Willapa Bay Salmon Management Policy (C-3622)

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Presentation Outline

Review of Policy C-3622

- Key Elements
- Review Policy management objectives

Review Willapa Bay Hatchery Production

Report on 2020 Preliminary Fisheries Performance

- Harvest
- Stock Assessment

FWC Guidance

- Review of previous interim guidance
- Seek 2021 Interim Guidance for North of Falcon

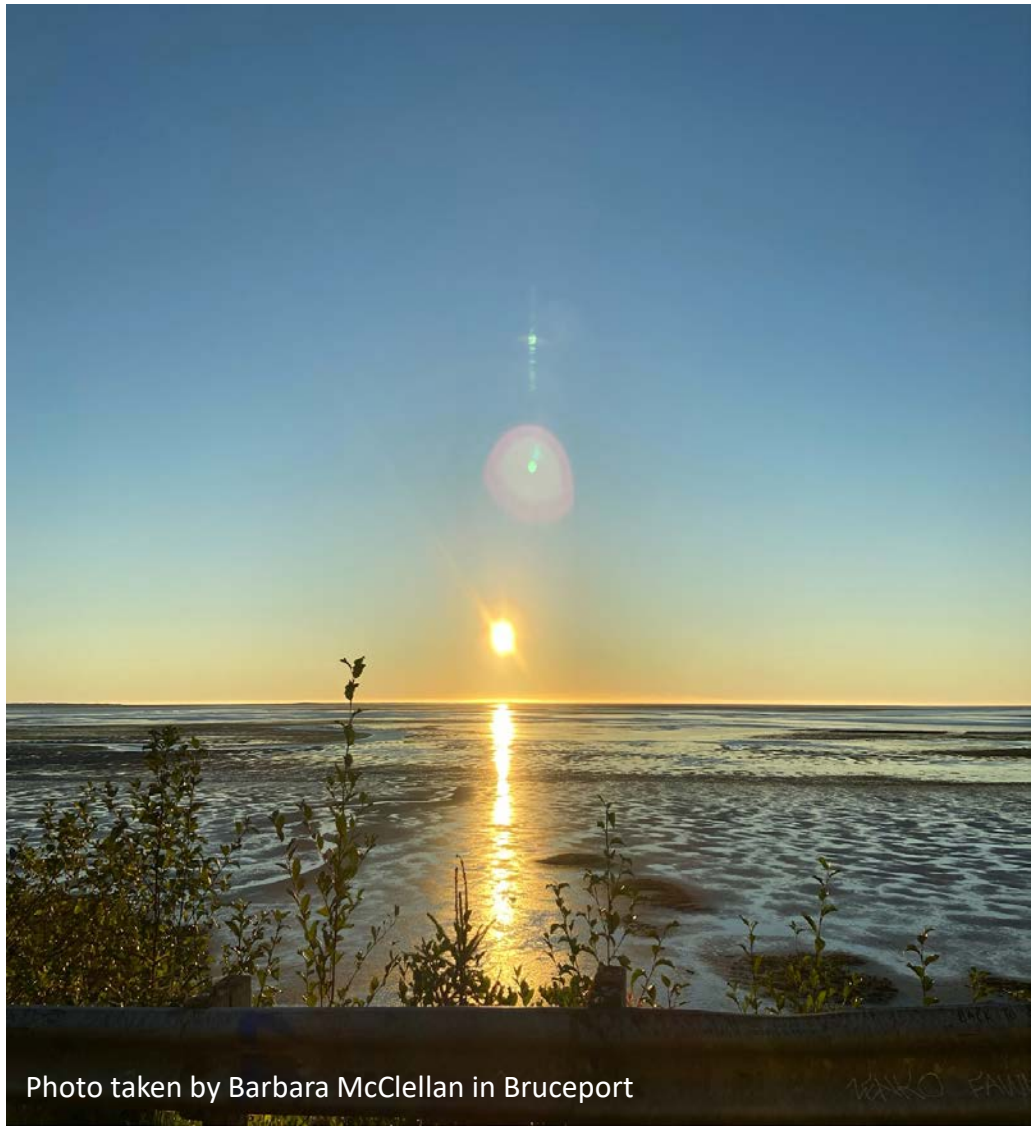


Photo taken by Barbara McClellan in Bruceport

Willapa Bay Policy C-3622

Willapa Bay Salmon Management Policy C-3622

Objectives

- Achieve restoration of wild salmon
- Avoid ESA designation
- Maintain or enhance economic well-being
- Appropriate distribution of fishing opportunities
- Enhanced transparency, information sharing, and improved technical rigor
- Restore and maintain public trust and support

Willapa Bay Salmon Management Policy C-3622

Chinook Guidance

- Two-phase rebuilding program
- Achieve broodstock standards by 2020
- Achieve spawner goals in 16 – 21 years
- Full recreational fishing season with increased participation and catch
- Population designations
  - Willapa-primary, Naselle-contributing
- Maintain rebuilding trajectory
- Reduced hatchery production at Forks Creek to 350,000 smolt

Phase One: 2015 - 2018

- 20% impact rate cap for Willapa and Naselle rivers
- Alternative gear set aside for commercial fishery
- No commercial fisheries until after Labor Day in the south bay
- No commercial fisheries prior to 9/16 in the north bay

Phase Two: 2019 forward

- 14% impact rate cap

Willapa Bay Salmon Management Policy C-3622

Coho Guidance

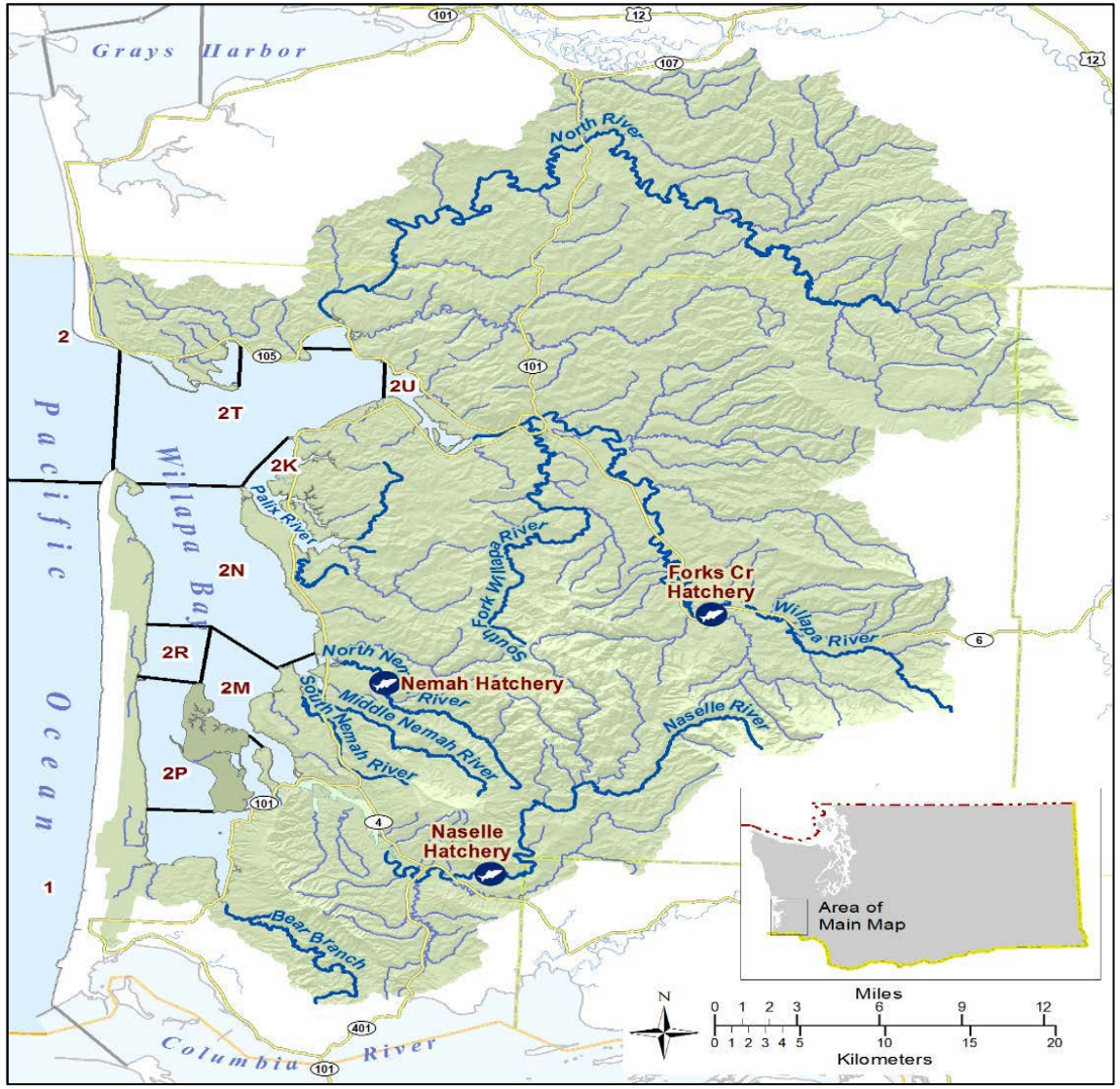
- Achieve aggregate spawner goal for natural-origin Coho
- Prioritize commercial fishing opportunities
  - September 16 through October 14
- Provide recreational fishing opportunities

Chum Guidance

- Achieve aggregate spawner goal for naturally spawning chum
- Provide commercial fishing opportunities
- Provide recreational fishing opportunities
- 10% terminal impact rate cap

Willapa Bay Hatchery Production

Willapa Bay


Grays Harbor
North River
2
2U
2T
2K
Pacific Ocean
Willapa Bay
Palix River
South Fork Willapa River
Forks Cr Hatchery
Willapa River
2N
2R
2M
2P
North Nemah River
Nemah Hatchery
Middle Nemah River
South Nemah River
Naselle River
Naselle Hatchery
Bear Branch
Columbia River
Area of Main Map
Miles
Kilometers
N

Willapa Hatchery Production: Background

Chinook Population Designations

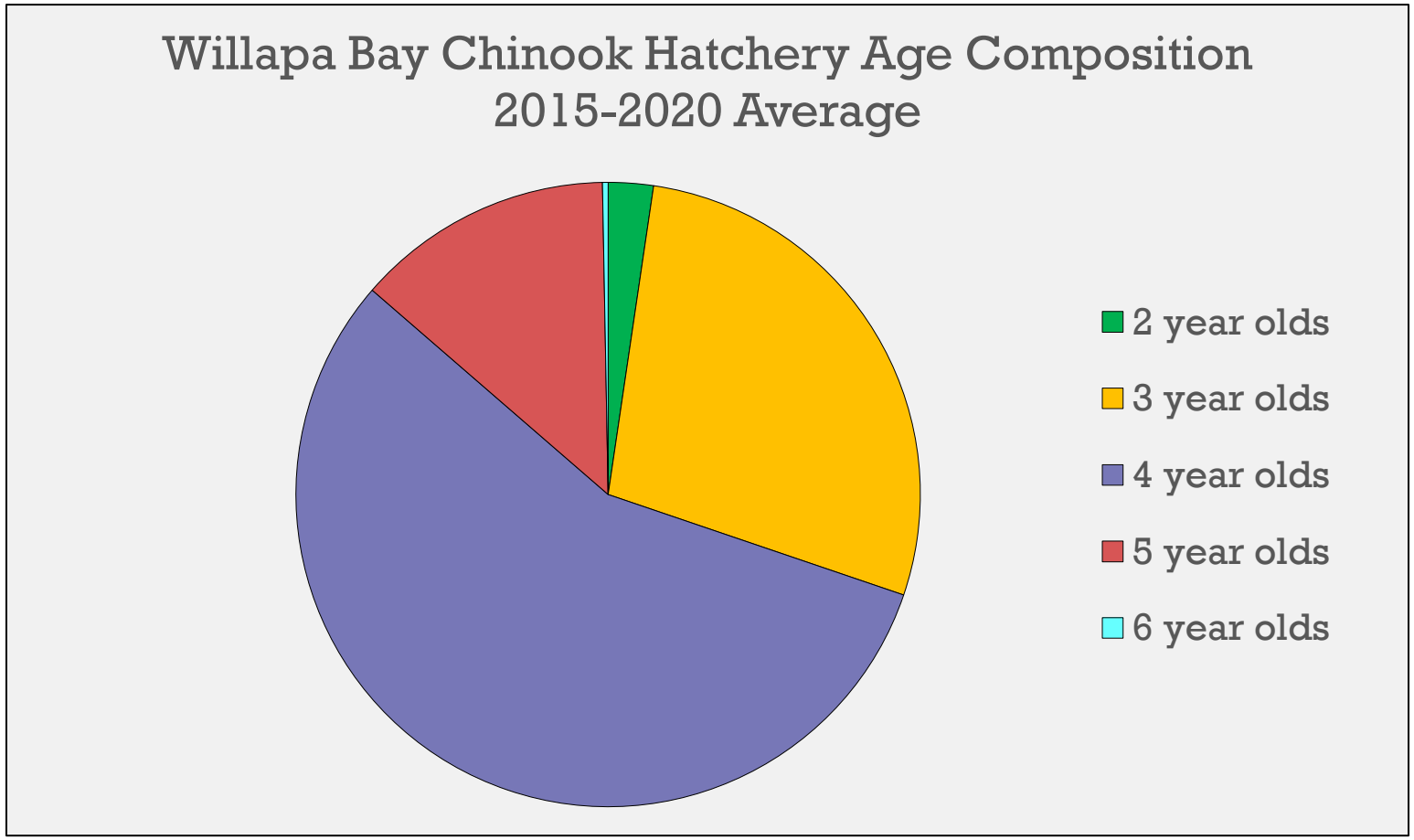
Population designations are a measure of the biological significance of a population to the recovery of the ESU. The three types of population designations are primary, contributing, and stabilizing.

- Primary populations can be described as having a high biological significance to the recovery of the ESU, historically were a large segment of the population structure and at a low risk of extinction.

- Contributing populations have some significance to the recovery of the ESU but are lower in abundance than primary populations and contribute to the diversity of the population.

- Stabilizing populations provide the lowest significance to recovery of the ESU and may not have ever been a large segment of the ESU population structure

Willapa Hatchery Production: Background



Willapa Hatchery Production: Forks Creek Hatchery

Facility and Brood Year	Chinook Smolts	Return Year							
Forks Creek Hatchery	Released	2017	2018	2019	2020	2021	2022	2023	2024
2010	3,398,300								
2011	3,189,750								
2012	3,227,824								
2013	3,166,719								
2014	3,221,073								
2015	379,192	2 yo	3 yo	4 yo	5 yo				
2016	368,537		2 yo	3 yo	4 yo	5 yo			
2017	365,864			2 yo	3 yo	4 yo	5 yo		
2018	374,500				2 yo	3 yo	4 yo	5 yo	
2019	2,628,497					2 yo	3 yo	4 yo	5 yo

2019 interim guidance – no backfilling, release all salmon from their brood facility, and increase Forks Creek Hatchery Chinook production by 50K for Southern Resident Killer Whale

Willapa Hatchery Production: Naselle Hatchery

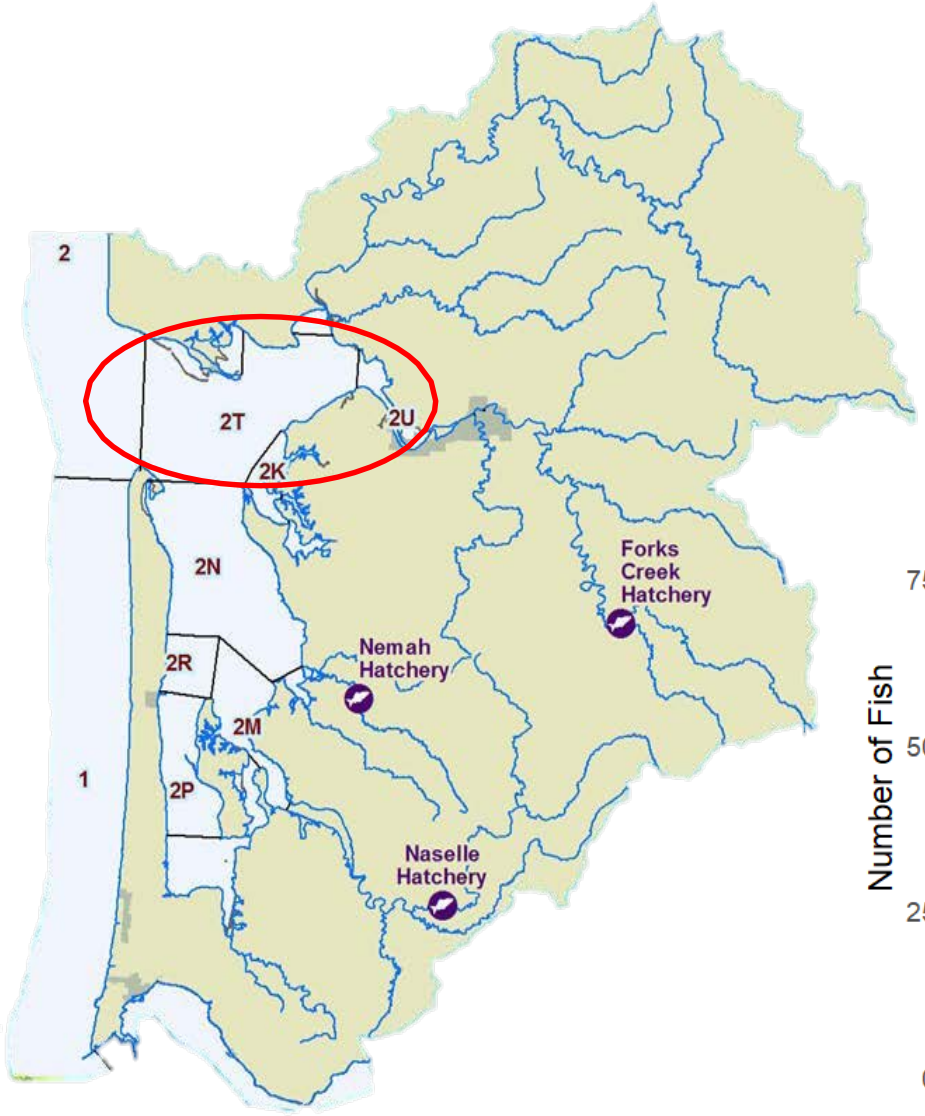
Facility and Brood Year	Chinook Smolts	Return Year							
Naselle Hatchery	Released	2017	2018	2019	2020	2021	2022	2023	2024
2010	882,000								
2011	878,100								
2012	940,800								
2013	850,000								
2014	749,265								
2015	788,229	2 yo	3 yo	4 yo	5 yo				
2016	2,499,279		2 yo	3 yo	4 yo	5 yo			
2017	2,531,859			2 yo	3 yo	4 yo	5 yo		
2018	2,567,614				2 yo	3 yo	4 yo	5 yo	
2019	2,046,129					2 yo	3 yo	4 yo	5 yo

2019 interim guidance – no backfilling, release all salmon from their brood facility, and increase Naselle Hatchery Chinook production by 2.5 M for Southern Resident Killer Whale

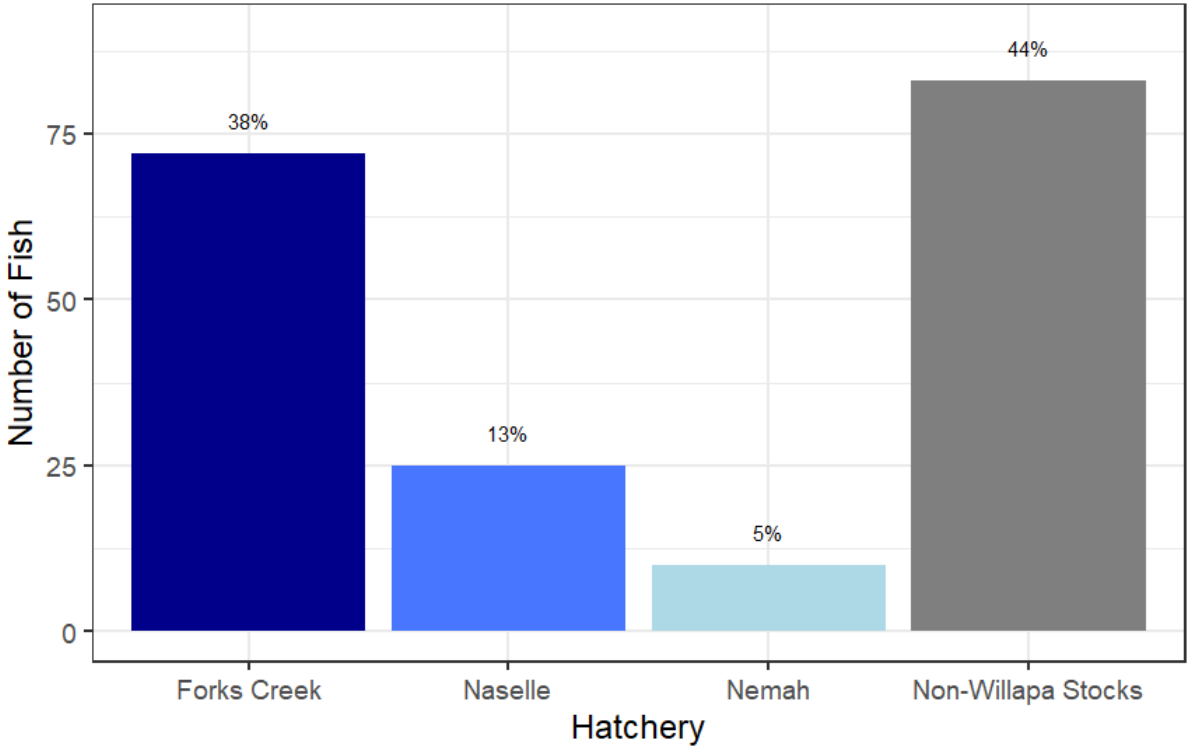
Willapa Hatchery Production: Background

Facility and Brood Year	Smolts	Return Year							
Forks Creek Hatchery	Released	2017	2018	2019	2020	2021	2022	2023	2024
2015	379,192	2 yo	3 yo	4 yo	5 yo				
2016	368,537		2 yo	3 yo	4 yo	5 yo			
2017	365,864			2 yo	3 yo	4 yo	5 yo		
2018	374,500				2 yo	3 yo	4 yo	5 yo	
2019	2,628,497					2 yo	3 yo	4 yo	5 yo
Naselle Hatchery									
2015	788,229	2 yo	3 yo	4 yo	5 yo				
2016	2,499,279		2 yo	3 yo	4 yo	5 yo			
2017	2,531,859			2 yo	3 yo	4 yo	5 yo		
2018	2,567,614				2 yo	3 yo	4 yo	5 yo	
2019	2,046,129					2 yo	3 yo	4 yo	5 yo
Nemah Hatchery									
2015	3,259,623	2 yo	3 yo	4 yo	5 yo				
2016	3,185,438		2 yo	3 yo	4 yo	5 yo			
2017	3,358,383			2 yo	3 yo	4 yo	5 yo		
2018	3,342,100				2 yo	3 yo	4 yo	5 yo	
2019	1,150,182					2 yo	3 yo	4 yo	5 yo

Willapa Hatchery Production: Background



- Recreational Marine Area 2-1 occurs in north bay
- Coded Wire Tag (CWT) analysis provides probability of recovery
- Forks Creek Hatchery Chinook (Willapa River) important to recreational fishing



56% of CWTs recovered are local to Willapa
-out of these, 67% represent Forks Creek Hatchery fish

Willapa Hatchery Production

2020 On-hand vs. Goal*

Species	Egg Take	Forks Creek Hatchery	Nemah Hatchery	Naselle Hatchery	Total
Chinook	On-Hand	0.6	3.5	3.9	8.0
	Program Goal	0.4	3.3	5.0	8.7
Coho	On-Hand	0.7	NA	1.7	2.4
	Program Goal	0.6	NA	1.4	2.0
Chum	On-Hand	0.7	1.7	0.5	2.9
	Program Goal	0.5	1.5	0.5	2.5

*Numbers in millions


Photo taken by B. McClellan at Naselle Hatchery

2020 Preliminary Fisheries Performance

2020 Preliminary Performance

Willapa Bay Natural Origin Chinook

Year	Run Size		Impact Rate		NOS Total Escapement	
	Forecast	Actual	Predicted	Actual	Predicted	Actual
Avg 2010-2014	*3,923*	*4,640*	*33.5%*	*34.8%*	*2,611*	*2,682*
2015	3,835	4,329	19.2%	22.3%	3,100	2,043
2016	3,261	2,434	20.0%	21.5%	2,610	1,581
2017	4,131	3,736	19.3%	15.8%	3,333	3,008
2018	3,838	3,188	17.8%	8.2%	3,153	2,821
2019	4,309	3,415	15.4%	14.6%	3,647	2,636
2020	2,914	4,071*	13.1%	11.4%*	2,533	3,410*
Avg 2015 - 2020	*3,715*	*3,529*	*17.5%*	*15.6%*	*3,063*	*2,583*

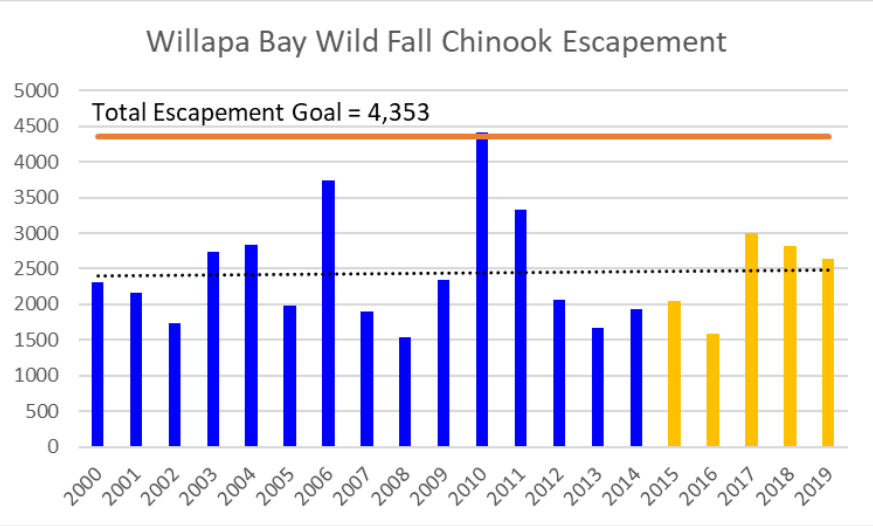
** Preliminary data subject to change*

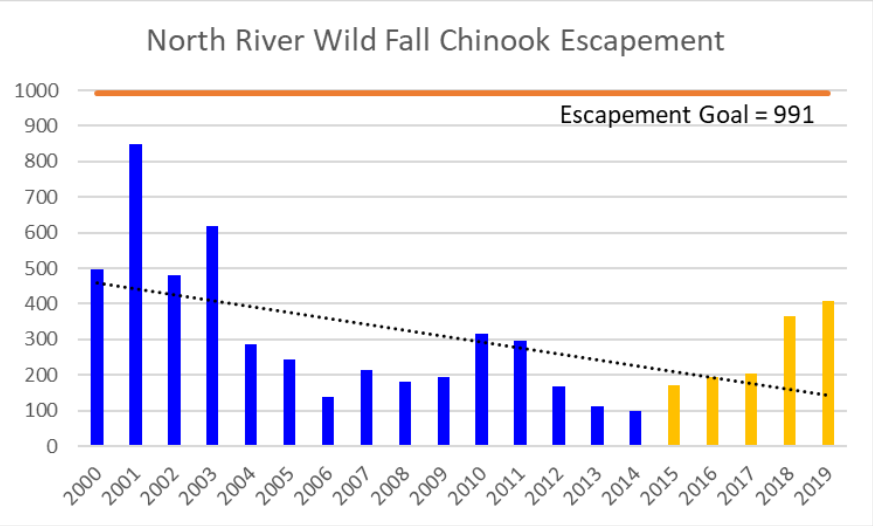
Actual performance affected by in-season management actions.

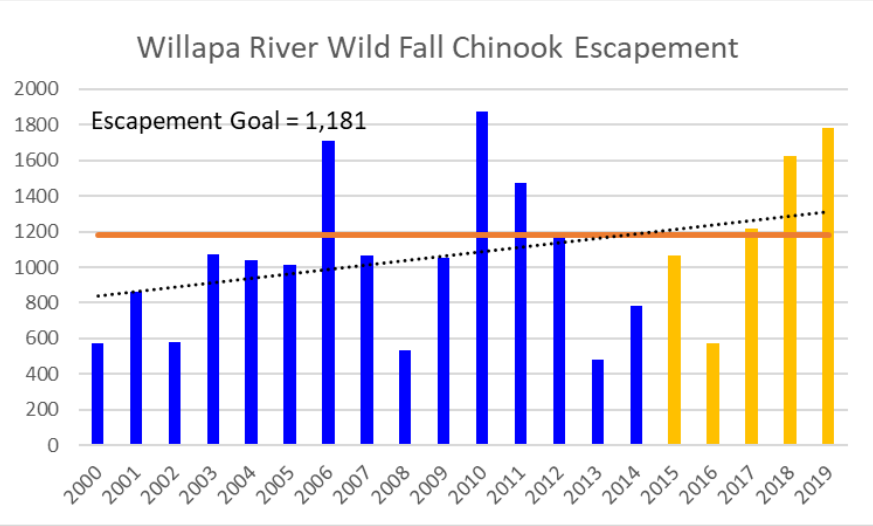
Management objectives for 2020: Impact rate = 14%; Escapement = 4,353 natural spawners

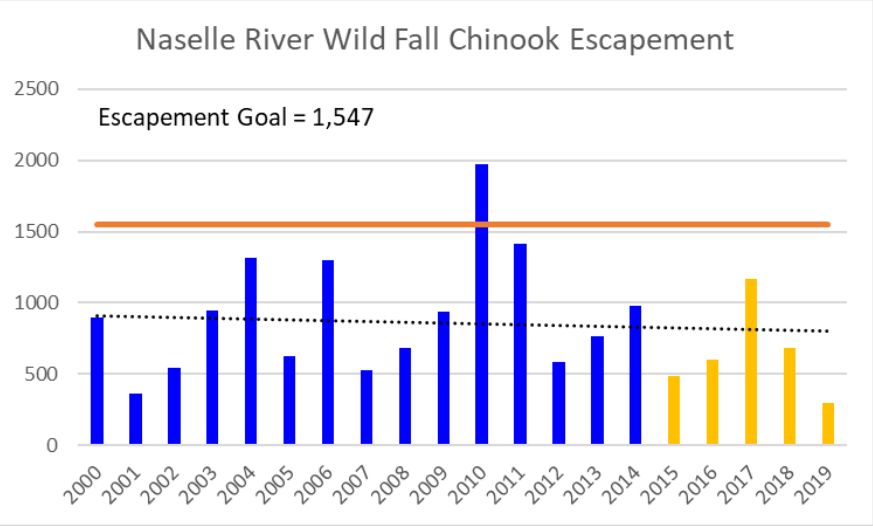
2020 Preliminary Performance

Willapa Bay Wild Chinook Abundance Trends









2020 Preliminary Performance

Commercial Landed Catch

Species	Pre-Season	Actual*
Chinook	1,589	747
Coho	5,615	15,260
Chum	1,642	3,833

** Does not include estimated impacts and drop offs*
** Preliminary data subject to change*

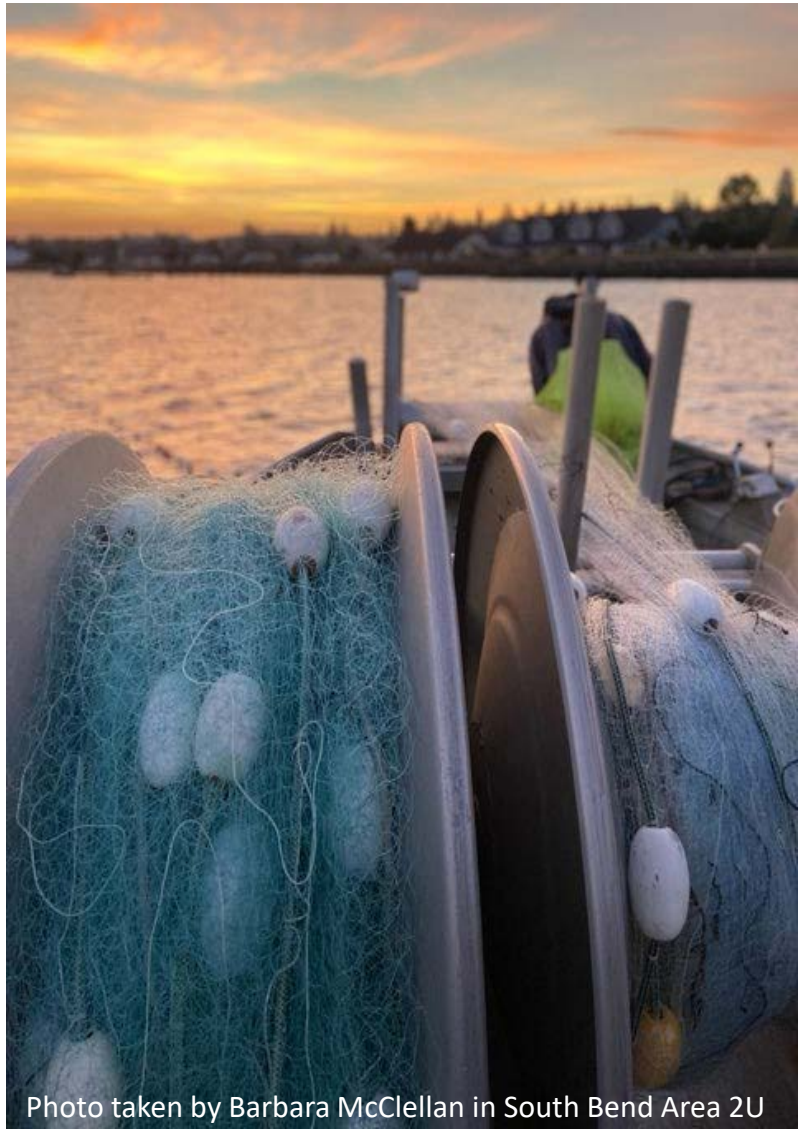
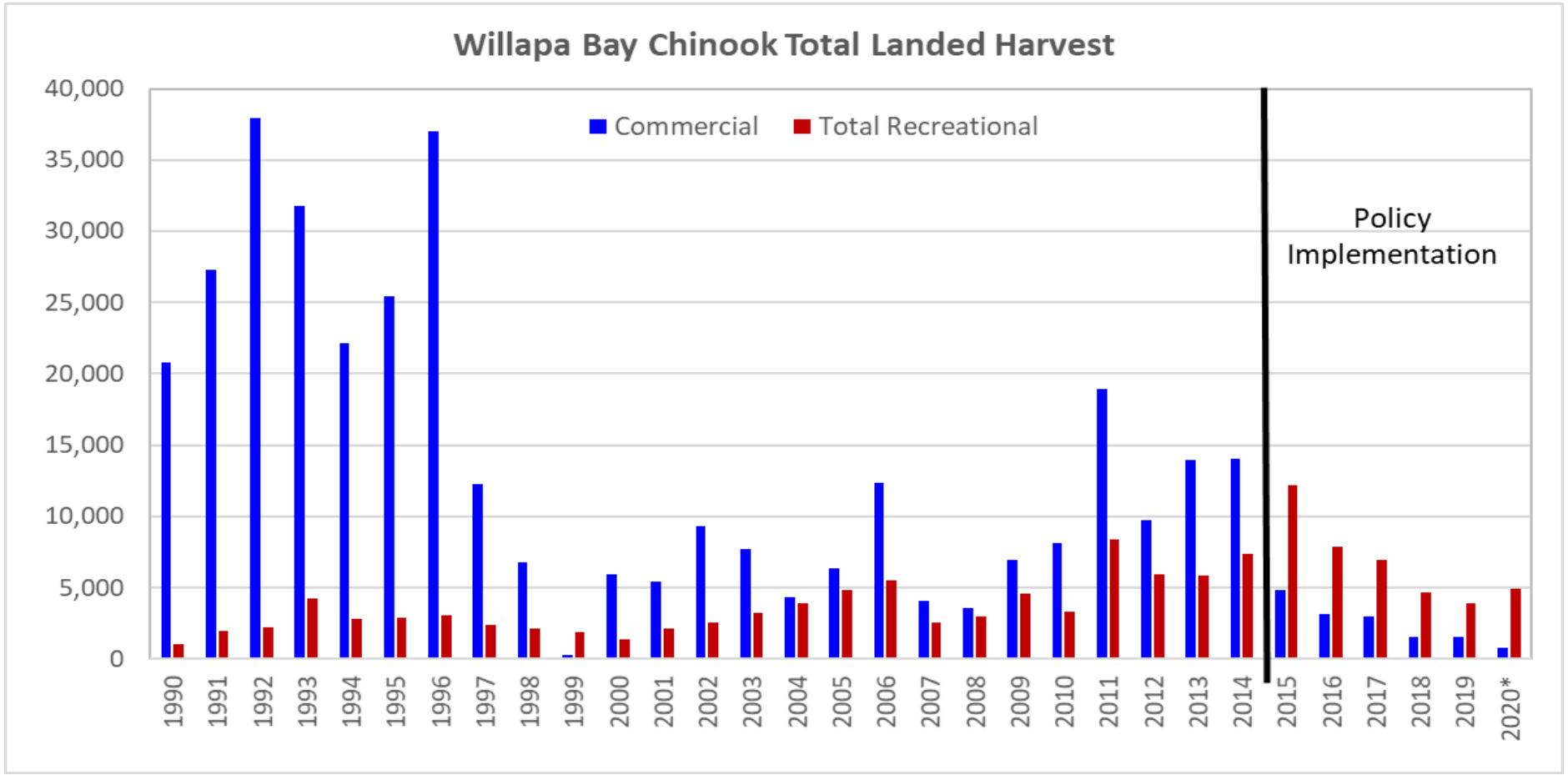


Photo taken by Barbara McClellan in South Bend Area 2U

Policy C-3622 Performance



** 2020 data - recreational freshwater harvest is estimated using recent 5-year average harvest*

2020 Preliminary Performance

Willapa Bay Fall Natural Origin Chinook

Metric	Objective	Pre-Season	Actual*
Run Size	--	2,914	4,071
Escapement	4,353	2,533	3,410
Harvest Rate for Willapa	14%	13.2%	12.7%
Harvest Rate for Naselle	14%	13.7%	11.3%

** Preliminary data subject to change*

2020 Preliminary Performance

Willapa Bay Fall Chinook - Hatchery

Metric	Pre-Season	Actual*
Run Size	28,271	36,157
Escapement	18,375	29,791
Total Harvest Rate	35.0%	15.8%

** Preliminary data subject to change*

2020 Preliminary Performance

Willapa Bay Natural Origin Fall Coho

Year	Run Size		Impact Rate		NOS Total Escapement	
	Forecast	Actual	Predicted	Actual	Predicted	Actual
Avg 2010-14	*50,745*	*52,665*	*41%*	*31%*	*28,165*	*37,768*
2015	38,505	14,493	30%	26%	26,795	10,366
2016	37,069	32,929	30%	23%	26,012	24,950
2017	34,425	13,816	40%	33%	20,719	8,965
2018	18,994	17,087	20%	27%	15,243	12,285
2019	56,366	16,448	28%	28%	40,819	11,332
2020	16,074	17,670*	14%	31%*	13,840	11,492*
Avg 2015-2020	*33,572*	*18,740*	*27%*	*28%*	*23,905*	*13,232*

** Preliminary data subject to change*

Actual performance affected by in-season management actions

Management objectives: Spawning escapement = 13,600 wild spawners

2020 Preliminary Performance

Willapa Bay Coho – Natural Origin

Metric	Objective	Pre-Season	Preliminary*
Run Size	---	16,074	17,760
Escapement	13,600[1]	13,840	11,492

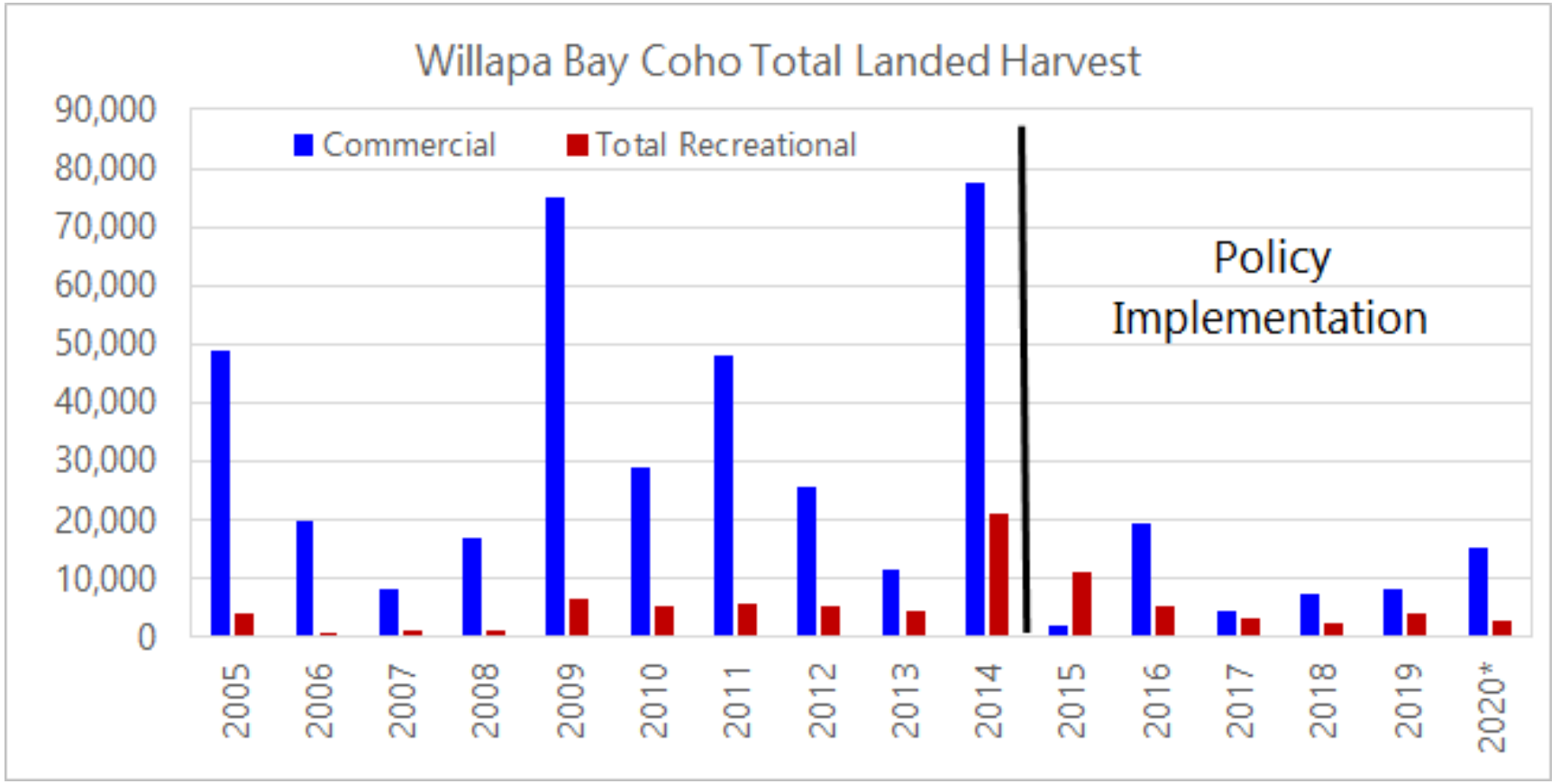
[1] WDFW goal; PFMC goal 17,200 naturally spawning Coho; 2020 naturally spawning estimate 18,013

Willapa Bay Coho - Hatchery

Metric	Pre-Season	Preliminary*
Runsize	39,517	52,949
Escapement	29,601	40,441

** Preliminary data subject to change*

Policy C-3622 Performance



** 2020 data - recreational freshwater harvest is estimated using recent 5-year average harvest*

2020 Preliminary Performance

Willapa Bay Total Fall Chum

Year	Run Size		Impact Rate		Total Escapement	
	Forecast	Actual	Predicted	Actual	Predicted	Actual
Avg 2010-2014	*34,986*	*39,498*	*8%*	*14%*	*32,218*	*34,040*
2015	39,994	48,631	10%	7%	35,986	45,325
2016	47,555	86,679	10%	7%	42,855	80,931
2017	57,726	22,496	10%	2%	51,932	21,986
2018	39,932	44,182	9%	6%	36,352	41,448
2019	52,205	44,181	10%	1%	47,012	43,830
2020	40,804	59,892*	5%	7%*	38,867	55,825*
Avg 2015–2020	*46,369*	*51,010*	*9%*	*5%*	*42,167*	*48,224*

**Preliminary data subject to change*

Total Escapement Goal = 35,400

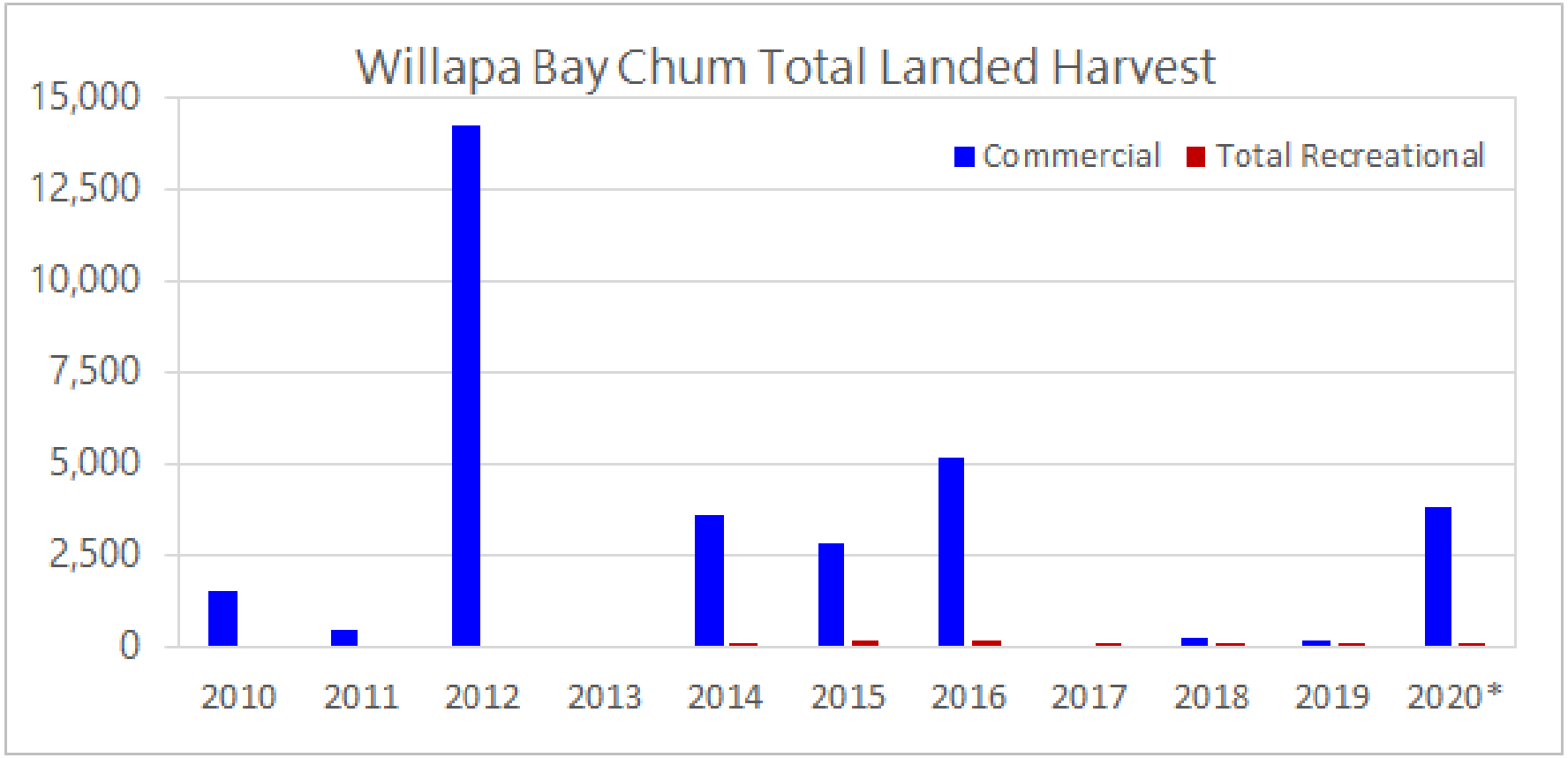
2020 Preliminary Performance

Willapa Bay Fall Chum

Metric	Objective	Pre-Season	Actual*
Runsize	---	40,804	59,892
Escapement	35,400	38,867	55,825
Harvest Rate	10%	4.7%	6.8%

** Preliminary data subject to change*

Policy C-3622 Performance



** 2020 data - recreational freshwater harvest is estimated using recent 5-year average harvest*

2020 Preliminary Performance

2020 Spawning Escapements

Species	Basin	Goal	Actual[1]	% of Goal
Chinook	North	991	441	44%
	Willapa	1,181	2,045	170%
	Palix	104	42	40%
	Nemah	224	154	69%
	Naselle	1,547	695	45%
	Bear	306	33	11%
Coho[2]	--	13,600	11,492	85%
Chum [3]	--	35,400	55,825	157%

[1]*Preliminary data subject to change*

[2]*Escapement estimated using in-season update model*

[3]*Chum escapement is an aggregate of natural and hatchery origin spawners*

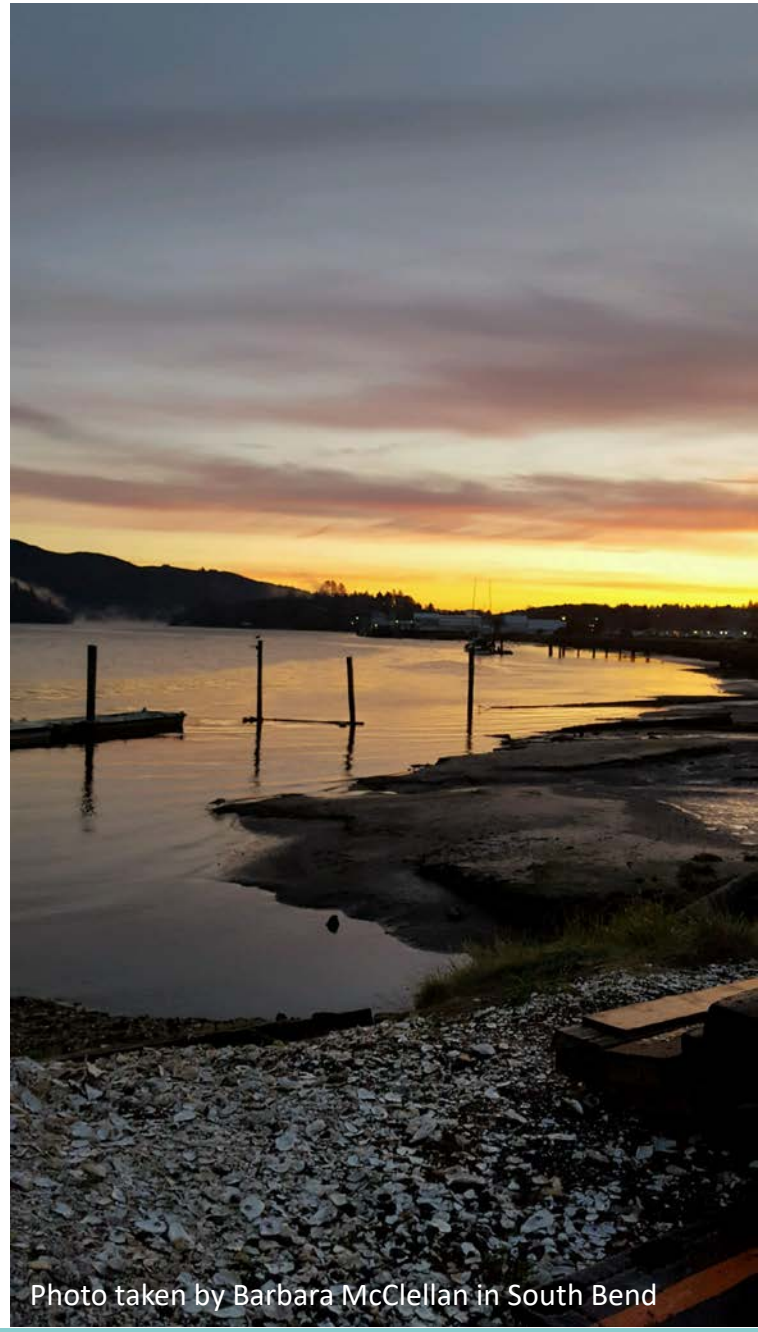


Photo taken by Barbara McClellan in South Bend

Willapa Bay Economics

Recreational Marine Fishery

Year	Angler Trips	Economic Benefit[1]
2015	21,453	$2.1
2016	27,961	$2.7
2017	21,500	$2.1
2018	9,254	$0.9
2019	9,750	$0.9
2020*	8,749	$0.8
Average	*16,445*	*$1.6*

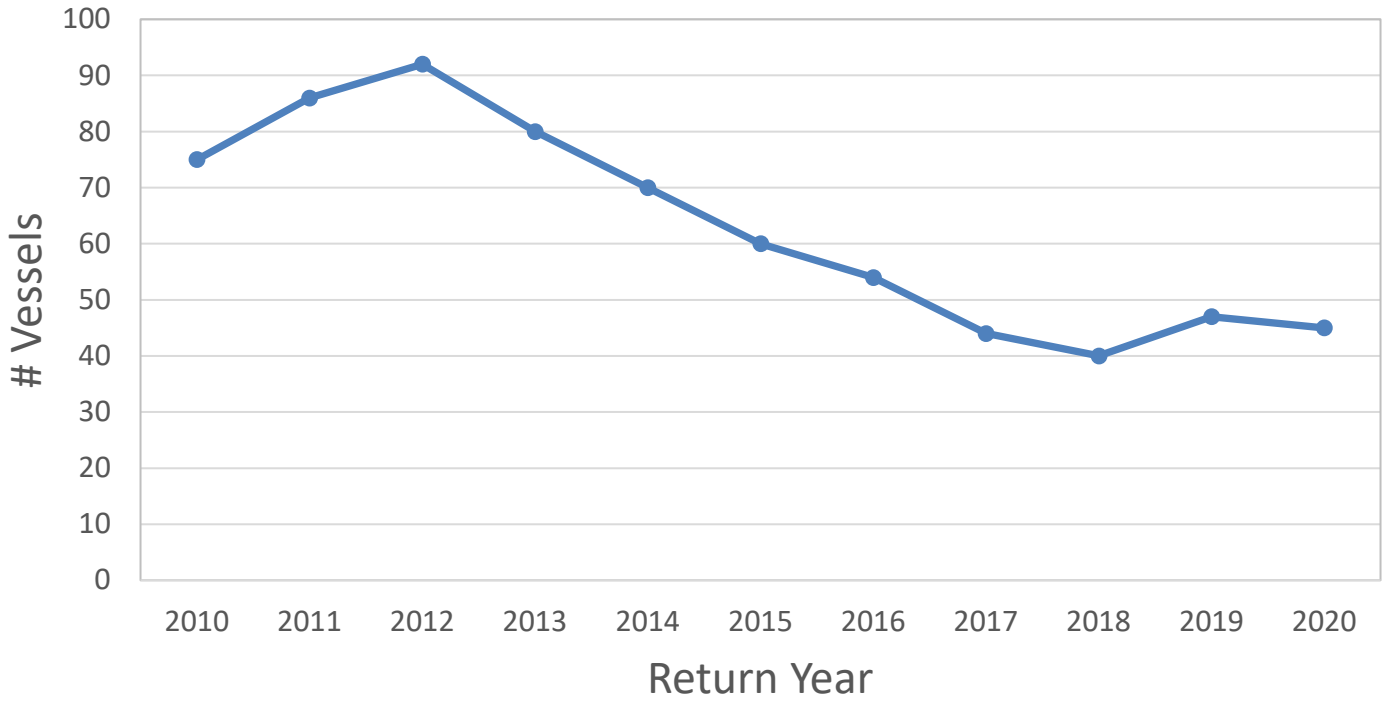
[1] Dollar values in millions

**Preliminary subject to change*

Willapa Bay Economics

Commercial Fisheries Effort

Total # of Commercial License Holders Landing Fish by Year



Willapa Bay Economics

Commercial Fishery

Year	# Landings	Chinook[1]	Coho[1]	Chum[1]	Total[1]
Avg 2010-2014	*1,356*	*$402*	*$532*	*$29*	*$958*
2015	261	$119	$22	$12	$152
2016	657	$93	$383	$27	$503
2017	344	$93	$77	NA	$170
2018	339	$47	$127	$2	$176
2019	392	$35	$116	$1	$152
2020 *	305	$20	$222	$22	$264
Avg 2015 - 2020	*383*	*$68*	*$157*	*$13*	*$236*

[1] *Dollar values in thousands*

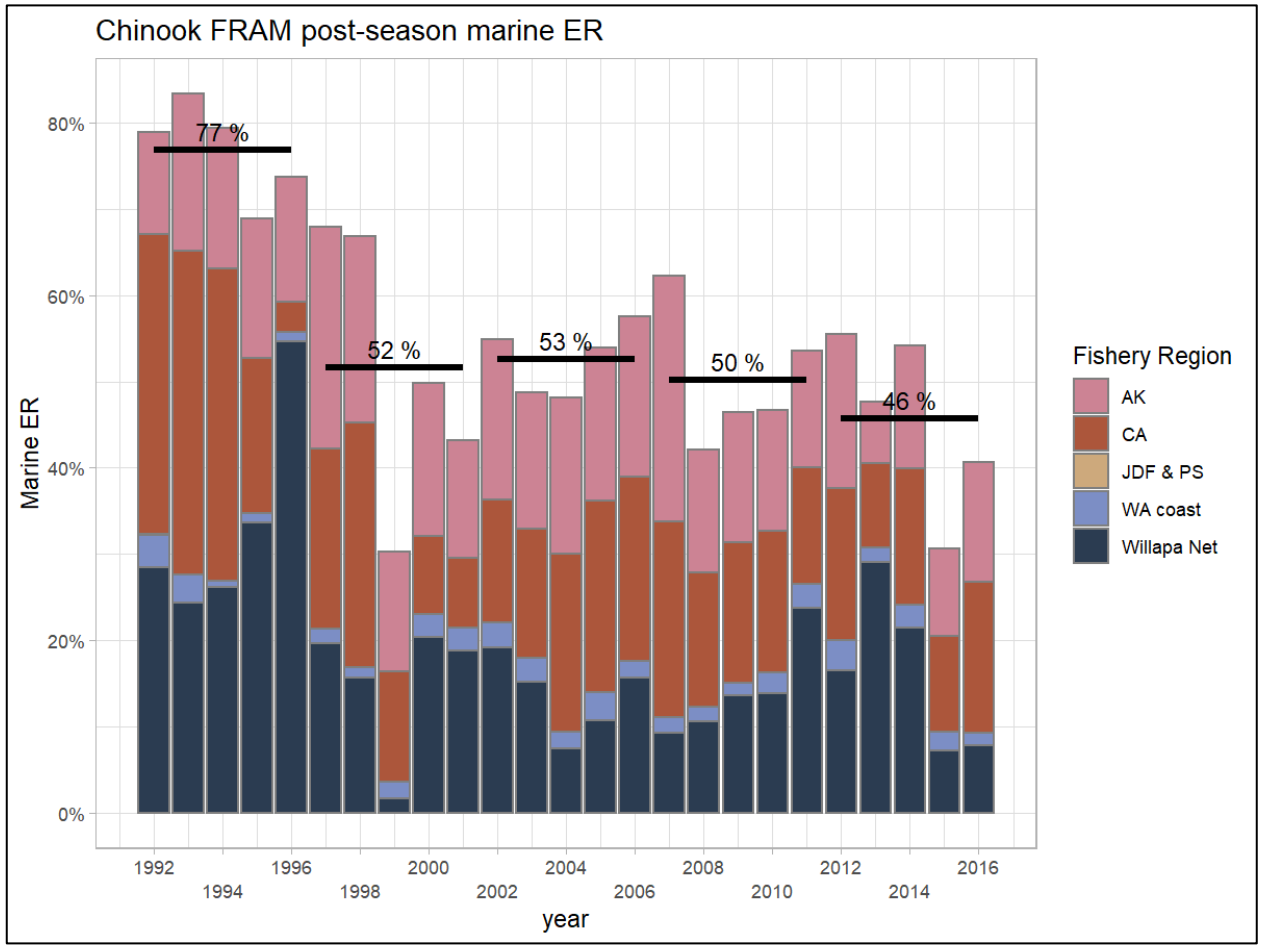
**Preliminary subject to change*

Fish & Wildlife Commission Guidance

January Commission Requests

- Historical impact rates on Willapa Bay natural origin Chinook including pre-terminal and terminal fisheries
- Effects of species prioritization designations for sport and commercial fisheries
- What would be needed for incidental take of Chinook and Coho in Willapa Bay fisheries
- Providing for in-bay test fisheries in 2021

January Commission Requests



- Policy Development
  - AHA model
    - -35% pre-terminal harvest rate
    - -14% terminal harvest rate
    - -43.8% total exploitation rate
- Declining exploitation rate
- New Pacific Salmon Treaty annex in 2019

Interim Guidance

2018

- Results of Policy Implementation
  - Increased recreational harvest rate
  - Limited remaining impacts for commercial fisheries

- Guidance
  - Actively manage for a 20% impact rate cap
    - » Commercial fishery allocation of 9%
  - Active monitoring of bay fishery prior to Sept. 30
  - Explore reductions to recreational bag limits and curtail high catch periods to meet objectives


Photo taken by Barbara McClellan in South Bend

Interim Guidance

2019

- Results of Policy Implementation
  - Increased recreational harvest rate
  - No remaining impacts for commercial fisheries

- Guidance
  - Actively manage for a 20% impact rate cap
  - Suspension of time and area restrictions for commercial fisheries
  - Flexibility for staff to determine bag limits for recreational fisheries

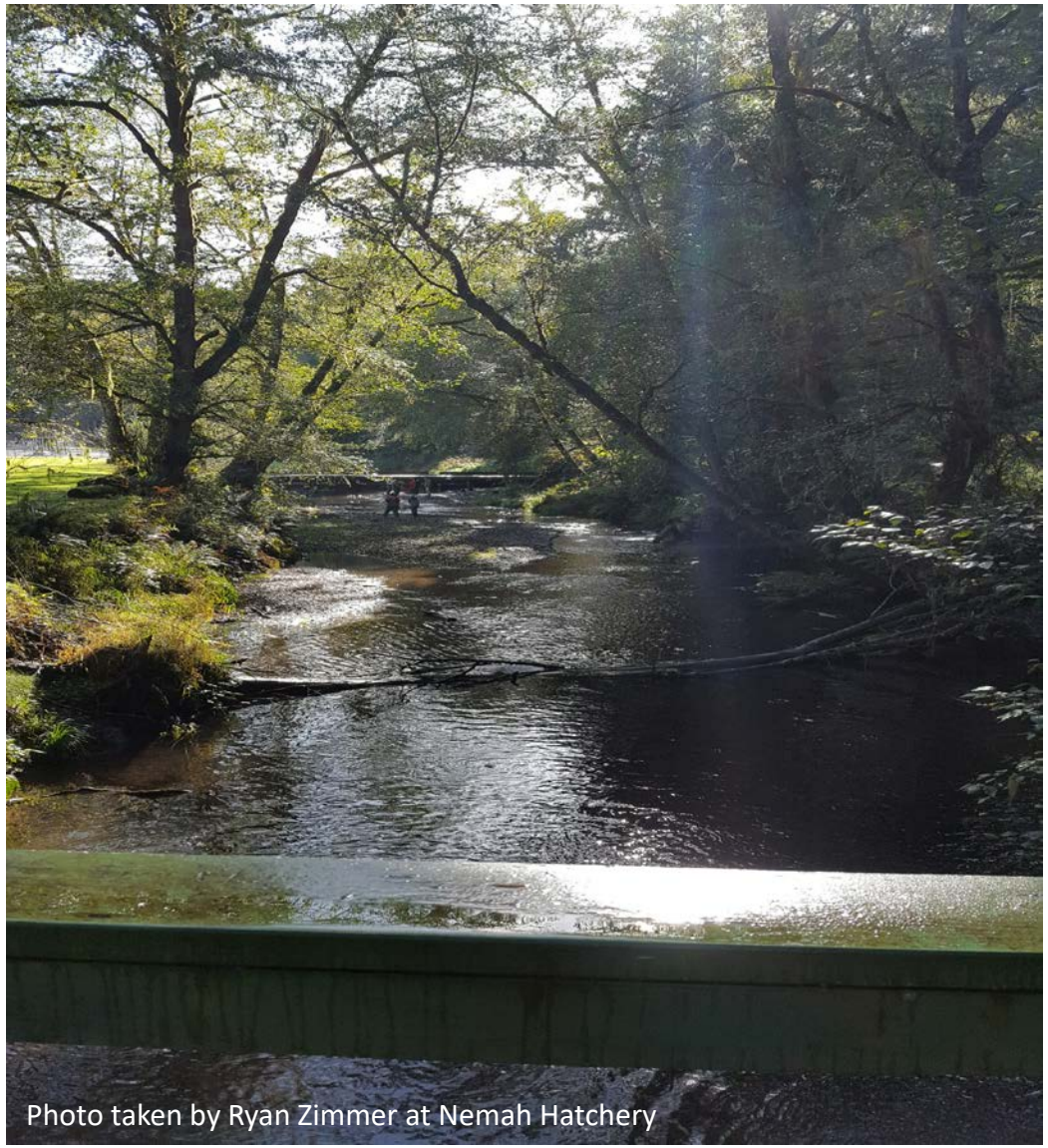


Photo taken by Ryan Zimmer at Nemah Hatchery

Interim Guidance

2020

- Constraints
  - Low forecasted abundance of natural Coho

- Guidance
  - Carry forward the 2019 interim guidance
    - » Except for reducing the 20% harvest rate cap to 14%
    - » Leave hatchery production releases at their current facility


Photo taken by Barbara McClellan at Naselle Hatchery Attraction Channel

Questions