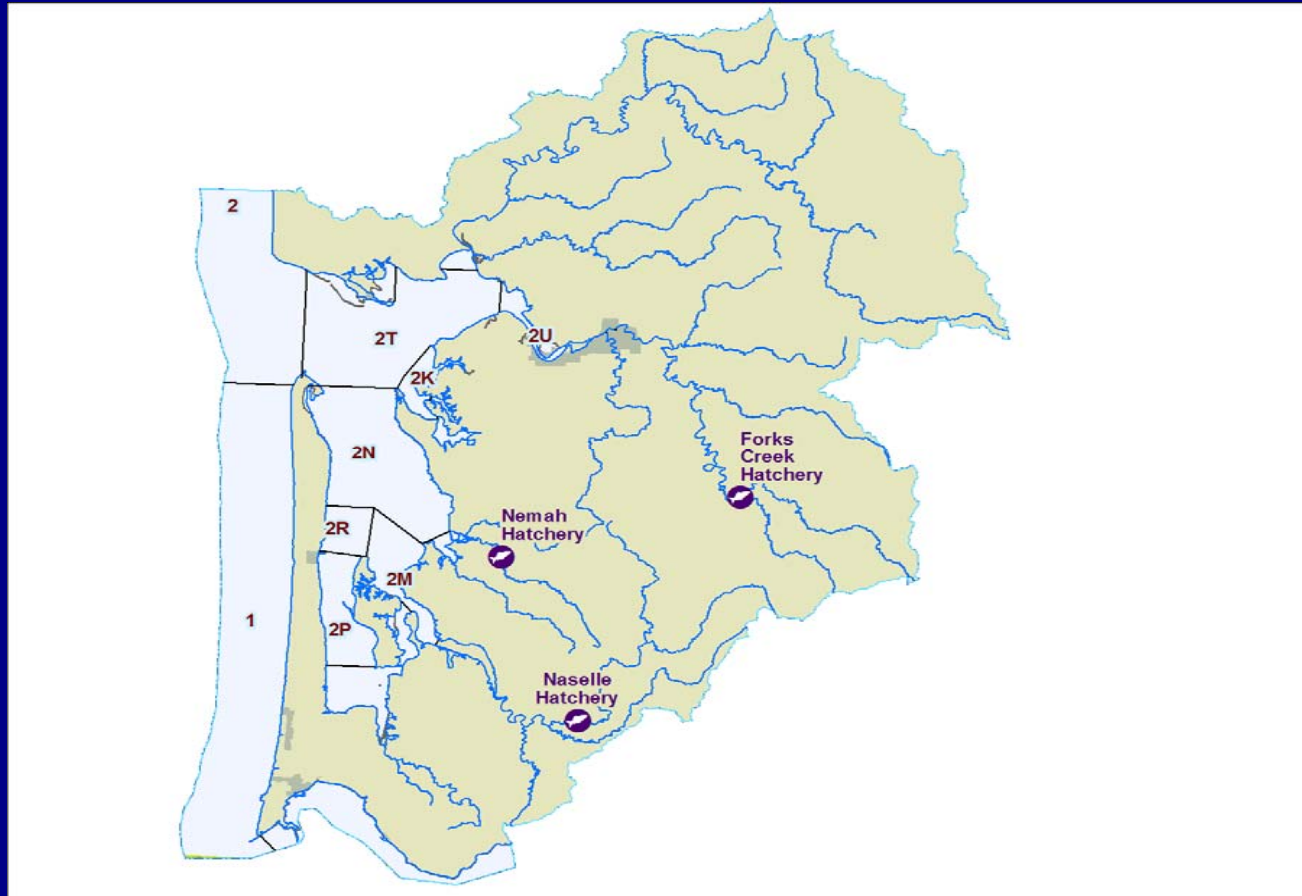


Willapa Bay Salmon Management Policy 2019 Season Review



Chad Herring – Fish Program
Washington Fish and Wildlife Commission Meeting
January 18, 2020

Presentation Outline

- Overview of Fishery Guidance in Policy C-3622, adopted in 2015
- Review of 2019 Fishery Planning Interim Guidance
- Review of 2019 Planning
- Report on 2019 Preliminary Performance
 - Harvest
 - Stock Assessment
- 2020 Fishery Planning Guidance

Overview of Policy C-3622 - Fishery Guidance

Chinook

- Achieve spawner goals through two phase rebuilding program
 - 14% impact rate cap for UM Chinook
- Provide for full recreational fishing season
- Commercial fisheries
 - After Sept. 7 in south bay
 - After Sept. 16 in north bay

Overview of Policy C-3622 - Fishery Guidance (cont.)

Coho

- Achieve aggregate spawner goal
- Prioritize commercial fisheries
 - Sept. 16 through Oct. 14
- Provide recreational fishing

Chum

- Achieve aggregate spawner goal
 - 10% impact rate cap
- Prioritize commercial fisheries
 - No fishery between Oct. 15 through Oct. 31
- Provide recreational fishing

FWC Interim Fishery Guidance for 2019

- **FWC meeting on April 6, 2019**
 - Guidance for 2019 only
 - Actively manage for 20% impact rate cap on natural Chinook
 - Suspend area and time restrictions for commercial fisheries
 - Allow staff flexibility in determining bag limits for recreational fisheries

2019 Fishery Planning

Forecasts

Species	Natural	% of 10yr Avg.	Hatchery	% of 10yr Avg.
Chinook	4.3K	107%	23.8K	71%
Coho	56.4K	128%	82.8K	166%
Chum	51.4K	134%	~800	225%

- Hatchery production for Chinook and chum
- Ocean conditions for juvenile salmon
- 2018 NOAA nearshore trawl – second largest number of juvenile coho

2019 Fishery Planning

- Fisheries were crafted to comply with policy and interim guidance

Species	Objective	2019 Planning
Chinook	20% impact rate	15.4% impact rate
Coho	13.6K spawners	40.1K spawners
Chum	10%	9.9%

Commercial Fishery

- Sept 3 – south; Sept 16 – north
- Release UM Chinook – all season; chum in Nov
- Closed Oct 12 – Nov 3

2019 Fishery Planning

Recreational Fishery

- Marine Area 2-1
 - June 22 opener; concurrent with Marine Area 2
 - 2 fish bag limit, only one Chinook, release wild coho
- Marine Area 2-1 and freshwater
 - Aug. 1 switch to Marine Area 2-1 specific rules
 - Willapa Bay Control Zone open
 - Freshwater openings in rivers with hatcheries
 - Marine and FW rules; 6 fish daily limit, 2 adult bag, release UM Chinook

2019 Preliminary Performance

2019 Environmental Conditions

- Marine environment
 - Warmer than normal sea surface temperatures
 - Unusual encounters in ocean fisheries
 - Blue-fin Tuna, White Croaker, Mako sharks, mahi-mahi, etc.
 - Harvest in Marine Areas 1-4
 - Chinook – below expectation; coho – well below expectation
- Freshwater environment
 - Water temps well above average
 - Little to no fall rain – driest November in 40 years
 - Summer and fall stream flows near or at historic low flows

2019 Preliminary Performance

Commercial Fishery

Species	Origin	Predicted	Preliminary	% Diff
Chinook	Natural	431	260*	-60%
	Hatchery	2,976	1,546	-55%
Coho	Natural	9,869	2,886	-28%
	Hatchery	18,995	5,314	-28%
Chum	N/A	4,792	208*	-5%

* Includes impacts for release

- Catch expressed as Willapa origin fish
- Persistent drop in effort
- November closure
 - % of impacts predicted in November
 - 5% of hatchery coho
 - 19% of natural coho
 - 45% of chum

2019 Preliminary Performance

Recreational Marine Area 2-1 Fishery

Species	Origin	Predicted	Actual	% Diff
Chinook	Natural	170	82*	-48%
	Hatchery	1,474	841	-57%
Coho	Natural	2,718	404	-15%
	Hatchery	4,740	946	-20%
Chum	N/A	171	N/A	-0%

* Includes impacts for release

- Catch expressed as Willapa origin fish
- 2nd year of Murthy Method
 - June 22nd to Sept. 30
 - Tokeland and South Bend boat launches
 - 4,273 anglers interviewed, estimated 8,646 total anglers
- Freshwater data unavailable at this time

2019 Preliminary Performance

Chinook Spawning Escapement

– 2019

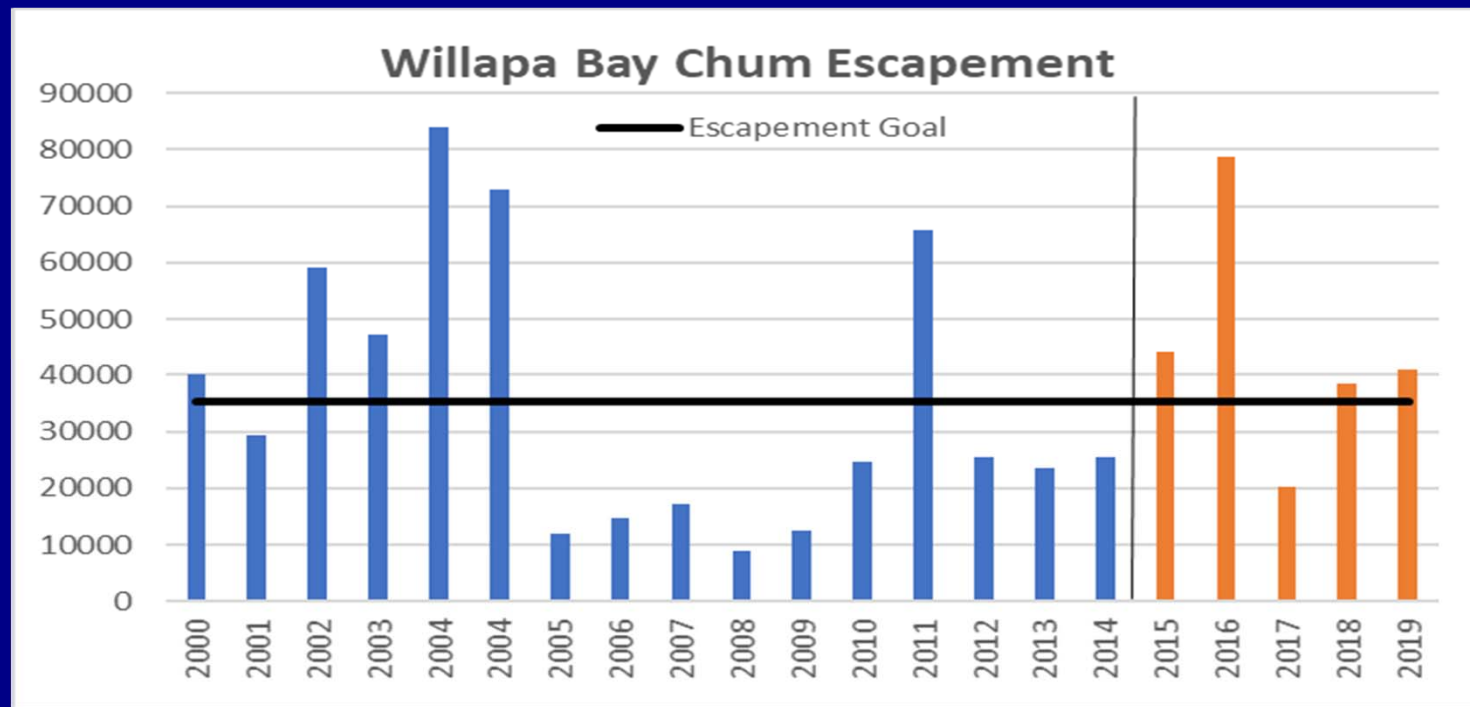
- 880 redds in indexes; 2015-18 avg. = 697

Year	North R.	Willapa R.	Naselle R.	Willapa Bay
2015	173	1,064	483	2,043
2016	194	575	597	1,580
2017	206	1,219	1,172	3,008
2018	366	1,623	679	2,821
2019*	~360-490	~1,300-2,000	~1,300-1,600	~3,200-4,400
<i>Wild Esc. Goal</i>	<i>991</i>	<i>1,181</i>	<i>1,547</i>	<i>4,353</i>

* preliminary

2019 Preliminary Performance

Chum



- 2019 preliminary estimate 40,893; Esc. Goal 35,400
- Made goal 4 out of 5 and 2 years in a row

2019 Preliminary Performance

Coho

- Fishery performance well below prediction
- Coho in-season runsize update model
 - Based on commercial CPUE by statistical week
 - Predicts total terminal runsize
 - Origin composition breakout based on sampling data

Natural Coho	Forecast	ISU
2019 Runsize	56.4K	22.4K

- 60% reduction in runsize
- Advisory group convened to collect input
- Early November E-reg closing recreational and commercial fisheries

2020 Fishery Planning

NOAA “Stop-light” Chart of Ocean Indicators

- 22 year data set
- Metrics ranked from 1 to 22
- Binned into 3 categories; Green = good, Yellow = neutral, Red = bad

Ecosystem Indicators	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
PDO (Sum Dec-March)	19	6	3	13	7	21	12	17	14	9	5	1	16	4	2	8	10	22	20	18	11	15
PDO (Sum May-Sept)	10	4	6	5	11	17	16	18	12	14	2	9	7	3	1	8	20	22	21	15	13	19
ONI (Average Jan-June)	21	1	1	7	14	16	15	17	9	12	3	11	18	4	6	8	10	19	22	13	5	20
SST NDBC buoys (°C, May-Sept)	17	6	8	4	5	11	22	12	2	14	1	10	3	7	9	16	20	19	18	13	15	21
Upper 20 m T (°C, Nov-Mar)	21	11	8	10	6	15	16	13	12	5	1	9	18	4	3	7	2	22	20	19	14	17
Upper 20 m T (°C, May-Sept)	16	11	13	4	1	3	22	19	8	10	2	5	17	7	6	18	20	9	14	12	15	21
Deep temperature (°C, May-Sept)	22	6	8	4	1	10	12	16	11	5	2	7	14	9	3	15	21	19	13	18	20	17
Deep salinity (May-Sept)	21	3	11	4	5	18	19	12	7	1	2	16	20	15	14	13	22	17	9	8	6	10
Copepod richness anom. (no. species, May-Sept)	20	2	1	7	6	15	14	19	16	10	8	9	18	4	5	3	11	21	22	17	13	12
N. copepod biomass anom. (mg C m ⁻³ , May-Sept)	20	15	11	12	4	17	14	21	16	13	7	10	9	1	3	5	6	18	22	19	8	2
S. copepod biomass anom. (mg C m ⁻³ , May-Sept)	22	2	5	4	3	15	16	21	14	10	1	7	17	9	8	6	11	19	20	18	13	12
Biological transition (day of year)	19	11	6	7	8	15	12	20	14	3	1	2	17	4	9	5	10	21	21	18	13	15
Nearshore ichthyoplankton (mg C 1,000 m ⁻³ , Jan-Mar)	17	3	11	6	1	21	22	15	8	17	3	13	2	7	5	10	19	14	15	12	9	20
Nearshore & offshore ichthyoplankton community index (PCOaxis 1 scores, Jan-Mar)	11	6	5	9	8	13	16	20	1	14	3	12	15	4	2	7	10	18	21	22	17	19
Chinook salmon juvenile catches (no. km ⁻² , June)	20	4	5	17	8	12	18	21	13	11	1	6	7	16	2	3	10	14	19	22	15	9
Coho salmon juvenile catches (no. km ⁻² , June)	20	8	14	6	7	3	17	21	18	4	5	10	11	16	19	1	13	9	15	22	2	12
Mean of ranks	18.5	6.2	7.3	7.4	5.9	13.9	16.4	17.6	10.9	9.5	2.9	8.6	13.1	7.1	6.1	8.3	13.4	17.7	18.3	16.6	11.8	15.1
Rank of the mean rank	22	4	6	7	2	15	17	19	11	10	1	9	13	5	3	8	14	20	21	18	12	16
Ecosystem Indicators not included in the mean of ranks or statistical analyses																						
Physical Spring Trans. UI based (day of year)	3	7	21	18	4	13	16	22	13	1	6	2	8	11	19	9	20	10	5	17	11	13
Physical Spring Trans. Hydrographic (day of year)	21	3	13	8	5	12	15	22	6	9	1	9	19	3	11	2	17	7	18	20	15	14
Upwelling Anomaly (April-May)	11	3	18	7	10	15	14	22	11	5	8	9	16	18	16	13	20	1	2	21	6	4
Length of Upwelling Season UI based (days)	6	2	20	13	1	15	11	22	5	3	9	9	17	19	17	16	21	12	8	14	7	10
Copepod Community Index (MDS axis 1 scores, May-Sept)	21	4	3	8	1	13	15	19	17	10	2	6	12	9	7	5	11	20	22	18	14	16

- Sea surface temperatures
- 21 out of 22
- Recruitment of Ichthyoplankton (2 metrics)
- 19 out of 22
- 20 out of 22
- PDO
- 19 out of 22
- Overall
- 16 out of 22

2020 Fishery Planning

2020 Hatchery Returns

- Forks Creek Chinook production
 - Reduced from 3.2M to 400K in 2015 brood year
- Naselle Chinook production
 - Increased from 800K to 2.5M in 2016 brood year
- Nemah Chinook production
 - 3.3M
- Willapa Bay chum production
 - Overall increase from 900K to 1.5M in 2016 brood year

2020 Fishery Planning

2020 Considerations

- Predicted continuation of poor marine and freshwater environmental conditions
- Chinook
 - Hatchery production shift, North to South
 - Difficulty achieving hatchery broodstock
- Coho
 - 2015 through 2018, only 2016 made escapement
 - 2019 is still too early to report
- Chum
 - 2017 only year since policy not meeting escapement goals

2020 Fishery Planning

2020 Guidance Options

Species	Management Objectives	Policy C-3622	2019 FWC Guidance
Chinook	Harvest control rule	14% impact rate cap on UM Chinook	20% impact rate cap on UM Chinook
	Recreational Fisheries	Prioritize and enhance Chinook harvest	Staff flexibility in determining bag limits
	Commercial Fisheries	No fishery before Sept. 7 in south and Sept. 16 in north	No restrictions on time and area
Coho	Harvest control rule	Meet aggregate escapement goals	Meet aggregate escapement goals
Chum	Harvest control rule	Meet aggregate escapement goals	10% impact rate
	Commercial Fisheries	No restrictions	No commercial fisheries between Oct 15-31
	Recreational Fisheries	Allow retention	Allow retention

2020 Fishery Planning

- Staff seeking guidance for 2020 fishery management objectives for Willapa Bay
 - Policy C-3622
 - Likely reduction in bag limits and possibly shortened seasons for recreational fisheries from 2018
 - Further reduction in commercial opportunity in September
 - 2019 Interim Guidance
 - Seasons similar to 2018
 - Other Commission guidance?



Questions?

Photo by Barbara McClellan of the Palix River

WA Dept. of Fish and Wildlife, Information subject to
changes and amendments over time

Commission Presentation
January 18, 2020