

# SOOES/OZETTE— SOOES FALL CHINOOK

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## STOCK STATUS

1992 STATUS	2002 STATUS
<b>Unknown</b>	<b>Unknown</b>

## STOCK STATUS RATING DATA

Abundance data for the natural-origin component of this composite stock are very limited, so stock status is **Unknown** in 2002. Hatchery escapement data from 1984 to the present is available from the Makah National Fish Hatchery staff. The relevancy of this data in determining stock status rating is currently unresolved between state and tribes.

## STOCK DEFINITION

Sooes fall Chinook were identified as a stock based on their distinct spawning distribution and genetic differences.

**SPAWNING DISTRIBUTION:** Spawning takes place throughout the watershed up to RM 13.8 in the mainstem before an impassable falls and in up to 39 miles of tributaries. Most spawning occurs primarily within the first three miles of the mainstem Sooes River below the Makah National Fish Hatchery (MNFH) conversion dam. Active adult passage above the dam has occurred for 15 years by the U.S. Fish & Wildlife Service (USFWS).

**SPAWNING TIMING:** Spawning generally occurs from October through November.

**GENETIC ANALYSIS:** Fall Chinook sampled at Makah NFH in 1997 were genetically distinct from other Washington Chinook stocks examined. Natural spawners have not been sampled (Anne Marshall, WDFW, pers comm). It is unlikely that hatchery plants of Green River Fall Chinook into the Sooes River that occurred about 50 years ago had a much influence on the genetic integrity of the native Sooes River Fall Chinook stock, however Sooes Chinook do show some similarities to Puget Sound Chinook, which could be the result of these introductions (Mike Crewson, Makah Tribe, pers comm).

## STOCK ORIGIN

This is a **native** stock with **composite** production. Fish are spawned at the Makah National Fish Hatchery, and fry are released into the drainage.

# QUILLAYUTE – SOL DUC SUMMER CHINOOK

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## STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Unknown

## STOCK STATUS RATING DATA

Abundance data for the natural-origin component of this composite stock are very limited, due to the mixing of the native stock (Sol Duc summer Chinook) with the introduced stock (Sol Duc hatchery spring Chinook). Although escapement is monitored, there are inadequate abundance trend data with which to rate stock status, so status is **Unknown** in 2002.

## STOCK DEFINITION

Sol Duc summer Chinook were identified as a stock based on their distinct spawning distribution, early river entry (April to mid-August), and spawning timing.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the mainstem Sol Duc River (RM 18.0 to RM 45.0). Spawning is also observed in Beaver and Bear creeks in years of moderate to high late summer flows.

**SPAWNING TIMING:** Spawning generally occurs from late August to mid-October.

**GENETIC ANALYSIS:** Genetic analysis has not been done on this stock.

## STOCK ORIGIN

This is a **mixed** stock with **composite** production. This stock is composed of a native summer run stock and a non-native spring run stock. Chinook from WDFW Sol Duc Hatchery, which are likely a mixture of Dungeness Chinook and some Sol Duc summer Chinook, are known to stray onto wild spawning grounds. Since 1987 the Quileute Tribe has operated a summer Chinook hatchery program at Bear Springs using brood stock from the wild spawning population. Subsequent scale analyses revealed that a significant portion of the brood stock were of hatchery origin. Chinook from this program also stray onto wild spawning grounds. The summer Chinook stock may be a mixture of hatchery spring Chinook and native summer Chinook. Presently 100% of the hatchery fish are marked which will help distinguish hatchery and wild fish on the spawning grounds.

# QUILLAYUTE – SOL DUC FALL CHINOOK

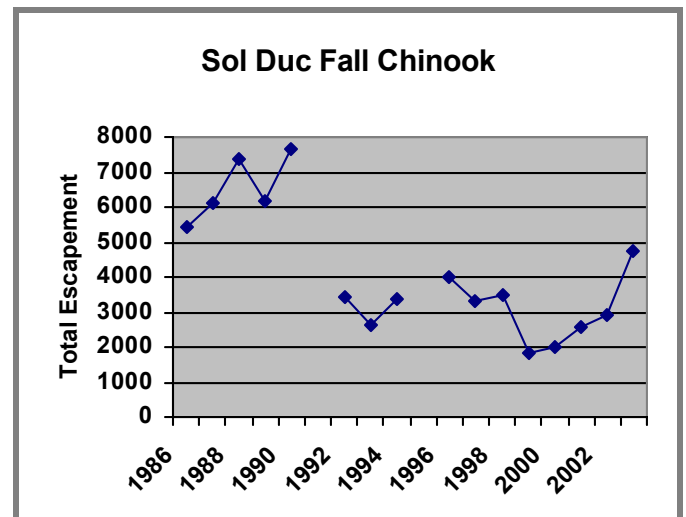
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	5,438
1987	6,100
1988	7,379
1989	6,156
1990	7,658
1991	No data
1992	3,420
1993	2,628
1994	3,376
1995	No data
1996	4,003
1997	3,338
1998	3,470
1999	1,854
2000	1,978
2001	2,593
2002	2,940
2003	4,720



Data are total escapement estimates based on redd counts in index areas on the mainstem Sol Duc (RM 5.6 to 53.5, RM 11.2 to 13.0, RM 18.6 to 22.6 and RM 41.1 to 43.0). Surveyed index areas also include Gunderson, Shuwah, Lake, Beaver and Bear creeks.

There is no evidence of a negative trend in escapements. Present spawning distribution is thought to be similar to the historic spawning distribution, therefore stock status is again rated **Healthy** in 2002.

## STOCK DEFINITION

Sol Duc fall Chinook were identified as a stock based on their distinct spawning distribution, later river entry timing (September to late November), and spawning timing.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Sol Duc River up to the forks and in larger tributaries including Gunderson, Shuwah, Lake, Beaver and Bear creeks.

**SPAWNING TIMING:** Spawning generally occurs from late October to early December.

# QUILLAYUTE – SOL DUC FALL CHINOOK

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**GENETIC ANALYSIS:** Genetic analysis has not been done on Sol Duc fall Chinook.

## STOCK ORIGIN

This is a **native** stock with **wild** production. A small hatchery program using native brood stock was discontinued in the early 1990s.

# QUILLAYUTE – QUILLAYUTE/BOGACHIEL SUMMER CHINOOK

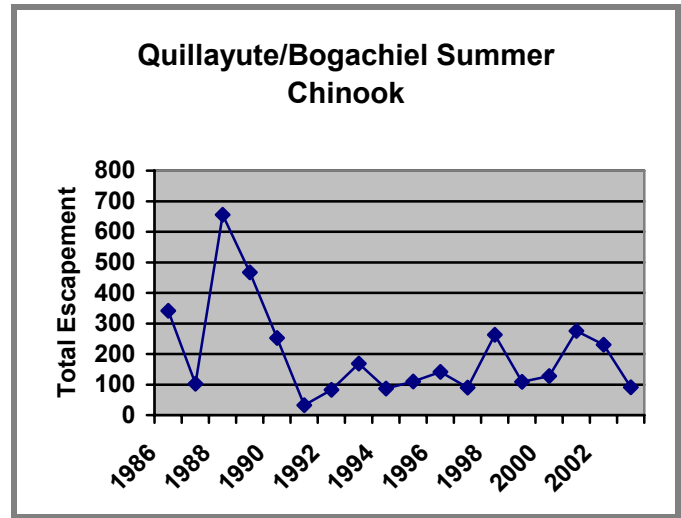
## STOCK STATUS

<b>1992 STATUS</b> Unknown	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Good

YEAR	TOTAL ESCAPEMENT
1986	341
1987	103
1988	656
1989	467
1990	252
1991	32
1992	83
1993	169
1994	87
1995	110
1996	141
1997	90
1998	263
1999	109
2000	128
2001	275
2002	230
2003	91



Data are total escapement estimates based on redd counts in index areas of the Bogachiel River. Index areas surveyed include the mainstem Bogachiel River (RM 5.0 to 8.7, RM 8.7 to 15.7, RM 19.2 to 20.2 and RM 0.0 to 31.0).

Escapements have remained within the normal range of variation for this stock and have not changed significantly so the stock is again rated **Healthy** in 2002.

## STOCK DEFINITION

Quillayute/Bogachiel summer Chinook were identified as a stock based on their distinct spawning distribution, early river entry timing (early April to mid-August) and spawning timing. The Quileute Tribe recommends this stock to be associated with the Sol Duc rather than with the Bogachiel.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the mainstem Bogachiel River. Redds are also consistently observed in the mainstem Quillayute River.

**SPAWNING TIMING:** Spawning generally occurs from late August to mid-October.

# **QUILLAYUTE – QUILLAYUTE/BOGACHIEL SUMMER CHINOOK**

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**GENETIC ANALYSIS:** Genetic analysis has not been done on Quillayute/Bogachiel summer Chinook.

## **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# QUILLAYUTE – QUILLAYUTE/BOGACHIEL FALL CHINOOK

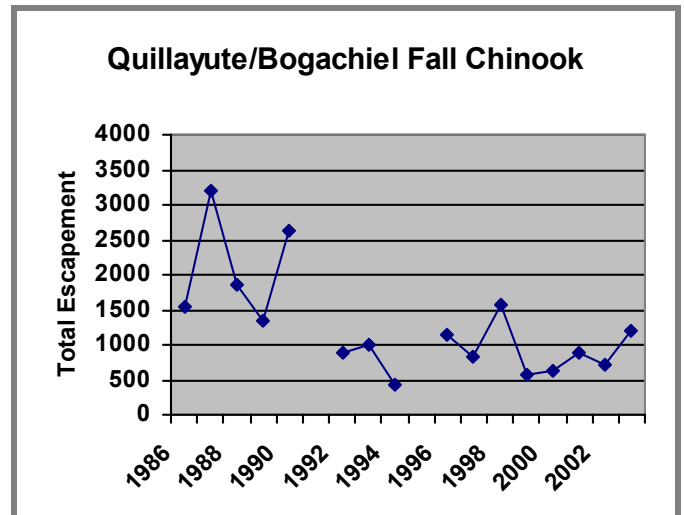
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Good

YEAR	TOTAL ESCAPEMENT
1986	1,540
1987	3,210
1988	1,853
1989	1,350
1990	2,615
1991	No data
1992	881
1993	991
1994	432
1995	No data
1996	1,133
1997	833
1998	1,564
1999	563
2000	638
2001	868
2002	711
2003	1,198



Data are total escapement estimates based on redd counts in index areas on the mainstem Bogachiel River (RM 0.0 to 31.0, RM 5.0 to 8.7, RM 8.7 to 15.7 and RM 19.2 to 20.2).

There is no evidence of a significant negative trend, and current spawning distribution is thought to be similar to the historic distribution. Stock status is again rated **Healthy** in 2002.

## STOCK DEFINITION

Quillayute/Bogachiel fall Chinook were identified as a stock based on their distinct spawning distribution, later river entry timing (September to late November), and spawning timing.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the mainstem Bogachiel River and Bear Creek. In high-flow years, smaller Bogachiel River tributaries may also be utilized. Fewer redds are seen in the mainstem Quillayute River, except during low-flow years.

**SPAWNING TIMING:** Spawning generally occurs from late October to early December.

# QUILLAYUTE – QUILLAYUTE/BOGACHIEL FALL CHINOOK

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**GENETIC ANALYSIS:** Genetic analysis has not been done on Quillayute/Bogachiel fall Chinook stock.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUILLAYUTE – DICKEY FALL CHINOOK

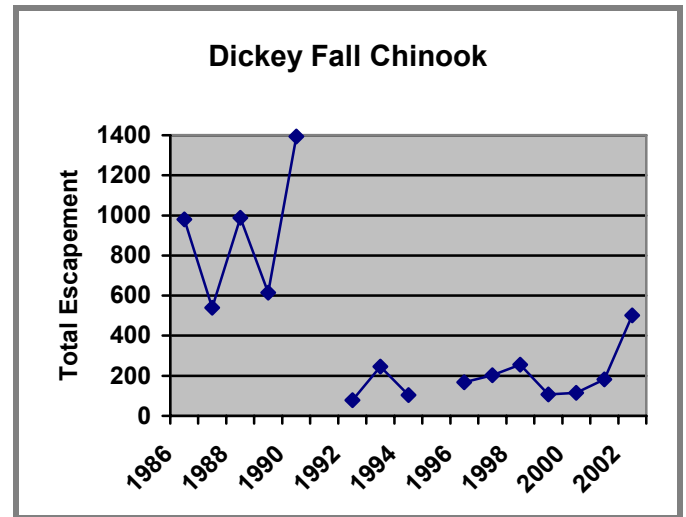
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Unknown
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## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	TOTAL ESCAPEMENT
1986	980
1987	540
1988	988
1989	615
1990	1,393
1991	No data
1992	78
1993	246
1994	104
1995	No data
1996	168
1997	203
1998	255
1999	107
2000	115
2001	182
2002	501



Data are total escapement estimates based on redd counts in index areas on the mainstem Dickey River (RM 5.1 to 8.0, RM 1.0 to 5.1 - Supplemental and RM 18.5 to 19.5) and in Colby Creek, East Fork Dickey and West Fork Dickey rivers.

Escapements dropped sharply after 1990 and have remained low. Stock status is rated **Unknown** in 2002 due to poor survey conditions and because spawner survey information has been incomplete for six of the last ten years. Escapements were partially or completely estimated using correlations with other rivers in the system, therefore the usefulness of the estimates for rating stock status is poor. The lower escapements may possibly be more of a function of bad survey conditions than actual declines. From 1988 through 1990, escapement estimates for nearly all coastal Chinook stocks were unusually high resulting in extraordinary production from 1984 brood. Comparisons made with future escapement estimates may not reflect an accurate depiction of the current health of this stock.

## STOCK DEFINITION

Dickey fall Chinook were identified as a stock based on their distinct spawning distribution, later river entry timing (September to late November), and spawning timing.

# QUILLAYUTE – DICKEY FALL CHINOOK

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**SPAWNING DISTRIBUTION:** Most spawning takes place in the mainstem, East Fork and Middle Fork Dickey rivers.

**SPAWNING TIMING:** Spawning generally occurs from late October to early December.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Dickey fall Chinook stock.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUILLAYUTE – CALAWAH SUMMER CHINOOK

## STOCK STATUS

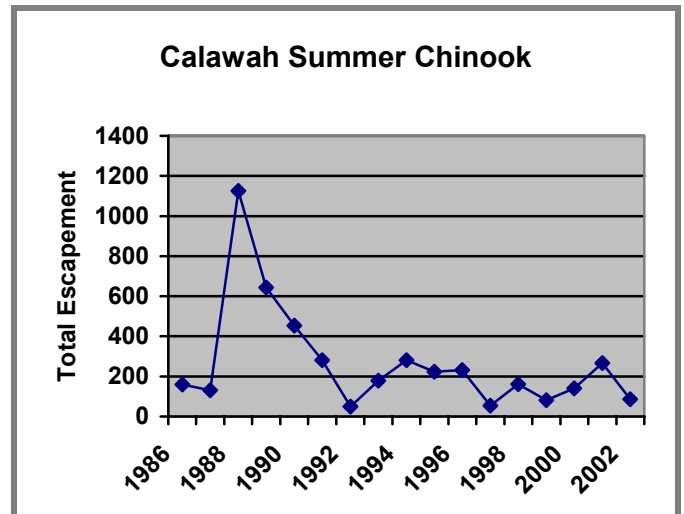
**1992 STATUS**  
Unknown

**2002 STATUS**  
Healthy

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** *Good*

YEAR	TOTAL ESCAPEMENT
1986	160
1987	131
1988	1,125
1989	644
1990	453
1991	281
1992	50
1993	178
1994	281
1995	224
1996	232
1997	55
1998	161
1999	82
2000	140
2001	267
2002	86



Data are total escapement estimates based on redd counts in index areas of the Calawah and Sitkum rivers. Surveyed index areas include the mainstem Calawah River (RM 0.0 to 15.3, RM 8.7 to 10.5 and RM 13.3 to 15.3) and in the North Fork Calawah and Sitkum rivers.

Escapements have remained fairly stable except for the very high value in 1988. Current spawning distribution is thought to be similar to historic distribution. Stock status is again rated **Healthy** in 2002.

## STOCK DEFINITION

Calawah summer chinook were identified as a stock based on their distinct spawning distribution, early river entry timing (early April to mid-August), and spawning timing.

# QUILLAYUTE – CALAWAH SUMMER CHINOOK

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**SPAWNING DISTRIBUTION:** Most spawning takes place in the mainstem Calawah and South Fork Calawah rivers. In years with high flows, spawning can take place in the lower three miles of the Sitkum River and the lower three miles of the North Fork Calawah River.

**SPAWNING TIMING:** Spawning generally occurs from late August to mid-October.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Calawah summer chinook.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUILLAYUTE – CALAWAH FALL CHINOOK

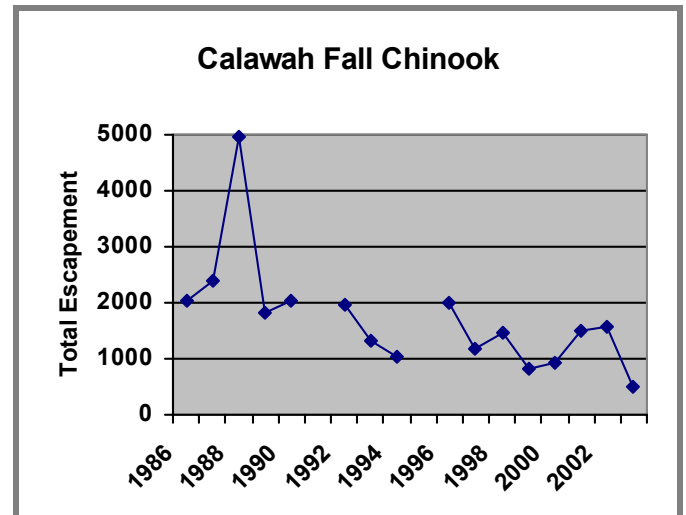
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	2,048
1987	2,403
1988	4,947
1989	1,830
1990	2,045
1991	No data
1992	1,958
1993	1,338
1994	1,021
1995	No data
1996	2,011
1997	1,187
1998	1,464
1999	810
2000	919
2001	1,488
2002	1,561
2003	487



Data are total escapement estimates based on redd counts in index areas on the mainstem Calawah River (RM 8.7 to 10.5 and RM 13.3 to 15.3) and in the North Fork Calawah River, Cool and Hyas creeks and the Sitkum River.

There is no consistent negative trend in escapement and present spawning distribution is thought to be similar to historic distribution. For these reasons, stock status is again rated **Healthy** in 2002.

## STOCK DEFINITION

Calawah fall Chinook were identified as a stock based on their distinct spawning distribution, later river entry (September to late November), and spawning timing.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the mainstem Calawah and lower South Fork Calawah rivers. In some years spawning is observed in the lower three miles of the Sitkum River and in the lower 11 miles of the North Fork Calawah River.

**SPAWNING TIMING:** Spawning generally occurs from late October to early December.

# QUILLAYUTE – CALAWAH FALL CHINOOK

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**GENETIC ANALYSIS:** Genetic analysis has not been done on Calawah fall Chinook stock.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# HOH – HOH SPRING/SUMMER CHINOOK

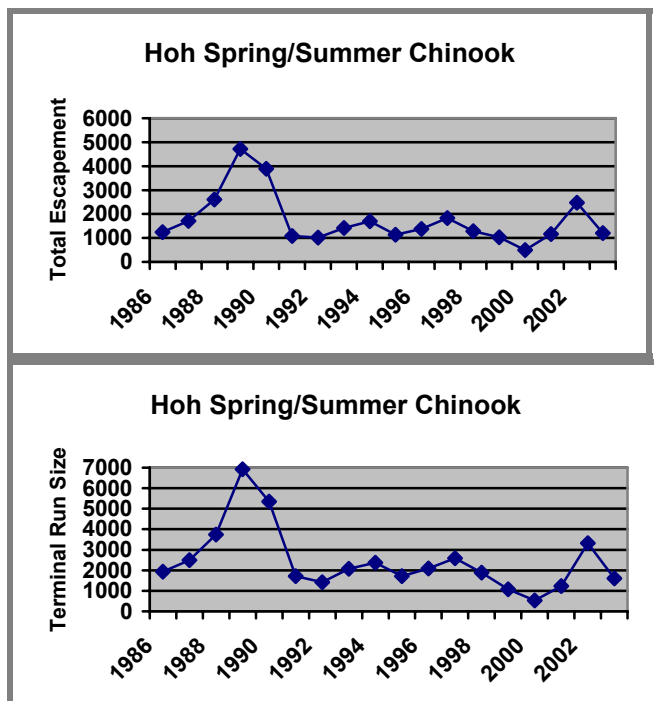
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

### USEFULNESS FOR RATING STOCK STATUS: Fair/Good

YEAR	TOTAL ESCAPEMENT	TERMINAL RUN SIZE
1986	1,248	1,931
1987	1,710	2,499
1988	2,605	3,741
1989	4,721	6,924
1990	3,894	5,344
1991	1,078	1,712
1992	1,018	1,424
1993	1,411	2,074
1994	1,699	2,364
1995	1,132	1,716
1996	1,372	2,083
1997	1,826	2,582
1998	1,287	1,880
1999	1,027	1,081
2000	492	529
2001	1,159	1,231
2002	2,466	3,326
2003	1,201	1,605



Data are total escapement estimates based on redd counts in index areas in the mainstem Hoh River (RM 24.2 to 30.0 and RM 36.2 to 39), supplemental mainstem index areas on the mainstem Hoh River (RM 12.0 to 24.2, RM 30.0 to 36.2 and RM 39.0 to 44.8) and in the South Fork Hoh River (RM 0.0 to 11.6). Index areas surveyed also include Winfield, Owl and Mount Tom creeks. Terminal run size data are escapement plus in-river sport and net catch.

Hoh spring/summer Chinook escapements have been fairly stable except for high escapements in 1989 and 1990. A historical low occurred in escapement in 2000, possibly due to oceanic conditions. This stock will be monitored and reassessed if escapements continue to drop below the average. There is no consistent negative trend, so stock status is again rated **Healthy** in 2002.

## STOCK DEFINITION

Hoh spring/summer Chinook were identified as a stock based on their distinct spawning distribution, early river entry timing (late April through August) and spawning timing.

## **HOH – HOH SPRING/SUMMER CHINOOK**

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**SPAWNING DISTRIBUTION:** Spawning takes place in the uppermost reaches of the north and south forks of the Hoh River, the mainstem Hoh River and in Mt. Tom Creek. Spawning also occurs in larger tributaries or upper river spring-fed tributaries following large, early freshets.

**SPAWNING TIMING:** Spawning generally occurs from mid-August through September. Spawning begins higher up in the basin and takes place later in areas down river.

**GENETIC ANALYSIS:** Genetic analysis has not been done on samples taken from Hoh spring/summer Chinook.

### **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# HOH – HOH FALL CHINOOK

## STOCK STATUS

**1992 STATUS**

Healthy

**2002 STATUS**

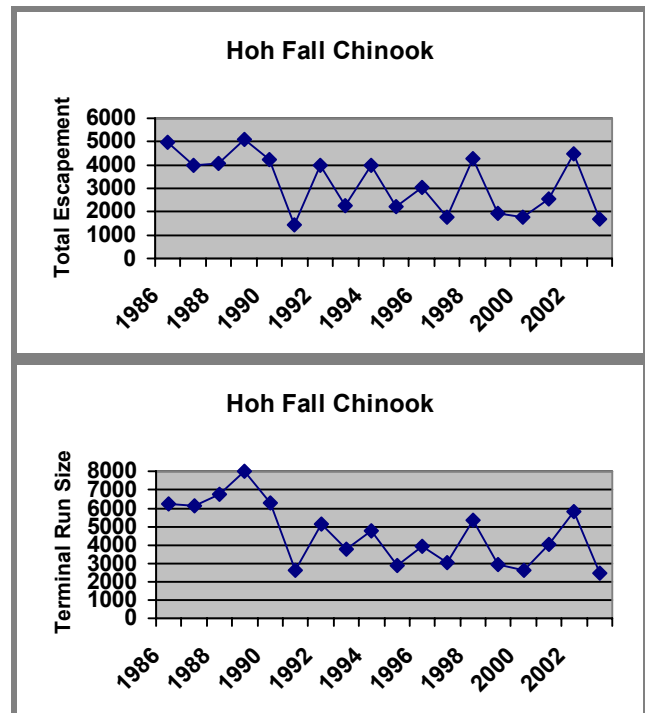
Healthy

## STOCK STATUS RATING DATA

### USEFULNESS FOR RATING STOCK STATUS:

Fair/Good

YEAR	TOTAL ESCAPEMENT	TERMINAL RUN SIZE
1986	4,981	6,258
1987	4,006	6,147
1988	4,068	6,755
1989	5,102	8,014
1990	4,236	6,298
1991	1,420	2,611
1992	4,003	5,136
1993	2,280	3,766
1994	3,967	4,794
1995	2,202	2,899
1996	3,022	3,943
1997	1,773	3,059
1998	4,257	5,369
1999	1,924	2,942
2000	1,749	2,632
2001	2,560	4,023
2002	4,497	5,798
2003	1,681	2,482



Data are total escapement estimates based on redd counts in index areas including the mainstem Hoh River (RM 24.2 to 30.0), supplemental index areas from the mainstem Hoh River (RM 6.8 to 24.2 and RM 30.0 to 31.7) and in tributaries including South Fork Hoh, Nolan, Anderson, Winfield, Elk, Alder, Willoughby, Lindner, Braden, Lost, Pole, Spruce, Owl, Iron Maiden, Shelter, Camp, Twin, Hoh creeks and unnamed tributary 20.0511. Terminal run size data are total escapement plus in-river sport and net catches.

There is no consistent negative trend in escapements, and current spawning distribution is thought to be similar to the historic distribution. For these reasons, stock status is again rated **Healthy** in 2002.

## STOCK DEFINITION

Hoh fall Chinook were identified as a stock based on their distinct spawning distribution, later river entry timing (September to late November), and spawning timing.

## HOH – HOH FALL CHINOOK

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**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Hoh from RM 3.0 to the lower three miles of the North and South Forks Hoh rivers and in most of the larger tributaries.

**SPAWNING TIMING:** Spawning generally occurs from late October to early December. Spawning begins higher up in the basin and occurs later in downstream areas.

**GENETIC ANALYSIS:** Genetic analysis has not been done on samples taken from Hoh fall Chinook.

### STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUEETS– QUEETS SPRING/SUMMER CHINOOK

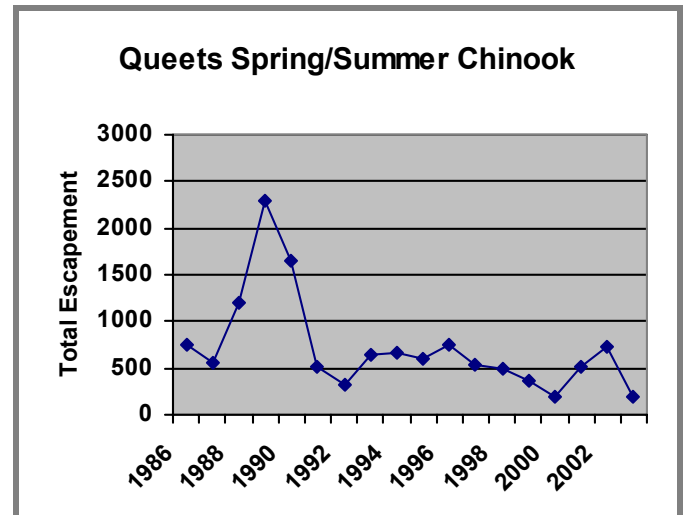
## STOCK STATUS

<b>1992 STATUS</b> Depressed	<b>2002 STATUS</b> Depressed
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## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1986	745
1987	560
1988	1,195
1989	2,295
1990	1,643
1991	630
1992	325
1993	650
1994	655
1995	610
1996	758
1997	532
1998	485
1999	373
2000	186
2001	521
2002	738
2003	184



Data are total escapement estimates derived from redd counts in index areas on the Queets River. Index areas include the mainstem Queets River (RM 23.5 to 25.8, RM 6.6 to 23.5 and RM 25.8 to 30.6).

Queets spring/summer Chinook escapements have been declining since 1997, and the 2000 escapement of 186 spawners is the lowest on record. Stock status is rated **Depressed** in 2002 because of **chronically low** escapements.

## STOCK DEFINITION

Queets spring/summer Chinook were identified as a stock based on their distinct spawning distribution, early river entry timing (early April to mid-August) and spawning timing.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Queets up to about RM 39.0 and in the lower portions of some of the major tributaries such as Tshletsy and Matheny creeks and Sams River.

**SPAWNING TIMING:** Spawning generally occurs from September through October.

# QUEETS– QUEETS SPRING/SUMMER CHINOOK

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**GENETIC ANALYSIS:** Genetic analysis has not been done on Queets spring/summer Chinook.

## **STOCK ORIGIN**

This is a **native** stock with **wild** production. Releases of non-native hatchery spring/summer Chinook have occurred, but not for a number of years. Genetic impacts on native Queets spring/summer Chinook are thought to be minimal.

# QUEETS – QUEETS FALL CHINOOK

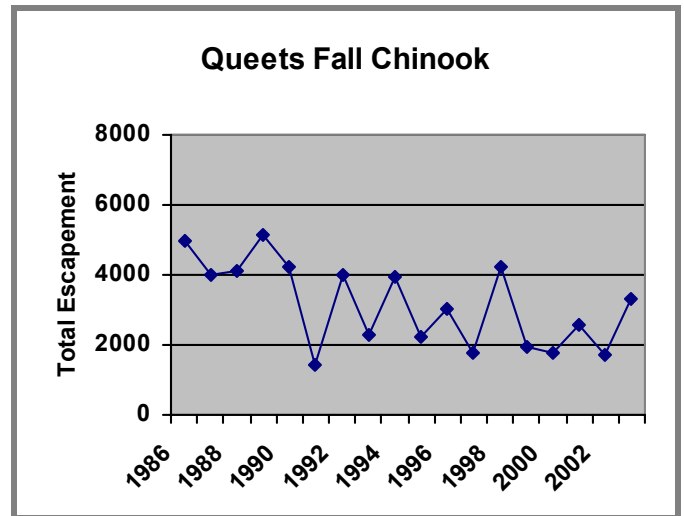
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1986	4,981
1987	4,006
1988	4,128
1989	5,148
1990	4,236
1991	1,420
1992	4,003
1993	2,280
1994	3,967
1995	2,202
1996	3,022
1997	1,773
1998	4,257
1999	1,924
2000	1,749
2001	2,560
2002	1,730
2003	3,326



Data are total escapement estimates based on cumulative redd counts in index reaches and supplemental survey observations, expanded to basin total escapement estimates. Index areas surveyed include the mainstem Queets River (RM 23.5 to 25.8), the Salmon River (RM 2.2 to 3.7 and RM 4.0 to 4.7), Mud Creek (RM 0.0 to 0.4), Matheny Creek (RM 0.5 to 2.7), North Creek (RM 0.0 to 0.8) and Sams River (RM 1.9 to 3.0).

Queets fall chinook experienced high escapements from 1986 to 1991. Since that time escapements have ranged from 1,000 to 3,000 spawners. Recent escapements seem to be more representative of long-term production levels than the higher values. Stock status is rated **Healthy** in 2002.

## STOCK DEFINITION

Queets fall chinook were identified as a stock based on their distinct spawning distribution, later river entry timing (September to late November), and late spawning timing.

# QUEETS – QUEETS FALL CHINOOK

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**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Queets to about RM 39.0 and in the lower portions of some of the major tributaries such as Tshletsy and Matheny creeks as well as Sams and Salmon rivers.

**SPAWNING TIMING:** Spawning generally occurs from late October through December.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Queets fall chinook.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUEETS – CLEARWATER SPRING/SUMMER CHINOOK

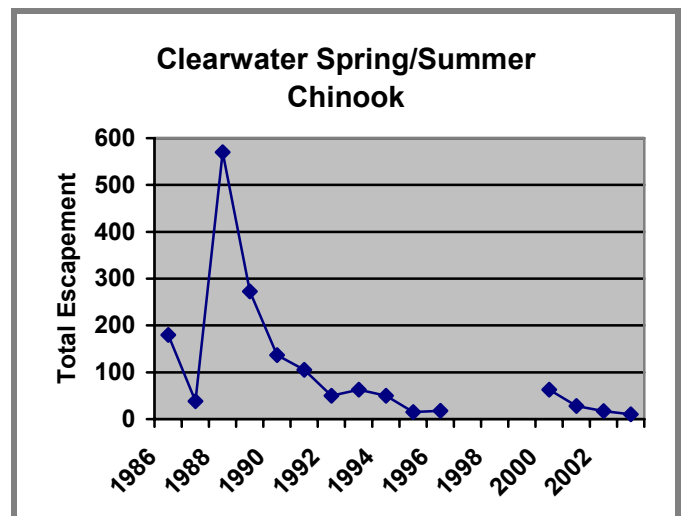
## STOCK STATUS

<b>1992 STATUS</b> Depressed	<b>2002 STATUS</b> Critical
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## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1986	180
1987	38
1988	570
1989	273
1990	137
1991	105
1992	50
1993	63
1994	50
1995	15
1996	18
1997	No data
1998	No data
1999	No data
2000	63
2001	28
2002	17
2003	10



Data are total escapement estimates derived from redd counts in index areas on the Clearwater River. Index areas include the mainstem Clearwater River (RM 0.0 to 23.0 - aerial) and three concurrent foot surveys covering 4.4 miles for comparison of data.

Clearwater spring/summer chinook have experienced a decline in escapements to very low levels since 1992. Stock status is rated **Critical** in 2002 because of a **long-term negative trend** in escapements.

## STOCK DEFINITION

Clearwater spring/summer chinook were identified as a stock based on their distinct spawning distribution, early river entry timing (early April to mid-August) and early spawning timing.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the mainstem Clearwater River up to the confluence with the Sollecks River (RM 23.0).

**SPAWNING TIMING:** Spawning generally occurs from September through October.

# **QUEETS – CLEARWATER SPRING/SUMMER CHINOOK**

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**GENETIC ANALYSIS:** Genetic analysis has not been done on Clearwater spring/summer chinook.

## **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# QUEETS – CLEARWATER FALL CHINOOK

## STOCK STATUS

**1992 STATUS**

Healthy

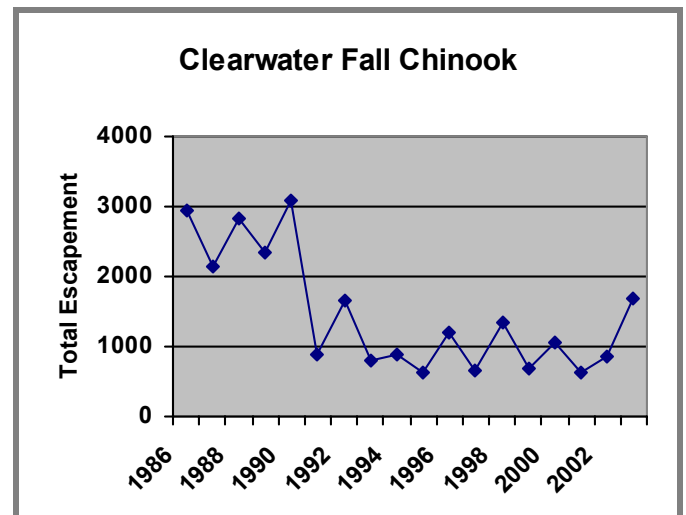
**2002 STATUS**

Healthy

## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	2,930
1987	2,135
1988	2,833
1989	2,336
1990	3,087
1991	896
1992	1,656
1993	814
1994	892
1995	619
1996	1,212
1997	647
1998	1,340
1999	679
2000	1,050
2001	640
2002	856
2003	1,687



Data are total escapement estimates based on cumulative redd counts in index reaches and supplemental survey observations, expanded to basin total escapement estimates. Index areas surveyed include the mainstem Clearwater River (RM 0.5 to 2.7, RM 15.5 to 17.0 and RM 22.3 to 23.0), Hurst Creek (RM 0.0 to 1.4), Shale Creek (RM 0.0 to 2.0), West Fork Miller Creek (RM 0.0 to 1.0), East Fork Miller Creek (RM 0.0 to 0.5), Christmas Creek (RM 0.0 to 1.3), Peterson Creek (RM 0.0 to 0.3), Deception Creek (RM 0.0 to 0.5), Snahapish Creek (RM 0.0 to 1.6) and Bull Creek (RM 0.0 to 0.6) as well as the Stequaleho River (RM 0.0 to 1.8) and the Solleks River (RM 0.0 to 1.2).

Clearwater fall Chinook have experienced two ranges of escapements since the 1980s. In early to mid-1980s escapements ranged from 500 to 1,500 spawners. In the late 1980s and 1990 escapements increased to 2,000 to 3,000 spawners. Since 1992 escapements have ranged from 600 to 1,600. Recent escapements seem to be more representative of long-term production levels than the higher values. Stock status is again rated **Healthy** in 2002.

# QUEETS – CLEARWATER FALL CHINOOK

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## STOCK DEFINITION

Clearwater fall Chinook were identified as a stock based on their distinct spawning distribution, later river entry timing (September to late November), and spawning timing.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Clearwater River up to the confluence with the Sollecks River (RM 23.0) and in the lower portions of Miller and Christmas creeks and Sollecks River.

**SPAWNING TIMING:** Spawning generally occurs from late October through December.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Clearwater fall Chinook.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUINAULT – QUINAULT SPRING/SUMMER CHINOOK

## STOCK STATUS

**1992 STATUS**

Depressed

**2002 STATUS**

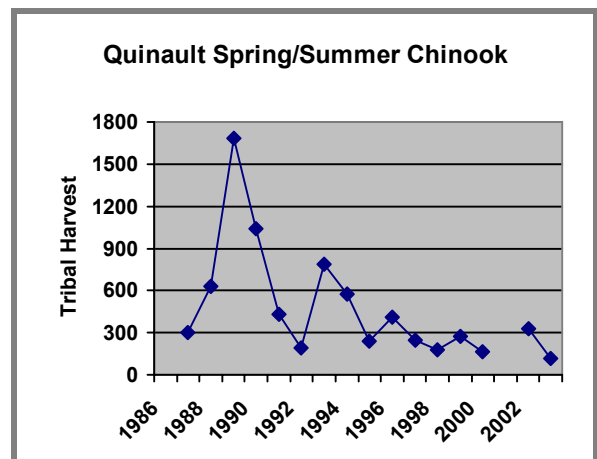
Depressed

## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:

Poor

YEAR	TOTAL TRIBAL HARVEST
1987	298
1988	630
1989	1685
1990	1043
1991	430
1992	195
1993	785
1994	573
1995	238
1996	408
1997	245
1998	176
1999	274
2000	165
2001	Not yet available
2002	330
2003	118



Data are total tribal harvest estimates. Quinault Tribal Fisheries staff have been monitoring escapements from the late 1970's to the present. Currently data are unavailable for review.

Quinault spring/summer Chinook were rated **Depressed** in 1992 because of a short-term severe decline in catch. Since then catches have continued to be low, and stock status is rated **Depressed** in 2002 because of **chronically low** harvest.

## STOCK DEFINITION

Quinault spring/summer Chinook were identified as a stock based on their distinct spawning distribution, early river entry timing (early April to mid-August) and spawning timing.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the upper mainstem Quinault River from the Quinault Lake inlet (RM 36.2) upstream to Graves Creek (RM 52.6). Some spawning also occurs in the North Fork Quinault River (RM 0.0 to 7.5) and in the lower mainstem Quinault River (RM 16.0 to 33.0).

# QUINAULT – QUINAULT SPRING/SUMMER CHINOOK

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**SPAWNING TIMING:** Spawning generally occurs from September through mid-October.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Quinault spring/summer Chinook.

## STOCK ORIGIN

This is a **native** stock with **wild** production. There are early-returning hatchery Chinook in the basin that cannot be distinguished from the native stock, and there is some potential for hybridization between them.

# QUINAULT – QUINAULT FALL CHINOOK

## STOCK STATUS

**1992 STATUS**

Healthy

**2002 STATUS**

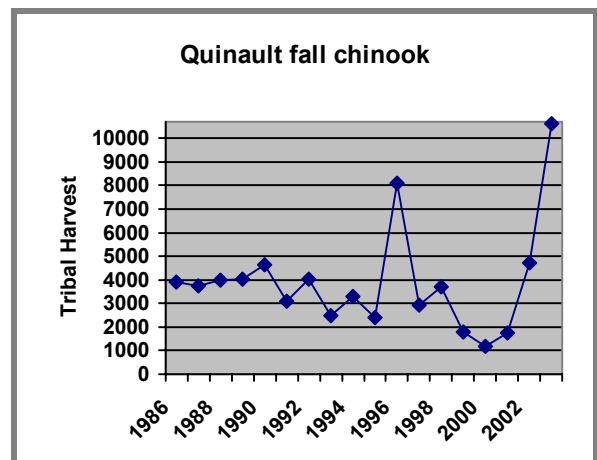
Healthy

## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	TOTAL TRIBAL HARVEST
1986	3,887
1987	3,726
1988	3,975
1989	4,043
1990	4,630
1991	3,078
1992	4,017
1993	2,481
1994	3,300
1995	2,418
1996	8,093
1997	2,939
1998	3,707
1999	1,787
2000	1,175
2001	1,745
2002	4,733
2003	10,604*

\*Preliminary estimate



Data are total tribal harvest estimates. Quinault tribal biologists have been monitoring escapements from the late 1970's to the present. Currently data are unavailable for review.

Quinault fall Chinook harvests have ranged from 1,100 to 4,700 since 1978, except for an unusually high value of 8,093 in 1996. There is no consistent negative trend, and stock status is rated **Healthy** in 2002. However, this stock will be monitored in the future for a rating change if harvest numbers continue to decrease.

## STOCK DEFINITION

Quinault fall Chinook were identified as a stock based on their distinct spawning distribution, later river entry timing (August through November) and spawning timing.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the lower mainstem Quinault River (RM 4.0 to 33.0), the upper mainstem Quinault River (RM 36.2 to 52.6), the North Fork

# QUINAULT – QUINAULT FALL CHINOOK

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Quinault River (RM 0.0 to 7.5) and Big Creek. Spawning also occurs in Fletcher, Inner, Willaby, Ten O'clock, Boulder South and Prairie creeks.

**SPAWNING TIMING:** Spawning generally occurs mid-October through December.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Quinault fall Chinook stock.

## **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# QUINALT – COOK CREEK FALL CHINOOK

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## STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Unknown

## STOCK STATUS RATING DATA

WDFW spawner surveys were discontinued after 1991. Quinalt Tribal fisheries staff and USFWS have been monitoring fall Chinook escapements from the late 1980's to the present, but estimates are not appropriate for rating stock status. Stock status is **Unknown** in 2002.

## STOCK DEFINITION

Cook Creek fall Chinook were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the upper portion of Cook Creek below the USFWS hatchery facility. Spawning also occurs in the lower Cook and Elk creeks.

**SPAWNING TIMING:** Spawning generally occurs from mid-October to early December.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Cook Creek fall Chinook stock.

## STOCK ORIGIN

This is a **mixed** stock with **composite** production. The Cook Creek fall Chinook stock is a mixture of non-native stocks that was originally developed to create an early-timed fall Chinook run for harvest. The stock was originally composed of a variety of North Coast and Puget Sound stocks reared at the Quinalt National Fish Hatchery. Some adults are expected to spawn naturally.

# SOOES/OZETTE – SOOES FALL CHUM

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## STOCK STATUS

1992 STATUS <b>Unknown</b>	2002 STATUS <b>Unknown</b>
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## STOCK STATUS RATING DATA

There is little abundance trend information with which to rate stock status. Hatchery escapement data from 1984 to the present are available from the Makah National Fish Hatchery staff. The relevance of these data to the current stock status rating is currently unresolved between state and tribes. Therefore, stock status remains **Unknown** in 2002.

## STOCK DEFINITION

Sooes fall chum were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Specific spawning locations are unknown, however all chum are enumerated and passed above the hatchery. Natural spawning habitat is accessible to chum spawning in the mainstem Sooes River up to RM 13.8 and in numerous tributaries.

**SPAWNING TIMING:** Spawning generally occurs in November.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Sooes fall chum.

## STOCK ORIGIN

Stock origin is likely **non-native** and production type is currently **wild**. There was a small native Sooes fall chum stock, numbers declined due to habitat degradation associated with logging and to fishing pressure. Substantial numbers of non-native fish were introduced into the watershed in the 1970s and 1980s (Quinault in 1975 and 1978, Quilcene and Walcott Slough in 1976, 1977, 1980 and 1982-1985) to enhance the chum run. For a time, the Makah National Fish Hatchery spawned all chum returning to the Sooes River. Chum are not currently spawned or released from the hatchery. The result at present is the replacement of a historically small native population with a small non-native population.

# SOOES/OZETTE – OZETTE FALL CHUM

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## STOCK STATUS

1992 STATUS	2002 STATUS
<b>Unknown</b>	<b>Unknown</b>

## STOCK STATUS RATING DATA

There is very little abundance trend information with which to rate stock status.

Stock status is rated **Unknown** in 2002, but may be depressed due to very low numbers of chum observed in Umbrella Creek, a tributary to Lake Ozette and in the Ozette River, the lake outlet to the Pacific Ocean.

## STOCK DEFINITION

Ozette fall chum were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Specific spawning locations have not been determined. Chum have been observed to spawn, and emergent natural-origin chum fry have been trapped from Umbrella Creek. Low numbers of chum fry were also recovered in a smolt trap emigrating from the Ozette River (Makah Fisheries Management, unpublished field notes).

**SPAWNING TIMING:** Spawning generally occurs from late October to early December.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Ozette fall chum.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUILLAYUTE – QUILLAYUTE FALL CHUM

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## STOCK STATUS

1992 STATUS	2002 STATUS
<b>Unknown</b>	<b>Unknown</b>

## STOCK STATUS RATING DATA

The Quillayute system has a small, dispersed chum presence. Some of these may be strays from other river systems. Chum catches in the Quillayute River system reported in tribal net fisheries that are directed at other species are low (9 to 91 fish annually). Although they suggest that only low numbers of chum are produced in the Quillayute system, these catches represent an unknown proportion of the total population. Escapement is not monitored. There are no adequate abundance trend data with which to rate stock status so status in 2002 is **Unknown**.

## STOCK DEFINITION

Quillayute fall chum were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place throughout the Quillayute drainage. Small numbers of chum have been observed in the mainstem Quillayute, Dickey, Sol Duc and Calawah rivers and accessible tributaries.

**SPAWNING TIMING:** Spawning generally occurs from late October to early December.

**GENETIC ANALYSIS:** Sampling for genetic analysis has been attempted, but spawner densities are so low that analysis is not feasible at this time.

## STOCK ORIGIN

This is a **native** stock with **wild** production. Two releases of fall chum occurred in 1984 and 1985 from the Lonesome Creek Hatchery on the Quileute reservation. These were fertilized eggs received from WDFW. The impact of these releases on the current native population is not known.

# HOH— HOH FALL CHUM

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## STOCK STATUS

1992 STATUS <b>Unknown</b>	2002 STATUS <b>Unknown</b>
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## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to rate stock status. Escapement is not monitored. Chum catches in the Hoh River reported in tribal net fisheries are incidental to fisheries for other species. Although they suggest that only low numbers of chum are produced in the Hoh system, these catches represent an unknown proportion of the total population, so status in 2002 is **Unknown**.

## STOCK DEFINITION

Hoh fall chum were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Hoh River and side channels upstream to the vicinity of Willoughby Creek.

**SPAWNING TIMING:** Spawning generally occurs from November through December.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Hoh fall chum.

## STOCK ORIGIN

This is a stock of **unknown** origin with **wild** production. State fisheries managers believe that this is a reproductively isolated native stock. Tribal managers believe that chum spawning in the Hoh may be strays from stocks in other coastal river systems.

# QUEETS – QUEETS FALL CHUM

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## STOCK STATUS

1992 STATUS	2002 STATUS
<b>Unknown</b>	<b>Unknown</b>

## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to rate stock status. Escapement is not monitored. Tribal chum catch in net fisheries in the Queets River is incidental to fisheries for other species. Although they suggest that only low numbers of chum are produced in the Queets system, these catches represent an unknown proportion of the total population, so status in 2002 is **Unknown**.

## STOCK DEFINITION

Queets fall chum were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning distribution is not well characterized. Some spawning is observed in the lower Queets and Clearwater rivers and in the lower portions of Salmon River and Matheny Creek.

**SPAWNING TIMING:** Spawning generally occurs from early November through mid-December.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Queets fall chum.

## STOCK ORIGIN

Stock origin and production type is **unresolved** between state and tribal biologists. WDFW biologists believe that this is a reproductively isolated native stock. Tribal biologists believe that chum spawning in the Queets system may be strays from the Quinault River and perhaps from the Grays Harbor basin.

# QUINAULT – QUINAULT FALL CHUM

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## STOCK STATUS

1992 STATUS <b>Healthy</b>	2002 STATUS <b>Unknown</b>
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## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to rate stock status. Escapement is no longer monitored by WDFW. The Quinault Fisheries collects spawning ground survey data but has not generated escapements based on these counts. Harvest data may not be good indicators of abundance, so status is **Unknown** in 2002.

## STOCK DEFINITION

**SPAWNING DISTRIBUTION:** Spawning takes place primarily in the lower mainstem Quinault River (RM 4.0 to 33.0). Spawning also occurs in the upper mainstem Quinault River as well as Big, Inner, Boulder South and Ten O'clock Creeks.

**SPAWNING TIMING:** Spawning occurs from mid-October through early December.

**GENETIC ANALYSIS:** Genetic analysis has not been conducted on Quinault Fall Chum.

## STOCK ORIGIN

This is a **mixed** stock with **composite** production. A potential for hybridization between native chum and non-native hatchery chum released from the Quinault National Fish Hatchery exists.

# SOOES/OZETTE – SOOES/WAATCH COHO

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## STOCK STATUS

<b>1992 STATUS</b> Unknown	<b>2002 STATUS</b> Unknown
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## STOCK STATUS RATING DATA

The only population data currently available are tribal in-river commercial net fishery catches and hatchery rack return information. In-river catches are not thought to represent inter-annual changes in the spawning population, due to the presence of a significant hatchery coho program in the river basin. Much of the annual terminal fishery harvest each year likely results from hatchery program returns, and therefore is not directly reflective of changes in natural origin spawning abundance or natural stock productivity. Hatchery rack return data does not have direct applicability to rating the status of the natural spawning population in the Sooes and Waatch rivers, since it only summarizes returns to the hatchery rack. This stock status is therefore again rated **Unknown**.

## STOCK DEFINITION

Sooes/Waatch coho were defined as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place throughout the mainstem of the Sooes River and tributaries such as Holden, Colby, 30 Cent, Miller, Grimes, Shafter, Snag and Pilchuck creeks.

**SPAWNING TIMING:** Spawning generally occurs from mid-October through January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Sooes/Waatch coho.

## STOCK ORIGIN

This is a **mixed** stock with **composite** production. Lake Quinault and Quilcene stocks were previously planted into the Sooes River to mitigate for the extermination of all migrating salmonid juveniles from the river in the parent cohort brood years, in an attempt to address a perceived disease concern. Despite the influence of these plants, Sooes coho are thought to be primarily of natural origin. This stock is derived from native coho brood stock from the Makah National Fish Hatchery on the Sooes River.

# SOOES/OZETTE – OZETTE COHO

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## STOCK STATUS

<b>1992 STATUS</b> Unknown	<b>2002 STATUS</b> Unknown
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## STOCK STATUS RATING DATA

Adult coho have been surveyed annually in seven tributaries to Lake Ozette since the late 1990s by Makah Fisheries Management. Adult coho counts peaked at 200 fish per mile surveyed in December of 1998. Habitat classification, combined with increased effort (increasing the number of stream surveys, survey segments and number of surveyors), has enabled more accurate escapement estimates since 1999. Adult coho surveys conducted in 1998 by Makah Fisheries Management found moderate to high numbers in most watersheds. Fyke netting in Umbrella Creek in 1999 caught almost 50,000 emergent coho fry egressing to Lake Ozette in only three weeks of trapping. Prior to these efforts, no coho stock assessment work had been conducted in this watershed.

Estimates of the total spawning population in the Ozette watershed are not available at this time. Therefore stock status is again rated as **Unknown**.

## STOCK DEFINITION

Ozette coho were defined as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in accessible tributaries in the Lake Ozette basin such as Umbrella Creek.

**SPAWNING TIMING:** Spawning generally occurs from late October through January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Ozette coho.

## STOCK ORIGIN

This is a **native** stock with **wild** production. There have been no releases of hatchery coho into the Ozette watershed.

# QUILLAYUTE – SOL DUC SUMMER COHO

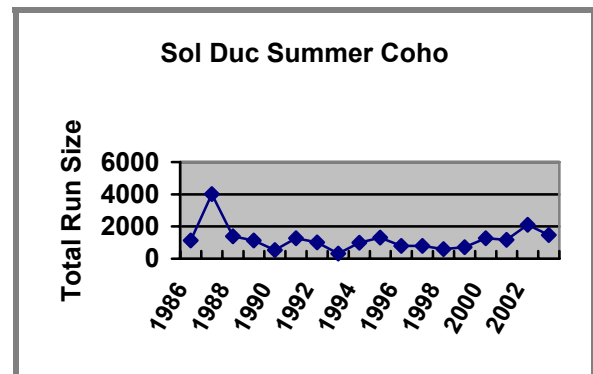
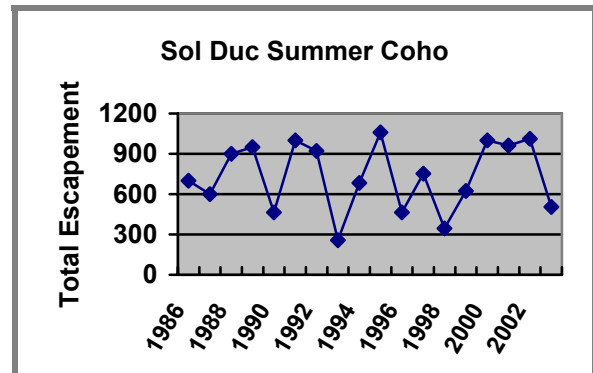
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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### STOCK STATUS RATING DATA

#### USEFULNESS FOR RATING STOCK STATUS: *Poor/Good*

YEAR	TOTAL ESCAPEMENT	TOTAL RUN SIZE
1986	700	1,133
1987	600	4,020
1988	900	1,395
1989	950	1,138
1990	465	528
1991	1,001	1,280
1992	921	1,022
1993	256	324
1994	683	999
1995	1,060	1,318
1996	465	801
1997	753	798
1998	346	593
1999	624	723
2000	1,001	1,280
2001	961	1,172
2002	1,012	2,099
2003	505	1,467



Data are escapement estimates based on redd counts in the Sol Duc “Hot Springs” coho index area on the mainstem Sol Duc River (RM 62.0). Total run-size estimates are escapement plus in-river sport and net catches. Our ability to rate stock status based on escapement estimates is poor because the estimates are based on only one index area.

This stock is rated **Healthy** because there has been no decline in escapements since the last status review, and escapement is considered adequate for the main spawning habitat reach upstream of the Salmon Cascades (RM 59.0). Historical terminal run data prior to 1986 suggests a significant reduction in average wild terminal run size since the 1970s, but problems with the historical terminal catch allocation estimates between the natural-origin coho and hatchery coho make the terminal run-size data a somewhat unreliable trend indicator (i.e., the actual wild-origin terminal run size may be much smaller than the estimates of natural terminal run size, due to misallocation of hatchery-origin fish to the wild return). The number of hatchery smolts stocked annually was reduced dramatically between the late 1970s and early 1980s and later years, so the total summer coho run size dropped dramatically from that time period as well (Jeff Haymes, WDFW, personal communication). A Depressed rating should be considered if escapement and/or run size trends do not improve.

# QUILLAYUTE – SOL DUC SUMMER COHO

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## STOCK DEFINITION

Sol Duc summer coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Most spawning takes place in a short stretch of the Sol Duc River (RM 61.0 to 63.0) above the Salmon Cascades. Other spawning tributaries include Bear, Camp and Beaver creeks.

**SPAWNING TIMING:** Spawning generally occurs from late October to early December.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Sol Duc summer coho.

## STOCK ORIGIN

This is a **native** stock with **composite** production. The coho program at the WDFW Sol Duc Hatchery uses rack return fish for brood stock. The hatchery stock was originally derived from native summer coho stock.

# QUILLAYUTE – SOL DUC FALL COHO

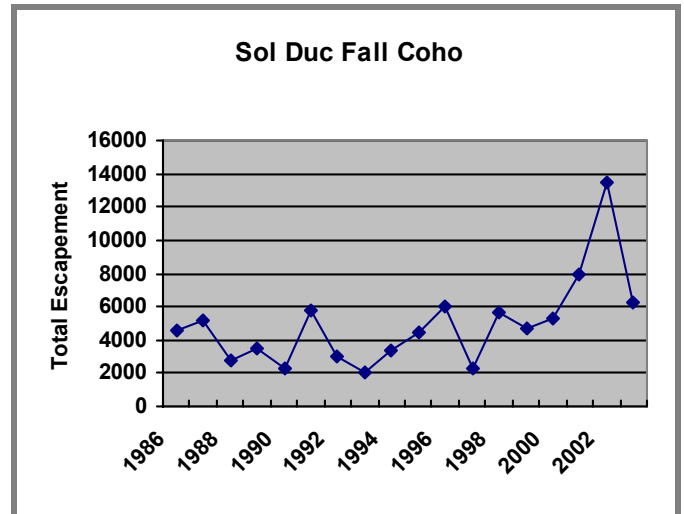
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: *Good*

YEAR	TOTAL ESCAPEMENT
1986	4,555
1987	5,149
1988	2,800
1989	3,446
1990	2,300
1991	5,743
1992	3,019
1993	2,089
1994	3,333
1995	4,452
1996	6,060
1997	2,262
1998	5,597
1999	4,638
2000	5,342
2001	7,889
2002	13,500
2003	6,269



Data are total escapement estimates based on cumulative redd counts in index reaches and supplemental survey observations, expanded to basin total escapement estimates. Index areas surveyed include Tassel Creek (RM 0.0 to 0.5), Gunderson Creek (RM 0.0 to 0.6), Swanson Creek (RM 0.0 to 0.6), Lake Creek (RM 4.9 to 5.8), Johnson Creek (RM 0.0 to 0.5), Bockman Creek (RM 2.0 to 2.8), Redoubt Creek (RM 0.0 to 0.9) and Camp Creek (RM 0.5 to 1.2) as well as unnamed tributary 20.0317 (RM 0.0 to 0.4).

Stock status is again rated **Healthy** due to recent-year escapements being at or above the long-term average and reasonably robust annual escapements.

## STOCK DEFINITION

Sol Duc fall coho were identified as a stock based on their distinct spawning distribution.

# QUILLAYUTE – SOL DUC FALL COHO

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**SPAWNING DISTRIBUTION:** Most spawning takes place in the numerous small and medium-size tributaries throughout the basin such as Bear and Beaver creeks. Limited mainstem spawning also occurs in isolated locations under favorable conditions.

**SPAWNING TIMING:** Spawning generally occurs from mid-November to mid-January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Sol Duc Fall coho.

## **STOCK ORIGIN**

This is a **native** stock with **composite** production. There is a large fall coho program at the Sol Duc Hatchery that utilizes rack returns for brood stock. The hatchery stock was originally derived from the native stock.

# QUILLAYUTE – DICKEY FALL COHO

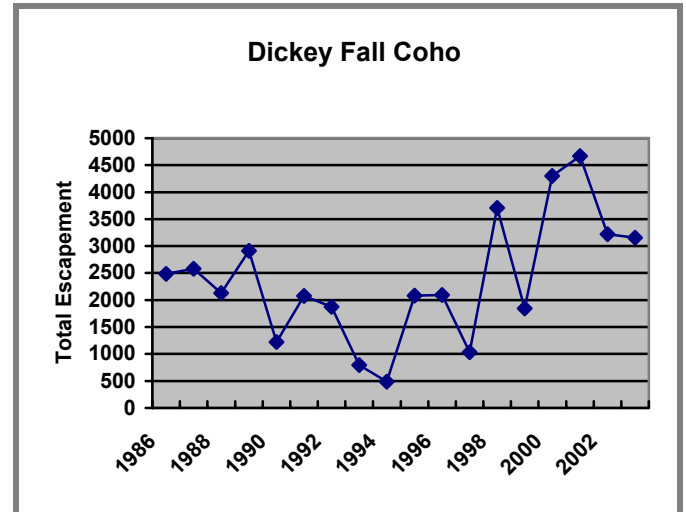
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Good

YEAR	TOTAL ESCAPEMENT
1986	2,485
1987	2,579
1988	2,129
1989	2,911
1990	1,219
1991	2,073
1992	1,876
1993	796
1994	484
1995	2,079
1996	2,091
1997	1,031
1998	3,709
1999	1,846
2000	4,298
2001	4,670
2002	3,220
2003	3,158



Data are based on season-cumulative redd counts in index reaches and supplemental survey observations, expanded to basin total escapement estimates. Index areas surveyed include Coal Creek (RM 3.7 to 4.4), Colby Creek (RM 1.0 to 2.3), Stampede Creek (RM 0.0 to 1.6), mainstem Dickey River (RM 2.9 to 3.9), Spiddle Creek (RM 0.0 to 0.5), East Fork Dickey River (RM 14.3 to 15.5) and unnamed tributaries 20.0114 (RM 0.0 to 0.8), 20.0139 (RM 1.6 to 3.1) and 20.0141 (RM 1.1 to 2.6).

This stock is again rated **Healthy** based on recent-year escapements being at or above the long-term average and reasonably robust annual escapements.

## STOCK DEFINITION

Dickey fall coho were identified as a stock based on their distinct spawning distribution.

# QUILLAYUTE – DICKEY FALL COHO

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**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Dickey River and in numerous tributaries in the basin such as Coal Creek and in the east and west forks of the Dickey River.

**SPAWNING TIMING:** Spawning generally occurs from mid-November to mid-January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Dickey coho.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUILLAYUTE – BOGACHIEL FALL COHO

## STOCK STATUS

**1992 STATUS**

Healthy

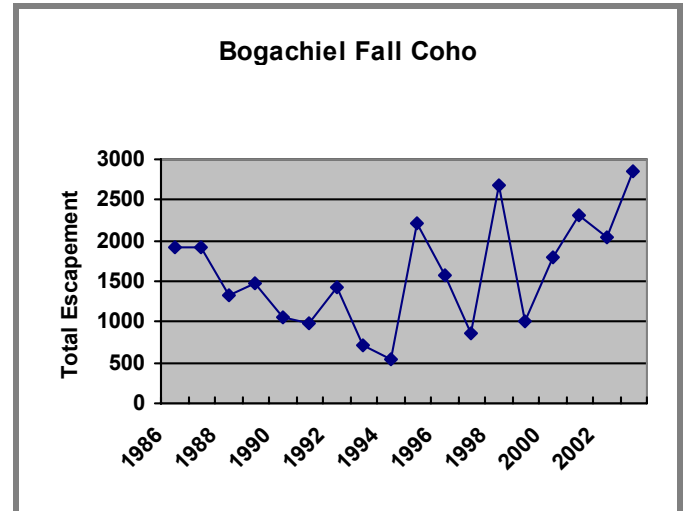
**2002 STATUS**

Healthy

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Good

YEAR	TOTAL ESCAPEMENT
1986	1,918
1987	1,915
1988	1,316
1989	1,471
1990	1,048
1991	978
1992	1,423
1993	718
1994	549
1995	2,215
1996	1,585
1997	864
1998	2,688
1999	1,019
2000	1,792
2001	2,323
2002	2,029
2003	2,856



Data are total escapement estimates based on cumulative redd counts in index reaches and supplemental survey observations. Index areas surveyed include the upper Bogachiel River (RM 19.2 to 20.2), Murphy Creek (RM 0.0 to 1.6), Mill Creek (RM 2.5 to 4.0), Hemphill Creek (RM 0.6 to 1.5), Morganroth Creek (RM 0.0 to 0.5), Morganroth Spring (RM 0.0 to 0.4), Kahkwah Creek (RM 0.0 to 0.4) and Kahkwah Slough (RM 0.1 to 0.3).

This stock is again rated **Healthy** based on recent-year escapements being at or above the long-term average and reasonably robust annual escapements.

## STOCK DEFINITION

Bogachiel fall coho were identified as a stock based on their distinct spawning distribution.

# QUILLAYUTE – BOGACHIEL FALL COHO

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**SPAWNING DISTRIBUTION:** Most spawning takes place in small to medium-sized tributaries such as Murphy, Maxfield, Dry and Bear creeks, with some limited spawning in the mainstem Bogachiel River in isolated locations under favorable conditions.

**SPAWNING TIMING:** Spawning generally occurs from mid-November to mid-January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Bogachiel fall coho.

## **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# QUILLAYUTE – CALAWAH FALL COHO

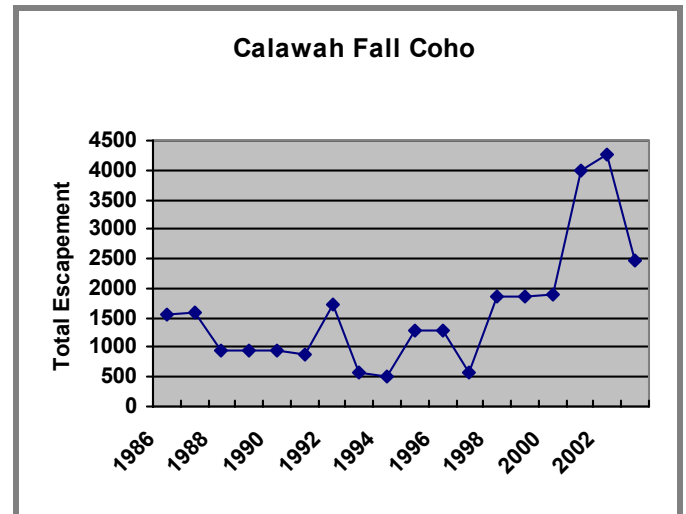
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Good

YEAR	TOTAL ESCAPEMENT
1986	1,546
1987	1,603
1988	944
1989	935
1990	946
1991	892
1992	1,741
1993	562
1994	516
1995	1,289
1996	1,273
1997	570
1998	1,871
1999	1,862
2000	1,911
2001	3,994
2002	4,267
2003	2,473



Data are total escapement estimates based on cumulative redd counts in index reaches and supplemental survey observations. Index areas include the North Fork Calawah River (RM 9.4 to 10.7 and RM 16.0 to 17.4), Elk Creek (RM 0.8 to 3.2), Cool Creek (RM 0.0 to 1.9), Hyas Creek (RM 0.0 to 0.5) and unnamed tributary 20.0184 (RM 0.2 to 0.8).

This stock is again rated **Healthy** based on recent-year escapements being at or above the long-term average and reasonably robust annual escapements.

## STOCK DEFINITION

Calawah fall coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Most spawning takes place in small to medium-size tributaries such as Elk, Upper Coal and Hyas creeks. Spawning also takes place in the mainstem Calawah River, in the north and south forks of the Calawah River, as well as in the Sitkum River.

# QUILLAYUTE – CALAWAH FALL COHO

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**SPAWNING TIMING:** Spawning generally occurs from mid-November to mid-January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Calawah fall coho.

## **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# HOH – GOODMAN/MOSQUITO CREEKS COHO

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## STOCK STATUS

1992 STATUS <b>Unknown</b>	2002 STATUS <b>Unknown</b>
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## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to rate stock status. Escapement is not monitored, thus status in 2002 is **Unknown**.

## STOCK DEFINITION

Goodman/Mosquito Creeks coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place throughout the Goodman/Mosquito creeks system.

**SPAWNING TIMING:** Spawning generally occurs from mid-November to mid-January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Goodman/Mosquito Creek fall coho.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# HOH- HOH COHO

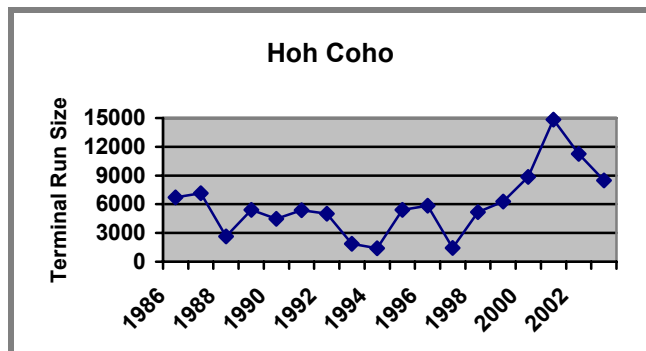
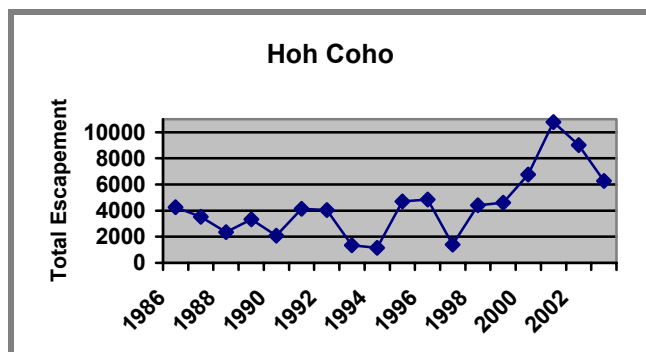
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
-------------------------------	-------------------------------

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Fair/Good

YEAR	TOTAL ESCAPEMENT	TERMINAL RUN SIZE
1986	4,270	6,702
1987	3,516	7,165
1988	2,350	2,639
1989	3,321	5,428
1990	2,094	4,460
1991	4,129	5,370
1992	4,045	5,007
1993	1,345	1,874
1994	1,161	1,404
1995	4,710	5,419
1996	4,858	5,836
1997	1,386	1,449
1998	4,418	5,184
1999	4,594	6,293
2000	6,772	8,838
2001	10,773	14,839
2002	9,009	11,254
2003	6,273	8,497



Data are total escapement based on redd counts in index reaches and supplemental surveys on the mainstem Hoh River (RM 24.2 to 30.0). Terminal run size data are based on total escapement plus in-river tribal net catch (wild only) and in-river sport catch.

In 1993, 1994 and 1997, escapements were low and there is concern regarding fluctuations in ocean survival that could coincide with poor freshwater production. Stock status is rated **Healthy** because recent-year escapements are still at or above the long-term average and are reasonably robust.

## STOCK DEFINITION

Hoh coho stock were identified as a separate stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem side channels and tributaries from the mouth of the Hoh River to RM 48.0, on the North Fork Hoh River and to RM 10.0 on the South Fork Hoh River.

**SPAWNING TIMING:** Spawning generally occurs from October through February.

# HOH– HOH COHO

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**GENETIC ANALYSIS:** Genetic analysis has not been done on Hoh coho.

## **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# KALALOCH CREEK – KALALOCH CREEK COHO

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## STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

## STOCK STATUS RATING DATA

This stock was rated **Unknown** in 1992 due to a lack of population trend data. The information status for this stock has not changed since that time, thus the stock is again rated **Unknown**.

## STOCK DEFINITION

Kalaloch Creek coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in Kalaloch Creek.

**SPAWNING TIMING:** Spawning generally occurs from late November to January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Kalaloch fall coho.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUEETS – QUEETS COHO

## STOCK STATUS

**1992 STATUS**

Healthy

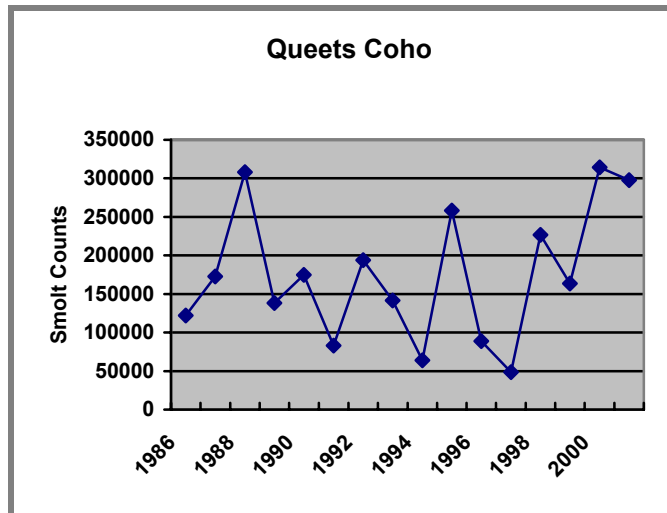
**2002 STATUS**

Healthy

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Good

BROOD YEAR	SMOLT COUNTS
1986	122,195
1987	172,711
1988	308,177
1989	138,108
1990	174,658
1991	83,215
1992	193,926
1993	141,700
1994	63,842
1995	258,287
1996	88,947
1997	48,763
1998	226,564
1999	163,450
2000	314,404
2001	297,660



Data are juvenile smolt counts by brood year expanded to basin-total smolt production estimates. Index areas surveyed include the mainstem Queets River (RM 23.5 to 25.8) and the Salmon River (RM 2.2 to 3.7, RM 4.0 to 4.7 and RM 10.8 to 11.9). Surveyed tributaries include Mud Creek (RM 0.0 to 0.3), Matheny Creek (RM 0.5 to 2.7), North Creek (RM 0.0 to 0.5), Pebble Creek (RM 0.0 to 0.3), unnamed tributary 21.0139E and Sams River (RM 1.9 to 3.0).

The stock is rated **Healthy** in 2002 because there are no observations of critically low smolt production in recent years and there is an increasing escapement trend. There is concern for the persistence of relatively low smolt production for one of the brood lines in 1993, 1997 and 1999 due to a combination of low parent escapements and flooding during incubation.

## STOCK DEFINITION

Queets coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the Queets, Salmon and Sams rivers. Spawning also occurs in Matheny, Mud, North and Pebble creeks.

# QUEETS – QUEETS COHO

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**SPAWNING TIMING:** Spawning generally occurs from November through January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Queets coho.

## **STOCK ORIGIN**

This is a **native** stock with **composite** production. Cultured wild broodstock releases have occurred in the Queets River to supplement wild coho production.

# QUEETS – CLEARWATER COHO

## STOCK STATUS

**1992 STATUS**

Healthy

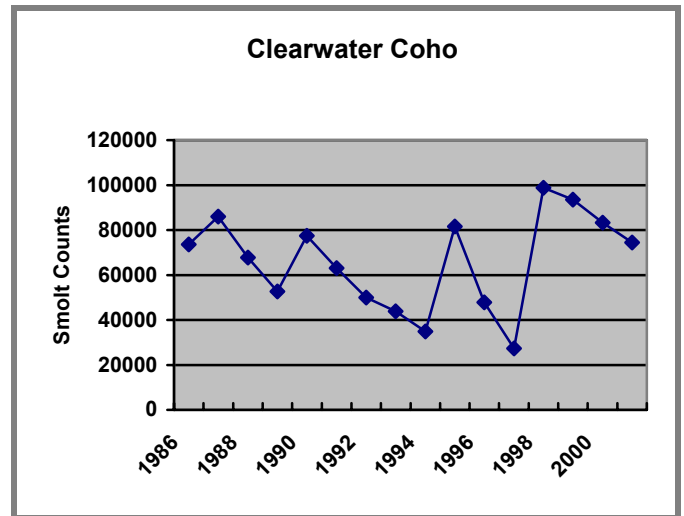
**2002 STATUS**

Healthy

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Good

<b>BROOD YEAR</b>	<b>SMOLT COUNTS</b>
1986	73,600
1987	86,000
1988	67,800
1989	52,600
1990	77,500
1991	63,100
1992	49,900
1993	43,900
1994	34,900
1995	81,508
1996	47,807
1997	27,314
1998	98,831
1999	93,469
2000	83,312
2001	74,415



Data are juvenile smolt counts expanded to basin-total smolt production estimates. Index areas surveyed include the mainstem Clearwater River (RM 0.5 to 2.7, RM 15.5 to 17.0 and RM 22.3 to 23.0). Surveyed tributaries include Hurst Creek (RM 0.0 to 1.4), Hunt Creek (RM 0.0 to 0.9), Elkhorn Creek (RM 0.0 to 0.7), Shale Creek (RM 0.0 to 2.0), West Fork Miller Creek (0.0 to 1.0), East Fork Miller Creek (RM 0.0 to 0.5), Christmas Creek (RM 0.0 to 1.3), an unnamed tributary to Christmas Creek 21.0066 (RM 0.0 to 1.3), Peterson Creek (RM 0.0 to 0.3), Deception Creek (RM 0.0 to 0.5), Octopus Creek (RM 0.0 to 1.0) and Bull Creek (RM 0.0 to 0.8). Other surveyed tributaries also include Snahapish River (RM 0.0 to 1.6 and RM 2.3 to 5.2), Stequaleho River (RM 0.0 to 1.8) and Sollecks River (RM 0.0 to 1.2 and RM 6.1 to 7.1).

Stock status for Clearwater coho is again rated **Healthy** in 2002 due to consistently robust smolt production.

## STOCK DEFINITION

Clearwater coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the Clearwater and Sollecks rivers. Spawning also occurs in tributaries such as Snahapish River and Christmas Creek.

# QUEETS – CLEARWATER COHO

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**SPAWNING TIMING:** Spawning generally occurs from November through January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Clearwater coho.

## **STOCK ORIGIN**

This is a **native** stock with **composite** production. Native fry and smolt releases occur in the Clearwater basin to supplement wild coho production.

# QUEETS – SALMON RIVER COHO

## STOCK STATUS

**1992 STATUS**

Healthy

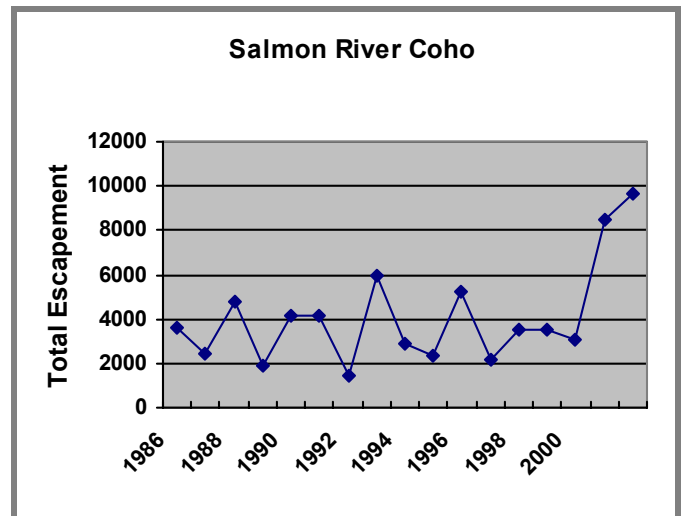
**2002 STATUS**

Healthy

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Good

YEAR	TOTAL ESCAPEMENT
1986	3,654
1987	2,401
1988	4,782
1989	1,872
1990	4,123
1991	4,129
1992	1,402
1993	5,938
1994	2,901
1995	2,385
1996	5,191
1997	2,137
1998	3,504
1999	3,551
2000	3,065
2001	8,477
2002	2,703
2003	9,632



Data are total escapement estimates based on redd counts in index areas of the Salmon River. Index areas surveyed include the mainstem Salmon River (RM 2.2 to 3.7, RM 4.0 to 4.7 and RM 10.8 to 11.9). Surveyed areas also include unnamed tributary 21.0139E (RM 0.0 to 0.2).

Stock status is **Healthy** due to consistent escapement estimates that remain within the normal range of variation for this stock.

## STOCK DEFINITION

Salmon River coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the lower to middle reaches of Salmon River. Spawning also occurs in the upper Queets River system.

**SPAWNING TIMING:** Spawning generally occurs from September to mid-October.

# QUEETS – SALMON RIVER COHO

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**GENETIC ANALYSIS:** Genetic analysis has not been done on Salmon River coho.

## **STOCK ORIGIN**

This is a **mixed** stock with **composite** production. Returns in this stream basin are dominated by hatchery coho production. The hatchery coho were originally obtained from the Quinault National Fish Hatchery. Hatchery production is transferred to rearing ponds on Salmon River for acclimation and release. Returning hatchery coho are allowed to spawn naturally in the Salmon River system, and most Salmon River coho are hybrids or direct offspring of hatchery fish.

# RAFT – RAFT COHO

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## STOCK STATUS

<b>1992 STATUS</b> Unknown	<b>2002 STATUS</b> Unknown
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## STOCK STATUS RATING DATA

There are no abundance trend data for this stock, so stock status is **Unknown** in 2002.

## STOCK DEFINITION

Raft coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning locations within the Raft system are unknown.

**SPAWNING TIMING:** Spawning timing is unknown.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Raft River coho.

## STOCK ORIGIN

This is a **mixed** stock with **wild** production. Releases of Quinault and Salmon River coho smolts and fry were made throughout the 1980s up to 1992. The returning adults have been permitted to spawn naturally. This stock is considered to be a mixture of native and non-native fish.

# QUINAULT – QUINAULT COHO

---

## STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

## STOCK STATUS RATING DATA

There are no abundance trend data for this stock. The Quinault tribal fisheries staff collect spawning ground survey data but have not generated escapements based upon these counts. Stock status is **Unknown** in 2002.

## STOCK DEFINITION

Quinault coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Most spawning takes place in tributaries of the Quinault River such as Boulder North, Prairie, Ten O'clock, Boulder South, Kestner, Inner, Fletcher and Big creeks. Spawning also occurs in the upper and lower mainstem Quinault River, the North Fork Quinault River and in several unnamed tributaries.

**SPAWNING TIMING:** Spawning generally occurs from October through January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Quinault River coho.

## STOCK ORIGIN

This is a **mixed** stock with **composite** production. Hatchery adults returning to the tribal hatchery on Lake Quinault may have contributed to some of the wild production above and around Lake Quinault. Hybridization between the native and non-native stocks is thought to occur.

# QUINAULT – COOK CREEK COHO

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## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Unknown
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## STOCK STATUS RATING DATA

Total stock abundance is largely dependent upon hatchery program production. Natural escapement is monitored by Quinault tribal fisheries staff however, escapements have not been generated based on those counts. Therefore stock status is rated **Unknown** in 2002.

## STOCK DEFINITION

Cook Creek coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in Cook Creek and adjoining tributaries such as Elk and Red creeks.

**SPAWNING TIMING:** Spawning generally occurs from October through January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Cook Creek coho.

## STOCK ORIGIN

This is a **mixed** stock with **composite** production. The Quinault River has been stocked with large numbers of hatchery smolts and fry from various Puget Sound and North Coast stocks in recent years. Some of the returning hatchery coho are thought to spawn in the wild.

# MOCLIPS/COPALIS – MOCLIPS COHO

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## STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

## STOCK STATUS RATING DATA

The only data available for this stock are in-river net fishery catches. Fisheries do not have good inter-annual consistency in effort and seasons and are therefore unreliable for rating stock status. Quinault tribal fisheries staff collect spawning ground survey data but have not generated escapements based upon these counts. Consequently stock status remains **Unknown** in 2002.

## STOCK DEFINITION

Moclips coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Specific spawning locations within the Moclips system are unknown.

**SPAWNING TIMING:** Spawning generally occurs from November through mid-January.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Moclips coho.

## STOCK ORIGIN

This is a **mixed** stock with **composite** production. Quilcene, Lake Pleasant, Purdy Creek, George Adams, Sol Duc, Willapa and Quinault hatchery smolts, fingerlings and fry were released into the Moclips River from 1962 through 1992. Stray coho from larger nearby river systems could also have a significant influence on the genetic composition of the stock in this small river.

# MOCLIPS/COPALIS – COPALIS COHO

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## STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

## STOCK STATUS RATING DATA

The only data available are sport catches that are considered unlikely to accurately reflect inter-annual changes in abundance due to the limited size of the fishery and inter-annual environmental influences on angler efficiency and effort. Stock status is again rated **Unknown** in 2002.

## STOCK DEFINITION

Copalis coho were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning locations within the Copalis system are unknown.

**SPAWNING TIMING:** Spawning timing is unknown.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Copalis coho.

## STOCK ORIGIN

This is a **mixed** stock with **wild** production. The Copalis River had been planted with Willapa, Humptulips, Sol Duc and Quinault hatchery smolts and fry from the mid-1970s through the mid-1980s. Stray coho from larger nearby river systems could also have a significant influence upon the stock in this small river. This stock is likely a mixture of native and introduced non-native stocks.

## STOCK STATUS

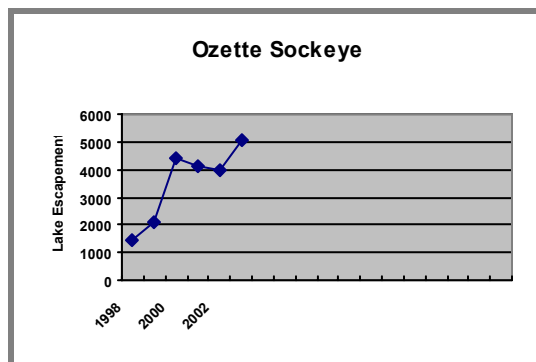
<b>1992 STATUS</b> Depressed	<b>2002 STATUS</b> Unknown
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## STOCK STATUS RATING DATA

### USEFULNESS FOR RATING STOCK STATUS:

Excellent

YEAR	LAKE ESCAPEMENT
1998	1,430
1999	2,077
2000	4,399
2001	4,116
2002	3,990
2003	5,075



Data are estimates of escapement of adult sockeye into Lake Ozette based on visual and underwater video camera counts at a weir in the Ozette River below the lake outlet. Since sockeye are enumerated in May and June when they enter Lake Ozette but do not spawn for another four to eight months, this run size estimate should not be considered an estimate of spawning escapement. Detailed analysis of historic abundance data has led Makah Tribal managers to conclude that counts prior to 1998 are unreliable and significantly underestimated stock abundance. An update in equipment for the video capture program is providing more accurate enumeration of fish passage, and more recent estimates will be error checked (Mike Crewson, Makah Tribe, personal communication.).

Only four years of reliable abundance data are available for Ozette sockeye, therefore stock status is **Unknown** in 2002. Ozette sockeye were listed as threatened under the federal Endangered Species Act in 1999.

## STOCK DEFINITION

Ozette sockeye were identified as a stock based on their distinct spawning distribution, genetic composition and life history characteristics.

**SPAWNING DISTRIBUTION:** Spawning occurs in Lake Ozette on Olsen’s and Allen’s beaches near Umbrella Creek. Spawning also occurs in Umbrella Creek and in Big River, tributaries to Lake Ozette located at the Northeast end of the lake.

**SPAWNING TIMING:** Spawning generally occurs from late September through January and peaks in November.

## SOOES/OZETTE – OZETTE SOCKEYE

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**GENETIC ANALYSIS:** Allozyme analysis from juvenile samples collected in 1990 showed that Ozette sockeye are genetically distinct from all other Washington sockeye stocks examined. DNA analysis from adults sampled on spawning areas at Olson's Landing and Allen's Bay showed significant differences between Ozette sockeye and Baker and Samish sockeye (the only comparisons made) and some differences between the Olson's Landing and Allen's Bay spawning groups. Interpretation of these results is complicated by detection of significant differences between spawners collected in two successive years at Olson's Landing (Winans et al. 1996). Comparisons of DNA spawners from different years from the same beach and between spawners from the two different beaches locations within the same year found significant differences temporally and spatially. Temporal differences among different years within the same beach were found to be greater than differences between the two beach spawning populations. The Technical Recovery Team, led by NOAA Fisheries, is currently conducting an analysis to determine the population structure of all spawning aggregation of Lake Ozette sockeye (Mike Crewson, Makah Tribal Fisheries, personal communication).

### STOCK ORIGIN

This is a **native** stock with **composite** production. Broodstock from the Quinault River were introduced for one year into the Ozette system in 1982. Their contribution to the native stock is not known, but is thought to have been insignificant. The Makah Tribe is conducting a hatchery supplementation program for tributary-spawning sockeye, using native beach spawning sockeye at their Umbrella Creek Hatchery. Eyed eggs are outplanted from Makah National Fish Hatchery located in Neah Bay for hatching, early rearing and release from two remote site incubator locations, one each on the upper reaches of the Umbrella Creek and in Big River drainages (Makah Fisheries Management 2000).

# QUILLAYUTE – LAKE PLEASANT SOCKEYE

## STOCK STATUS

**1992 STATUS**

Unknown

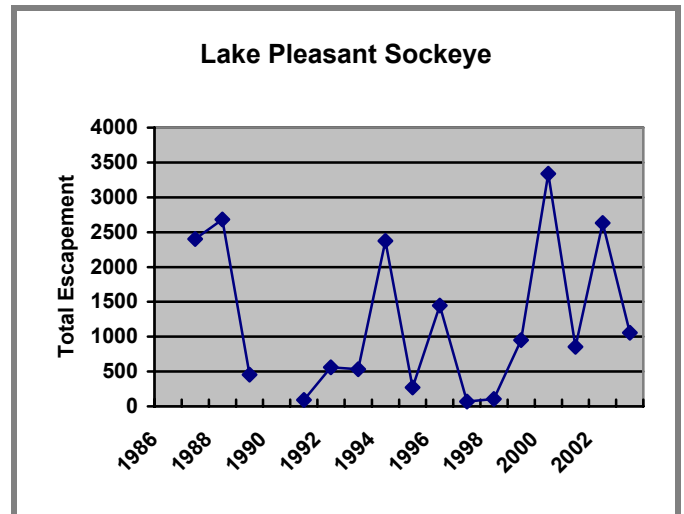
**2002 STATUS**

Healthy

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS: FAIR**

PEAK LIVE SPAWNER COUNTS	
YEAR	
1986	No data
1987	2402
1988	1,684
1989	453
1990	No data
1991	90
1992	562
1993	531
1994	2,373
1995	273
1996	1,445
1997	69
1998	105
1999	952
2000	3,337
2001	852
2002	2,631
2003	1,055



Data are peak live spawner counts made along the shore of Lake Pleasant (RM 2.8 to 4.8).

Although peak counts are variable, production in the lake appears to be fairly stable. There is no evidence of a negative trend in peak counts, and numbers are consistent with expectations for production in the lake. Status is rated **Healthy** in 2002.

## STOCK DEFINITION

Lake Pleasant sockeye were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Most spawning takes place along the northeast lakeshore of Lake Pleasant. Lower spawner densities are seen on the north shore and along the west shore of the lake.

**SPAWNING TIMING:** Spawning generally occurs from late November through early January.

# QUILLAYUTE – LAKE PLEASANT SOCKEYE

---

**GENETIC ANALYSIS:** Allozyme analysis has shown that Lake Pleasant sockeye are genetically distinct from all other Washington sockeye stocks examined. (Gustafson et al.1997)

## **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# QUINAULT- QUINAULT SOCKEYE

## STOCK STATUS

**1992 STATUS**

Healthy

**2002 STATUS**

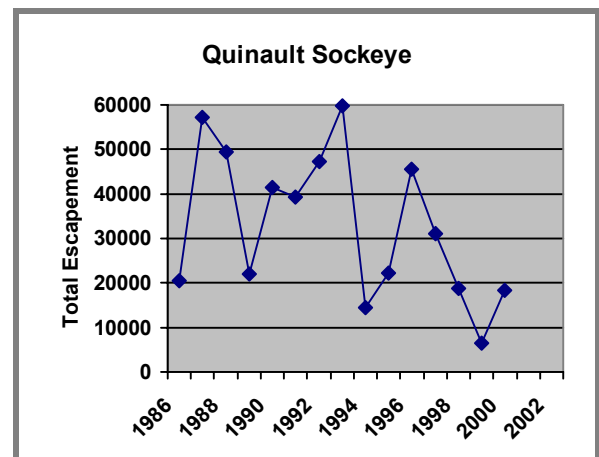
Healthy

## STOCK STATUS RATING DATA

### USEFULNESS FOR RATING STOCK STATUS:

Fair

YEAR	TOTAL ESCAPEMENT
1986	20,516
1987	57,186
1988	49,492
1989	22,017
1990	41,536
1991	39,317
1992	47,162
1993	59,832
1994	14,407
1995	22,147
1996	45,527
1997	30,973
1998	18,801
1999	6,476
2000	18,364
2001	Not yet available
2002	Not yet available
2003	Not yet available



Data are total escapement estimates based on hydro-acoustic surveys in Lake Quinault.

Although escapements have dropped since 1996, the decline does not fit criteria for either a long-term negative trend or a short-term severe decline. Consequently stock status is rated **Healthy** in 2002.

## STOCK DEFINITION

Quinault sockeye were identified as a stock based on their distinct spawning distribution and unique early river entry timing (January through July).

**SPAWNING DISTRIBUTION:** Most spawning takes place in the mainstem Quinault River (RM 36.2 to 47.0). Spawning also occurs in Big, Inner, Fletcher, Joe (Culvert), No Name and Ziegler creeks.

# QUINAULT- QUINAULT SOCKEYE

---

**SPAWNING TIMING:** Spawning generally occurs from mid-October through the end of February.

**GENETIC ANALYSIS:** Allozyme analysis has shown that Quinault sockeye are genetically distinct from all other Washington sockeye stocks examined (Gustafson et al. 1997).

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# SOOES/OZETTE – SOOES/WAATCH WINTER STEELHEAD

---

## STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

## STOCK STATUS RATING DATA

There is little abundance trend information with which to rate stock status. Hatchery escapement data from 1984 to the present are available from the Makah National Fish Hatchery staff. The relevance of these data in determining stock status is currently unresolved between state and tribes. Stock status remains **Unknown** in 2002.

## STOCK DEFINITION

Sooes/Waatch winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the Sooes and Waatch rivers. In the Sooes River, spawning occurs in the mainstem and in tributaries such as Tyler, Cheeka, Kobusie, Grimes, Miller, Holden, Colby, 30 Cent, Shafter, Snag and Pilchuck creeks. In the Waatch River, spawning occurs in the mainstem and in tributaries such as Educket (below diversion reservoir), Bear, Red and Waatch creeks.

**SPAWNING TIMING:** Spawning generally occurs from mid-February to mid-June.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Sooes/Waatch Winter steelhead.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# SOOES/OZETTE – OZETTE WINTER STEELHEAD

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## STOCK STATUS

<b>1992 STATUS</b> Unknown	<b>2002 STATUS</b> Unknown
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## STOCK STATUS RATING DATA

Annual spawner surveys are conducted by Makah Fisheries Management in Umbrella Creek and in Big River, the two main tributaries to Lake Ozette, but accurate estimates of escapement have been made only in recent years. Makah Fisheries Management initiated annual smolt enumeration beginning in 2000 of all salmonids egressing from Lake Ozette, and adult steelhead returning spawners and post-spawning kelts are also enumerated annually by video camera as they pass the weir below the lake outlet (Mike Crewson, Makah Tribal Fisheries, personal communication).

Adequate abundance trend data are limited at this time so stock status remains **Unknown** in 2002.

## STOCK DEFINITION

Ozette winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the Ozette and Big rivers and in tributaries such as Umbrella, Crooked, Coal, Palmquist, Trout, Boe and Solberg creeks. Spawning also occurs in numerous small unnamed tributaries to Lake Ozette.

**SPAWNING TIMING:** Spawning generally occurs from mid-February to early-June.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Ozette Winter steelhead.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUILLAYUTE – QUILLAYUTE/BOGACHIEL SUMMER STEELHEAD

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In the 1992 SASSI, this stock was known as Bogachiel summer steelhead.

## STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 continues to be **Unknown**. Escapement is not monitored, and sport harvest data are of little value in rating status due to wild steelhead release regulations.

## STOCK DEFINITION

Quillayute/Bogachiel summer steelhead were identified as a stock based on their distinct spawning distribution. They are distinct from wild winter steelhead in the Bogachiel River based on run timing.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Quillayute River, Bogachiel River and in tributaries such as Murphy and Mayfield creeks.

**SPAWNING TIMING:** Spawning timing is unknown.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Quillayute/Bogachiel summer steelhead.

## STOCK ORIGIN

Stock origin is **unresolved** by the state and tribes. Stock production type is **wild**.

# QUILLAYUTE – QUILLAYUTE/BOGACHIEL WINTER STEELHEAD

## STOCK STATUS

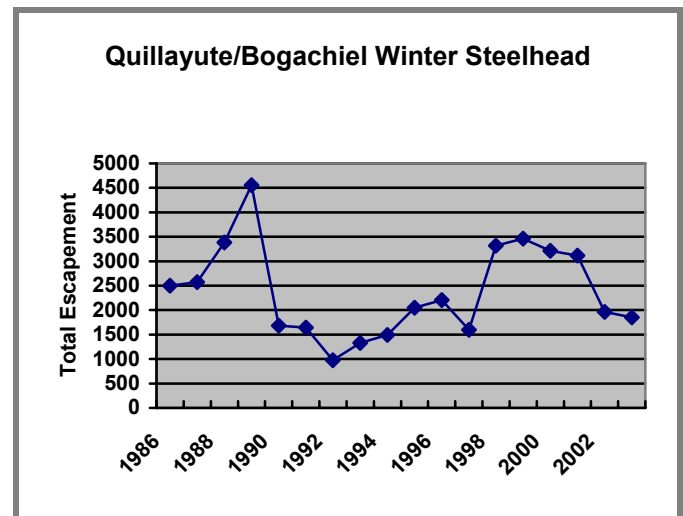
<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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Winter steelhead spawner escapement has been monitored for the Quillayute River system, which includes the Sol Duc, Quillayute/Bogachiel, Calawah and Dickey steelhead stocks, since 1978. In 1985, WDFW and the Quileute Tribe agreed to a wild steelhead spawner escapement goal of 5,900 for the entire Quillayute River system.

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS :** Excellent

YEAR	TOTAL ESCAPEMENT
1986	2,501
1987	2,569
1988	3,381
1989	4,553
1990	1,680
1991	1,642
1992	973
1993	1,329
1994	1,491
1995	2,050
1996	2,208
1997	1,596
1998	3,320
1999	3,465
2000	3,214
2001	3,112
2002	1,964
2003	1,854



Data are total escapement estimates based upon redds counts in index reaches and supplemental survey observations. Index areas surveyed include the mainstem Bogachiel River (RM 5.0 to 8.5, RM 8.5 to 15.7 and RM 19.2 to 20.2) as well as Murphy, Mill, Bear and Morganroth creeks. Supplemental surveys are conducted in Bear and Coon creeks and in the mainstem Bogachiel River (RM 21.2 to 31.0). Due to the large area of the Quillayute system used by spawning winter steelhead, only a limited portion can be surveyed on a weekly or bi-weekly schedule. To account for redd production in the mainstem reach used by winter steelhead, four to six helicopter surveys are conducted to count visible redds during the season.

# QUILLAYUTE – QUILLAYUTE/BOGACHIEL WINTER STEELHEAD

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The entire escapement for the Quillayute system since 1978 has averaged 10,205, of which 22% spawned in the Quillayute/Bogachiel watershed. Since 1992, winter steelhead escapements in the Quillayute/Bogachiel River have ranged from 973 to 3,465 and averaged 2,276. During the past five seasons the Quillayute/Bogachiel River and Quillayute system escapements have averaged 2,941 and 14,251, respectively. Stock status is again rated **Healthy** in 2002.

## STOCK DEFINITION

Quillayute/Bogachiel winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Quillayute and mainstem Bogachiel rivers (RM 0.0 to 33.8). Spawning also takes place in tributaries such as Murphy, Mayfield, Mill, Bear, Coon, Dowans and Morganroth creeks.

**SPAWNING TIMING:** Spawning generally occurs from mid-March to June.

**GENETIC ANALYSIS:** Allozyme analysis has shown this stock to be relatively similar to other northern coastal steelhead stocks examined (Reisenbichler and Phelps 1989). Phelps et al. (1997) found that Bogachiel juvenile steelhead sampled in 1994 had close genetic relationships with other Quillayute Basin stocks. Quillayute stocks are genetically distinct compared to those in Queets, Hoh, Quinault (other North Coast basins), based on the cluster analyses (Fig. 1-A for example) shown in Phelps et al. 1997.

## STOCK ORIGIN

This is a **native** stock with **wild** production. Chambers Creek hatchery steelhead smolts have been stocked in the Quillayute and Bogachiel rivers and nearby streams but these releases have been thought to have no significant impact on the native stock.

# QUILLAYUTE – DICKEY WINTER STEELHEAD

## STOCK STATUS

**1992 STATUS**  
Healthy

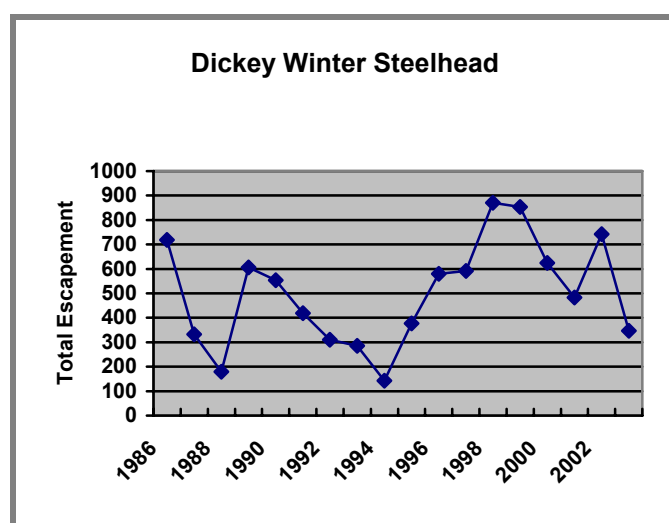
**2002 STATUS**  
Healthy

Winter steelhead spawner escapement has been monitored for the Quillayute River system, which includes the Sol Duc, Quillayute/Bogachiel, Calawah and Dickey steelhead stocks, since 1978. In 1985, WDFW and the Quileute Tribe agreed to a wild steelhead spawner escapement goal of 5,900 for the entire Quillayute River system.

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS: Excellent**

YEAR	TOTAL ESCAPEMENT
1986	719
1987	332
1988	179
1989	606
1990	554
1991	419
1992	310
1993	285
1994	143
1995	377
1996	580
1997	591
1998	871
1999	854
2000	624
2001	483
2002	742
2003	347



Data are total escapement estimates based upon redd counts in index reaches and supplemental survey observations. Index areas surveyed include Dickey River (RM 5.1 to RM 8.0), East Fork Dickey River (RM 5.7 to 8.0 and RM 13.2 to 15.5), Middle Fork Dickey River (RM 0.0 to RM 2.9) and Colby Creek (RM 1.0 to 2.3). Supplemental survey areas include the mainstem Dickey River and the east and middle forks of the Dickey River as well as Colby, Gunderson, Skunk and Fluharty creeks.

Since 1978 the entire escapement for the Quillayute system has averaged 10,205, of which 5% spawned in the Dickey River watershed. Since 1992, winter steelhead escapements in the Dickey River have ranged from 143 to 871 and averaged 512. During the past five seasons the Dickey

# QUILLAYUTE – DICKEY WINTER STEELHEAD

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River and Quillayute system escapements have averaged 685 and 14,251, respectively. This stock is again rated **Healthy** in 2002.

## STOCK DEFINITION

Dickey winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Dickey River, in the east, west and middle forks of the Dickey River. Spawning also takes place to a lesser extent in Coal, Colby, Thunder, Gunderson, Skunk and Fluharty creeks as well as unnamed tributaries 20.0114, 20.0129, 20.0139 and 20.0141.

**SPAWNING TIMING:** Spawning generally occurs from mid-March to June.

**GENETIC ANALYSIS:** Allozyme analysis has shown this stock to be genetically distinct compared to other North Coast steelhead samples included in the study (Allendorf 1975).

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUILLAYUTE – SOL DUC SUMMER STEELHEAD

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## STOCK STATUS

1992 STATUS	2002 STATUS
<b>Unknown</b>	<b>Unknown</b>

## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 continues to be **Unknown**. Escapement is not monitored, and sport harvest data are of little value in rating status due to wild steelhead release regulations.

## STOCK DEFINITION

Sol Duc summer steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the upper reaches of the Sol Duc River and in tributaries such as Kugel and Camp creeks.

**SPAWNING TIMING:** Spawning timing is unknown.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Sol Duc summer steelhead.

## STOCK ORIGIN

Stock origin is **unresolved** by the state and tribes. Stock production type is **wild**.

# QUILLAYUTE – SOL DUC WINTER STEELHEAD

## STOCK STATUS

**1992 STATUS**

**Healthy**

**2002 STATUS**

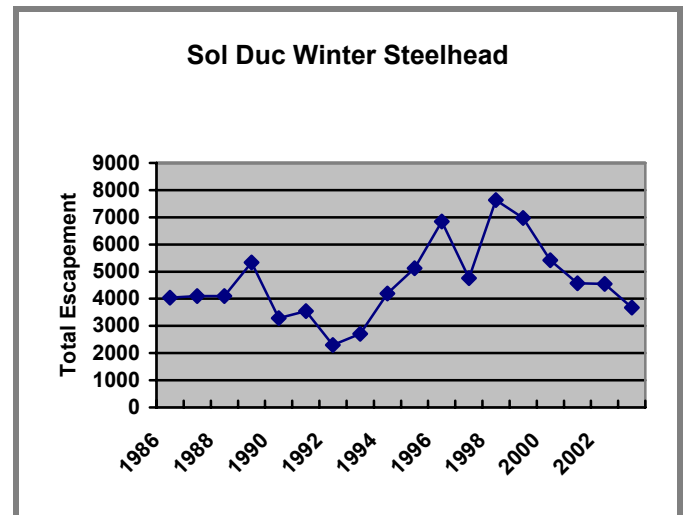
**Healthy**

Winter steelhead spawner escapement has been monitored for the Quillayute River system, which includes the Sol Duc, Quillayute/Bogachiel, Calawah and Dickey steelhead stocks since 1978. In 1985, WDFW and the Quileute Tribe agreed to a wild steelhead spawner escapement goal of 5,900 for the entire Quillayute River system.

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS: Excellent**

YEAR	TOTAL ESCAPEMENT
1986	4,046
1987	4,105
1988	4,099
1989	5,333
1990	3,289
1991	3,551
1992	2,295
1993	2,711
1994	4,191
1995	5,124
1996	6,845
1997	4,764
1998	7,634
1999	6,973
2000	5,416
2001	4,575
2002	4,546
2003	3,673



Data are total escapement estimates based upon redd counts in index reaches and supplemental survey observations. Index areas surveyed include the mainstem Sol Duc River (RM 18.6 to 22.8, RM 41.1 to 43.0 and RM 61.1 to 64.7) and Lake, Beaver, Bear, Camp and Goodman creeks as well as the South Fork Sol Duc River. Supplemental survey areas include Tassel, Gunderson, Bockman, Shuwah, Redoubt, South Fork Bear and Kugel creeks as well as the North Fork Sol Duc River. Due to the large area of the Quillayute system used by spawning winter steelhead, only a limited portion can be surveyed on a weekly or bi-weekly schedule. To account for redd production in the mainstem used by winter steelhead, four to six helicopter surveys are conducted to count visible redds during the season.

# QUILLAYUTE – SOL DUC WINTER STEELHEAD

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The entire escapement for the Quillayute system since 1978 averaged 10,205, of which 42% spawned in the Sol Duc watershed. Since 1992, winter steelhead escapements in the Sol Duc River have ranged from 2,295 to 7,634 and averaged 5,053. During the past five seasons the Sol Duc River and Quillayute system escapements have averaged 5,872 and 14,251, respectively. Therefore, the Sol Duc winter steelhead stock is again rated **Healthy**.

## STOCK DEFINITION

Sol Duc winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Sol Duc River from the mouth to RM 64.5, located downstream of the Sol Duc Falls in Olympic National Park. Spawning also occurs in tributaries such as Shuwah, Lake, Beaver, Bear, Camp, Goodman, Tassel, Gunderson, Bockman, Redoubt, South Fork Bear, Kugel and Alckee creeks. Spawning also can occur in unnamed tributaries 20.0330 and 20.0335 and in the north and south forks of the Sol Duc River.

**SPAWNING TIMING:** Spawning generally occurs from mid-March to June.

**GENETIC ANALYSIS:** Allozyme analysis has shown this stock to be relatively similar to all other northern coastal steelhead stocks examined (Reisenbichler and Phelps, 1989). Phelps et al. (1997) found that Sol Duc juvenile steelhead sampled in 1994 had close genetic relationships with other Quillayute Basin stocks. Quillayute stocks are genetically distinct compared to those in Queets, Hoh, Quinault (other North Coast basins), based on the cluster analyses (Fig. 1-A for example) shown in Phelps et al. 1997.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUILLAYUTE – CALAWAH SUMMER STEELHEAD

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## STOCK STATUS

1992 STATUS <b>Unknown</b>	2002 STATUS <b>Unknown</b>
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## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 continues to be **Unknown**. Escapement is not monitored and sport harvest data are of little value in rating status due to wild steelhead release regulations.

## STOCK DEFINITION

Calawah summer steelhead were identified as a separate stock based on their distinct spawning distribution and early run timing.

**SPAWNING DISTRIBUTION:** Spawning takes place in the isolated upper reaches of the Calawah River, South Fork Calawah River and Sitkum River.

**SPAWNING TIMING:** Spawning timing is unknown.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Calawah summer steelhead.

## STOCK ORIGIN

Stock origin is **unresolved** by state and tribes. Stock production type is **wild**.

# QUILLAYUTE – CALAWAH WINTER STEELHEAD

## STOCK STATUS

**1992 STATUS**

**Healthy**

**2002 STATUS**

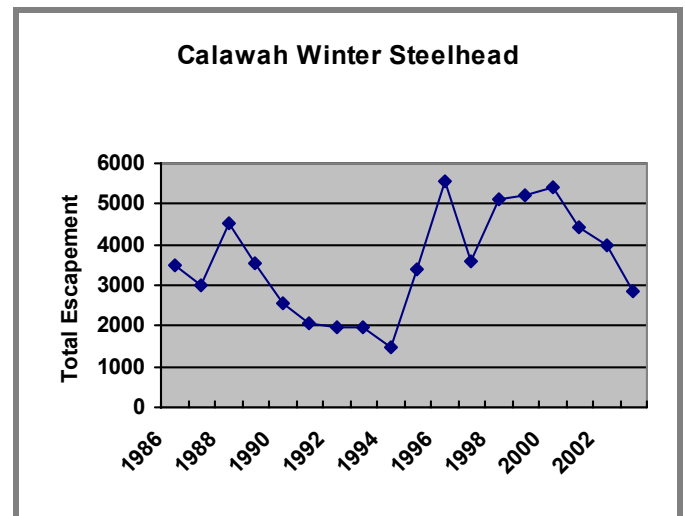
**Healthy**

Winter steelhead spawner escapement has been monitored for the Quillayute River system, which includes the Sol Duc, Quillayute/Bogachiel, Calawah and Dickey steelhead stocks, since 1978. In 1985, WDFW and the Quileute Tribe agreed to a wild steelhead spawner escapement goal of 5,900 for the entire Quillayute River system.

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS: Excellent**

YEAR	TOTAL ESCAPEMENT
1986	3,480
1987	2,994
1988	4,526
1989	3,556
1990	2,573
1991	2,046
1992	1,957
1993	1,945
1994	1,458
1995	3,375
1996	5,558
1997	3,607
1998	5,124
1999	5,210
2000	5,411
2001	4,413
2002	3,990
2003	2,850



Data are total escapement estimates based upon redd counts in index reaches and supplemental survey observations. Index surveys are conducted on the mainstem Calawah River (RM 6.6 to 8.7), North Fork Calawah River (RM 0.0 to 2.5 and RM 8.6 to 10.7), South Fork Calawah River (RM 13.3 to 15.3) and Sitkum River (RM 0.0 to 1.5). Other index areas include tributaries Hyas Creek (RM 0.0 to 0.5) and Cool Creek (RM 0.0 to 1.9). Supplemental survey sections include the mainstems of the South Fork Calawah, North Fork Calawah and Sitkum rivers, Elk, Devil's, Hyas creeks and unnamed tributary 20.0184. Due to the large area of the Quillayute system used by spawning winter steelhead, only a limited portion can be surveyed on a weekly or bi-weekly schedule. To account for redd production in the mainstem reach used by winter steelhead, four to six helicopter surveys are conducted to count visible redds during the season.

# QUILLAYUTE – CALAWAH WINTER STEELHEAD

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Since 1978, the entire escapement for the Quillayute system averaged 10,205, of which 31% spawned in the Calawah watershed. Since 1992, wild steelhead escapements in the Calawah River have ranged from 1,458 to 5,558 and averaged 3,806. During the past five seasons the Calawah River and Quillayute system escapements have averaged 4,753 and 14,251, respectively. This stock is again rated **Healthy** in 2002.

## STOCK DEFINITION

Calawah winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Calawah, north and south forks of the Calawah and in the Sitkum rivers. Spawning also occurs in tributaries such as Hyas, Elk, Cool, Pistol, Albion, Lost and Devil's creeks as well as in unnamed tributary 20.0184.

**SPAWNING TIMING:** Spawning generally occurs from mid-March to mid-June.

**GENETIC ANALYSIS:** Allozyme analysis has shown this stock to be relatively similar to other northern coastal steelhead stocks examined (Reisenbichler and Phelps, 1989). Phelps et al (1997) found that Calawah juvenile steelhead sampled in 1994 had close genetic relationships with other Quillayute Basin stocks. Quillayute stocks are genetically distinct compared to those in Queets, Hoh, Quinault (other North Coast basins), based on the cluster analyses (Fig 1-A for example) shown in Phelps et al. 1997.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# HOH – GOODMAN CREEK WINTER STEELHEAD

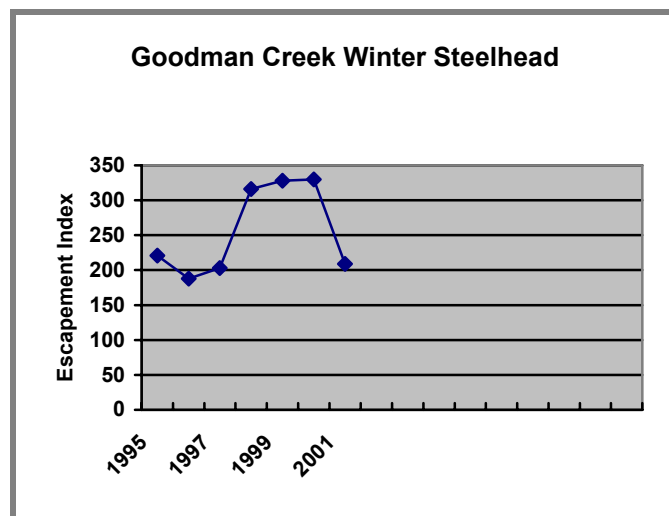
## STOCK STATUS

<b>1992 STATUS</b> Unknown	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Good

YEAR	ESCAPEMENT INDEX
1995	221
1996	188
1997	203
1998	316
1999	328
2000	330
2001	209



Data are escapement estimates based on redd counts in an index area located on mainstem of Goodman Creek (RM 0.3 to 12.0).

Escapement values remain within the normal range of variation for this stock and have shown an increase from 1998 to 2000. This stock has met the escapement goal of 206 fish in five out of the last seven years. Stock status is rated **Healthy** in 2002.

## STOCK DEFINITION

Goodman Creek winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in Goodman Creek.

**SPAWNING TIMING:** Spawning occurs from January through April.

**GENETIC ANALYSIS:** Allozyme analysis has shown this stock to be genetically similar to all other northern coastal steelhead stocks examined and to be genetically similar to the Chambers Creek Hatchery strain (Phelps et al. 1997).

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# HOH – MOSQUITO CREEK WINTER STEELHEAD

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## STOCK STATUS

1992 STATUS	2002 STATUS
<b>Unknown</b>	<b>Unknown</b>

## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 continues to be **Unknown**. Escapement monitoring began in 2000, and future escapement values will give a better idea of the status of this stock.

## STOCK DEFINITION

Mosquito Creek winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in Mosquito Creek.

**SPAWNING TIMING:** Spawning generally occurs January through April.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Mosquito Creek winter steelhead.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# HOH – HOH SUMMER STEELHEAD

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## STOCK STATUS

1992 STATUS	2002 STATUS
<b>Unknown</b>	<b>Unknown</b>

## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 continues to be **Unknown**. Escapement is not monitored, and sport harvest data are of little value in rating status due to sporadic harvest reporting and season closures.

## STOCK DEFINITION

Hoh summer steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the Hoh River, however specific spawning locations are unknown.

**SPAWNING TIMING:** Spawning timing is unknown.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Hoh summer steelhead.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# HOH – HOH WINTER STEELHEAD

## STOCK STATUS

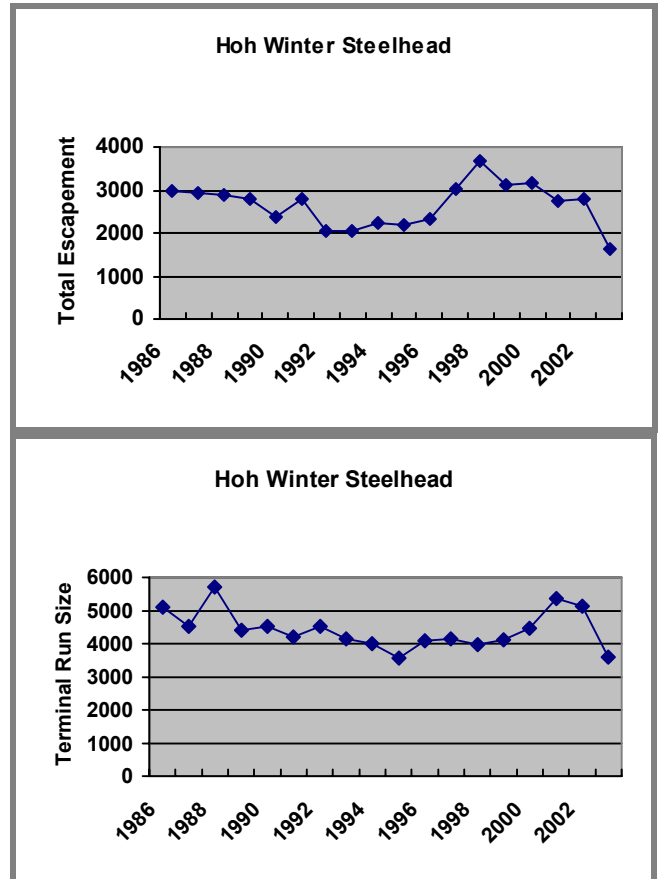
**1992 STATUS**  
Healthy

**2002 STATUS**  
Healthy

## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:  
Excellent

YEAR	TOTAL ESCAPEMENT	TERMINAL RUN SIZE
1986	3,000	5,094
1987	2,908	4,527
1988	2,906	5,706
1989	2,808	4,415
1990	2,390	4,525
1991	2,783	4,206
1992	2,061	4,515
1993	2,053	4,144
1994	2,239	3,988
1995	2,204	3,571
1996	2,340	4,097
1997	3,008	4,152
1998	3,689	3,977
1999	3,095	4,123
2000	3,162	4,468
2001	2,767	5,351
2002	2,811	5,125
2003	1,616	3,583



Data are total escapement estimates based on redd counts on the Hoh River and South Fork Hoh River. Terminal run size data are based on total escapement plus in-river tribal net catches (wild only) and in-river sport catches.

Hoh Winter Steelhead are rated Healthy in 2002. Escapement values remain within the normal range of variation for this stock and have exceeded the escapement goal of 2,400 fish from 1986 to 2001.

## STOCK DEFINITION

Hoh winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Hoh and South Fork Hoh rivers. Spawning also occurs in tributaries such as Braden, Nolan, Anderson, Lost, Winfield, Alder, Elk, Clear and Slate creeks.

## HOH – HOH WINTER STEELHEAD

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**SPAWNING TIMING:** Spawning generally occurs mid-February through mid-June.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Hoh winter steelhead.

### **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# KALALOCH – KALALOCH CREEK WINTER STEELHEAD

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## STOCK STATUS

<b>1992 STATUS</b> Unknown	<b>2002 STATUS</b> Unknown
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## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 continues to be **Unknown**. Escapement is not monitored, and sport harvest data are of little value in rating status due to low harvest numbers and season closures.

## STOCK DEFINITION

Kalaloch Creek winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Kalaloch Creek and in its east and west forks.

**SPAWNING TIMING:** Spawning timing is unknown.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Kalaloch Creek winter steelhead.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUEETS – QUEETS SUMMER STEELHEAD

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## STOCK STATUS

1992 STATUS <b>Healthy</b>	2002 STATUS <b>Unknown</b>
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## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 continues to be **Unknown**. Escapement is not monitored. Sport harvest data are of little value in rating status due to low harvest numbers and season closures.

## STOCK DEFINITION

Queets spring/summer steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning locations within the Queets system are unknown.

**SPAWNING TIMING:** Spawning timing is unknown.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Queets summer steelhead.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUEETS – QUEETS WINTER STEELHEAD

## STOCK STATUS

**1992 STATUS**

Healthy

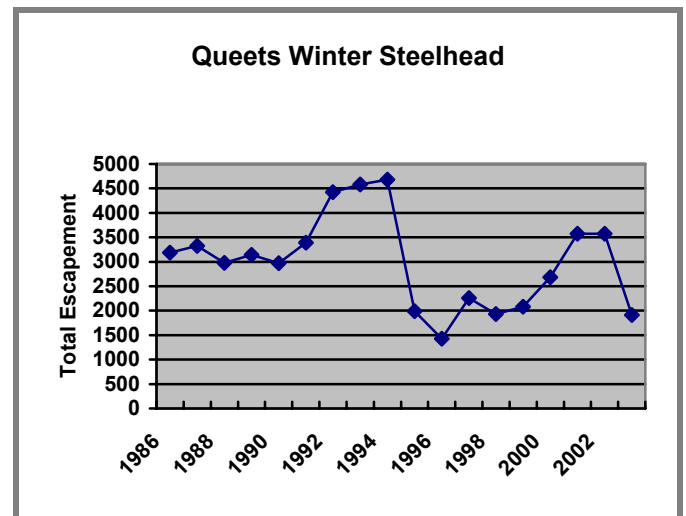
**2002 STATUS**

Healthy

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:** Excellent

YEAR	TOTAL ESCAPEMENT
1986	3,186
1987	3,323
1988	2,981
1989	3,142
1990	2,973
1991	3,387
1992	4,421
1993	4,578
1994	4,678
1995	1,990
1996	1,424
1997	2,260
1998	1,930
1999	2,080
2000	2,680
2001	3,574
2002	3,574
2003	1,910



Data are total escapement estimates based on redd counts in index areas in the Queets basin. Index areas include the mainstem Queets River (RM 23.5 to 25.8) and tributaries such as Salmon River (RM 3.7 to 4.7 and RM 10.8 to 11.9), Matheny Creek (RM 0.5 to 2.7) and Sams River (RM 1.9 to 3.0).

Escapement values remain within the normal range of variation for this stock. Stock status is again rated **Healthy** in 2002.

## STOCK DEFINITION

Queets winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the Queets, Salmon and Sams rivers. Spawning also occurs in Matheny and Tshletshy creeks.

**SPAWNING TIMING:** Spawning timing is unknown.

# QUEETS – QUEETS WINTER STEELHEAD

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**GENETIC ANALYSIS:** Allozyme analysis has shown this stock to be genetically similar to all other northern coastal steelhead stocks examined and to be genetically similar to the Chambers Creek Hatchery strain (Phelps et al. 1997).

## **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# QUEETS – CLEARWATER SUMMER STEELHEAD

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## STOCK STATUS

1992 STATUS	2002 STATUS
<b>Unknown</b>	<b>Unknown</b>

## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 continues to be **Unknown**. Escapement is not monitored. Sport harvest data are of little value in rating status due to low harvest numbers and season closures.

## STOCK DEFINITION

Clearwater summer steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning locations within the Clearwater system are unknown.

**SPAWNING TIMING:** Spawning timing is unknown.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Clearwater summer steelhead.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUEETS – CLEARWATER WINTER STEELHEAD

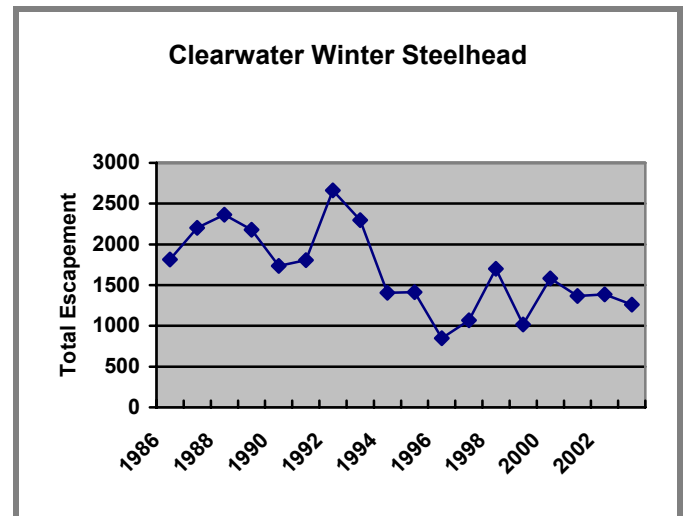
## STOCK STATUS

<b>1992 STATUS</b> Healthy	<b>2002 STATUS</b> Healthy
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## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Excellent

YEAR	TOTAL ESCAPEMENT
1986	1,816
1987	2,203
1988	2,363
1989	2,178
1990	1,735
1991	1,807
1992	2,662
1993	2,299
1994	1,405
1995	1,414
1996	847
1997	1,070
1998	1,699
1999	1,018
2000	1,582
2001	1,368
2002	1,385
2003	1,261



Data are total escapement estimates based on redd counts in index areas in the Clearwater basin. Index areas include the mainstem Clearwater River (RM 0.5 to 2.7, RM 15.5 to 17.0 and RM 22.3 to 23.0) and tributaries such as Shale Creek (RM 0.0 to 2.0), Miller Creek (RM 0.0 to 1.0 and RM 2.3 to 2.9), East Fork Miller Creek (RM 0.0 to 0.5), Christmas Creek (RM 0.0 to 1.3), Snahapish River (RM 0.0 to 1.6 and RM 2.3 to 5.2), Stequaleho River (RM 0.0 to 1.8) and Sollecks River (RM 0.0 to 1.2 and RM 6.1 to 7.1).

Escapement values remain within the normal range of variation for this stock. Stock status in 2002 is rated **Healthy**.

## STOCK DEFINITION

Clearwater winter steelhead were identified as a stock based on their distinct spawning distribution.

# QUEETS – CLEARWATER WINTER STEELHEAD

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**SPAWNING DISTRIBUTION:** Most spawning takes place in the Clearwater, Sollecks and Snahapish rivers. Spawning also occurs in tributaries such as Miller and Christmas creeks.

**SPAWNING TIMING:** Spawning generally occurs from February through June.

**GENETIC ANALYSIS:** Allozyme analysis has shown this stock to be genetically similar to all other northern coastal steelhead stocks examined and to be genetically similar to the Chambers Creek Hatchery strain (Phelps et al. 1997).

## **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# RAFT – RAFT WINTER STEELHEAD

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## STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 continues to be **Unknown**. Escapements have been monitored by the Quinault Fisheries Division. Stock beginning in 1998. Status will be assessed as data become available for this stock.

## STOCK DEFINITION

Raft winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning locations within the Raft system are unknown.

**SPAWNING TIMING:** Spawning generally occurs February through early June.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Raft winter steelhead.

## STOCK ORIGIN

This is a **mixed** stock with **composite** production. Quinault-origin smolts have been stocked in the Raft River since the 1980s. This stock is considered to be a mixture of native and non-native fish.

# QUINAULT – QUINAULT SUMMER STEELHEAD

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## STOCK STATUS

1992 STATUS <b>Unknown</b>	2002 STATUS <b>Unknown</b>
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## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 continues to be **Unknown**. Escapement is not monitored. Sport harvest and tribal commercial harvest data are of little value in rating status due to low harvest numbers and season closures.

## STOCK DEFINITION

Quinault summer steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Specific spawning locations within the Quinault system are unknown.

**SPAWNING TIMING:** Spawning timing is unknown.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Quinault summer steelhead.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# QUINAULT – QUINAULT WINTER STEELHEAD

## STOCK STATUS

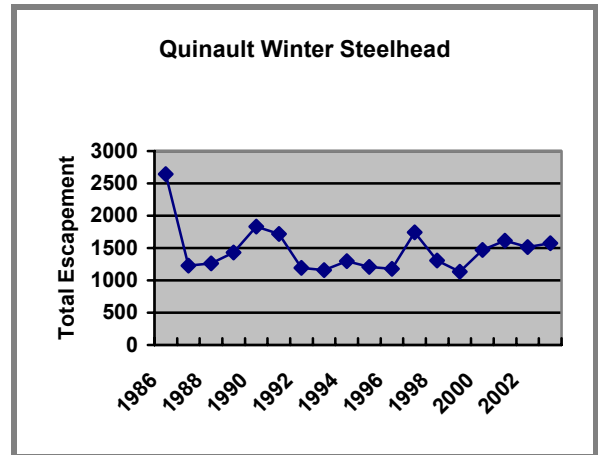
**1992 STATUS**  
Healthy

**2002 STATUS**  
Healthy

## STOCK STATUS RATING DATA

**USEFULNESS FOR RATING STOCK STATUS:**  
Good

YEAR	TOTAL ESCAPEMENT
1986	2,644
1987	1,227
1988	1,264
1989	1,430
1990	1,832
1991	1,719
1992	1,192
1993	1,156
1994	1,299
1995	1,208
1996	1,177
1997	1,745
1998	1,307
1999	1,133
2000	1,470
2001	1,612
2002	1,514
2003	1,572



Data are total escapement estimates based on redd counts in the Quinault basin.

Escapement values remain within the normal range of variation for this stock. The stock exceeded its escapement goal of 1,200 in twelve of the last sixteen years. The Quinault winter steelhead is again rated as **Healthy** in 2002.

## STOCK DEFINITION

Quinault winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the upper Quinault River (RM 36.2 to 53.0), North Fork Quinault River (RM 0.0 to 7.5) and Big Creek.

**SPAWNING TIMING:** Spawning generally occurs from February through June.

# QUINAULT – QUINAULT WINTER STEELHEAD

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**GENETIC ANALYSIS:** Allozyme analysis suggests that Quinault winter steelhead are genetically distinct from the lower river Quinault/Quinault Lake stock and that Lake Quinault may serve as a barrier to gene flow (Phelps et al. 1997).

## **STOCK ORIGIN**

This is a **native** stock with **wild** production.

# QUINAULT – QUINAULT/QUINAULT LAKE WINTER STEELHEAD

## STOCK STATUS

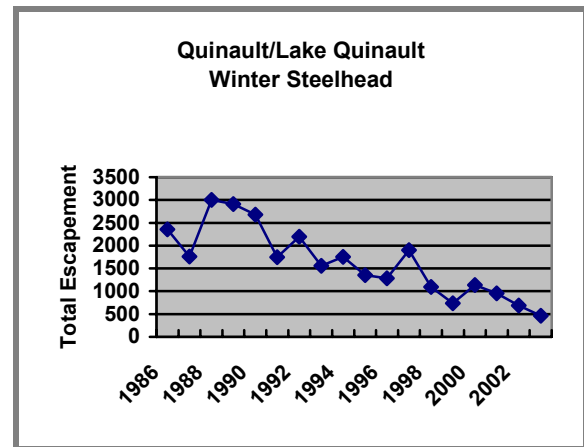
**1992 STATUS**  
Healthy

**2002 STATUS**  
Depressed

## STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:  
Good

YEAR	TOTAL ESCAPEMENT
1986	2,354
1987	1,764
1988	3,002
1989	2,910
1990	2,682
1991	1,745
1992	2,192
1993	1,557
1994	1,755
1995	1,352
1996	1,282
1997	1,903
1998	1,091
1999	734
2000	1,136
2001	956
2002	684
2003	462



Data are wild spawner total escapement estimates based on redd counts in index areas of the Quinault basin.

Quinault/Lake Quinault winter steelhead are rated **Depressed** due to a **long-term negative trend** in escapements. Escapement values have steadily declined in the last ten years and have not shown improvement.

## STOCK DEFINITION

Quinault/Lake Quinault winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Most spawning takes place in the lower mainstem Quinault River (RM 4.0 to 33.0) and in tributaries such as Boulder North, Prairie, Ten O'clock and Boulder South creeks.

## QUINAULT – QUINAULT/QUINAULT LAKE WINTER STEELHEAD

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**SPAWNING TIMING:** Spawning generally occurs from February through June.

**GENETIC ANALYSIS:** Allozyme analysis suggests that Quinault/Quinault Lake winter steelhead are genetically distinct from the upper river Quinault stock and that Lake Quinault may serve as a barrier to gene flow (Phelps et al. 1997).

### **STOCK ORIGIN**

This is a **mixed** stock with **wild** production. Large numbers of non-native hatchery fry have been released in the lower Quinault River and likely contribute to wild spawning.

# MOCLIPS/COPALIS – MOCLIPS WINTER STEELHEAD

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## STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Unknown

## STOCK STATUS RATING DATA

There are no adequate abundance trend data with which to assess stock status, so status in 2002 is **Unknown**. Escapement has not been monitored by WDFW since 1996. Sport harvest data are of little value in rating status due to low harvest numbers and season closures. Quinault tribal fisheries staff collect spawning ground survey data and have estimated escapements from 1998 to the present. Stock status will be revisited as data become available.

## STOCK DEFINITION

Moclips winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Spawning takes place in the mainstem Moclips and North Fork Moclips rivers. Spawning also occurs in tributaries such as Halbert and Hall creeks.

**SPAWNING TIMING:** Spawning generally occurs from February through June.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Moclips winter steelhead.

## STOCK ORIGIN

This is a **native** stock with **wild** production.

# MOCLIPS/COPALIS – COPALIS WINTER STEELHEAD

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## STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

## STOCK STATUS RATING DATA

There are no abundance trend data with which to assess stock status, so status continues to be **Unknown** in 2002.

## STOCK DEFINITION

Copalis winter steelhead were identified as a stock based on their distinct spawning distribution.

**SPAWNING DISTRIBUTION:** Specific spawning locations within the Copalis system are unknown.

**SPAWNING TIMING:** Spawning generally occurs from February through June.

**GENETIC ANALYSIS:** Genetic analysis has not been done on Copalis winter steelhead.

## STOCK ORIGIN

This is a **native** stock with **wild** production.