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August 2, 2016

MEMORANDUM

TO: Fish and Wildlife Committee

FROM: Lynn Palensky

SUBJECT: Briefing on real time summer conditions and management decisions to prevent/reduce summer fish mortalities

BACKGROUND:

Presenters: Lynn Palensky and Regional Coordinators and representatives of the Corps of Engineers, NOAA Fisheries and Fish Passage Advisory Committee: Michael Garrity (WDFW), Paul Kline (IDFG), Tom Rein (ODFW), Montana Fish, Wildlife and Parks Rep, Trevor Condor (NOAA), and Paul Wagner (FPAC Co-Chair NOAA), COE Rep

Summary: Representatives will provide an up-to-date briefing from fish and wildlife managers and river operators on summer conditions, recent agreed-upon actions taken to facilitate fish passage and prevent/reduce summer fish mortalities. General outline for presentation:

- Update on sockeye runs at Bonneville and elsewhere
- Update on water temperatures (from Bonneville to Lower Granite Dam)
- Fish mortality & disease observation and preparations
- Actions: Dworshak releases, pumps at Little Goose and Lower Granite and Snake River sockeye transport, etc.
- Managing agency actions not covered
- Next steps: Continued tracking (air temp forecast, etc.) and coordination

Relevance: This topic is relevant now, during the warmest part of the summer, for fish passage and fish health. Water temperatures are being monitored daily to prepare for swift, short-term shifts in dam operations that intend to keep the water cooler at the critical times and in the key places to facilitate safe fish passage. The briefing is focused primarily on mainstem reaches.

Work plan: The daily assessment and management actions associated with summer fish returns and passage align with two specific strategies under *Ecosystem Function* strategy in the program: [Climate change](#) and [Mainstem hydrosystem flow and passage operations](#). The communication and discussion of an *early warning system* to prevent fish mortalities aligns with the Regional Coordination Forum (RCF) coordination.

Background: The May 12, RCF meeting began with a presentation from the Coordinators of the *Klamath Fish Health Assessment Team (KFHAT)* regarding their work in the Klamath Basin of Oregon and California. *KFHAT is an interdisciplinary team of scientists who monitor river conditions and other factors to evaluate fish health and the potential for fish kill. They use a color coded system (green, yellow, orange, red) to assess risk. As risk increases, they step up their level of engagement to include frequent phone calls, more exchange of information, recommendations for resource management actions, and finally, implementation of a Response Plan. The Response Plan's main focus is adding cold water to the system and curtailing agricultural withdrawals.*

To prevent fish mortalities like we saw in summer 2015, the RCF was interested in exploring a similar effort for the Columbia Basin. A follow-up phone call with regional coordinators and other interested parties was planned for May 26th to discuss coordination opportunities. Since that meeting:

- 1) Fish managers and river operators briefed the fish and wildlife committee in June and July on current summer conditions and agreed-upon actions taken to facilitate fish passage and prevent/reduce summer fish mortalities due to water temperatures.
- 2) A follow-up briefing is scheduled for the September Council meeting
- 3) The Council is working on a prototype for a river conditions web page that pulls existing water temperature data, fish migration information and other real-time data for a high-level summary of conditions in the Columbia River.

More Info:

Fish Passage Center: <http://www.fpc.org/>

Fish Passage Advisory Committee: <http://www.fpc.org/fpaclinks.html>

UPDATE ON 2016 SOCKEYE SALMON PASSAGE, WATER TEMPERATURES, & ACTIONS TO REDUCE FISH MORTALITIES



***Montana Fish,
Wildlife & Parks***



Outline

- ▣ 2016 Sockeye Salmon Run Size Update
- ▣ 2016 Manager Actions
- ▣ 2016 Water Temperatures
- ▣ Mortality Monitoring & Disease Sampling
- ▣ Managers Updates
- ▣ Outlook
- ▣ Summary





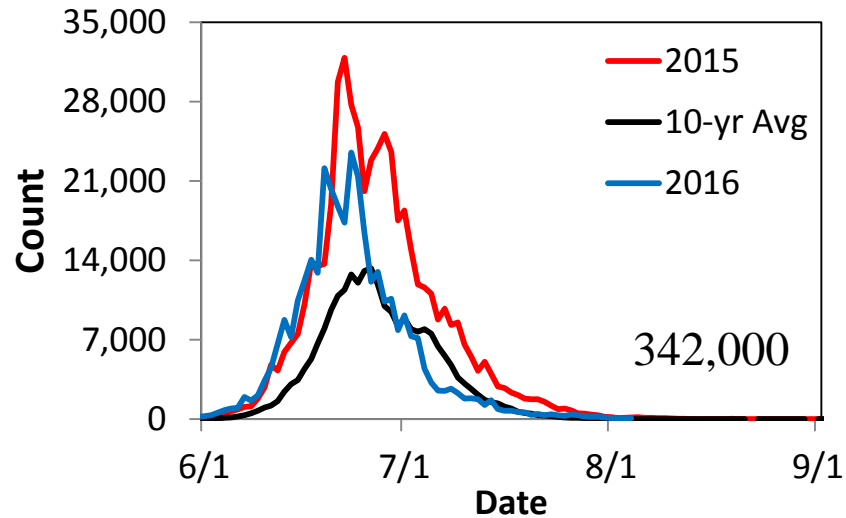
2016 Update

- ▣ Total sockeye BON return was ~500,000 in 2015 with a forecast of ~110,000 for 2016.
- ▣ Updated run size at BON is ~342,000 for 2016.
- ▣ Snake River sockeye BON return was ~4,000 in 2015 with a forecast of ~1,300 for 2016.
- ▣ Updated run size at BON is ~1,032 for 2016.

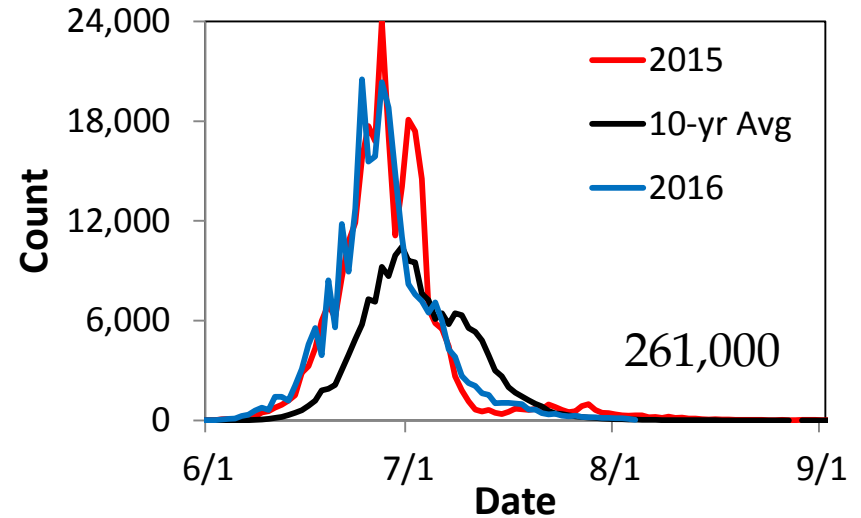


Sockeye Salmon Passage

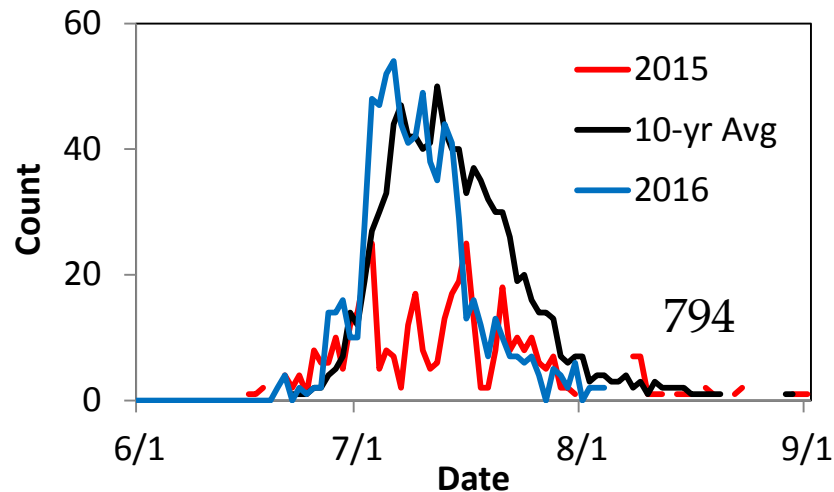
Bonneville Dam



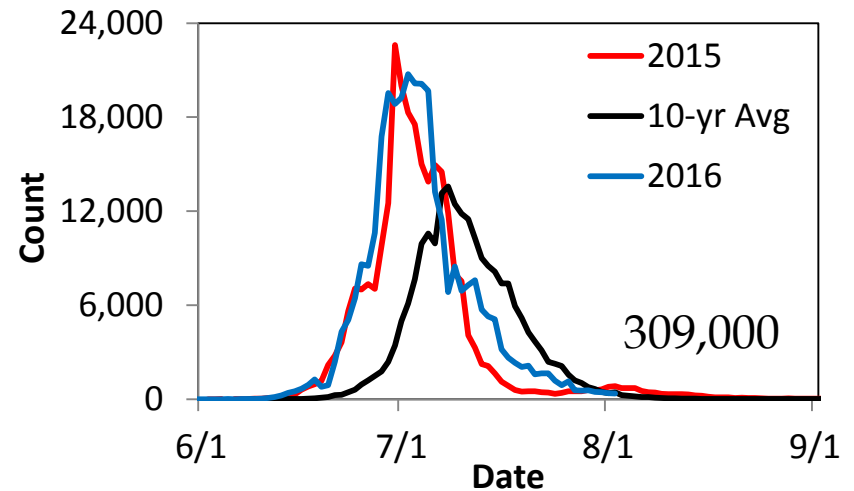
McNary Dam



Lower Granite Dam



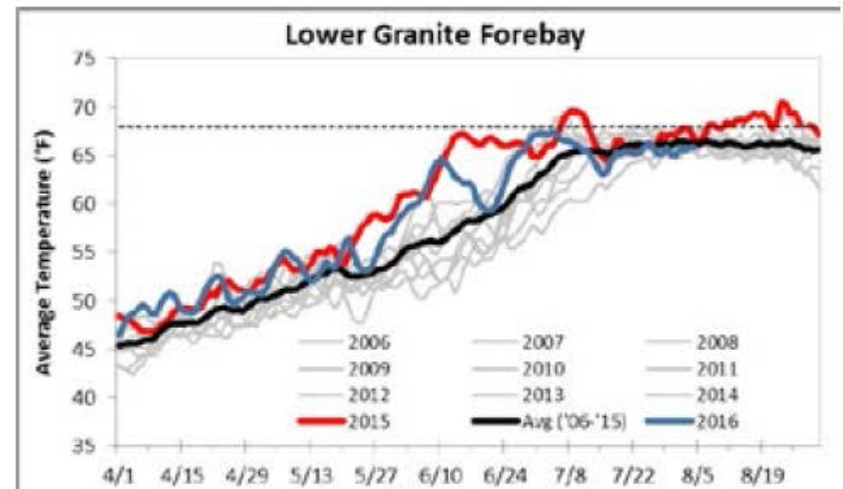
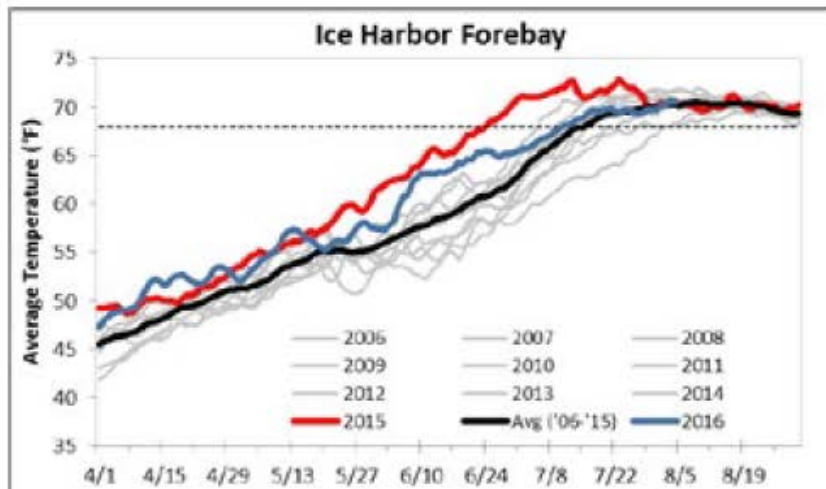
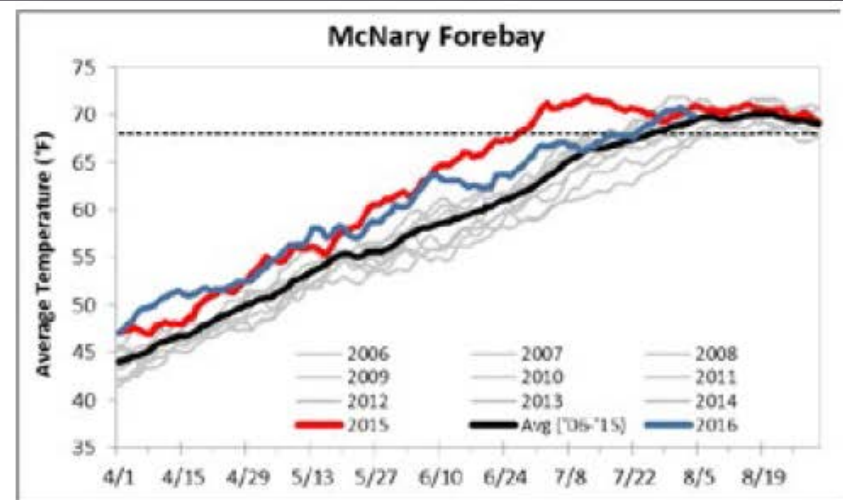
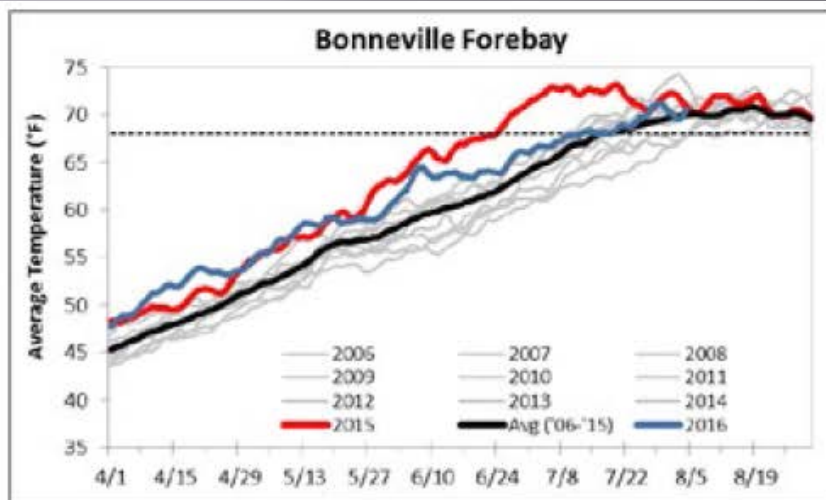
Rock Island Dam



2016 Regional Technical Teams Actions

- ▣ As water temperatures approach 68 degrees in the LGR tailrace the COE managed discharges from DWR to keep temps < 68 degrees (DWR releases began June 27, 2016).
- ▣ COE began pumping cold water from deep in dam forebays into fish ladders at LWG and LGS on June 9th and July 1st, respectively.
- ▣ No passage emergency declared for Snake River sockeye; therefore no transportation from LWG to Idaho.

2016 Water Temperatures (FPC)



Monitoring Fish Mortalities



- Anglers participating in the northern pikeminnow sport reward fishery were surveyed for observed fish mortalities from Astoria to LWG. Results from June 20 – July 31 indicated mortalities within the natural range.

Location	Angler Surveys	Sturgeon Mortalities	Salmon Mortalities
Below BON	2481	8	12
BON-MCN	1267	5	4
IHR-LWG	401	2	4

Disease Sampling



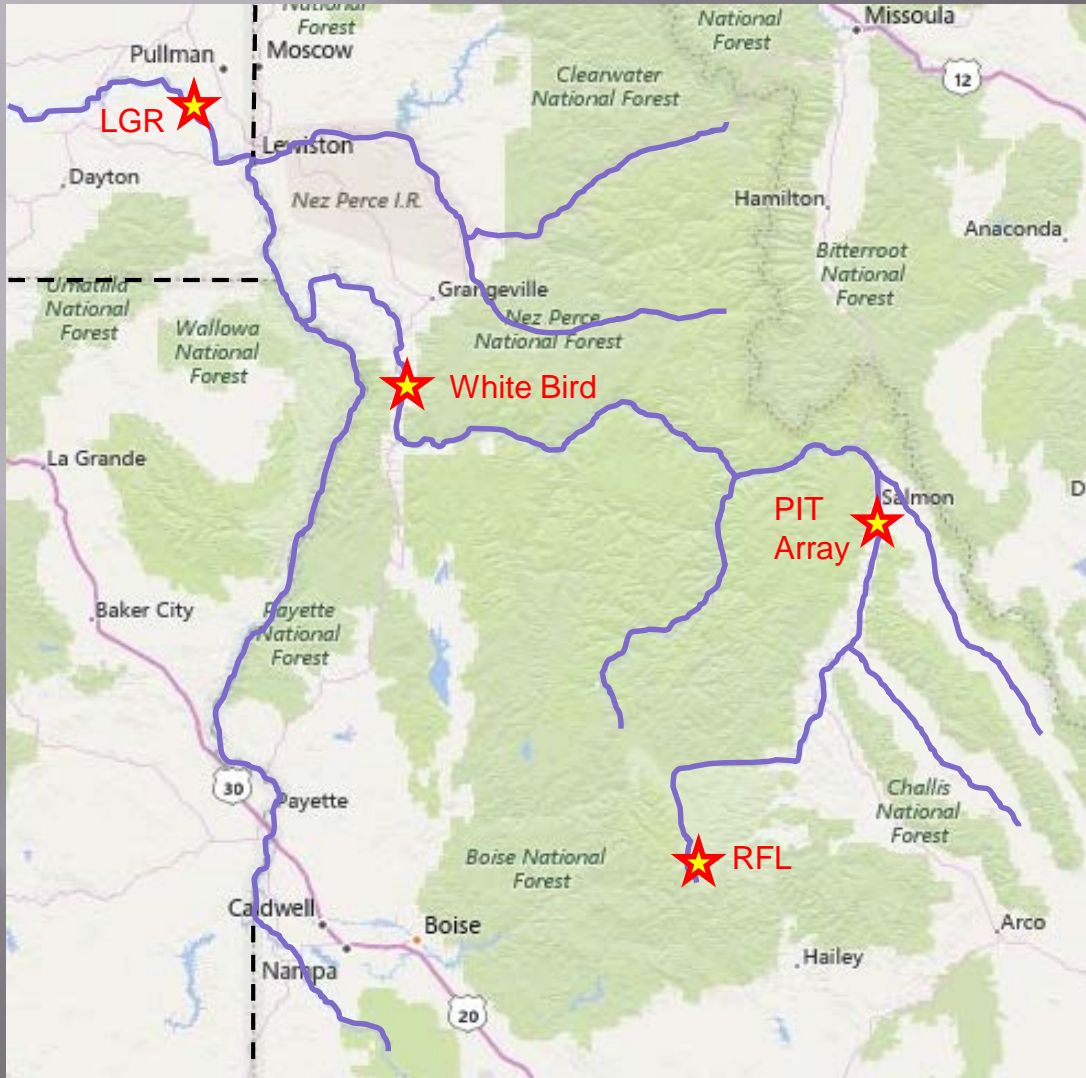
- ▣ WDFW & ODFW initiated sampling of White Sturgeon with USFWS Lower Columbia Fish Health Center for baseline disease screening
- ▣ USFWS continues disease sampling at BON.



Manager Updates

- ▣ Idaho
- ▣ Montana
- ▣ COE
- ▣ CRITFC
- ▣ Oregon
- ▣ NOAA
- ▣ Washington

Idaho Update



- LGR to RFL 460 miles
 - ~ 6,000 ft gain
 - 32d travel time
- Temp gage @ White Bird
- PIT site at Salmon

Idaho Update

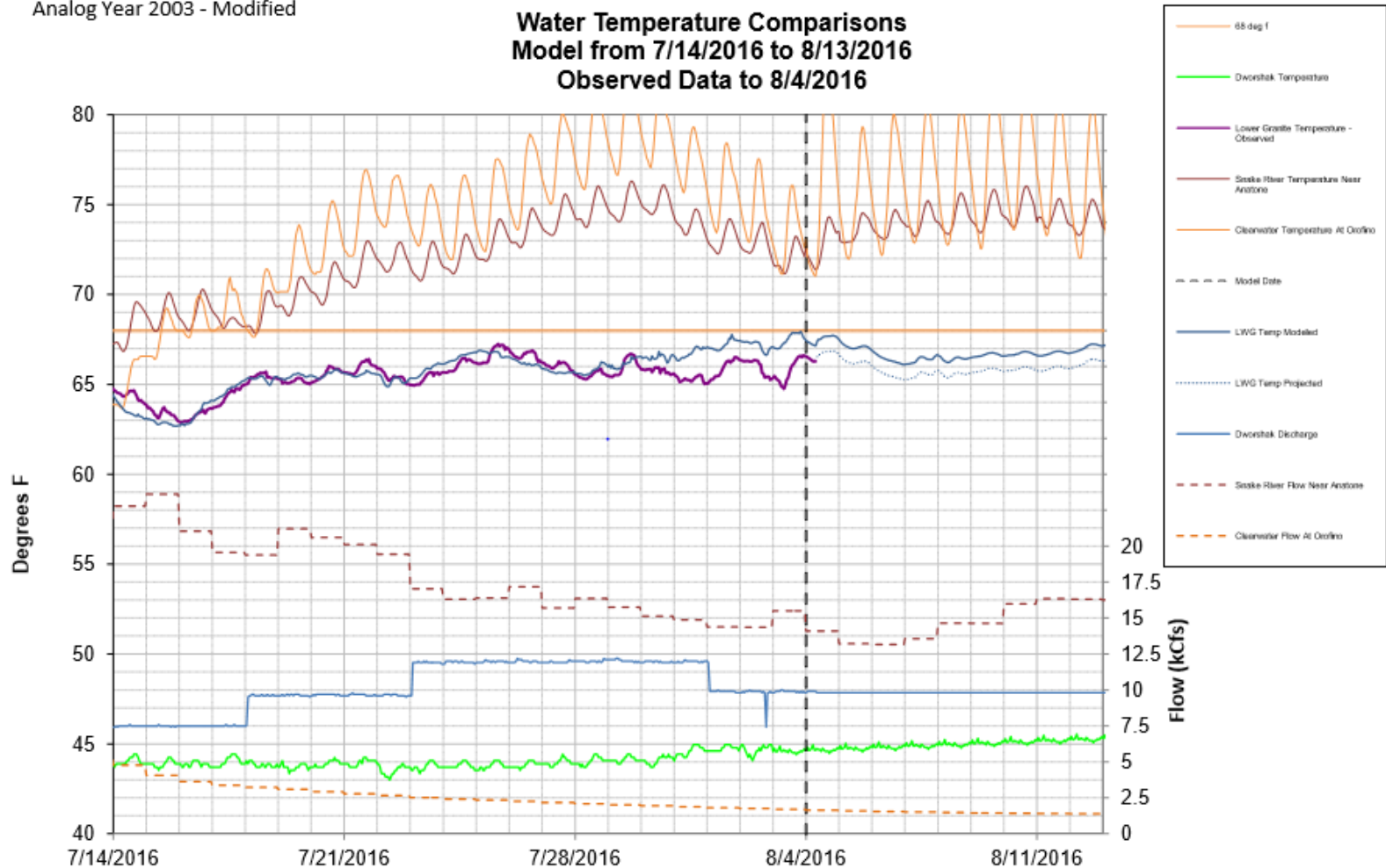
River water temperature comparison

Date Hr	Anatone	Orofino	Dworshak Tailwater	Lewiston	Lower Granite Tailwater	12-hour Average Lower Granite Tailwater
08/07 00	72.61	74.84	44.96	52.52	65.62	65.96
08/07 01	72.46	74.48	44.96	52.20	65.57	65.89
08/07 02	72.34	74.30	44.96	51.87	65.61	65.84
08/07 03	72.34	74.12	44.96	51.51	65.48	65.77
08/07 04	72.37	73.76	44.96	51.13	65.41	65.68
08/07 05	72.37	73.58	44.96	50.76	65.39	65.63
08/07 06	72.34	73.22	44.96	50.43	65.37	65.59
08/07 07	72.27	73.04	44.96	50.18	65.35	65.54
08/07 08	72.18	73.04	44.96	50.05	65.39	65.52
08/07 09	71.98	73.22	44.96	49.98	65.35	65.50
08/07 10	71.89	73.22	45.14	49.98	65.28	65.46
08/07 11	71.91	73.22	44.96	50.31	65.21	65.42
08/07 12	71.67	73.40	44.96	50.43	65.17	65.38
08/07 13	71.73	73.40	45.14	50.63	65.32	65.36
08/07 14	72.05	73.22	45.14	51.30	65.41	65.35
08/07 15	---	---	---	---	---	---

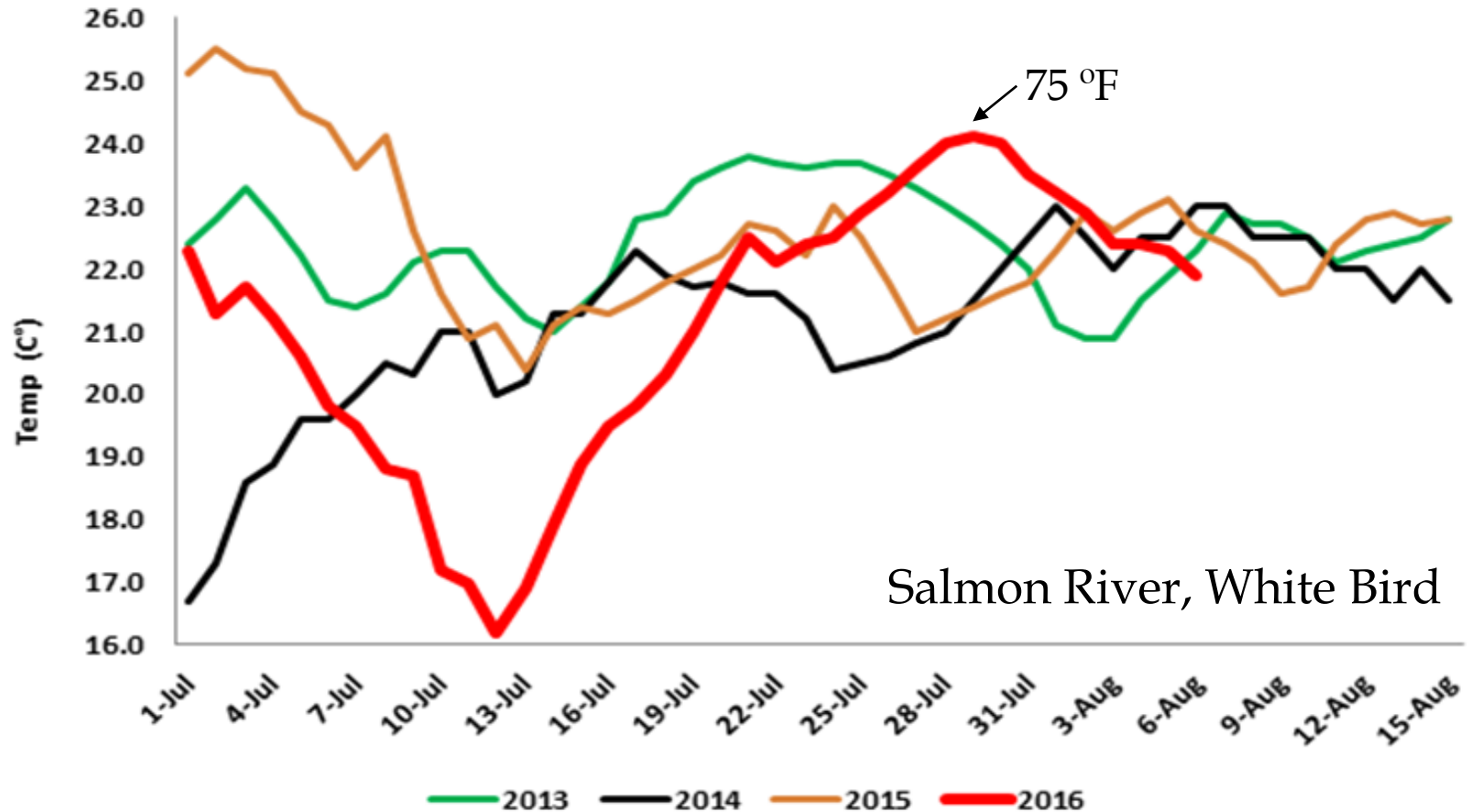
Idaho Update

Analog Year 2003 - Modified

Water Temperature Comparisons Model from 7/14/2016 to 8/13/2016 Observed Data to 8/4/2016



Idaho Update

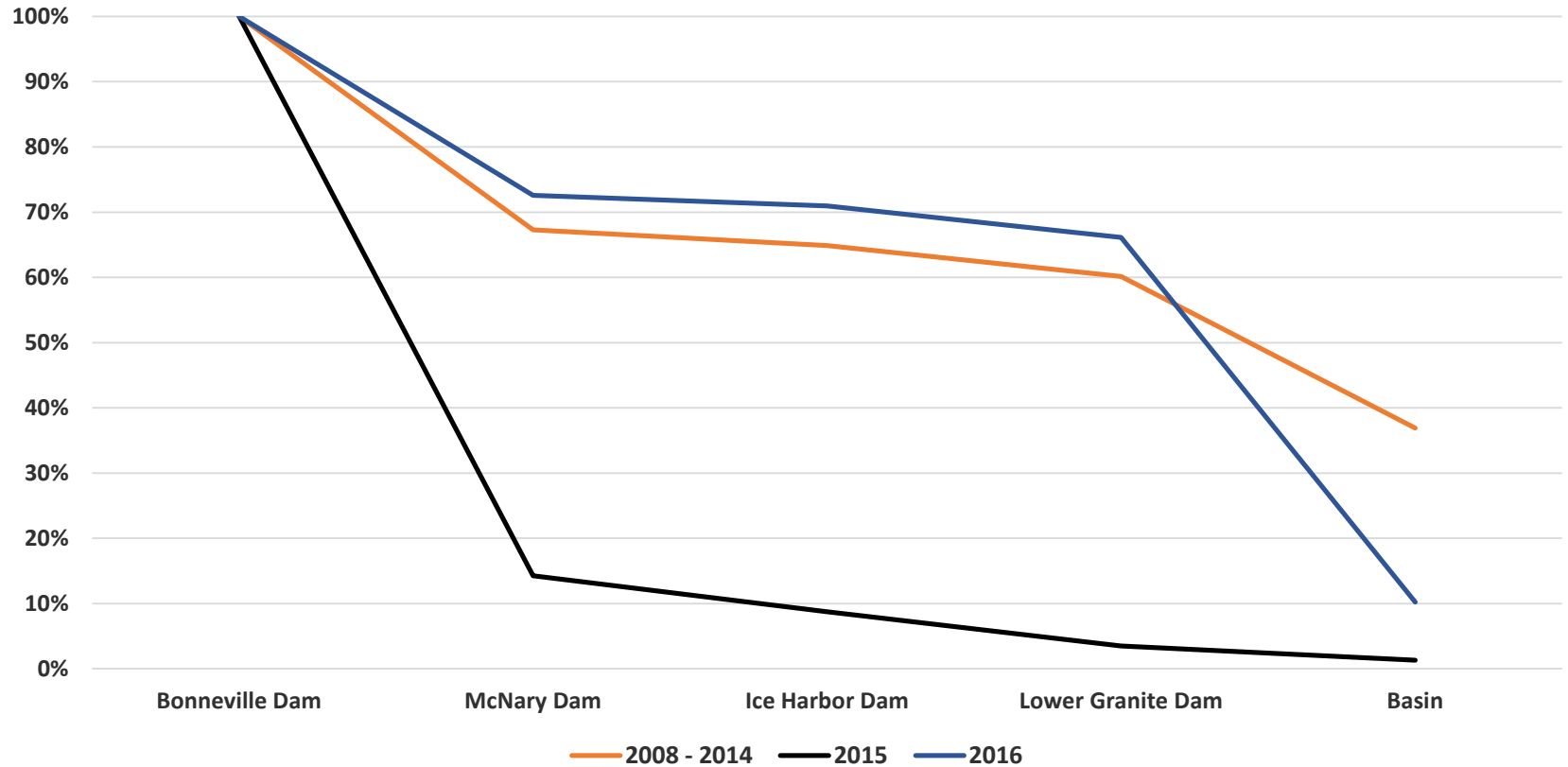


Idaho Update

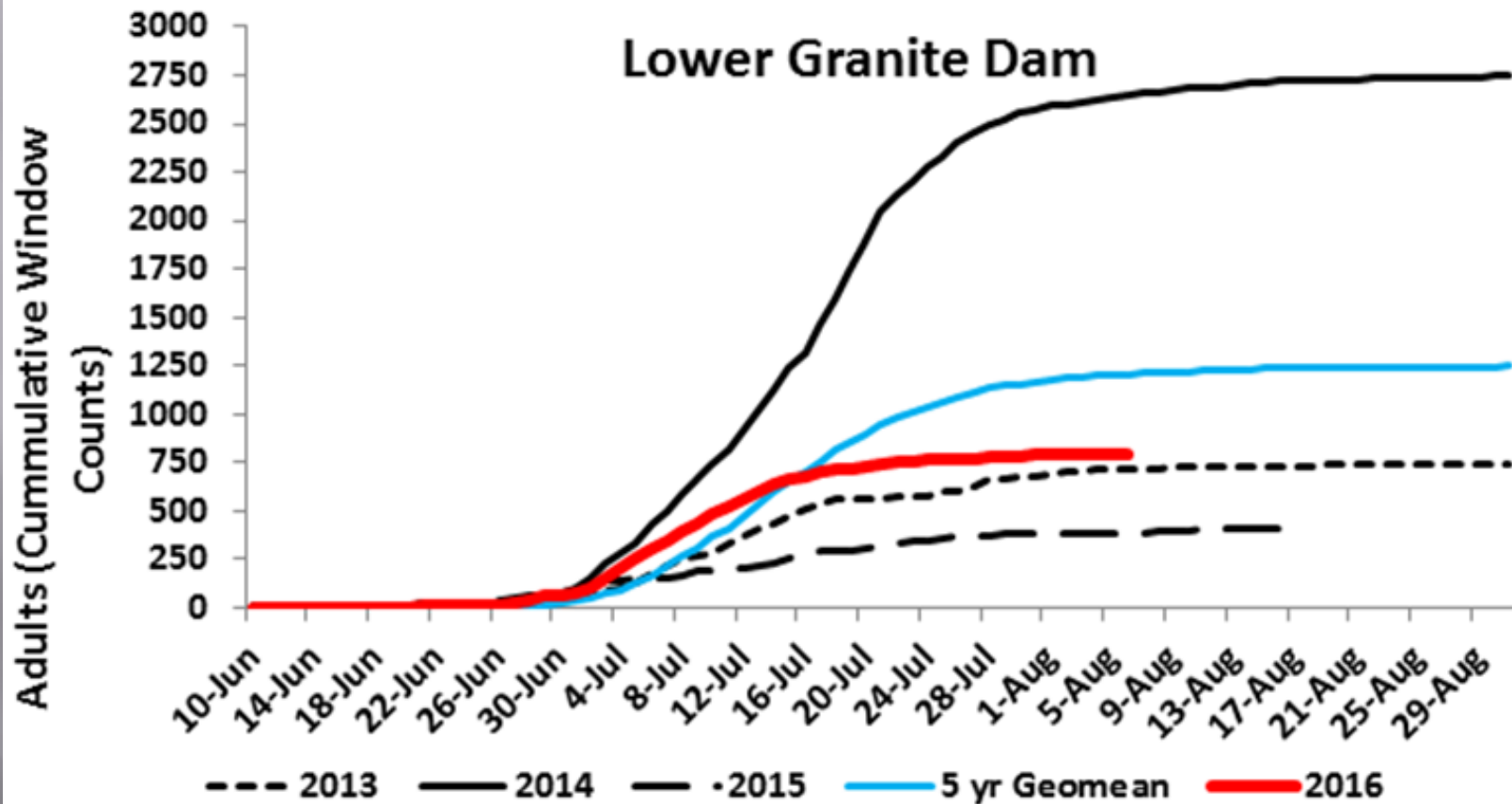
- ▣ Snake River sockeye salmon (8/7/2016)
 - 1,032 estimated to have passed Bonneville Dam
 - ▣ Based on PIT-tag expansion
 - Window count at Lower Granite = 796 (750 PIT)
 - ▣ Run at LGR 97% complete (historical timing)
 - 122 PIT-tagged sockeye interrogated at LGR
 - 76 PIT-tagged sockeye interrogated at Salmon River PIT tag array (62% conversion to this point so far).
 - ▣ Array is 366 mi from LGR or about 80% to RFL

Idaho Update

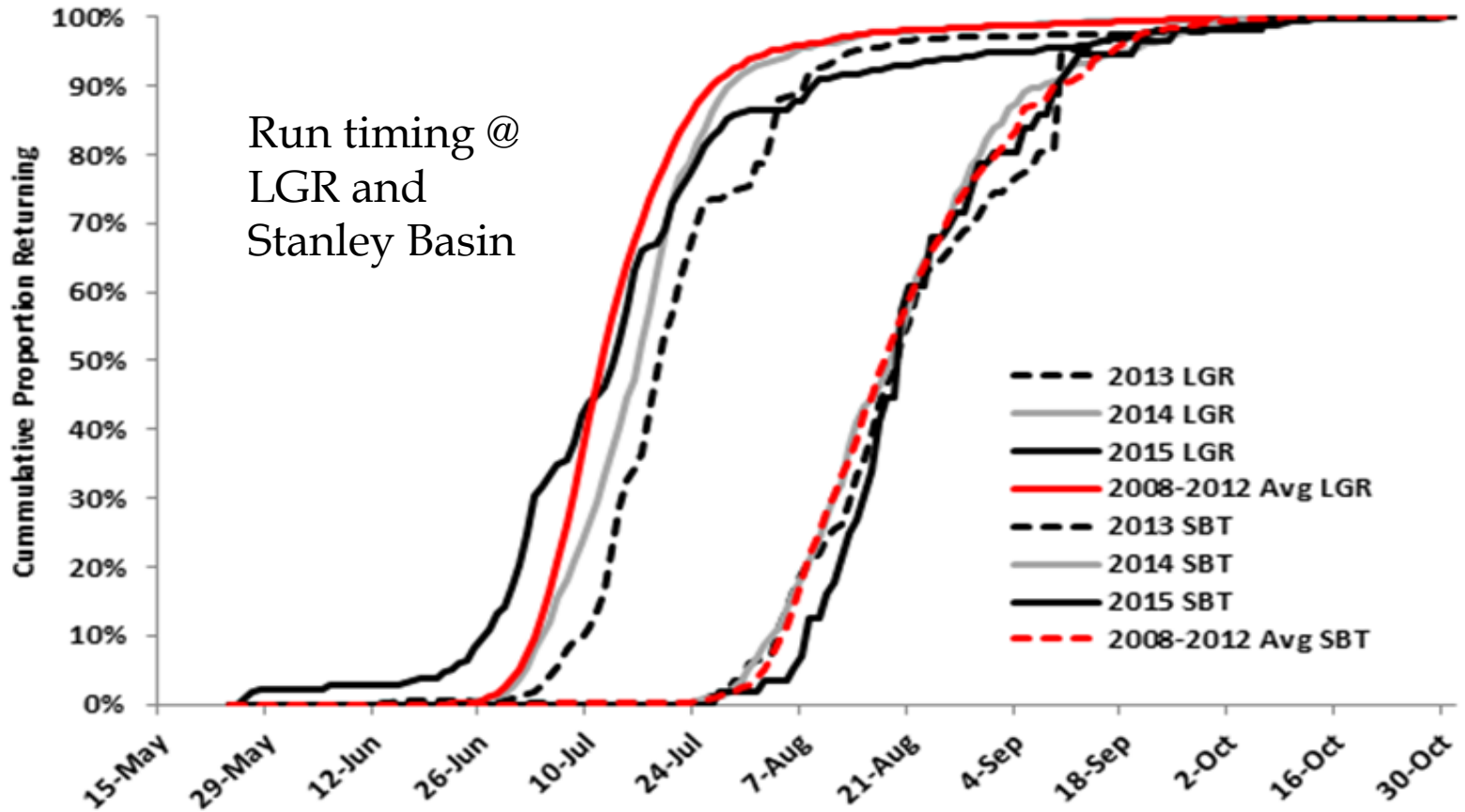
Snake River Sockeye Survival (Bonneville to Sawtooth Basin)



Idaho Update



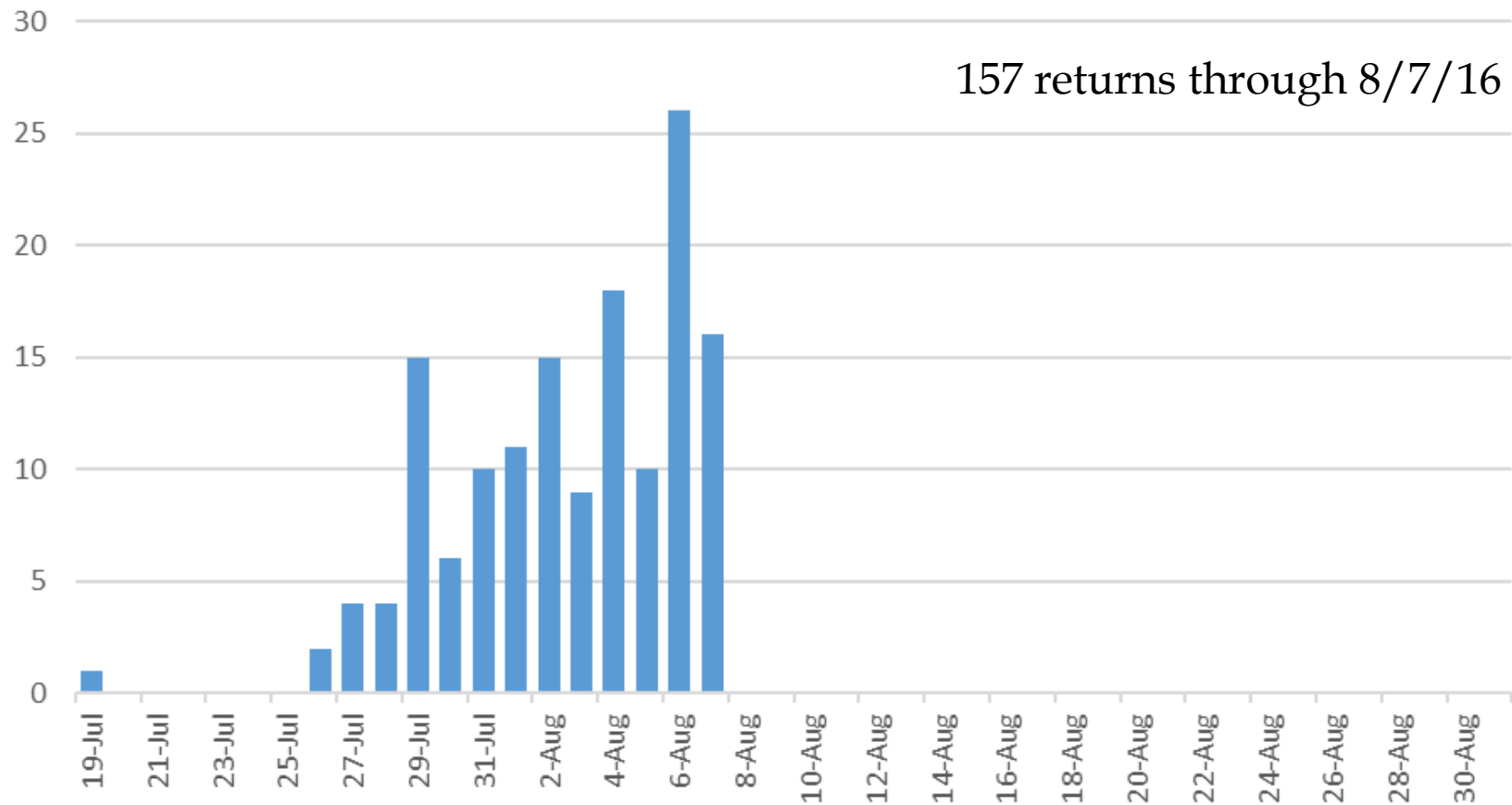
Idaho Update



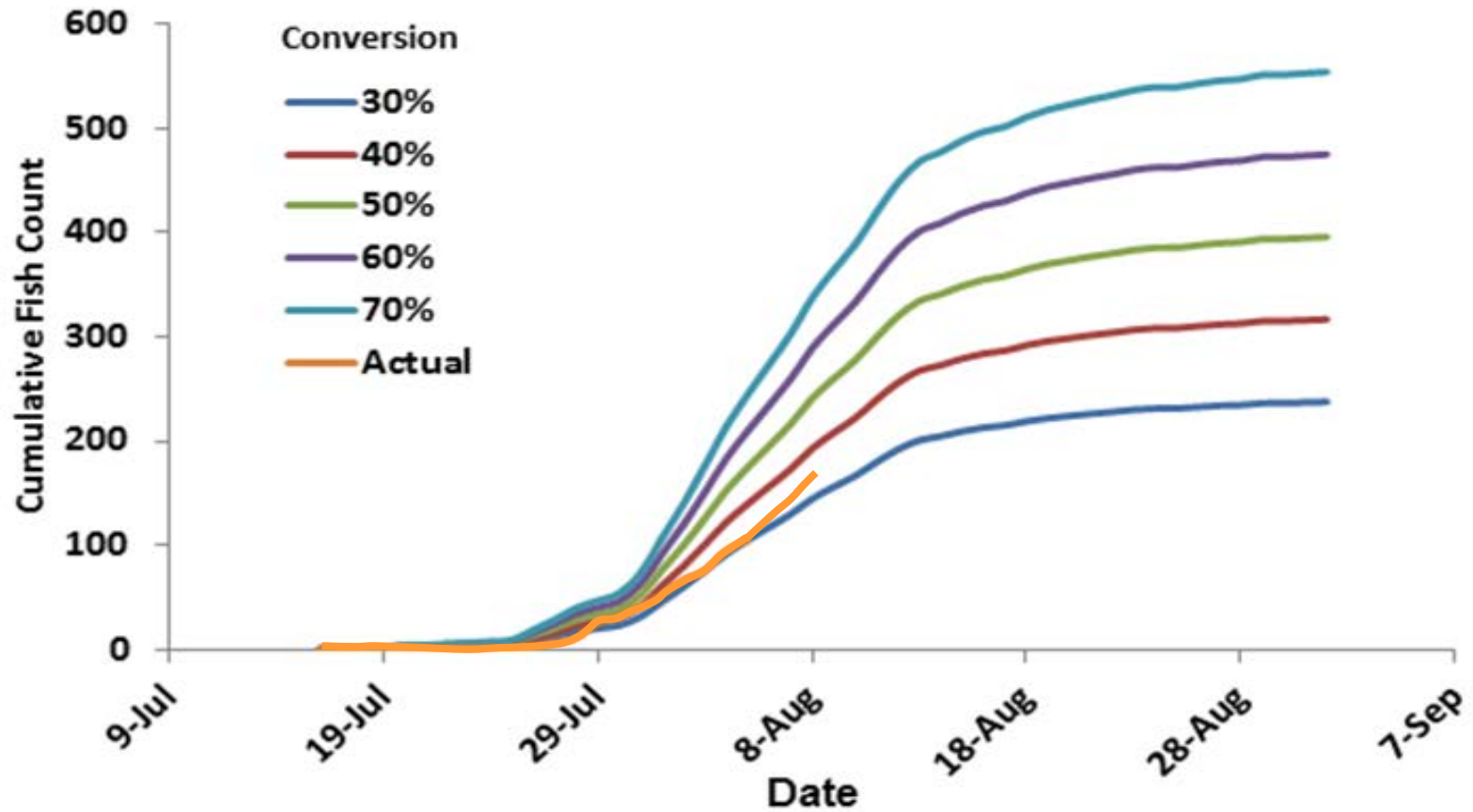
Idaho Update

Adult Sockeye Salmon Returns - 2016

157 returns through 8/7/16



Idaho Update

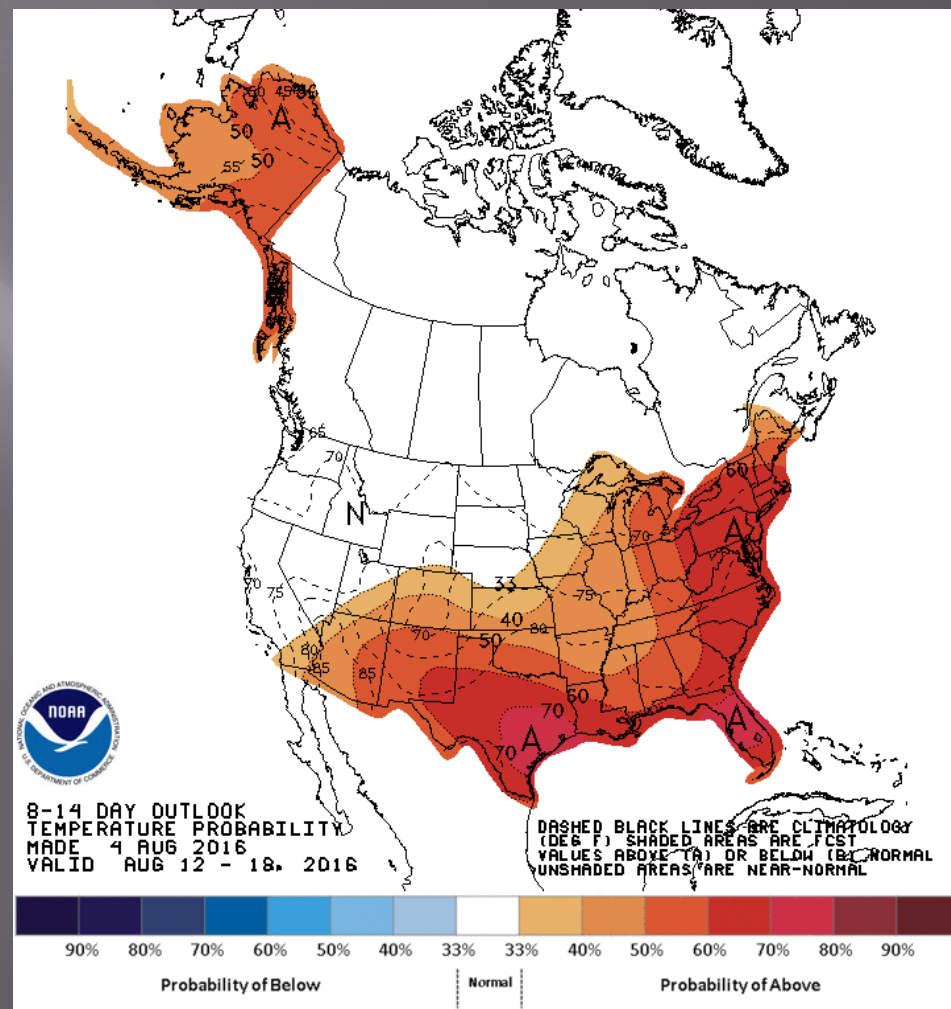
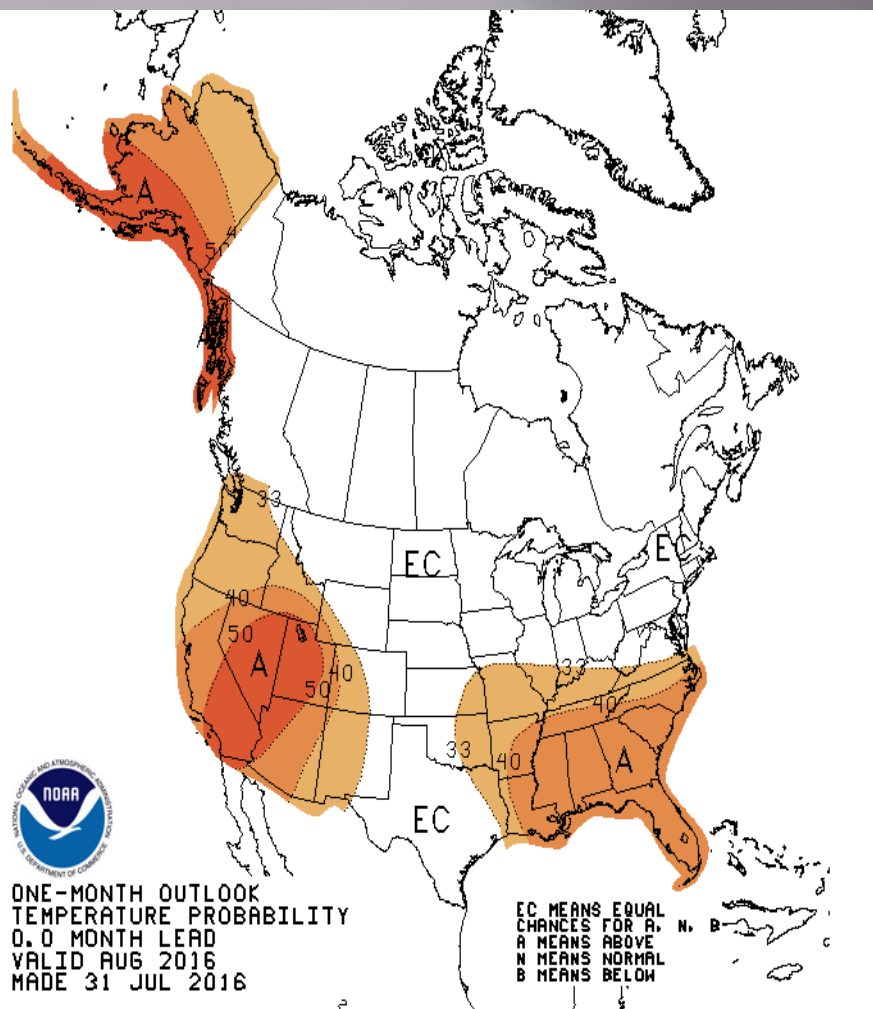




Manager Updates

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- ▣ Washington

2016 August Air Temperature Forecasts





Summary

- ▣ 2016 water temperature less extreme compared to 2015. Sockeye salmon and other fishes are experiencing more normal survivals and conversion rates between dams.
- ▣ Continued local coordination within states.
 - ▣ Still possibility of limited fishery closures
- ▣ Continued coordination by regional technical teams (FPAC, FPOM, TMT) but air temperatures predicted to be near to slightly above normal.
- ▣ Continued monitoring of sockeye through September to ensure they reach their spawning destination in Sawtooth Valley Wenatchee, and Okanogan lakes.

