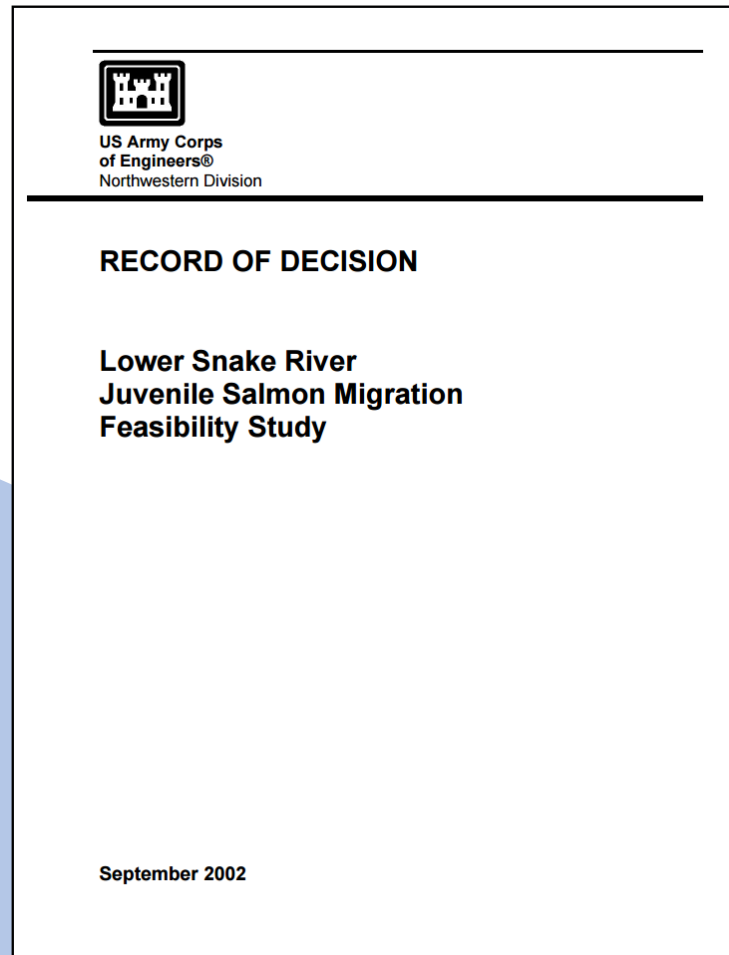
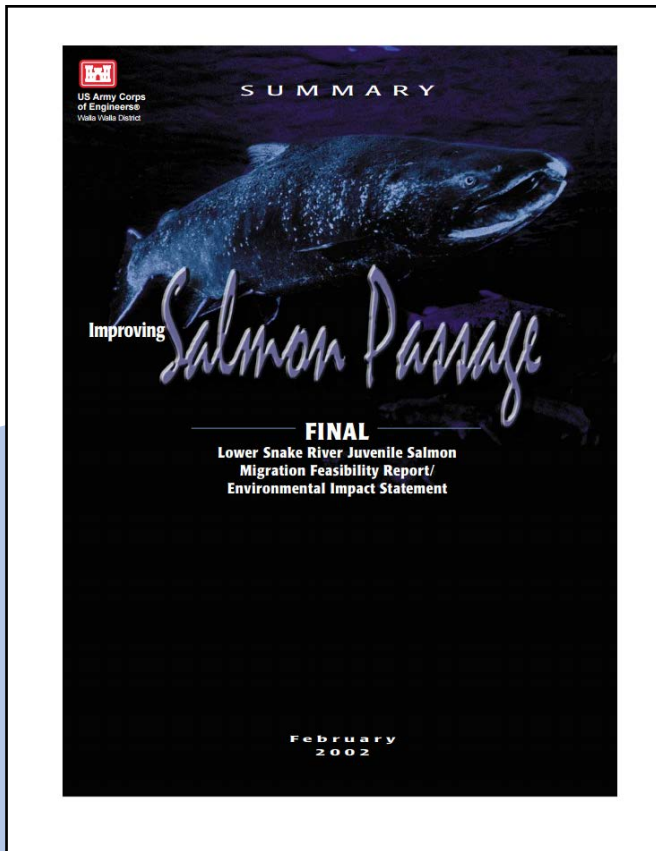


Ice Harbor



The 4 Lower Snake River Dams

 You are here



The Corps of Engineers built and maintain the 4LSRD

What does the Corps say?

<http://www.nww.usace.army.mil/Library/2002-LSR-Study/>



2002 Environmental Impact Statement

7 Years & \$33 Million spent on generating the 2002 EIS

4 Alternatives determined and studied

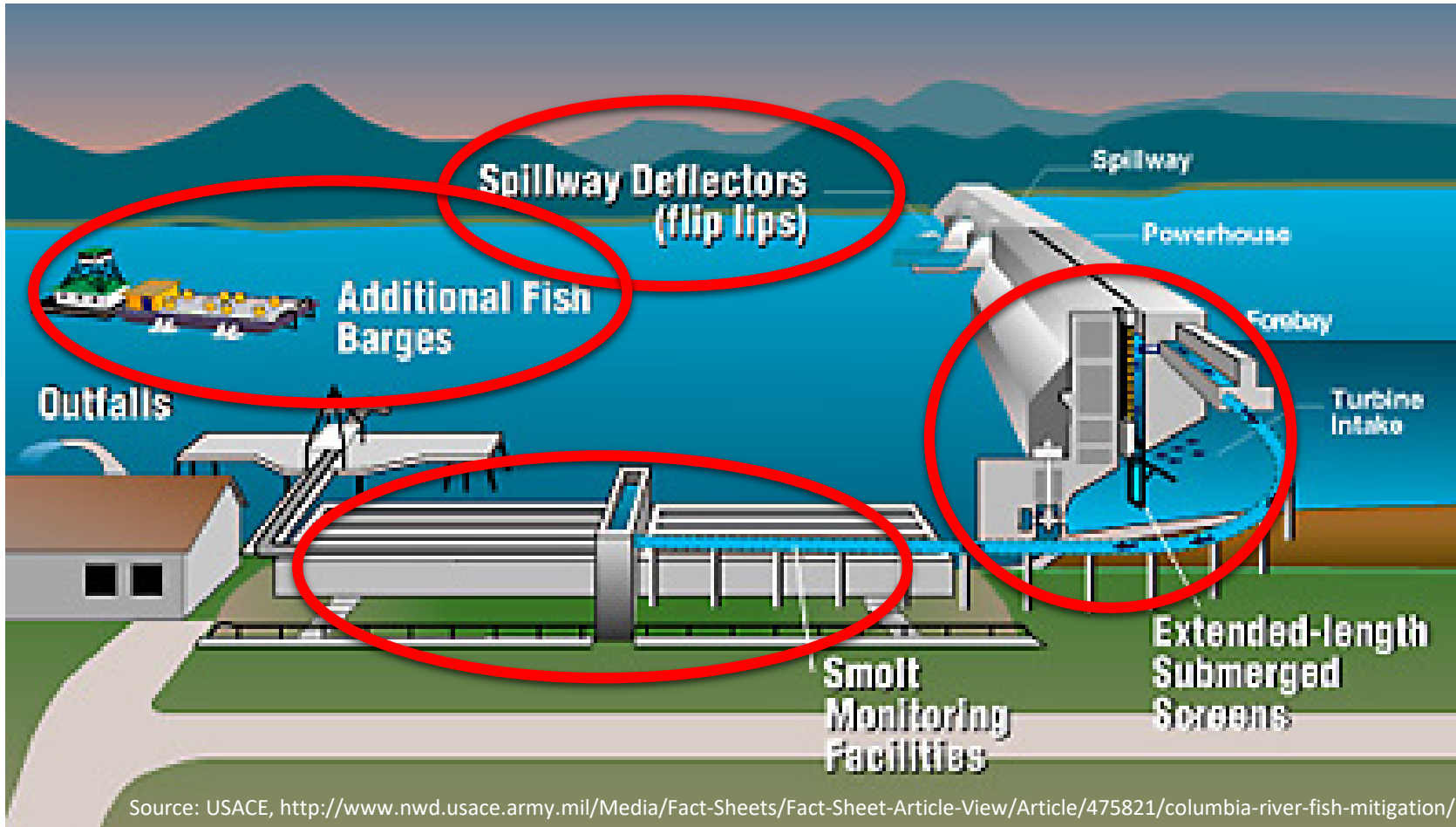
- ▮ Alt. 1: Do Nothing
- ▮ Alt. 2: Maximum Transport of Juvenile Salmon
- ▮ Alt. 3: Major System Improvements (Adaptive Migration)
- ▮ Alt. 4: Dam Breaching

“...the chance of meeting NMFS survival and recovery criteria for the four listed species Alt 1 would likely be the same or slightly better than Alternatives 2 and 3. Alternative 4 provides the highest probability of meeting the survival and recovery criteria..... The analyses indicate that **further improvements in the hydrosystem passage system are unlikely to recover listed Snake River stocks...**”

So what did we do?



What we've tried for salmon since 2002...



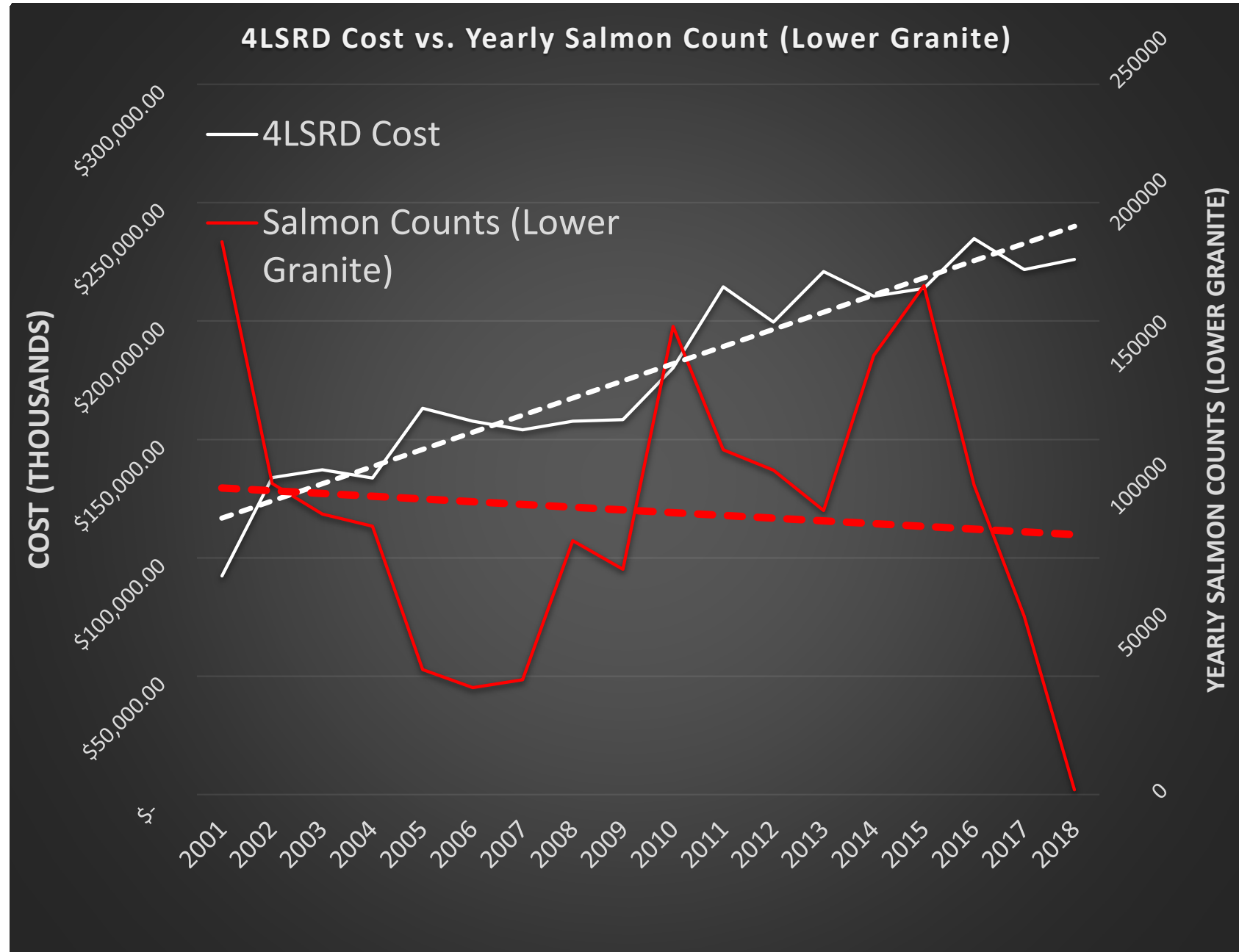
- Increased spills over the dams
- Additional fish barges
- Improved fish ladders
- Juvenile Bypass Systems



“For more than 20 years, the federal agencies have focused on essentially the same approach to saving [Snake River] salmon... Despite billions of dollars spent on these efforts, the listed species continue to be in a perilous state.”

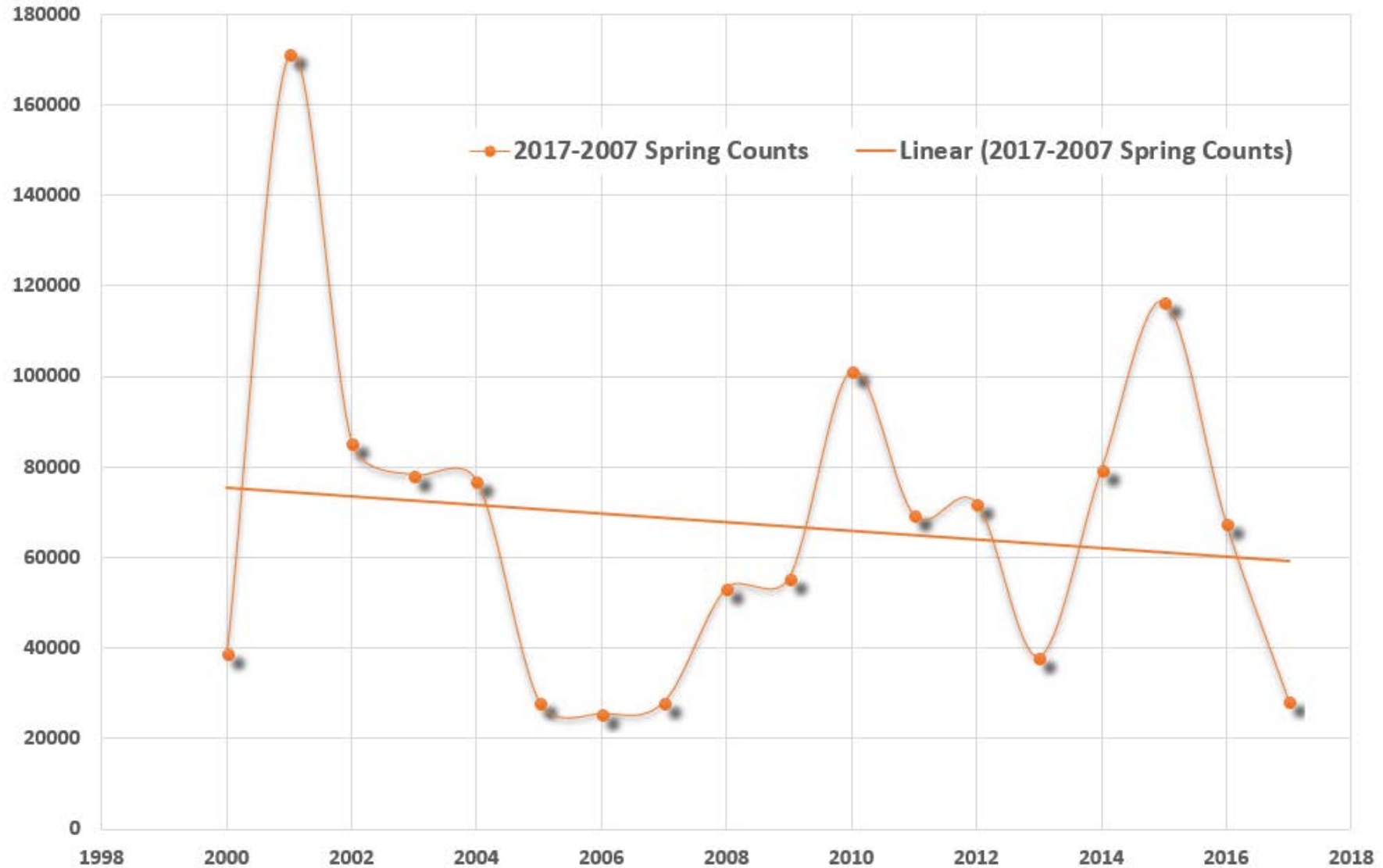
Judge Michael Simons, May 2016.

- ➔ \$1 billion & 16 years spent on dam passage improvements since the 2002 EIS was signed. \$1.5B since 1988!
- ➔ Runs < 3% of the historic mean of 10-16 million salmon & up to 30M in Columbia/Snake
- ➔ Billions more on habitat, wasted/sub optimized



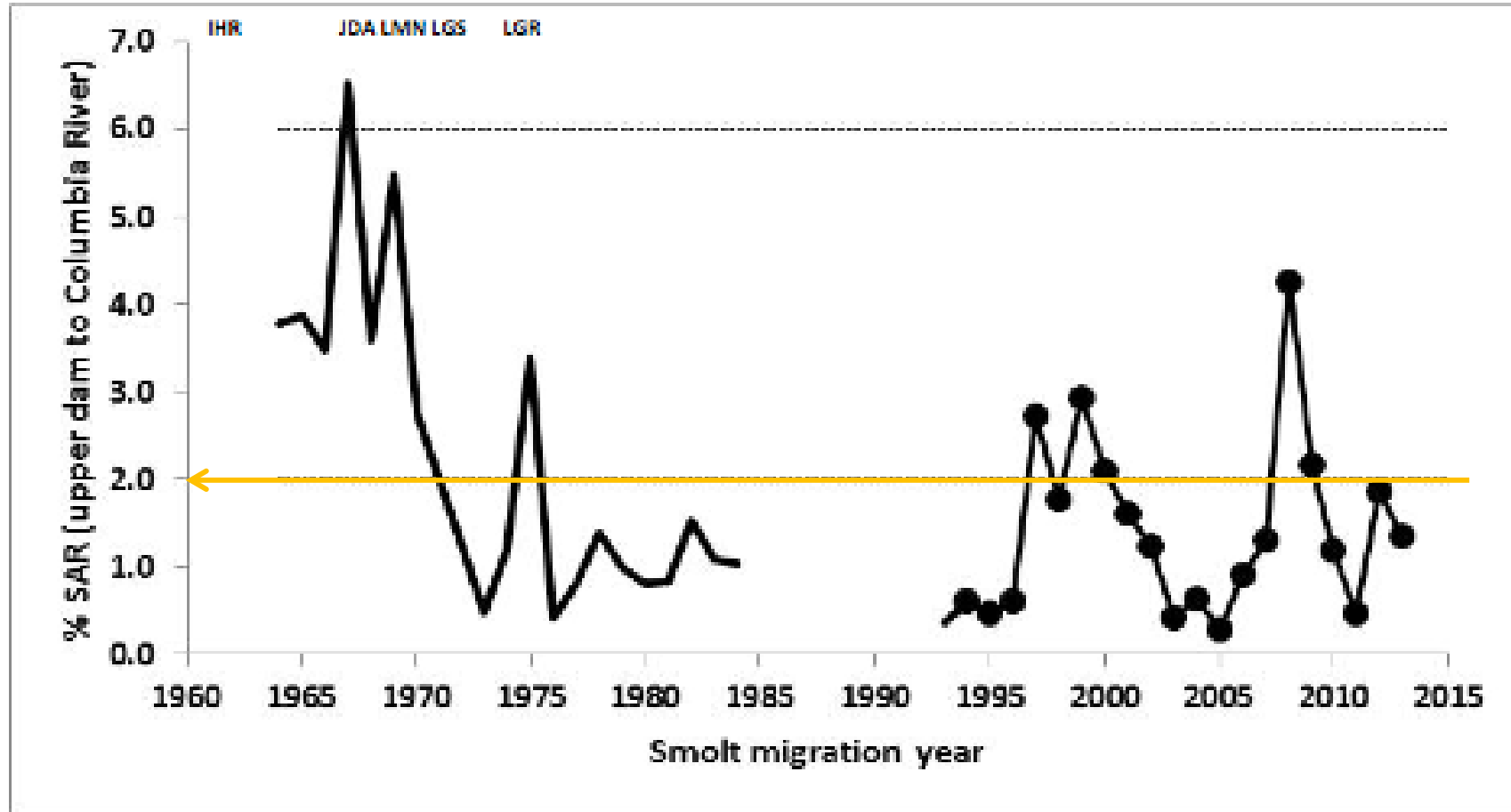
Salmon are declining, despite our current efforts

2017-2007 Spring Chinook Counts at Ice Harbor Dam





Wild Salmon Survival

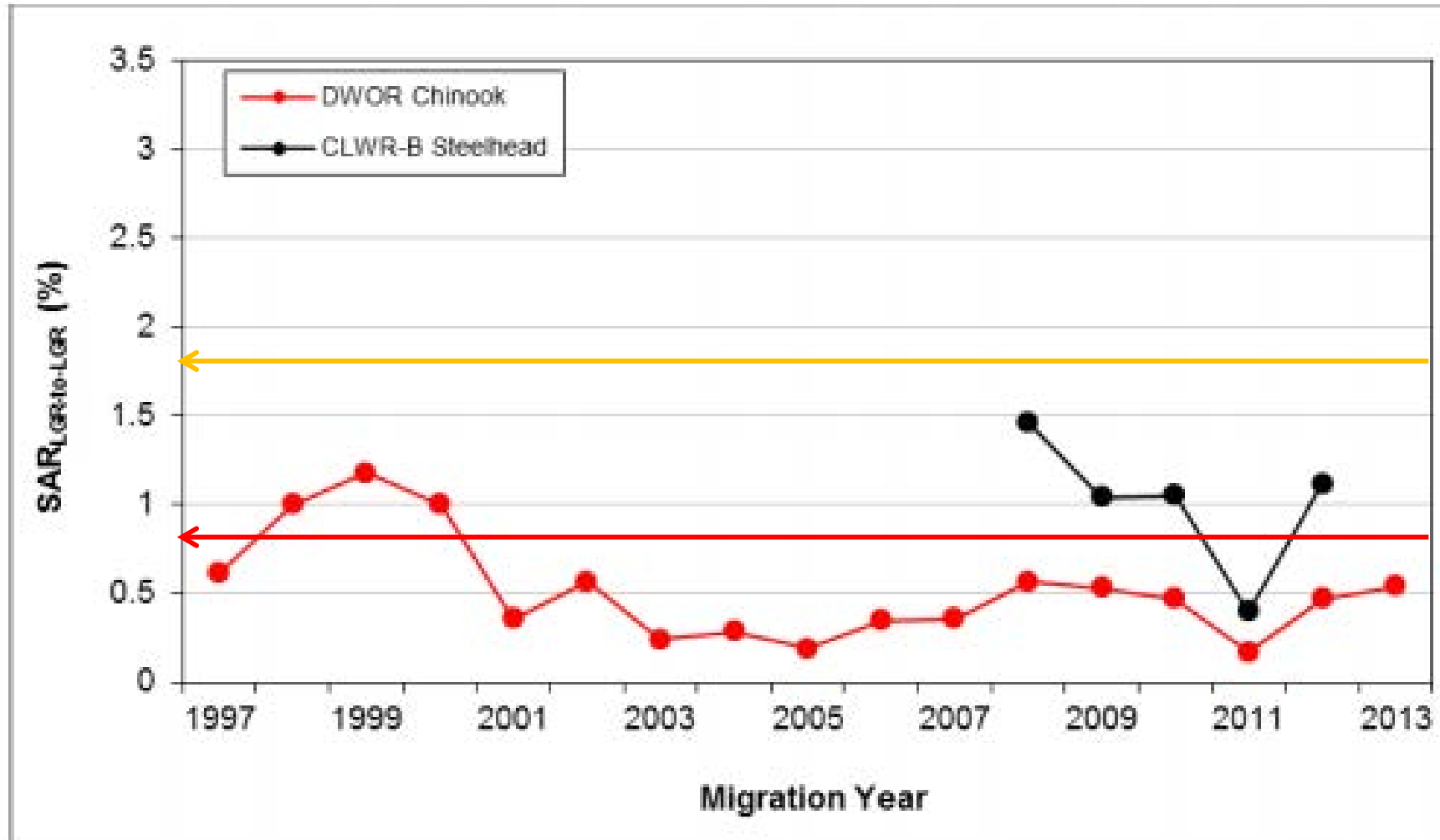


— % SAR required for recovery

“Figure 4.1. SARs from smolts at uppermost Snake River dam to Columbia River returns (including jacks) for wild Snake River spring/summer Chinook, 1964-2013. ... The NPCC (2014) 2%-6% objective for listed wild populations is shown for reference; SAR for 2013 is complete through 2-salt returns only.”



Hatchery Fish Survival



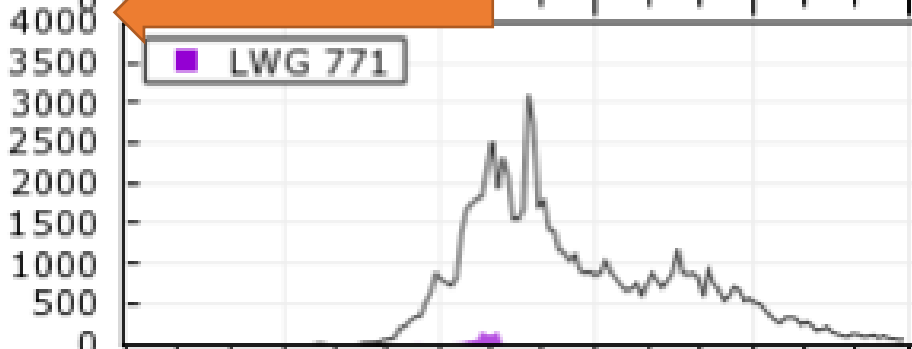
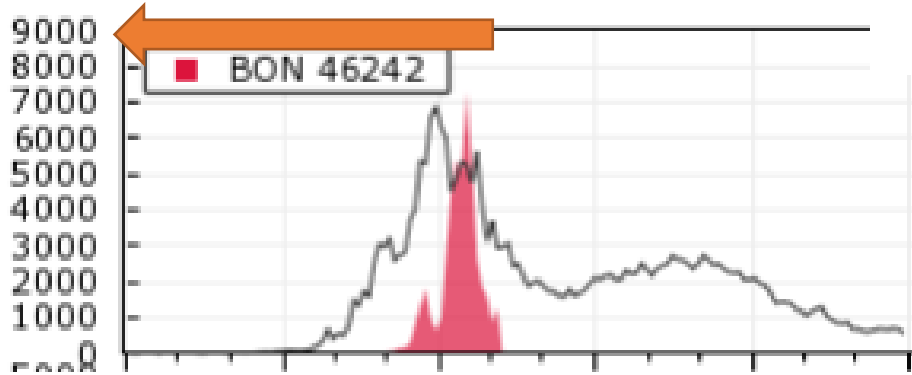
— % SAR required for recovery

Figure 9. Weighted SARLGR-to-LGR for Dworshak NFH spring Chinook (1997–2013) and Clearwater-B hatchery steelhead (2008–2012). Migration year 2013 is incomplete for yearling Chinook, with Age 2-salt adult returns through 9/14/2015.

<http://www.fpc.org/hatchery/dworshakhatchery2015.pdf>

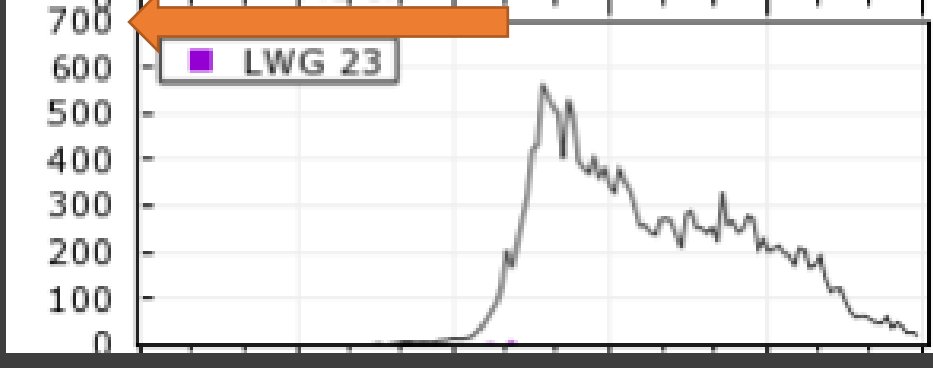
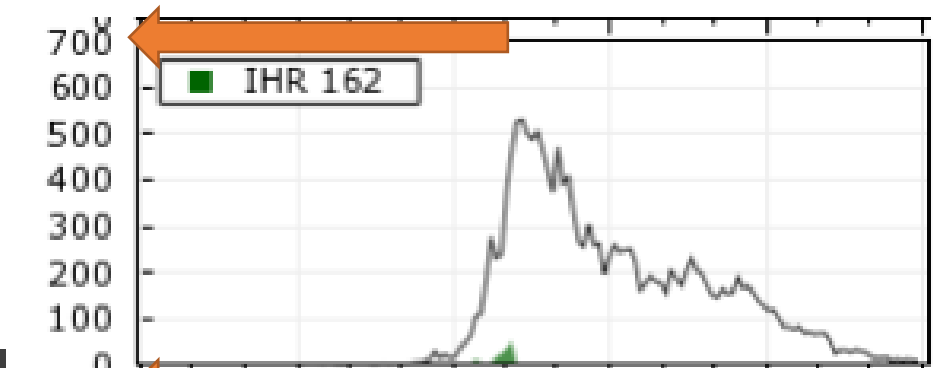
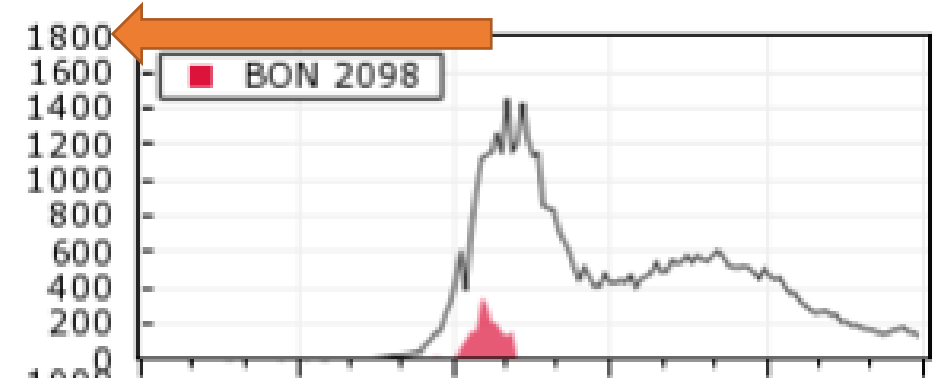
What's the current situation?

2018 Chinook Adult Passage (Mar-Jul) with 10 Year Average



“A disaster!”
(note the scale)

2018 Jack Chinook Adult Passage (Mar-Jul) with 10 Year Average



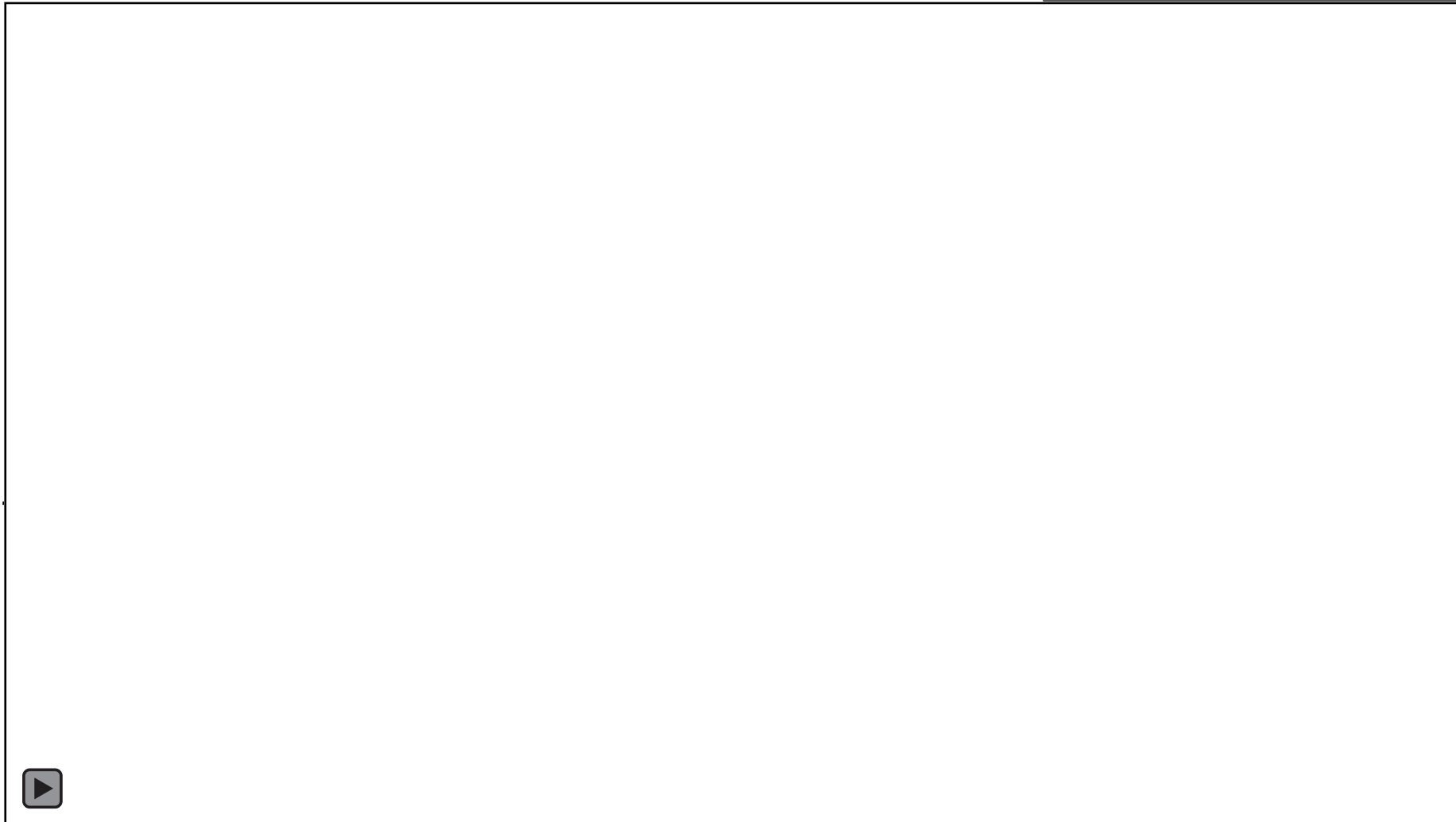
B O N N E V I L L E
P O W E R A D M I N I S T R A T I O N



BPA funds the
hydro power
production
(92% of the
4LSRD)

Bonneville Power Administration (BPA)

Bonneville Power Administrator Briefing Financial Situation

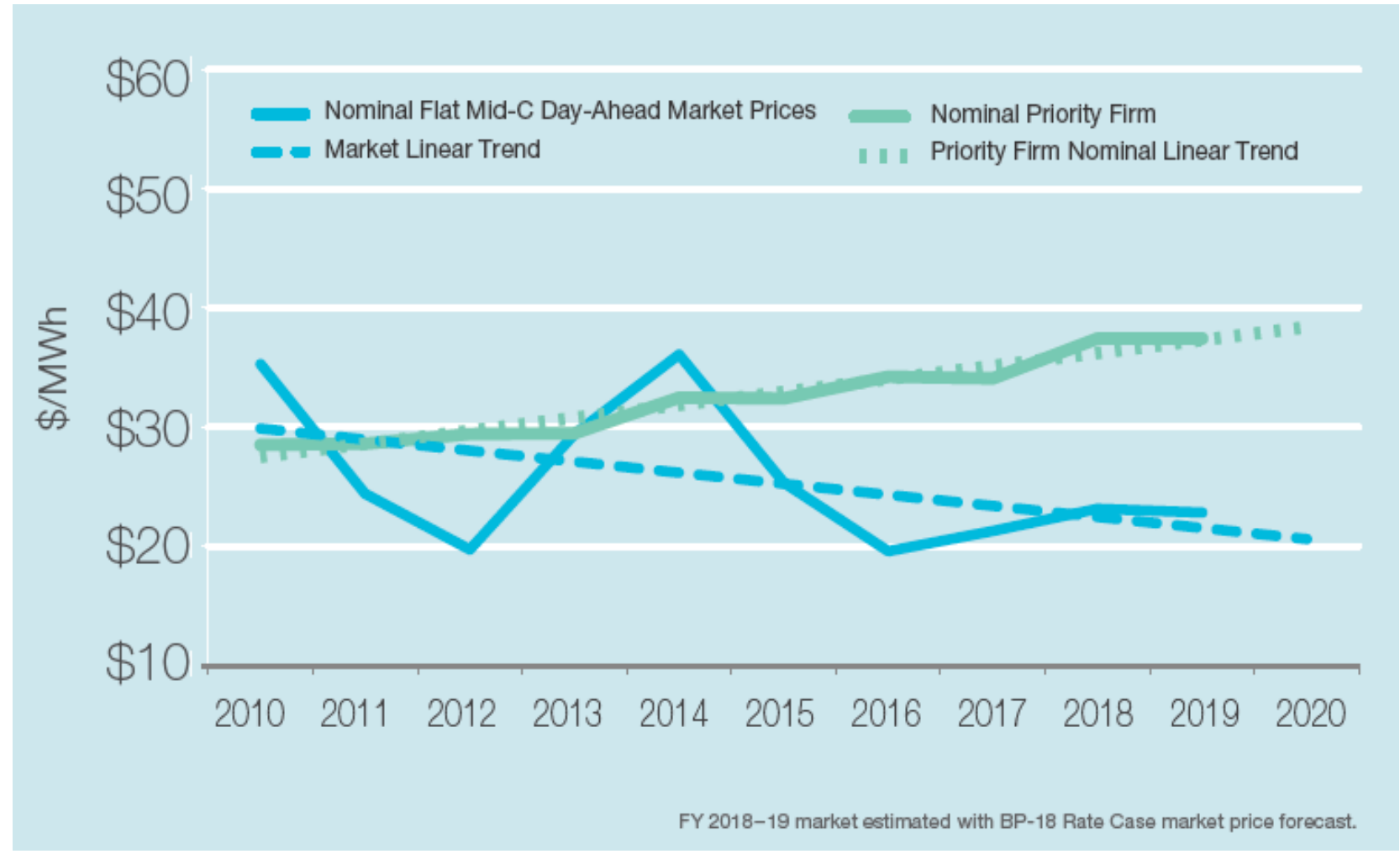


Bonneville Power Administration

“As wholesale market prices (blue) have trended downward, BPA’s Priority Firm power rates (green) have trended upward.”

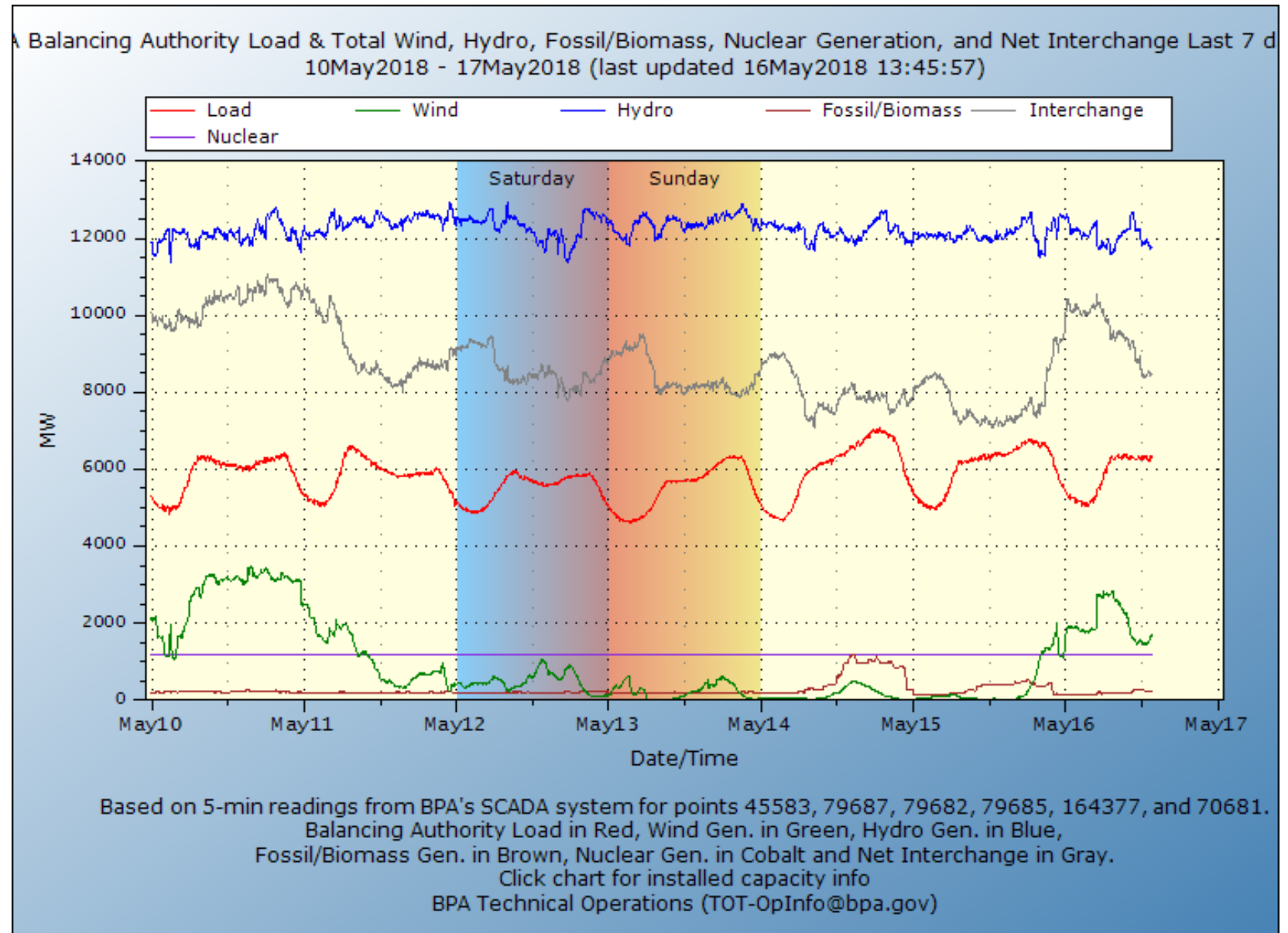
BPA 2018 Strategic Plan,
pg. 35

Historical Priority Firm Power Rates FY 2010 – 2019



Bonneville Power Administration

- As of May 16, 2018 surplus hydro power was being sold at to CA \$22/MWh
- *Has been as low as - \$21/MWh!*



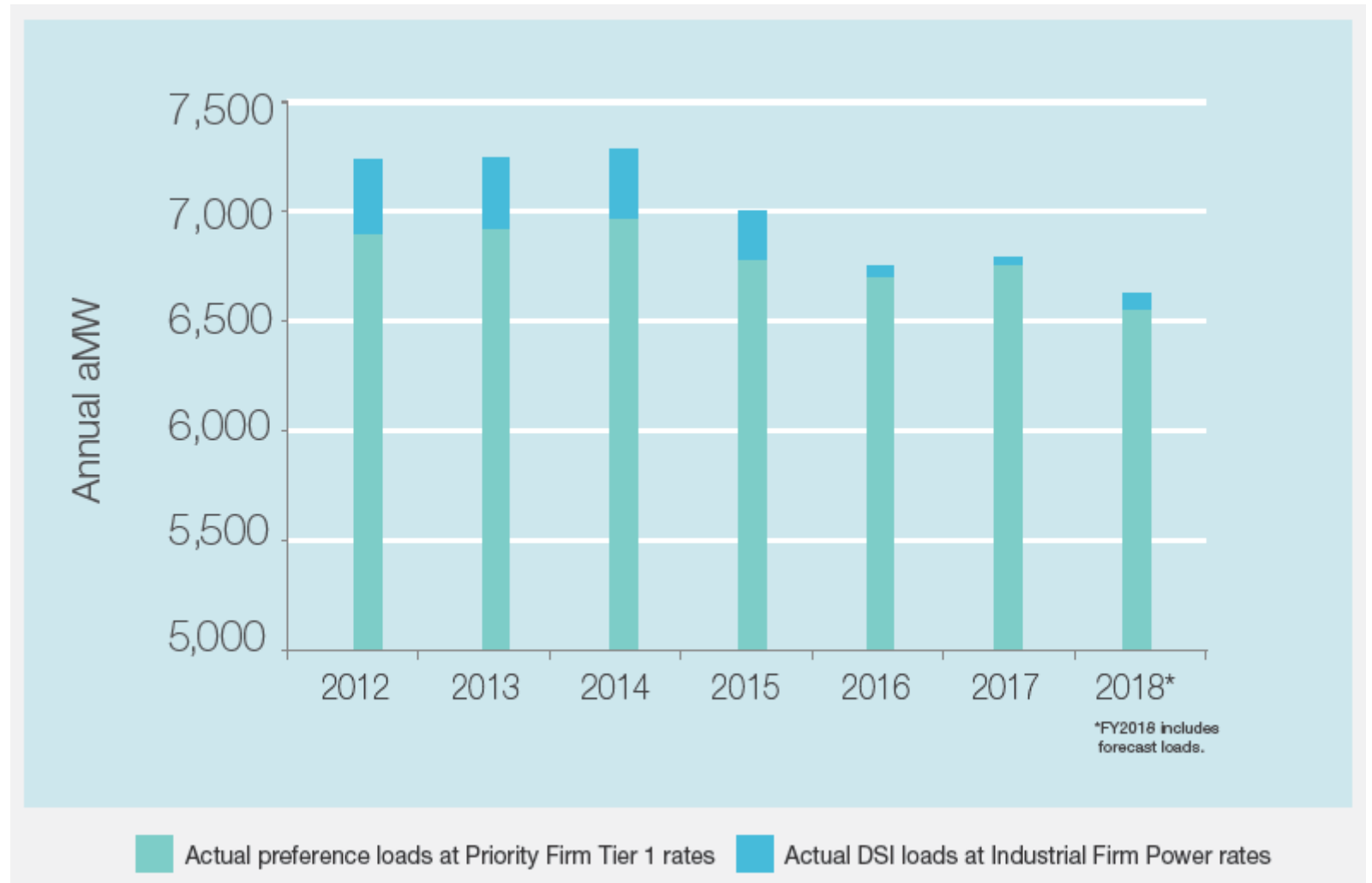
Source: <https://transmission.bpa.gov/Business/Operations/Wind/baltwg3.png>

Bonneville Power Administration

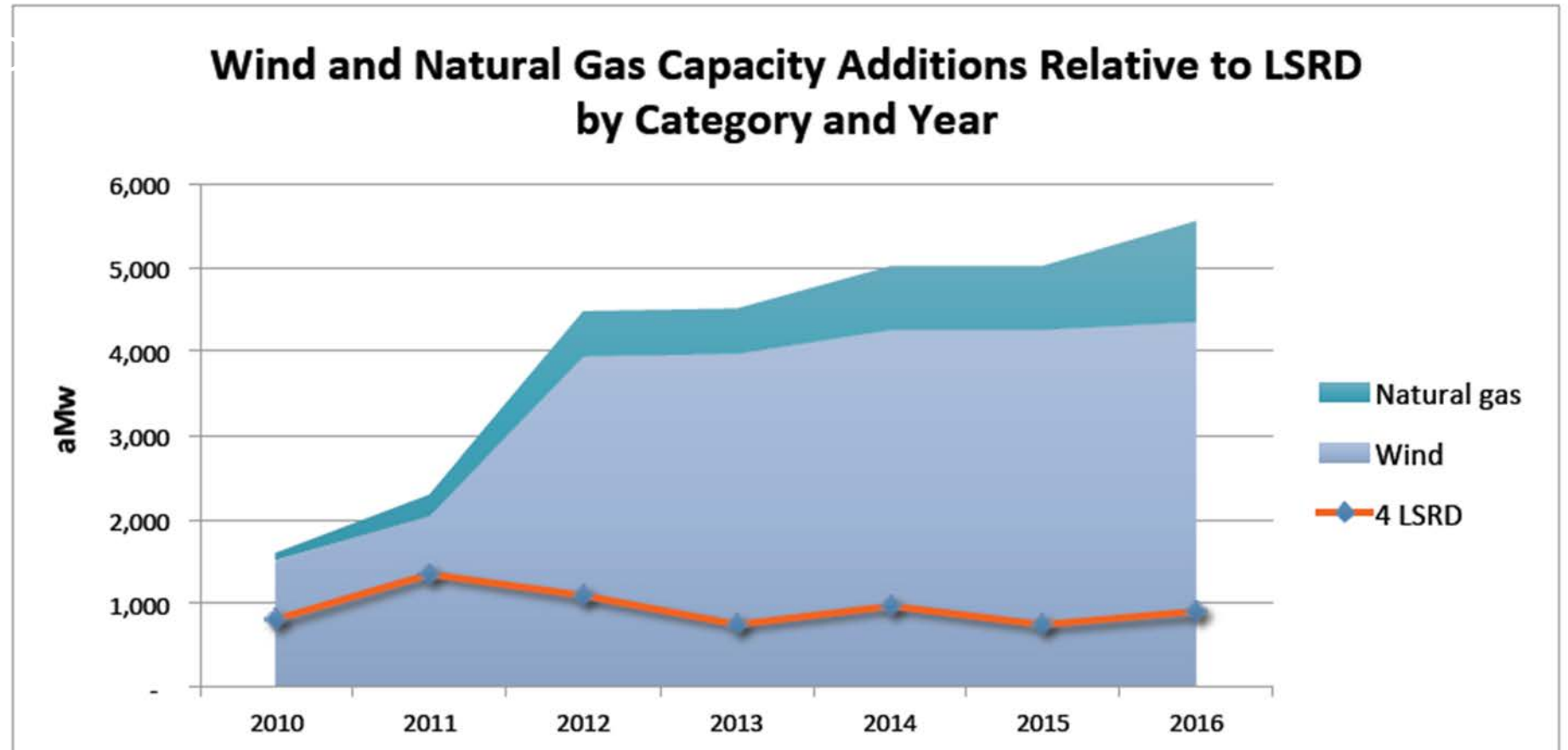
“BPA’s preference customer and direct-service industry loads have steadily declined since 2014.”

BPA 2018 Strategy Report,
pg. 37

BPA’s Preference Customer and Direct-Service Industry Loads



Do We Really Need the 4LSRD?



Data source: Northwest Power and Conservation Council Power Supply <https://www.nwcouncil.org/energy/powersupply/home/>
and <http://137.161.41.139/dd/common/dataquery/www/>

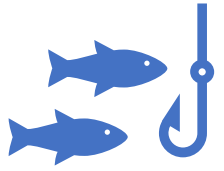
Graph compiled by Rocky Mountain Econometrics

Bonneville
Power
Administration

- ▮ Habitat Funding is the Target for Budget Cutbacks
- ▮ Wind Was “Curtailed” 40 Times In 2017
- ▮ BPA Has Nearly Zero Days Cash Reserve
- ▮ Customers Are Bailing Out Because of BPA’s High Cost

93,000 Hours of Production, Only 2 Hours Were Needed

**Removing High Cost Under Performing Assets is Only
Way Out of Insolvency For BPA**



4LSRD Cost/Economics: **the Bad**

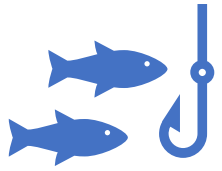
- ❏ Benefit to Cost ratio over the life of the four dams is **\$0.15 to \$1**
- ❏ Annual expenditures over the last 5 years have exceeded earnings
- ❏ LSR Dams are 2-3 times more expensive than mainstem dams on Columbia
- ❏ Three Turbine rehabs at Ice Harbor are now 3-4 times costlier than original estimates and 10 years behind schedule.
- ❏ Turbine rehabs of remaining 21 turbines not economically viable for BPA thus consumers.
- ❏ Oversupply of power in PNW increasing due to conservation, wind & solar.

But There Is A *FAST* Way Out!

Save Salmon
Save Money
Save Orca

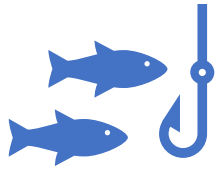
All at the same time in 2018!





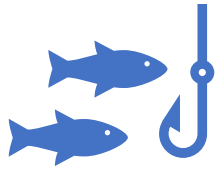
4LSRD Cost/Economics: the Good

- ↳ Corrected breach cost now around \$340 million, not \$2 or \$3 billion
- ↳ Benefit to cost ratio is at least \$4 to \$1, if the hydro power is replaced
 - ↳ Power replacement unnecessary and will free up grid space allowing more wind and solar
 - ↳ 2000 megawatts of solar alone waiting in BPA's Integration que!
- ↳ Breaching will save money for BPA/Corps which can be used on higher value dams and habitat restoration efforts. Eg., Puget Sound Near Shore (\$400 million needed)
- ↳ Provides 4 thousand more jobs in State
- ↳ Land lease for restored viticulture and orchards could add \$15 million a year to State School budgets and \$65.8 million in direct economic benefit



When we breach the 4LSRD...

- ➔ Habitat restoration investments will be optimized in the Snake basin due to large numbers of returning fish that can make use of previous improvements.
- ➔ Opens roughly 80 miles of Chinook spawning and rearing habitat
- ➔ Millions in fish mitigation funding can shift to riparian restoration on lower Snake and habitat work on other tributaries.
- ➔ More Corps funds available to other restoration initiatives, such as Puget Sound Near Shore Restoration.
- ➔ Increased Snake runs relieve fishing and prey pressures on Salish Sea and Coastal stocks, speeding their recovery.



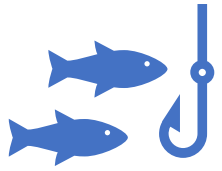
When we breach the 4LSRD...

Harvest

- ▣ More salmon and steelhead for fisheries, endangered Southern Resident Killer Whales, and other marine mammals and critters.
- ▣ Removes stocks from endangered status thus eliminating incidental take restrictions in mixed stock fisheries.
- ▣ Increased fishing of larger fish has numerous spinoff economic benefits to the State and region.

Hatcheries

- ▣ Lower Snake Compensation Plan hatcheries built to mitigate salmon losses due to dam construction along mainstem should be closed. Others modified or phased out over time. BPA savings go to other fish and wildlife projects.



When we breach the 4LSRD...

And lets not forget the greater PNW ecosystem..

- ↳ Greater numbers of larger salmon will increase the amount of biomass and nutrients moving from the ocean to the interior
- ↳ Other endangered aquatic species, such as lamprey and sturgeon, will benefit with breaching
- ↳ Riparian areas in the Snake basin will see sustainable increases in overall diversity and population density.
- ↳ Fewer algae producing reservoirs reduces methane emissions, a powerful global warming gas.



But, Can It Be Done and In Time? YES!!

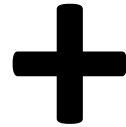




Image from the
Corps 2002 EIS...
So they did study it!!

But, Can It Be Done and In Time? YES!!

- ✓ Corps can place 4LSRD into a "non-operational" status *without Congressional authorization*, since dams do not provide an economic benefit and are causing significant harm to the environment.
- ✓ Since 4LSRD are 92% hydro, BPA pays the breach bill under the allocation rules and the 1980 Power Planning Act as Fish Mitigation.
- ✓ NEPA? The Corps has the **2002 EIS** that covers breaching, the only remaining reasonable alternative, can be updated in a matter of months.
- ✓ Breaching via removal of earthen berm portion of dam by controlled hydraulic breach requires little further engineering or complex contracting.
- ✓ Neither the ongoing litigation over the 2014 Federal Biological Opinion nor the Court's order for a new EIS constrains the Corps from breaching the dams through channel bypass *now*.
- ✓ Could and should begin in 2018!

How YOU Can Help Breach the 4LSRD

Next week is Action Week! Call each stakeholder and tell them your opinion!

Write a post card today and leave it with a Dam Sense Volunteer

Talk to your local PUD and Government to put pressure on BPA to breach the 4LSRD



What Questions
do you have?