

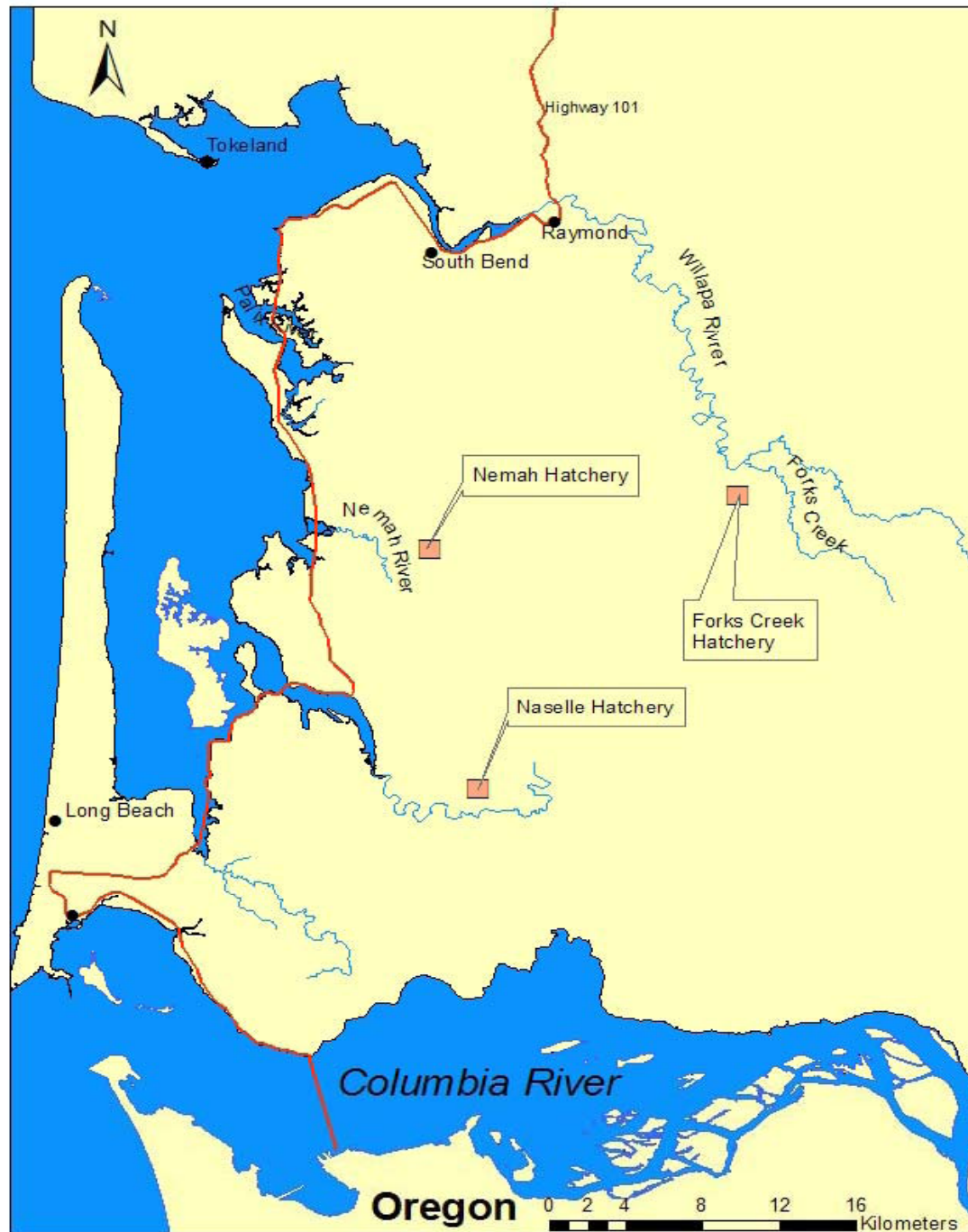
Hatchery Reform in Willapa Bay



James Dixon
WDFW Hatchery
Division



Willapa Bay



Historical Context

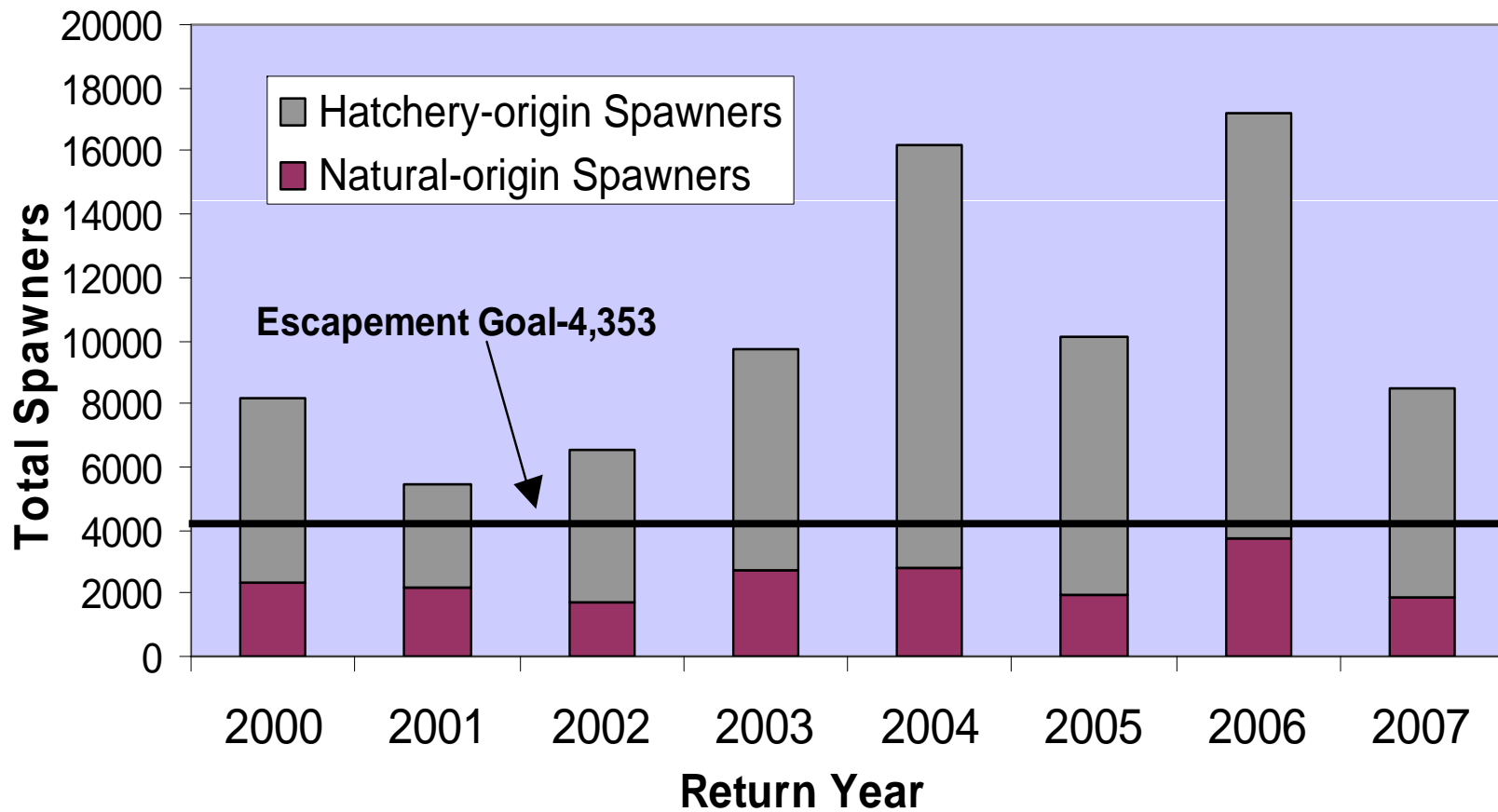
- System has been primarily managed for harvest for over a century.
- Harvest and the artificial production have shifted the historic salmonid-species balance in the bay.
- Historic importation of out-of-basin and out-of-ESU hatchery stocks.
- Heavy logging impact on drainages
- Low pop. density.....**Cleanest Large estuary in the lower 48.**

The Need for Hatchery Reform

- 21st Century Salmon and Steelhead Initiative-
focus on healthy natural salmon production
- The Willapa Bay Hatchery System was review by
the HSRG in 2004?
- Development of a new long-term (50yr) RMP
 - Which will focus on Natural production in the bay as the
primary driver and metric for artificial production and
in-turn harvest.
- Tools and logic for balancing programs with
natural production are in place.
- No NMFS status review since 1998.

Chinook Escapement

Willapa Bay- Total Chinook Spawners 2000-2007



Hatcheries Action and Implementation Plan (Hatcheries 2020)

- Identify and Categorize natural populations relative to their role in meeting conservation and fisheries goals.
- Identify and Categorize hatchery program goals and broodstock management strategies.
- Identify alternative scenarios for the combination of hatchery and fishery actions.

Chinook Stock Goals

Stock	Viability Goal	Associated Hatchery Program?	Broodstock Strategy and metrics
North River	Contributing	No	No Program
Willapa River	Primary	Yes	Integrated; PNI>0.70; pHOS<.30
Naselle River	Primary	Yes	Integrated; PNI>0.70; pHOS<.30
Nemah River*	Stabilizing	Yes	Segregated pHOS (strays) <0.05

* Not a SaSI stock

Current AHA Scenarios for Willapa Bay Chinook

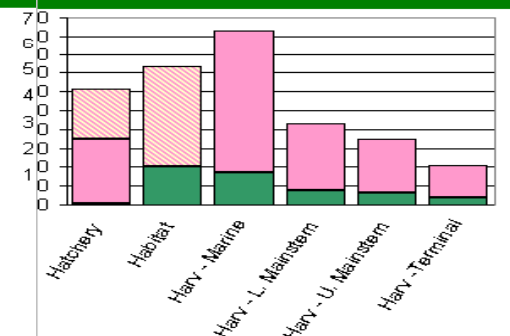
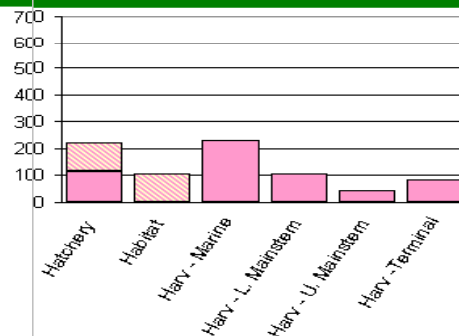
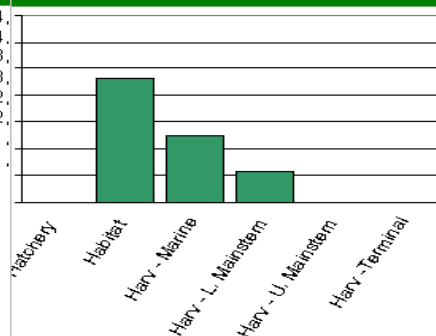
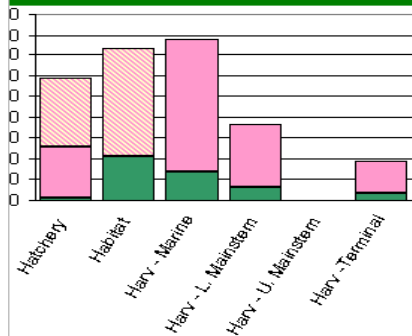
Willapa R.

North R.

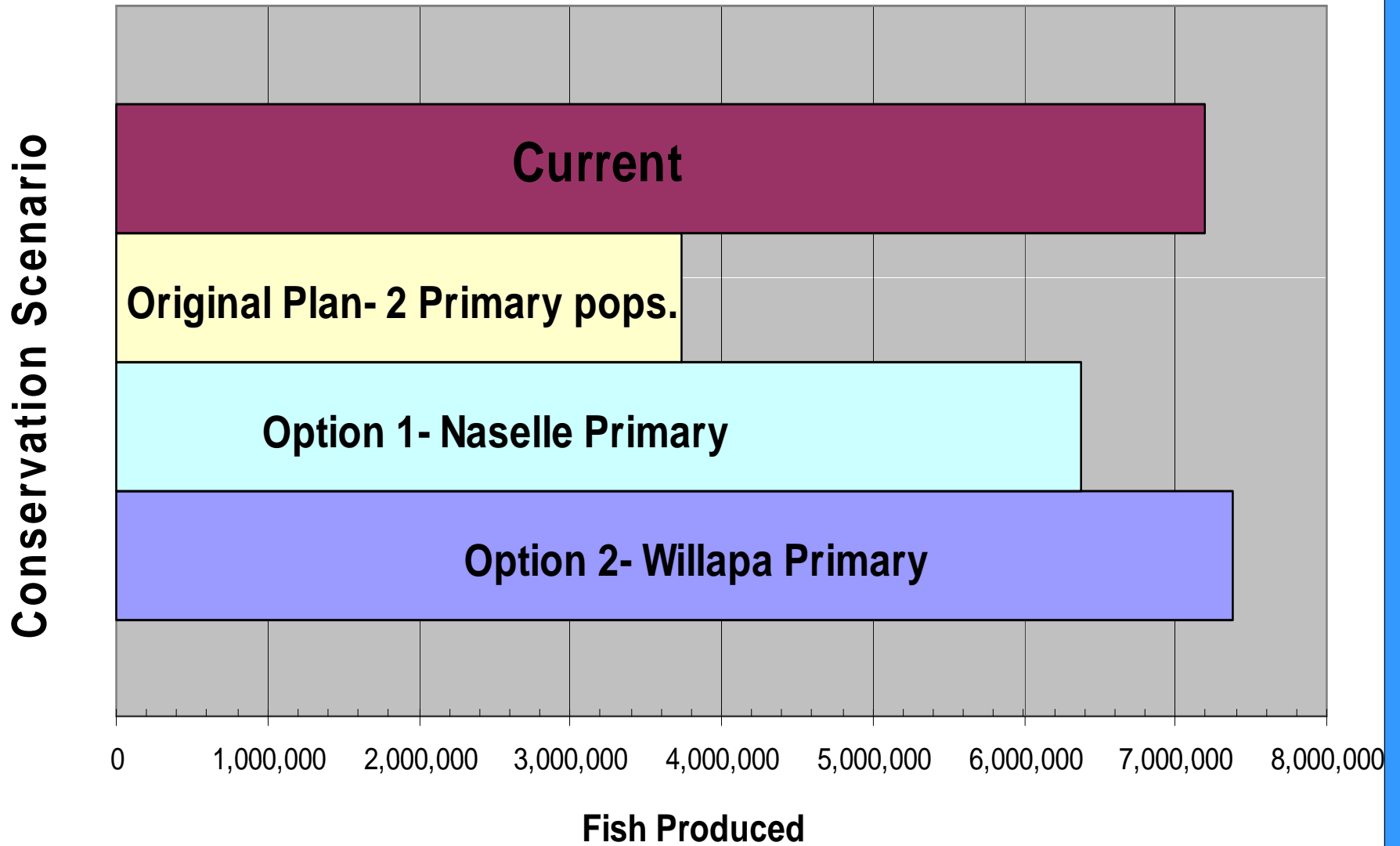
Nemah R.

Naselle R.

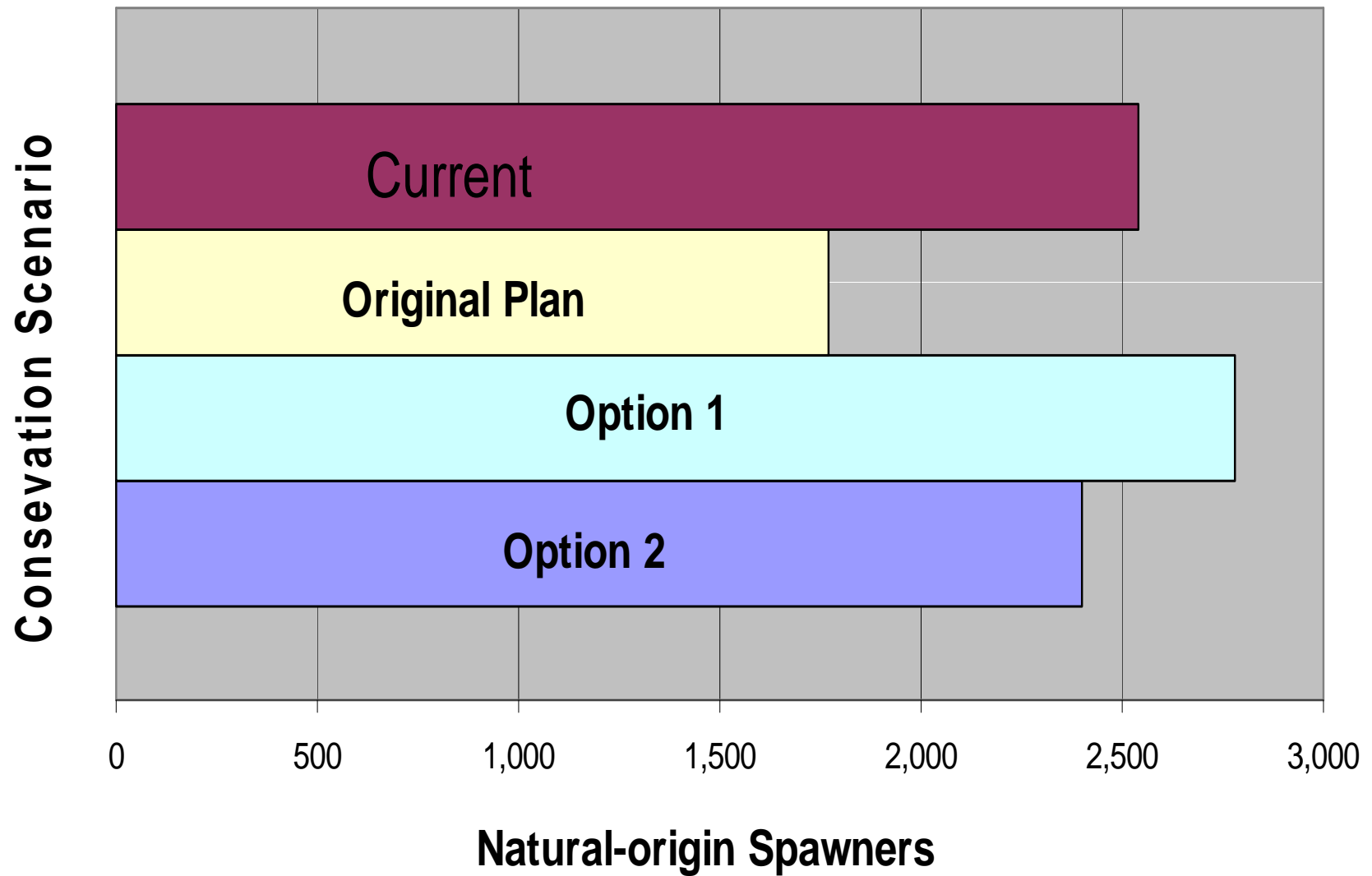
Current		Current		Current		Current	
4.00	4,500.00	4.00	1,350.00	0.01	0.01	4.00	6,150.00
1		1		1		1	
400.0	450,000	400.0	135,000	1.0	1	400.0	615,000
0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
y		Y		y		y	
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4.00	4,500	4.00	1,350	0.01	0	4.00	6,150
0.300	0.300	0.300			0.300	0.300	0.300
0.200	0.200	0.200			0.200	0.200	0.200
					0.100	0.200	0.200
0.130	0.130				0.220	0.150	0.150
0.513	0.513	0.440			0.607	0.619	0.619
pNOB	PHOS	pNOB	PHOS	pNOB	PHOS	pNOB	PHOS
5%						5%	
5%	66%				100%	3%	68%
Harv	Int	Harv	Int	Harv	Int	Harv	Int
1280	2,196,096		-	909	244	910	838
	250				2,001,752		2,999,044
55%	45%		100%	65%	35%	45%	55%
7.5	y	5.5	n	6.0	y	6.5	y



Willapa Bay Hatchery Chinook Production



Willapa Bay Chinook- Modeled Avg NOR Escapement



Willapa Bay Chinook Harvest (Modeled Avg)

