2018/2019 Sockeye Fishery Planning

Sockeye Salmon Key Management Issues
for 2018

FN Forum Meeting
February 27, 2018

Outline

1. 2018 Management Issues
    - Fraser Sockeye Forecasts
    - Environmental conditions – marine and freshwater
    - Run timing considerations within sockeye returns
    - Run timing considerations - other species
2. Regional Issues
    - Use of Fish Arrangements / Test Fisheries
    - Chapter 4 renegotiation?
    - Additional Terminal Harvest

2018 Fraser Sockeye Forecast Summary

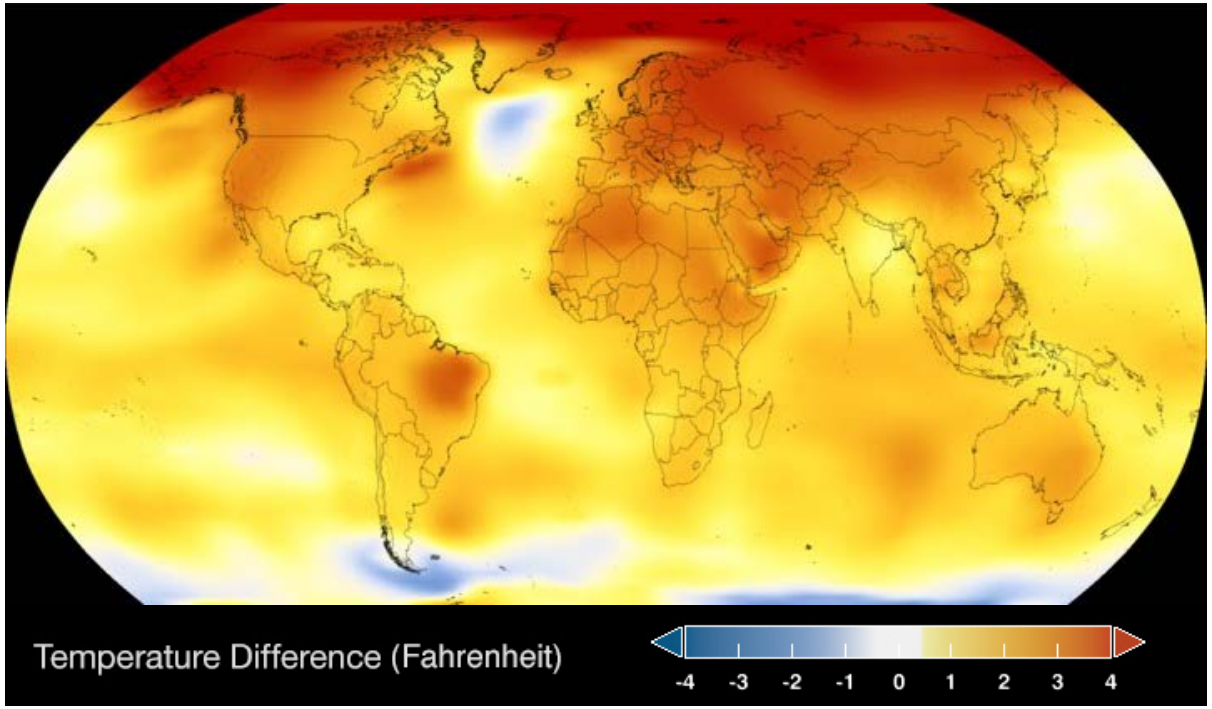
Run timing group	Probability that Return will be at/or Below Specified Run Size				
Stocks	**10%**	**25%**	**50%**	**75%**	**90%**
Early Stuart	**37,000**	**54,000**	**84,000**	**133,000**	**199,000**
Early Summer	**584,000**	**1,102,000**	**2,155,000**	**3,765,000**	**6,587,000**
Summer	**1,470,000**	**2,473,000**	**4,344,000**	**7,669,000**	**13,173,000**
Late	**3,174,000**	**4,794,000**	**7,398,000**	**11,370,000**	**16,943,000**
TOTAL SOCKEYE	**5,265,000**	**8,423,000**	**13,981,000**	**22,937,000**	**36,893,000**

Fraser River Sockeye – recent trends

- Total returns of Fraser sockeye have generally been near the forecast median (p50) or lower over the last 13 years with few exceptions (e.g. 2010). Total returns since 2015 have been near the p10 level.

Return Year	Forecast Probability Level						Actual Returns
	<10%	10%	25%	50%	75%	90%	
1998	NA	4,391,000	6,040,000	6,822,000	11,218,000 G	18,801,000	**10,870,000**
1999	NA	3,067,000 R	4,267,000	4,843,000	8,248,000	14,587,000	**3,640,000**
2000	NA	1,487,000	2,449,000	4,304,000 Y	7,752,000	NA	**5,200,000**
2001	NA	3,869,000	6,797,000 O	12,864,000	24,660,000	NA	**7,190,000**
2002	NA	4,859,000	7,694,400	12,915,900 Y	22,308,500	NA	**15,130,000**
2003	NA	1,908,000	2,742,000	3,141,000 Y	5,502,000 G	9,744,000	**4,890,000**
2004	NA	1,858,000	2,615,000	2,980,000 Y	5,139,000 G	9,107,000	**4,180,000**
2005	NA	5,149,000 O	8,734,000 O	16,160,000	30,085,000	53,191,000	**7,020,000**
2006	NA	5,683,000	9,530,000 O	17,357,000	31,902,000	56,546,000	**12,980,000**
2007	NA R	2,242,500	3,602,000	6,247,000	11,257,000	19,706,000	**1,510,000**
2008	NA	1,258,000 O	1,854,000 O	2,899,000	4,480,000	7,057,000	**1,740,000**
2009	NA R	3,556,000	6,039,000	10,578,000	19,451,000	37,617,000	**1,590,000**
2010	NA	5,360,000	8,351,000	13,989,000	23,541,000 G	40,924,000	**28,250,000**
2011	NA	1,700,000	2,693,000	4,627,000 Y	9,074,000	15,086,000	**5,110,000**
2012	NA	743,000	1,203,000	2,119,000 Y	3,763,000	6,634,000	**2,050,000**
2013	NA	1,554,000	2,655,000	4,765,000 Y	8,595,000	15,608,000	**4,130,000**
2014	NA	7,237,000	12,788,000	22,854,000 Y	41,121,000	72,014,000	**20,000,000**
2015	NA	2,364,000 R	3,824,000	6,778,000	12,635,000	23,580,000	**2,120,000**
2016	NA	814,000 R	1,296,000	2,271,000	4,227,000	8,181,000	**853,000**
2017	NA	1,315,000 R	2,338,000	4,432,000	8,873,000	17,633,000	1,500,000*

Environmental Considerations



Data source: NASA/GISS Credit: NASA Scientific Visualization Studio

- Warm Blob in NE Pacific occurred from 2013 to present
- Warm Lake Rearing and Very Early Freshet 2014-2015
- Warm Northeast Pacific from 2015 to 2017
- Strait of Georgia WARM in 2015

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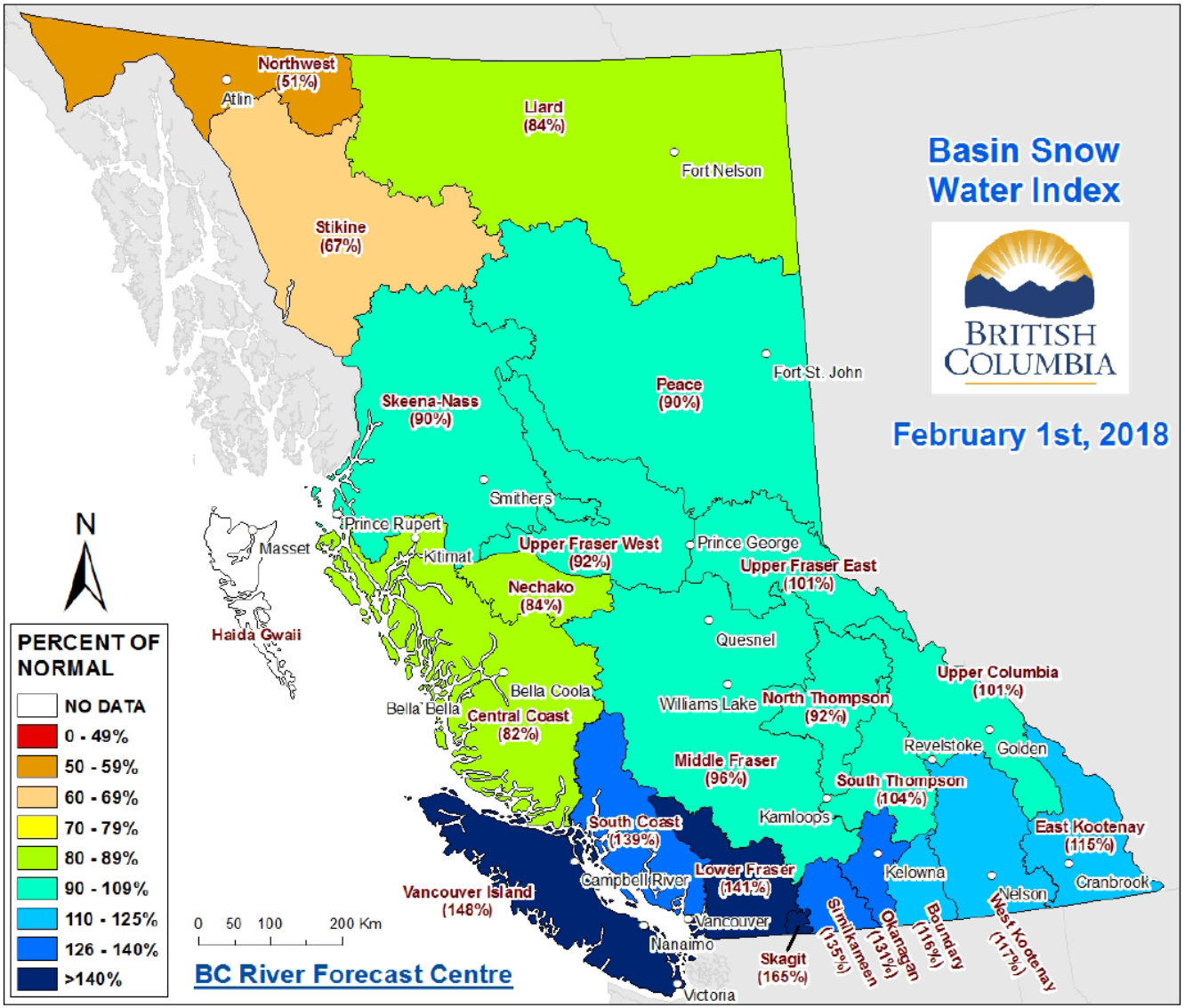
Environment Conditions



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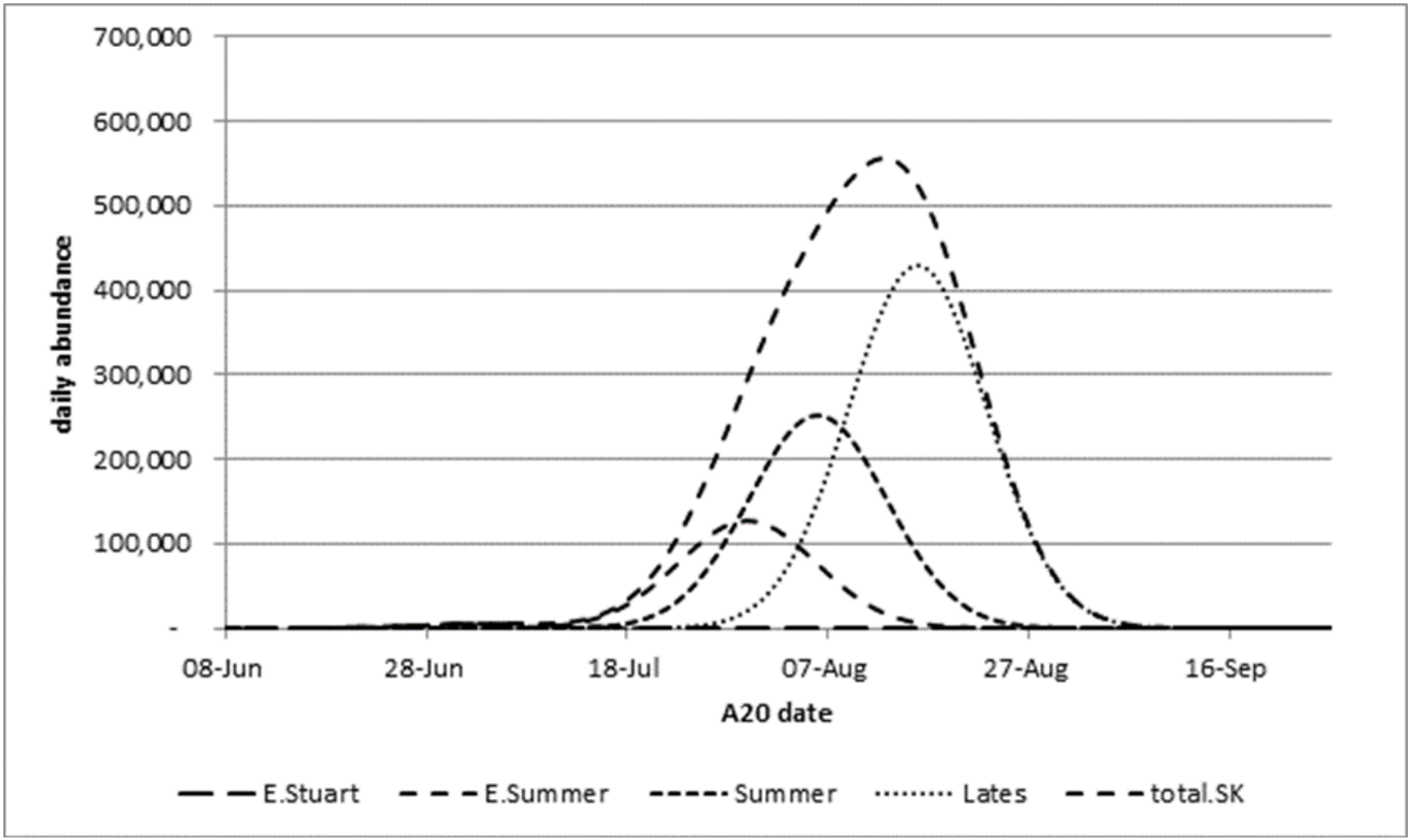
State of the Pacific Ocean and Freshwater Environmental Conditions

- Impacts of warm ocean in 2015 and El Nino in 2016 suggest unfavourable marine conditions for salmon.
- Environmental conditions and associated uncertainties may require in-season adjustments to achieve conservation and management objectives. Things to watch out for in 2018 include:
  - unfavourable migration conditions
  - early river entry for late run sockeye

Run Timing Considerations



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Sockeye Run Timing Considerations

- Seine FSC Closure to July 25th to protect Sakinaw
- Window closure to protect Early Stuart (3 weeks)
- Extend Window closure to protect Early Summer (+1 week)?
- Harvest opportunities are likely for Early Summers Summers and Lates even at low run sizes
- Harvest may be constrained by Early Summers or other stocks if run sizes are very low or MA's are high
- Cultus considerations

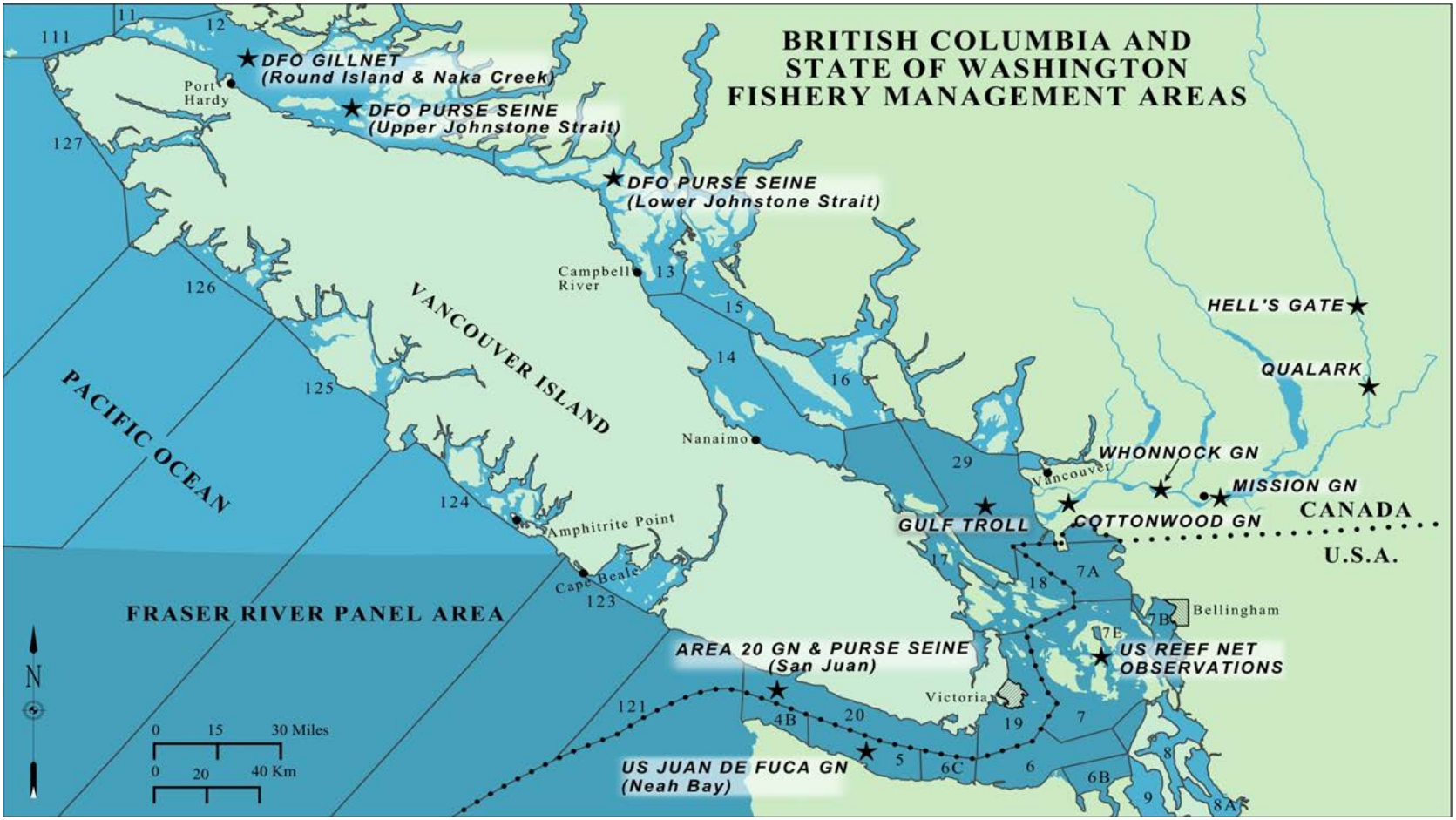
Run Timing Considerations - other Species

- Chinook salmon fisheries:
  - Depends on availability of sockeye TAC, LAER
  - Chinook outlook
  - Killer Whales
- IFR Coho constraints
  - Plan to constrain impacts to 3-5% as we remain in a low productivity regime
  - Window closure planned as usual
  - Implications for late times sockeye fisheries
- Interior Fraser Steelhead

Test Fishing – 2018 program considerations

- In 2013, new s. 10 authorities under the *Fisheries Act* to support the Pacific salmon test fishing program.
- National Use of Fish Policy not yet formally approved
- Objective of Use of Fish arrangements is for fish revenues to address programs costs,
- Low sockeye abundance curtailed test fish revenues, since 2015 incremental funding was secured to subsidize test fishing programs
- Some modifications in program design under consideration (test fishing review is ongoing).
- Additional payfish to cover test fishery program costs in 2018 plus future years has been raised in the Finance and Administration Committee of the PST process.

Fraser Sockeye and Pink Test Fisheries



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2018 Major Test Fisheries

Test Fisheries	Proposed 2018 Dates
Area 20 GN	July 10 – August 16
Area 12 GN	July 12 – August 14
Area 4 b, 5 GN	TBD
Area 29 Gulf Troll	TBD
Fraser River Whonnock GN	June 22 – Oct. 4
Fraser River Cottonwood GN	July 12 – September 26
Area 20 Seine	July 25 – August 30
Area 12 Seine	July 27 – September 11
Area 13 Seine	July 27 – September 13
Qualark Area 7 Reefnet	TBD July 23 - August 18

Pacific Salmon Treaty renegotiation

- Timeline for renegotiation
  - Target date for agreed upon changes Dec 31, 2018.
  - To date no significant changes have been identified by either party.
  - Minor language changes proposed for PSC staff responsibilities as well as question regarding Panel Waters language.
  - Test Fishery payfish and US contributions to the revolving fund are biggest issues at this time.
- Consultation plan being developed
  - Consultations being planned for this spring and next fall.

Additional Terminal Harvest

- Biological Considerations
  - biological definition of spawning requirement
  - an in-season estimate of potential spawning abundance
- Risk based terminal harvest targets
  - greater certainty of terminal escapement numbers allows better targeting of spawners surplus to escapement
- Stock specific considerations:
  - Terminal FN desires for escapement above spawning requirements
  - Terminal abundance and WSP status of stock

Additional Terminal Harvest

- Operational Considerations
  - fishery must target only on the terminal stock with surplus
  - requirement for enhanced monitoring of the fishery (mitigates risk)
  - additional terminal harvest should be spread over the return (avoid tail end or front end loading of harvest)
  - other species constraints (e.g. coho)
  - Decisions will be made in-season
    - data will become available over the course of the season
    - decisions will need to be made and revisited as data becomes available and fisheries progress (i.e. we cannot set harvest targets pre-season)

Summary

- Environmental conditions may have affected marine survival, may also affect in-season migration
- Adams dominant return cycle, expect harvest opportunities for all MUs except Early Stuart
- If returns are very low (p10) and migration conditions are poor Early Summers and Summers may constrain harvest
- Cultus, IFR coho and IFR Steelhead may constrain harvest opportunities