



MAKAH NATIONAL FISH HATCHERY

Neah Bay, Washington

INTRODUCTION

The Washington Fish and Wildlife Office (WFWO) and the Olympia Fish Health Center (OFHC) assist the three National Fish Hatcheries (NFH) on the Olympic Peninsula -- Makah, Quilcene, and Quinault (see locale map below). The WFWO, OFHC, and NFHs work together to restore salmon for domestic and international fisheries in compliance with Trust responsibilities to tribes, court orders, agreements with states, and international treaties. WFWO works with cooperators to program and evaluate hatchery production to assure obligations are met with minimal impact on wild fish. OFHC provides fish health diagnostic and treatment services to assure optimum post-release survival of hatchery fish.

This annual report provides basic information on Makah NFH to inform Service employees, visitors, and our cooperators of their hatchery programs.



Western Washington locale

Makah NFH, located within the Makah Indian Reservation on the Olympic Peninsula, began operating in 1981. General goals include rebuilding salmon and steelhead runs along the coast of Washington and contributing to current and future fisheries. Specific objectives to meet these goals vary by species and are described on the following pages.

QUICK REFERENCE DATA

LEGEND: AVG = Average (mean)
 BY = Brood Year
 FL = Fork Length
 COS = Coho Salmon
 FCS = Fall Chinook Salmon
 WST = Winter Steelhead
 ♀ = Female
 ♂ = Male

▶ **ADULT AGES AT RETURN**

	AGE RANGE	2007 AVG. AGE	1985-2007 AVG. AGE
FCS	2-6 yrs.	3.1	3.7
COS	2-3 yrs.	2.8	2.8
WST	2-6 yrs.	3.4	3.3

▶ **ADULT FORK LENGTHS in millimeters (inches)**

	FL RANGE	FL MEAN
FCS	350-945mm (14-37")	584mm (23")
COS	250-840mm (10-33")	644mm (25")
WST	330-1008mm (13-40")	675mm (27")

▶ **ADULT ENTRY DATES TO HATCHERY**

	1988-2007 RANGE	MEAN ENTRY DATE
FCS	Sep - Nov	October 13
COS	Sep - Jan	November 3
WST	Sep - Feb	December 16

▶ **NUMBER AND DATES OF ADULTS SPAWNED**

	2007 Date Range	2007 # Spawned			1986-2007 Avg # Spawned
		♂	♀	Total	
FCS	10/02-11/05	136	131	267	938
COS	10/22-12/08	334	271	605	502
WST	10/22-01/15	193	205	398	438

Please direct questions, comments, and suggestions to:



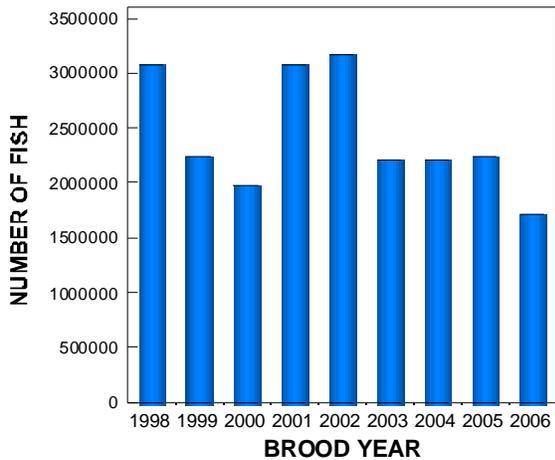
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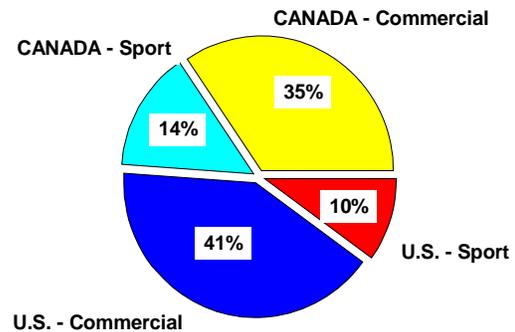


FALL CHINOOK SALMON

FALL CHINOOK RELEASES
(Brood Years 1998 - 2006)



CATCH OF FALL CHINOOK
(Brood Years 1985 - 2003)



GOAL: Rebuild Sooes River fall Chinook (FCS) run to approximately 8,000 returning adults. Contribute to local fisheries near Cape Flattery, as well as tribal fisheries in the Sooes and Waatch Rivers.

RELEASES: The current program goal is the release of 2.2 million 3.5-inch fish (subyearlings) at the hatchery. An average of 507 adults are passed upstream each year to seed the watershed; our goal is 473. When available, 100,000 fish are transferred to the Makah Tribe's Educket Creek facility on the Waatch River for rearing and release.

CATCH: Commercial fisheries account for 76% of all fish captures. Of the FCS produced by Makah NFH, 49% are caught in Canadian waters, 40% in Alaska, 11% in Washington waters. The portion caught in Washington will increase as the run builds and directed fisheries in the Sooes River occur.

FCS RETURNS TO HATCHERY RACK AND RIVER BY RETURN YEAR

Return Year	Age at Return					Total
	2	3	4	5	6	
1999	168	353	538	357	24	1,440
2000	301	425	553	138	10	1,427
2001	604	1,553	2,496	222	14	4,889
2002	712	1,126	5,522	405	0	7,765
2003	359	1,796	2,679	644	0	5,478
2004	210	5,935	6,358	975	0	13,478
2005	41	61	3,528	1,656	0	5,286
2006	15	101	2,080	1,343	14	3,553
2007	227	99	447	116	0	889

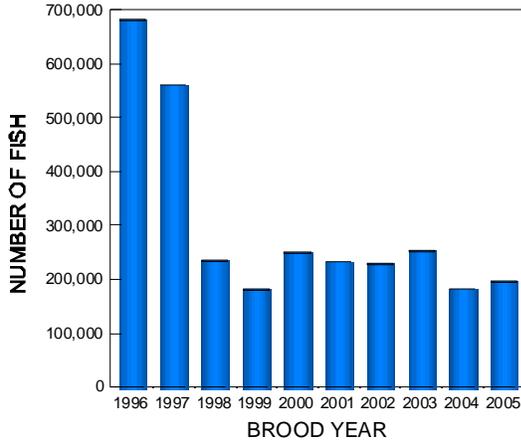
FCS ADULTS PASSED UPSTREAM BY RETURN YEAR

Return Year	Adults Passed Upstream
1999	24
2000	112
2001	2,837
2002	2,800
2003	1,061
2004	1,461
2005	1,025
2006	22
2007	5

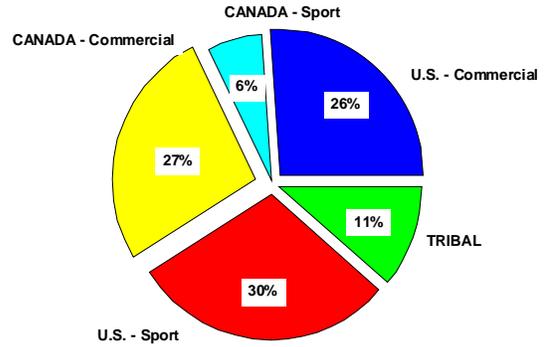
Beginning in 1997, tribal fisheries have been conducted in the Sooes River. 100 percent Chinook mass-marking was initiated in 2005.

COHO SALMON

COHO RELEASES (Brood Years 1996 - 2005)



CATCH OF COHO (Brood Years 1988 - 2004)



GOAL: Build coho runs in Cape Flattery area. Contribute to local fisheries near Cape Flattery, as well as tribal fisheries in the Sooes and Waatch Rivers.

RELEASES: Approximately 233,000 coho yearlings are released annually into the Sooes River. An additional 40,000 pre-smolts are provided to the Makah Tribe's facility on Educket Creek. Our goal is to pass 1,610 adults upstream annually to seed the watershed; we average 2,434 each year.

CATCH: An average of 6,000 fish (from hatchery programs) are caught in U.S. and Canadian waters each year.

COHO RETURNS TO HATCHERY RACK BY RETURN YEAR

Return Year	Age at Return		Total
	2	3	
1998	446	2,969	3,415
1999	492	7,842	8,334
2000	504	4,401	4,905
2001	438	6,388	6,826
2002	485	5,972	6,457
2003	372	3,781	4,153
2004	768	3,613	4,381
2005	107	4,982	5,089
2006	64	917	981
2007	130	705	835

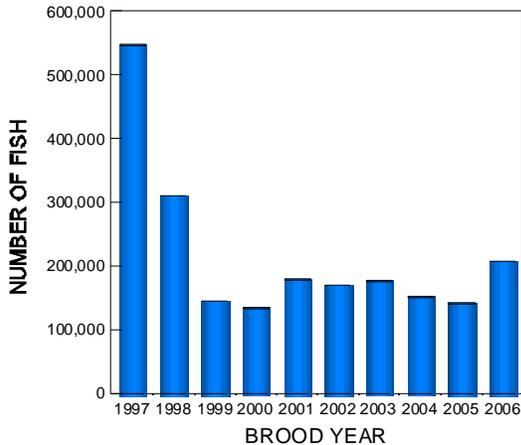
COHO ADULTS PASSED UPSTREAM BY RETURN YEAR

Return Year	Adults Passed Upstream
1998	5,545
1999	5,549
2000	1,937
2001	2,084
2002	3,214
2003	1,487
2004	1,802
2005	2,823
2006	447
2007	46

The current coho program contributes to various fisheries and is very successful. Average survival is 4 percent. A coho mass-marking program was initiated in the fall/winter of 1997-98 to support selective fisheries.

WINTER STEELHEAD

WINTER STEELHEAD RELEASES
(Brood Years 1997 - 2006)



CATCH OF WINTER STEELHEAD
(1997 - 2008)

Catch Year	Number Caught	
	Sooes River	Waatch River
1997-98	1,539	166
1998-99	2,967	50
1999-00	963	31
2000-01	1,406	74
2001-02	2,220	90
2002-03	446	22
2003-04	1,895	2
2004-05	3,516	6
2005-06	2,413	107
2006-07	Unavailable	Unavailable
2007-08	Unavailable	Unavailable

OBJECTIVE: Increase commercial and sport fishing opportunities and harvest in the Sooes and Waatch Rivers.

RELEASES: The current production goal is the release of 158,000 yearlings into the Sooes River and transfer of 22,000 yearlings to the Waatch River.

CATCH: Winter steelhead are caught in commercial and sport fisheries in the Sooes and Waatch Rivers. Few are caught in the ocean.

WST RETURNS TO HATCHERY RACK BY RETURN YEAR

Return Year	Age at Return					Total
	2	3	4	5	6	
1998-99	5	2,261	726	5	0	2,997
1999-00	6	510	118	5	0	639
2000-01	0	299	289	2	0	590
2001-02	19	1,213	516	34	0	1,782
2002-03	6	441	73	0	0	520
2003-04	163	169	249	0	0	581
2004-05	1	818	94	0	0	913
2005-06	22	499	202	0	0	723
2006-07	73	481	509	6	0	1,069
2007-08	0	388	231	0	0	619

Steelhead are managed as two populations - a hatchery population, entering from October to February, and a wild population, entering from March to May.

The wild population is allowed to move upstream past the hatchery to spawn naturally.

Broods 2004, 2005 and 2006 hatchery steelhead were mass marked.

LAKE OZETTE SOCKEYE

PROGRAM OVERVIEW: The Lake Ozette sockeye program is an integrated hatchery program intended to assist in the recovery of sockeye in the Lake Ozette system.

Lake Ozette sockeye were listed as threatened under the ESA in 1999. The current supplementation program was initiated in 2000. An evaluation of the program is scheduled to occur 12 years (3 full generations) post implementation. The evaluation will determine if it is necessary to continue or to terminate the tributary supplementation project.

Beginning in 2000, eggs were collected from returns to tributaries of Lake Ozette, primarily Umbrella Creek. At the request of the Makah Nation, Makah NFH became involved in the Lake Ozette sockeye program in 2003. The Makah NFH isolation/quarantine facility was modified at that time to be used for initial incubation to reduce the risk of egg loss that could occur at the Umbrella and Stony Creek remote sites. Unfertilized gametes are taken to Makah NFH, fertilized and incubated to the eyed stage. The egg take goal is 305,000 for incubation and otolith marking. The eyed eggs are taken back to Umbrella Creek (122,000) and the Stony Creek Hatchery (183,000). Planting goals are 122,000 at 450 fish per pound into Umbrella Creek, plus 91,500 at 900 fish per pound and 91,500 at 450 fish per pound into Stony Creek.