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July 6, 2016

MEMORANDUM

TO: Fish and Wildlife Committee

FROM: Lynn Palensky

SUBJECT: Briefing on real time summer conditions and operations/actions 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 (some in person and others by phone)

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 release, 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 the mainstem but will include some of the larger spawning tributaries as well.

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.

- Fish Health Early Warning System [conference call agenda](#)
- Klamath Fish Health Assessment Team: <http://www.kbmp.net/collaboration/kfhat>

After the May 26th call:

- 1) The fish and wildlife committee heard a report in June, on real-time temperatures and status of preparedness for triggering emergency actions or operational changes to prevent or minimize fish mortalities due to water temperatures.
- 2) Based on data and discussions among managers and river operators, actions have been taken to maintain or reduce water temperatures at critical times and locations to facilitate fish passage.
- 3) Additional follow-up briefings are scheduled for August and September Council meetings.

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



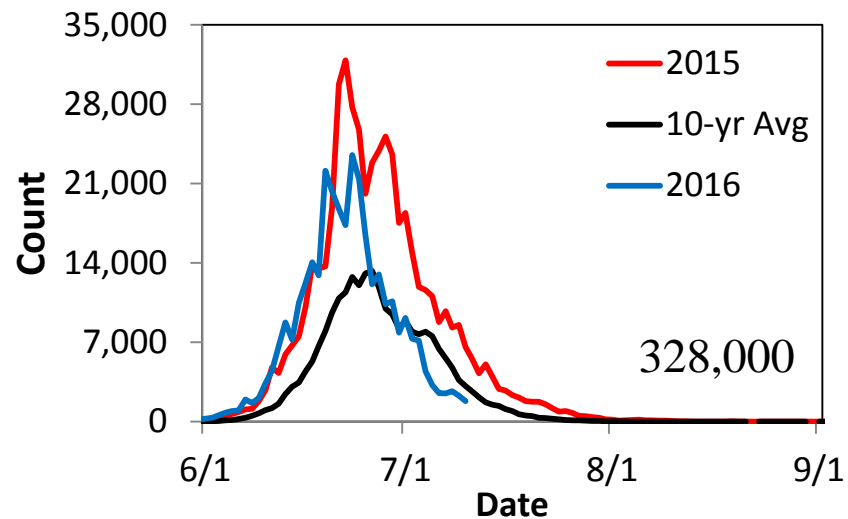


2016 Update

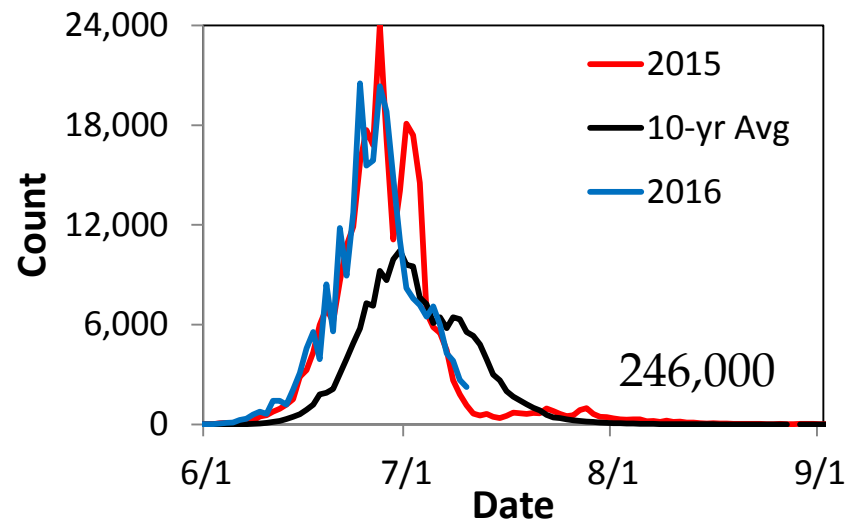
- ▣ Total sockeye BON return was ~500,000 in 2015 with a forecast of ~110,000 for 2016.
- ▣ Updated run size at BON is ~350,000 for 2016.
- ▣ Snake River sockeye BON return was ~4,000 in 2015 with a forecast of ~1,300 for 2016.
- ▣ Updated run size at BON is ~1,015 for 2016.

Sockeye Salmon Passage

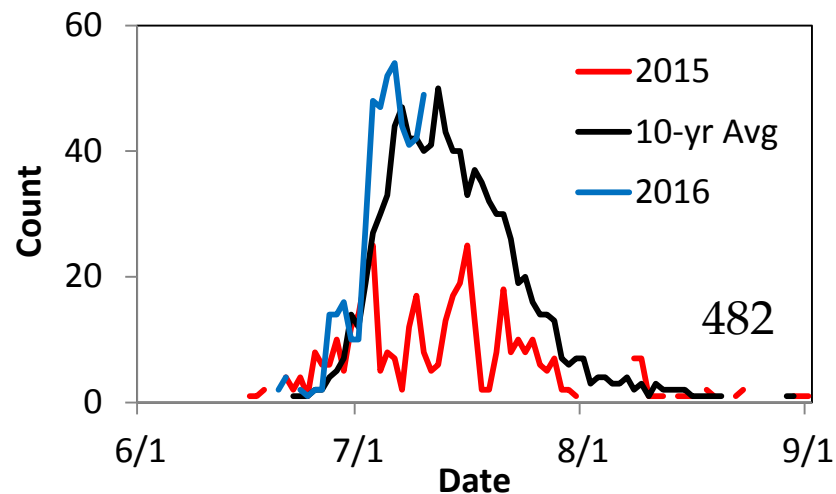
Bonneville Dam



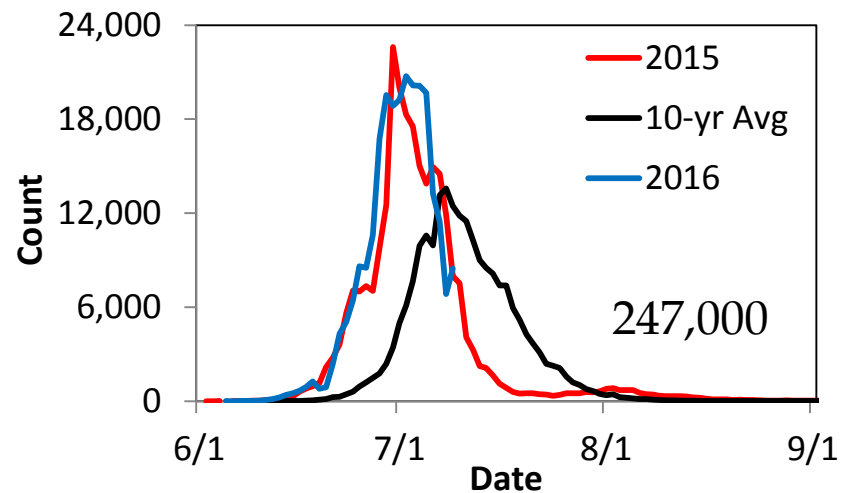
McNary Dam



Lower Granite Dam



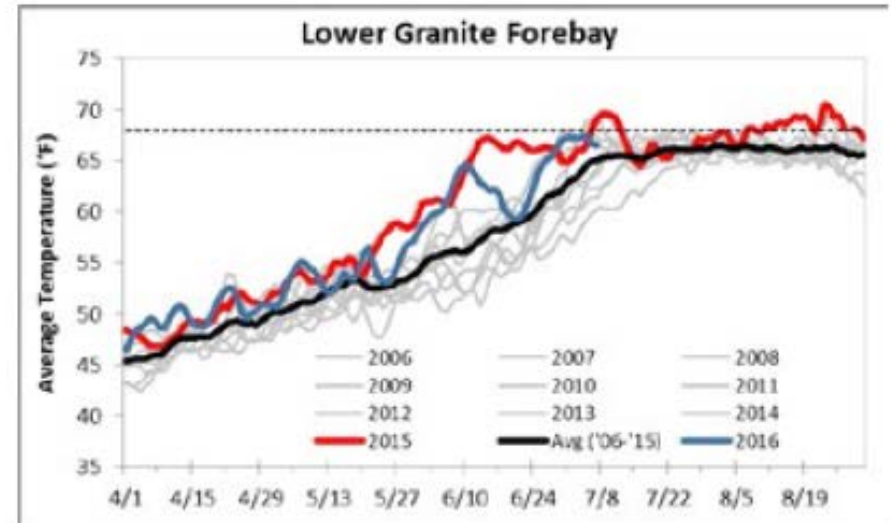
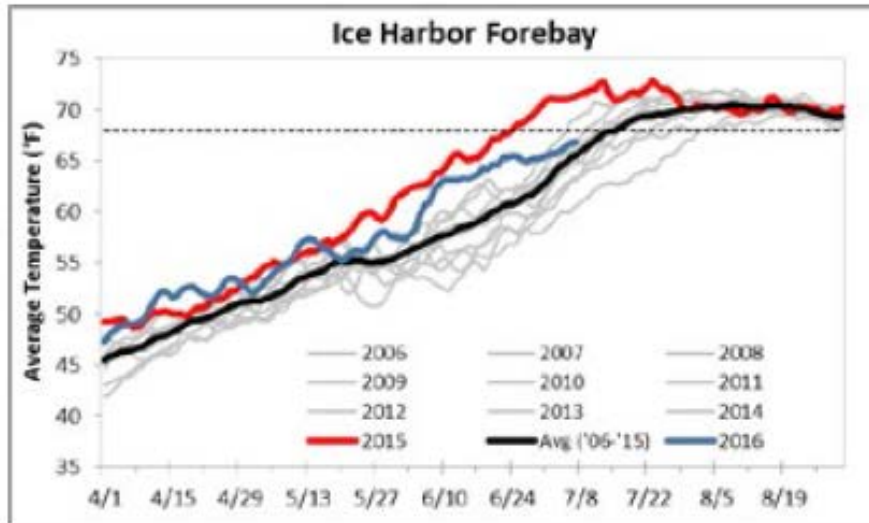
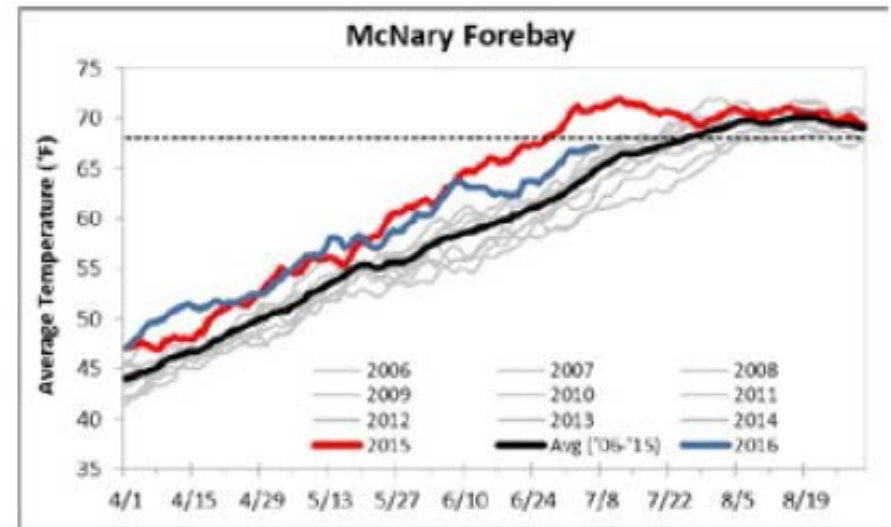
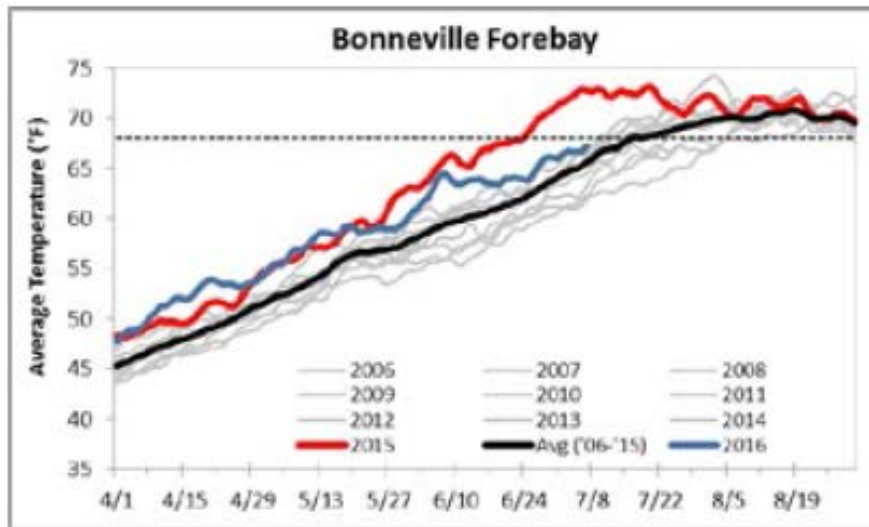
Rock Island Dam



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 3 indicated few observed mortalities.

Location	Angler Surveys	Sturgeon Mortalities	Salmon Mortalities
Below BON	774	2	7
BON-MCN	464	1	5
IHR-LWG	215	1	3

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

- ▣ Snake River sockeye salmon (July 9, 2016)
 - 1,015 estimated to have passed Bonneville Dam
 - ▣ Over past 5-yrs, 78%-92% passed Bon by now

Year	Est. No. SR Sockeye Passing Bonneville by 9 July	Est. Yearly Total SR Sockeye Passing Bonneville	Est. % SR Sockeye Passing Bonneville by 9 July
2011	1,216	1,331	91%
2012	501	575	87%
2013	989	1,076	92%
2014	2,405	2,773	87%
2015	3,186	4,093	78%

- Ice Harbor window Counts = 732
- Lower Granite window counts = 433

Idaho Update

- ▣ Reach survival estimates for Snake River sockeye salmon – based on PIT tags

	2008-2014 Average	2015 (7 July)	2016 Estimate (9 July)
Bonneville – The Dalles	84%	78%	87% (85% last week)
Dalles - McNary	79%	36%	77% (69% last week)
McNary – Ice Harbor	97%	76%	93% (85% last week)
Ice Harbor-Lower Granite	91%	32%	67% (56% last week)

- ▣ Travel times good:
 - BON to TDA: 1.5d, 2008-2014 avg. = 1.8d
 - TDA to MCN: 3.4d, 2008-2014 avg. = 3.7d
 - BON to LGR: 11.0d, 2008-2014 avg. = 12.2d

Idaho Update

- ▣ Water Temperatures as of July 9, 2016
 - Bonneville forebay: 67.8°F vs. 73.0°F last year
 - Lower Granite tail water: 66.2°F vs. 69.6°F last year
 - Salmon R. at Whitebird: 66.0°F vs. 72.7°F last year

Idaho Update



US Army Corps
of Engineers®

Lower Granite Fish Ladder Temperature String

Daily Average Temperatures

Date	Tailwater Observation Deck	Entrance	Fish Trap	Turn Pool	Diffuser	Exit Pool	Forebay South of Exit Pool	Forebay North of Exit Pool
01-Jul	67.08	---	66.98	67.32	67.76	67.67	67.92	67.75
02-Jul	67.32	---	67.18	67.54	68.02	67.94	68.21	68.05
03-Jul	67.18	---	67.02	67.34	67.76	67.67	67.96	67.78
04-Jul	67.18	---	67.02	67.27	67.68	67.61	67.83	67.63
05-Jul	67.22	---	67.13	67.25	67.44	67.36	67.56	67.39
06-Jul	66.66	66.54	66.64	66.81	67.04	66.94	67.07	67.00
07-Jul	66.72	66.69	66.55	66.89	67.37	67.29	67.59	67.36
08-Jul	66.49	66.45	66.29	66.72	67.32	67.24	67.70	67.31
09-Jul	66.58	66.55	66.12	66.79	67.67	67.57	68.01	67.45
10-Jul	---	---	---	---	---	---	---	---

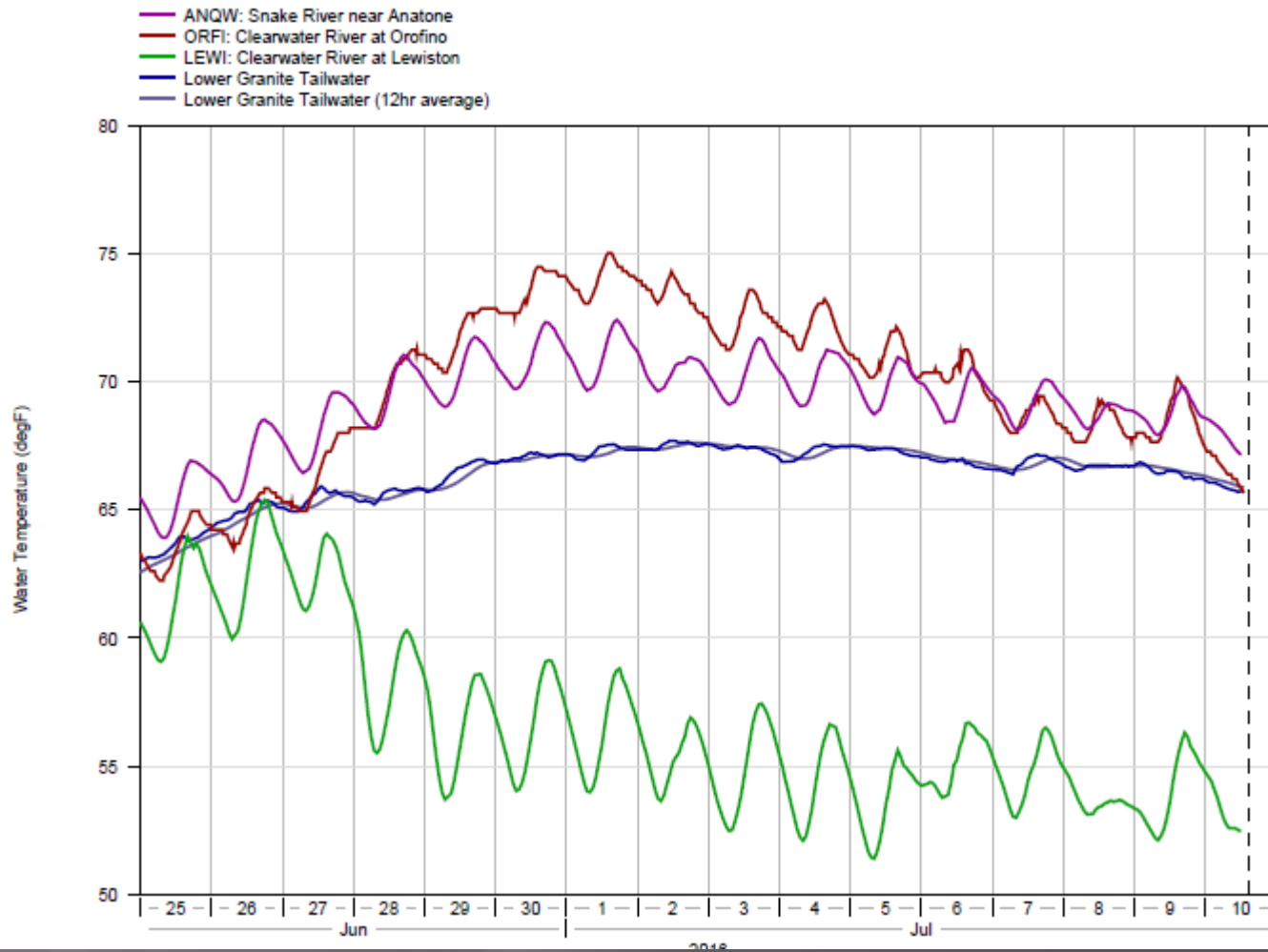
Idaho Update

- Impact of Dworshak Reservoir releases

Date Hr	Anatone	Orofino	Dworshak Tailwater	Lewiston	Lower Granite Tailwater	12-hour Average Lower Granite Tailwater
07/09 15	69.60	70.16	44.06	55.54	66.47	66.51
07/09 16	69.84	69.98	43.88	55.98	66.45	66.49
07/09 17	69.78	69.80	43.88	56.30	66.24	66.45
07/09 18	69.55	69.62	43.70	56.14	66.24	66.43
07/09 19	69.31	69.08	43.70	55.76	66.27	66.42
07/09 20	69.12	68.72	43.70	55.58	66.18	66.40
07/09 21	68.88	68.36	43.70	55.36	66.22	66.38
07/09 22	68.70	68.00	43.52	55.11	66.24	66.36
07/09 23	68.61	67.64	43.52	54.95	66.22	66.34

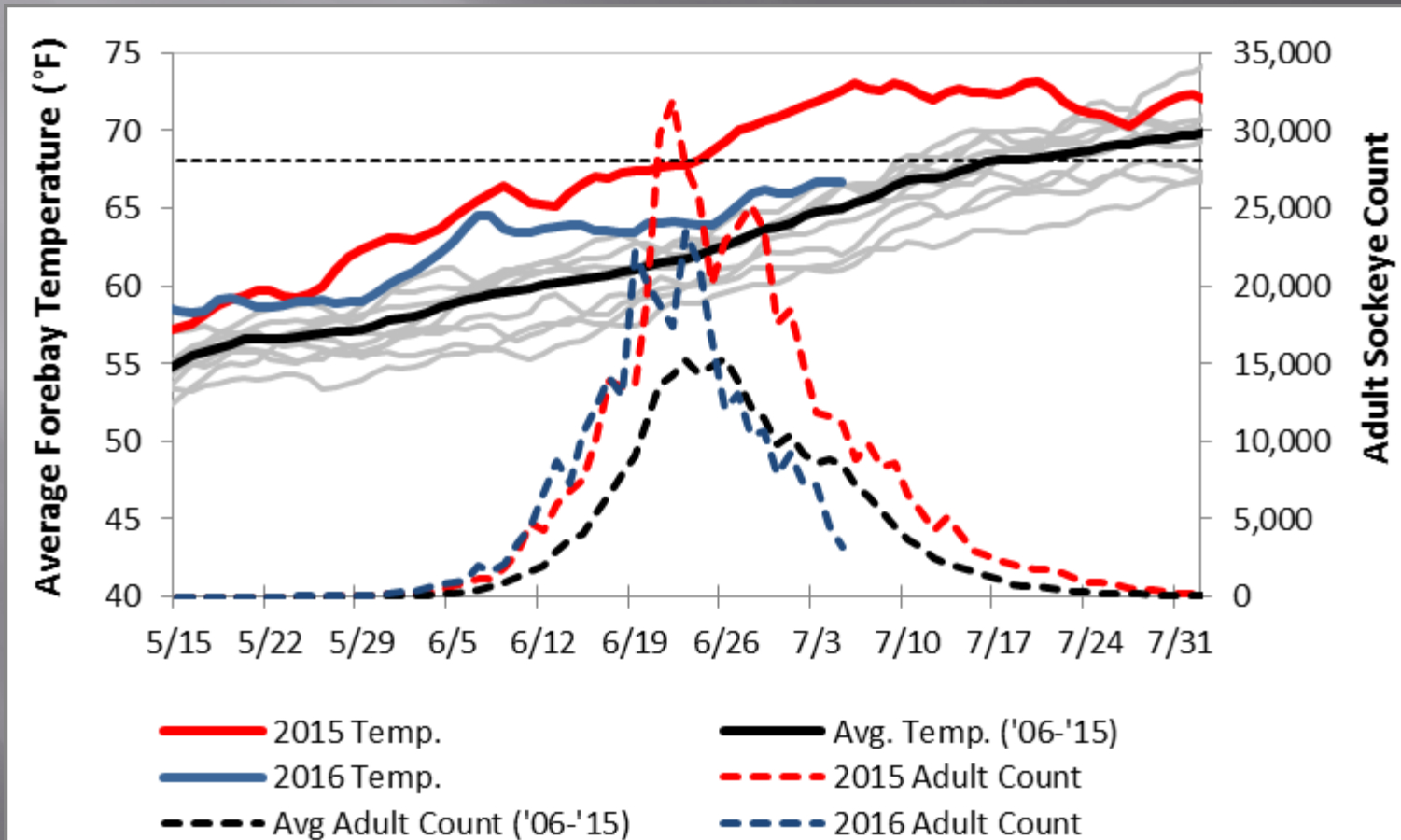
Idaho Update

Snake and Clearwater Rivers Water Temperatures - 15 days



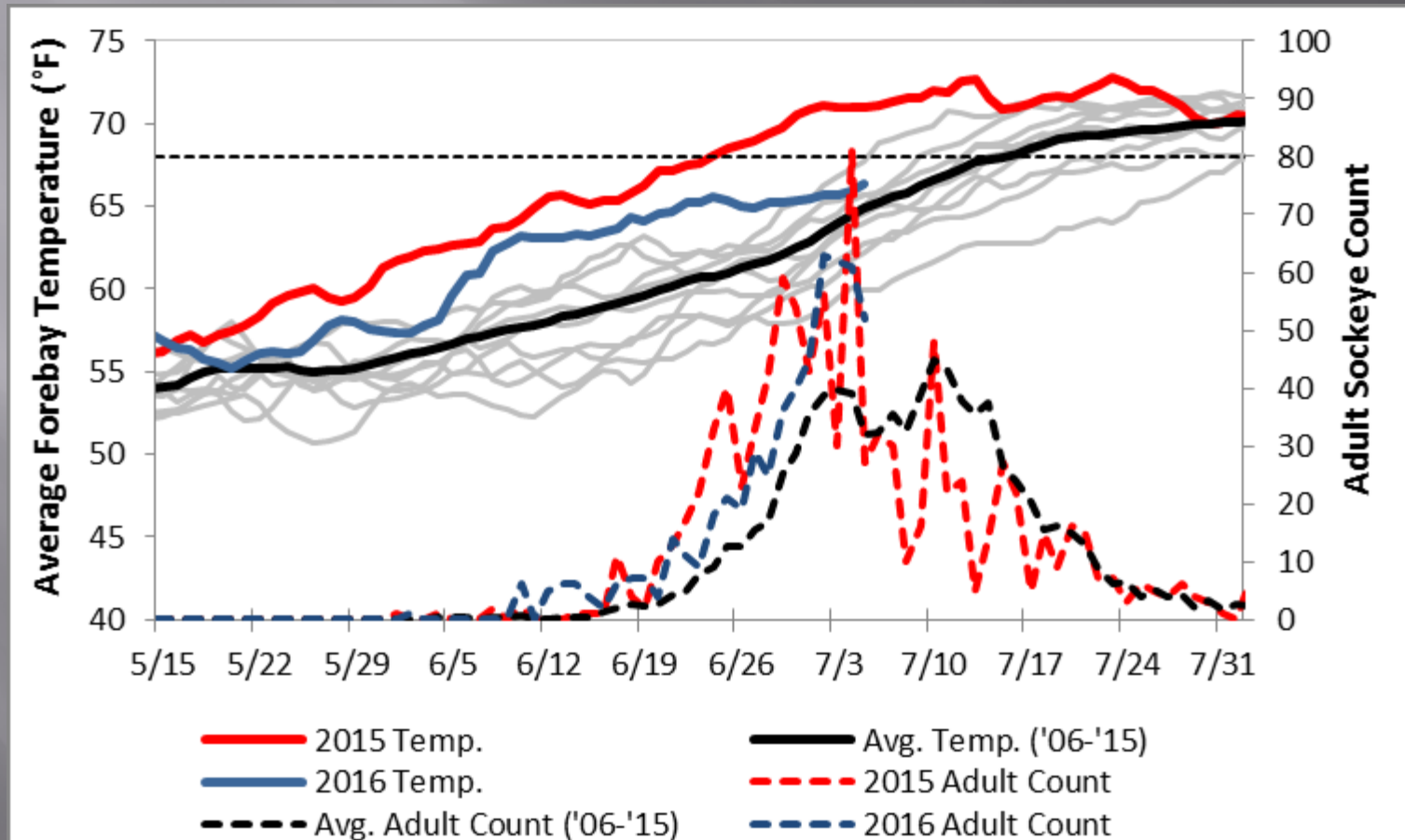
Idaho Update

- Bonneville Dam sockeye passage and temps.



Idaho Update

- Ice Harbor Dam sockeye passage and temps.

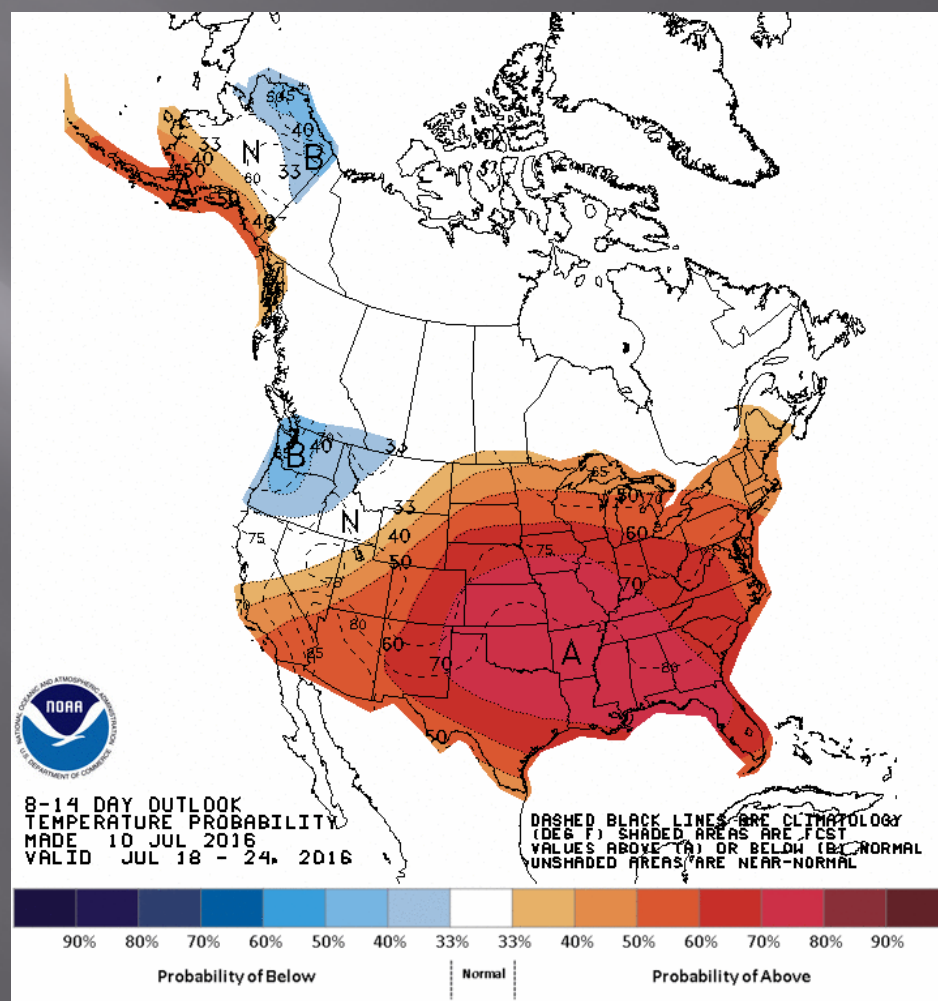
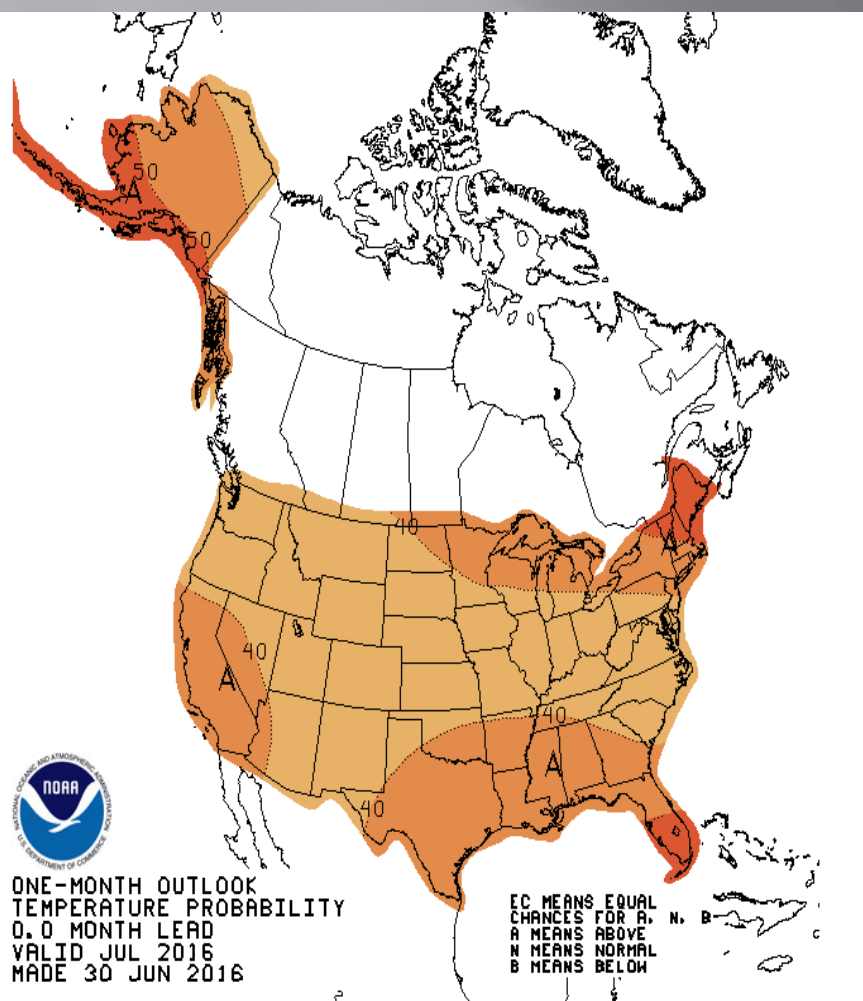




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2016 July Air Temperature Forecasts



Summary

- ▣ 2016 water temperature less extreme compared to 2015. Sockeye salmon and other fishes are experiencing more normal survivals.
- ▣ Continued local coordination within states.
 - ▣ Still possibility of limited fishery closures
- ▣ Continued coordination by regional technical teams (FPAC, FPOM, TMT).
- ▣ We are still monitoring sockeye to ensure they reach their spawning destination in Sawtooth Valley, Wenatchee Lake, and Okanogan Lake.

