This stock was called North Fork Nooksack Chinook in the 1992 SASSI.

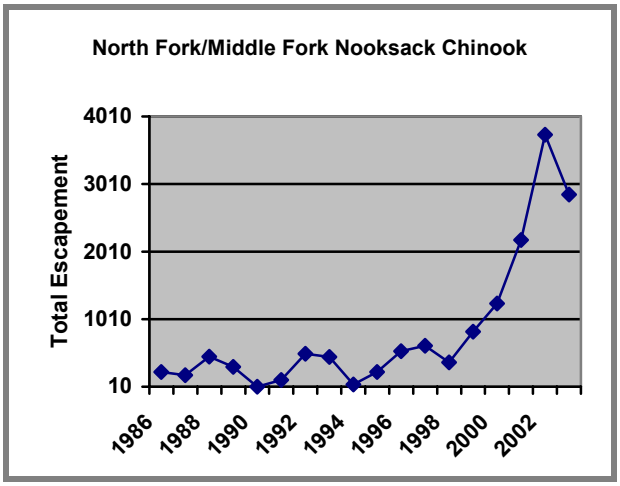
STOCK STATUS

1992 STATUS	2002 STATUS
Critical	Critical

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:
Very Good

YEAR	TOTAL ESCAPEMENT
1986	226
1987	181
1988	456
1989	303
1990	10
1991	108
1992	498
1993	449
1994	45
1995	230
1996	535
1997	617
1998	370
1999	823
2000	1,242
2001	2,185
2002	3,741
2003	2,857



Data are total escapement estimates based on carcass and redd counts in the North Fork and Middle Fork drainages. A stock re-building program using native broodstock was started at Kendall Creek Hatchery in 1980. Escapements have increased as a result, but the natural-origin spawners are still doing poorly.

Stock status is rated **Critical** in 2002 because the average escapement for brood years 1991 through 1997 of 148 natural-origin spawners is considerably less than the Comprehensive Chinook low abundance threshold for the stock of 1,000 natural-origin spawners (PSIT and WDFW 2001).

STOCK DEFINITION

North Fork/Middle Fork Nooksack Chinook were identified as a stock based on their distinct spawning distribution, early river entry timing and spawning timing, and by differences in genetic composition.

SPAWNING DISTRIBUTION: Most spawning takes place in the North Fork Nooksack River from Mosquito Lake Road (RM 44.8) up to RM 63.9. Approximately 88% of recent spawners have been returns from the Kendall Creek Hatchery rebuilding program (including off-station releases at acclimation sites). Carcass recoveries (and spawning locations) correlate with release locations, so upper basin releases are influencing the primary spawning locations. Spawning also occurs in the lower North Fork. Various tributaries are also used, including Canyon, Racehorse, Boulder, Maple, Cornell, Deadhorse, Thompson and Boyd creeks. Spawning also occurs in the Middle Fork Nooksack, including Canyon Lake Creek. Fish released from the Kendall Creek Hatchery program are known to stray into the South Fork Nooksack.

SPAWNING TIMING: Spawning generally occurs from late July through September.

GENETIC ANALYSIS: Allozyme analysis of North Fork/Middle Fork Nooksack Chinook showed them to be genetically distinct from the South Fork Nooksack Chinook and from all other Washington Chinook stocks examined (Marshall et al. 1995).

STOCK ORIGIN

This is a **native** stock with **composite** production. A supplementation program designed to increase numbers of North Fork/Middle Fork Nooksack Chinook has been underway at Kendall Creek Hatchery since 1980.

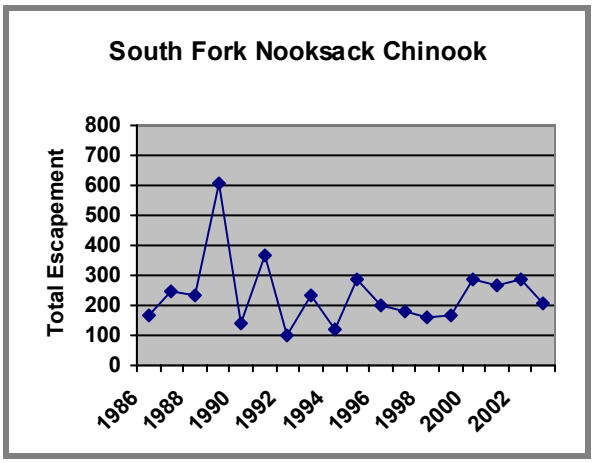
STOCK STATUS

1992 STATUS	2002 STATUS
Critical	Critical

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:
Very Good

YEAR	TOTAL ESCAPEMENT
1986	170
1987	248
1988	233
1989	606
1990	142
1991	365
1992	103
1993	235
1994	118
1995	290
1996	203
1997	180
1998	157
1999	166
2000	284
2001	267
2002	289
2003	204



Data are total escapement estimates based on counts of redds and spawners in the mainstem South Fork and tributaries through September 30 each year, excluding the proportion of redds that carcass recoveries indicated were from known hatchery strays.

Stock status is rated **Critical** in 2002 because the average escapement of 248 spawners for brood years1988 through 1997 is less than the Comprehensive Chinook low abundance threshold of 1,000 natural-origin spawners (PSIT and WDFW 2001).

STOCK DEFINITION

South Fork Nooksack Chinook were identified as a stock based on their distinct spawning distribution, early river entry and spawning timing, and genetic composition.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem South Fork Nooksack River up to RM 25 but up to RM 30.4 in some years. Tributary spawning occurs in Hutchinson, Skookum, Deer and Plumbago creeks.

SPAWNING TIMING: Spawning generally occurs from late August through September, with a peak in September, about two weeks after the peak for North Fork Nooksack Chinook.

GENETIC ANALYSIS: Allozyme analysis has shown that South Fork Nooksack Chinook are genetically distinct from the North Fork/Middle Fork Nooksack Chinook stock and from all other Washington Chinook stocks examined (Marshall et al. 1995). More recent microsatellite DNA analysis of Chinook outmigrants sampled in the South Fork Nooksack in 2000 showed that the majority were fall Chinook and most closely resembled the fall Chinook stock (Green River (Duwamish) origin) that was being released from the WDFW Kendall Creek Hatchery (North Fork Nooksack basin) at the time (Shaklee and Young 2002).

STOCK ORIGIN

This is a **native** stock with **wild** production. A relatively small supplementation program existed at Skookum Creek in the 1980s and early 1990s but was discontinued because of adult mortality and broodstock collection problems. The recent discovery that the majority of Chinook outmigrants in the South Fork in 2000 were fall Chinook is a matter of concern (see Genetic Analysis section above).

NOOKSACK/SAMISH - SAMISH/MAINSTEM NOOKSACK CHINOOK

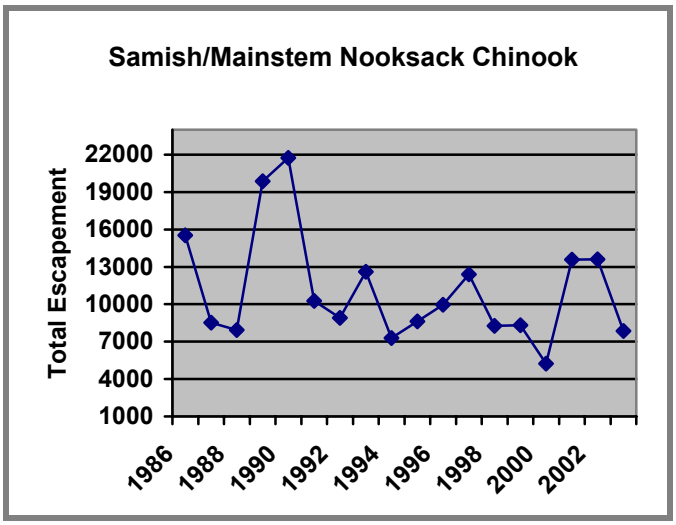
Stock Status

1992 Status	2002 Status
Unknown	Unknown

Stock Status Rating Data

Usefulness for rating stock status: Good

Year	Total Escapement
1986	15,535
1987	8,512
1988	7,938
1989	19,860
1990	21,739
1991	10,279
1992	8,899
1993	12,604
1994	7,293
1995	8,629
1996	9,970
1997	12,392
1998	8,259
1999	8,325
2000	5,248
2001	13,573
2002	13,593
2003	7,864



Data are estimates of total escapement based on redd counts from RM 8.2 to 10.5 in the Samish River plus counts of Chinook passed above the Samish Hatchery. We do not have escapement estimates for the Nooksack basin.

Natural spawning does occur in the Samish River, but the spawning population is composed predominantly of hatchery-origin Chinook. This stock is not enumerated in the Nooksack watershed, although substantial spawning occurs there. Consequently status remains **Unknown** in 2002.

Stock Definition

Samish/Mainstem Nooksack Chinook were identified as a stock based on their distinct spawning distribution and spawning timing.

Spawning Distribution: Spawning takes place in the mainstem Samish River below and above the Samish Hatchery. In the Nooksack system, spawning occurs in the mainstem and in tributaries including Bertrand, Fishtrap, Tenmile, and Smith and Anderson creeks, in all three forks of the Nooksack River and in numerous tributaries.

NOOKSACK/SAMISH - SAMISH/MAINSTEM NOOKSACK CHINOOK

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

GENETIC ANALYSIS: Samish Hatchery Chinook were derived mainly from Soos Creek (Green River) Hatchery Chinook (Marshall et al. 1995). Allozyme analysis showed that Samish Hatchery and Kendall Creek Hatchery (North Fork Nooksack basin) fall-timed Chinook were similar to other Puget Sound hatchery Chinook stocks, such as Deschutes and Hoodsport hatchery Chinook, which were also at least partially derived from Soos Creek Hatchery fish (WDFW and PSTIT 1994). However, DNA analysis of Green River-origin fall-timed Chinook released from the Kendall Creek Hatchery showed that they had diverged significantly from the Soos Creek Hatchery stock (Jim Shaklee, WDFW, personal communication) DNA analysis of Samish Hatchery Chinook has not been conducted. DNA analysis of Chinook smolts collected in 1999 and 2000 throughout the Nooksack basin assigned all smolts to the North Fork Nooksack stock, the South Fork Nooksack stock or the Kendall Creek Hatchery fall Chinook stock. There was no evidence for any other stock origin (e.g., a native fall Chinook stock) among the collections analyzed.

STOCK ORIGIN

This is a **non-native** stock with **composite** production. This stock was introduced from Soos Creek Hatchery (Green River) to the Samish Hatchery, although native fall Chinook formerly occupied the Nooksack watershed (Ned Currence, Nooksack Tribe, personal communication). This stock is spawning successfully in the Nooksack watershed. Fall-timed Chinook are no longer released from the Kendall Creek Hatchery. Instead, the Lummi Nation releases Samish Hatchery Chinook into Lummi Bay and into the lower Nooksack River.

SKAGIT – UPPER SKAGIT MAINSTEM/TRIBS CHINOOK

This stock was called Upper Skagit Mainstem/Tribs summer Chinook in the 1992 SASSI. In this SaSI revision, the run-timing designations have been dropped from most Puget Sound Chinook stock names because they have been applied inconsistently.

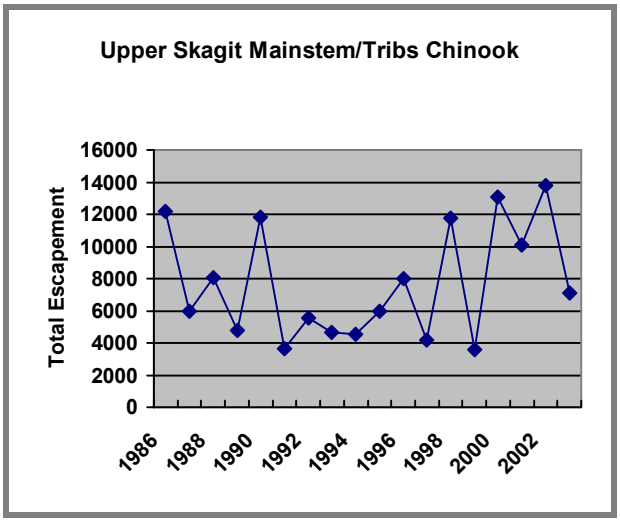
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:
Very Good

YEAR	TOTAL ESCAPEMENT
1986	12,181
1987	5,982
1988	8,077
1989	4,781
1990	11,793
1991	3,656
1992	5,548
1993	4,654
1994	4,565
1995	5,948
1996	7,989
1997	4,168
1998	11,761
1999	3,586
2000	13,092
2001	10,084
2002	13,815
2003	7,123



Data are total escapement estimates based on redd counts from the mouth of the Sauk River to Newhalem, the lower Cascade River (RM 0.0 to 6.5); and in Illabot, Diobsud, Bacon, Falls, and Goodell creeks.

The average escapement of 6,118 spawners for brood years 1988 through 1997 is greater than the spawner abundance recovery goal of 5,380 established for the stock by EDT analysis (Koenings et al. 2002). However, stock productivity is slightly below the expectation for a healthy stock. An average of 6,118 Upper Skagit spawners would be expected to produce at least 21,268 recruits, however the average number of recruits was 21,034. Moreover in eight of the last ten years, production was lower than would be expected in a healthy stock. Therefore, stock status is **Depressed** rated in 2002. The status of this stock is subject to change as values for recruits, provided by NOAA Fisheries, change during on-going analyses.

SKAGIT – UPPER SKAGIT MAINSTEM/TRIBS CHINOOK

STOCK DEFINITION

Upper Skagit Mainstem/Tribs Chinook were identified as a stock based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Spawning takes place in the mainstem Skagit River and tributaries from the Sauk River upstream to Newhalem, excluding the upper Cascade River.

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

GENETIC ANALYSIS: Allozyme analysis has shown that Upper Skagit Mainstem/Tribs Chinook are not significantly different from Lower Skagit fall Chinook stock or from Upper Sauk spring Chinook. They are, however, different from Skagit River hatchery stocks (Marshall et al. 1995).

STOCK ORIGIN

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

SKAGIT– LOWER SKAGIT MAINSTEM/TRIBS CHINOOK

This stock was called Lower Skagit Mainstem/Tribs fall Chinook in the 1992 SASSI. In this SaSI revision, the run-timing designations have been dropped from most Puget Sound Chinook stock names because they have been applied inconsistently.

STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	4,584
1987	2,635
1988	2,339
1989	1,454
1990	3,705
1991	1,510
1992	1,331
1993	942
1994	884
1995	666
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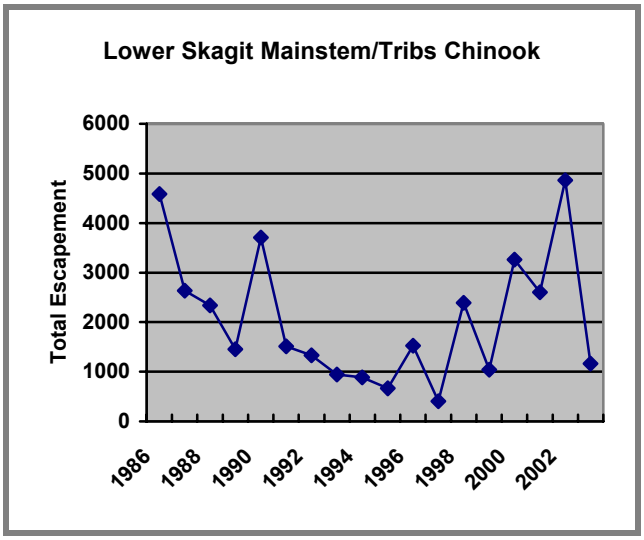
2001	2,606
2002	4,866
2003	1,161



Data are total escapement estimates based on redd counts from the mainstem Skagit between the town of Sedro Woolley and the mouth of the Sauk River and in Finney and Day creeks.

Stock status is rated **Depressed** in 2002 primarily due to low productivity. Productivity is less than expected, even assuming low marine survival. The average escapement for brood years 1988 through 1997 of 1,476 spawners would be expected to produce a mean number of recruits of 7,735. However, the observed mean is only 4,572. In addition, spawner abundance is low. The average escapement is less than the recovery goal of 3,900 spawners established for the stock by EDT analysis (Koenings et al. 2002). The status of this stock is subject to change as values for recruits, provided by NOAA Fisheries, change during on-going analyses.

STOCK DEFINITION

Lower Skagit Mainstem/Tribs Chinook were identified as a stock based on their distinct spawning distribution, spawning timing and genetic composition.

SKAGIT– LOWER SKAGIT MAINSTEM/TRIBS CHINOOK

SPAWNING DISTRIBUTION: Spawning takes place in the mainstem Skagit River and tributaries downstream from the Sauk River. The majority of fish spawn between Sedro Woolley and the Sauk River.

SPAWNING TIMING: Spawning generally occurs from September through October.

GENETIC ANALYSIS: Allozyme analysis shows that this stock is not significantly different from Upper Skagit Mainstem/Tribs Chinook stock. The two stocks are, however, different from the other Skagit wild Chinook stocks and hatchery stocks (Marshall et al. 1995).

STOCK ORIGIN

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

SKAGIT - LOWER SAUK CHINOOK

This stock was called Lower Sauk summer Chinook in the 1992 SASSI. In this SaSI revision, the run-timing designations have been dropped from most Puget Sound Chinook stock names because they have been applied inconsistently.

STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	1,143
1987	792
1988	1,052
1989	449
1990	1,294
1991	658
1992	469
1993	205
1994	112
1995	278
1996	1,103
1997	295
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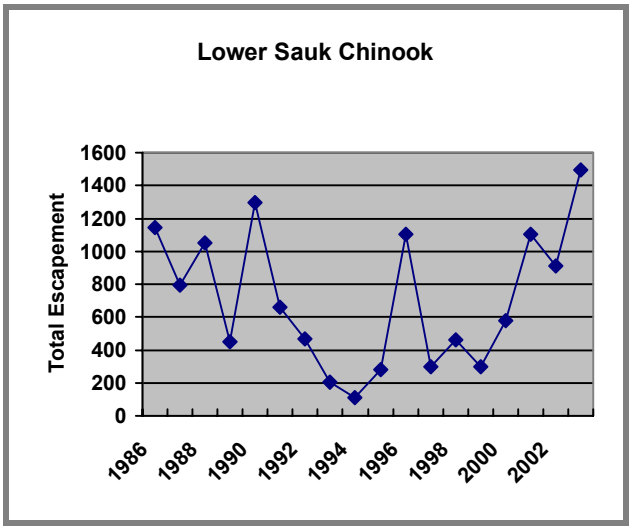
2000	576
2001	1,103
2002	910
2003	1,493



Data are total escapement estimates based on redd counts from the mouth of the Sauk River upstream to the town of Darrington (RM 0.0 to 21.1).

Stock status is rated **Depressed** in 2002 due primarily to low productivity. Stock productivity is less than expected even assuming low marine survival. A mean of 589 spawners for brood years 1988 through 1997 should produce a mean of 2,845 recruits. However, the mean number of recruits is only 799. In addition, spawner abundance is low. The average escapement is less than the recovery goal of 1,400 spawners established for the stock by EDT analysis (Koenings et al. 2002). The status of this stock is subject to change as values for recruits, provided by NOAA Fisheries, change during on-going analyses.

STOCK DEFINITION

Lower Sauk Chinook were identified as a stock based on their distinct spawning distribution, spawning timing and genetic composition.

SPAWNING DISTRIBUTION: Spawning takes place in the Sauk River from the mouth upstream to the Darrington Bridge (RM 21.2).

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

GENETIC ANALYSIS: Allozyme analysis has shown that Lower Sauk Chinook are genetically distinct from all other Washington Chinook stocks examined (Marshall et al. 1995).

STOCK ORIGIN

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

SKAGIT - UPPER SAUK CHINOOK

This stock was called Upper Sauk spring Chinook in the 1992 SASSI. In this SaSI revision, the run-timing designations have been dropped from most Puget Sound Chinook stock names because they have been applied inconsistently.

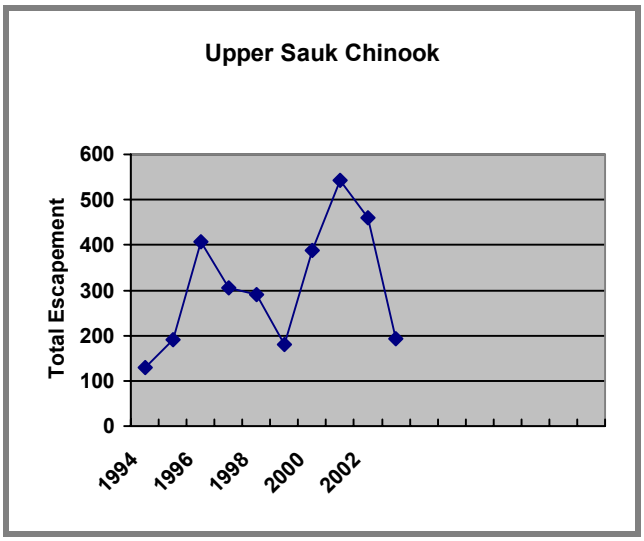
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:
Excellent

YEAR	TOTAL ESCAPEMENT
1994	130
1995	190
1996	408
1997	305
1998	290
1999	180
2000	388
2001	543
2002	460
2003	193



Data are total escapement estimates based on redd counts in the mainstem Skagit River from the town of Darrington up to the forks (RM 21.2 to 39.7), in the North Fork Sauk from the mouth upstream to the falls and in the South Fork Sauk from the mouth to about RM 2.5. A new escapement methodology was developed beginning in 1994. Expanded cumulative redd counts are thought to represent the total spawner population better than peak live plus dead counts which were used prior to 1994 (Pete Castle, WDFW, personal communication). The new estimates are not comparable to the estimates in the 1992 SASSI.

Stock status is rated **Depressed** in 2002. Mean spawner abundance for brood years 1994 through 1997 is 258. There is no Comprehensive Chinook low abundance threshold for this stock. The escapement boundary between depressed and critical status used for this stock is 210, which represents 5% of the historic Chinook capacity in the upper Sauk estimated by EDT as 4,200. The average number of spawners slightly exceeds this value. Stock productivity is low, even assuming low marine survival but is above the level of stock replacement. The status of this stock is subject to change as values for recruits, provided by NOAA Fisheries, change during on-going analyses.

STOCK DEFINITION

Upper Sauk Chinook were identified as a stock based on their distinct spawning distribution, spawning timing and genetic composition.

SKAGIT - UPPER SAUK CHINOOK

SPAWNING DISTRIBUTION: Spawning takes place in the Sauk River, primarily from Darrington up to the forks and in the lower reaches of the North and South forks.

SPAWNING TIMING: Spawning generally occurs from late July through early September.

GENETIC ANALYSIS: Allozyme analysis has shown that Upper Sauk Chinook are not genetically distinct from Upper Skagit Mainstem/Tribs.Upper Sauk Chinook are, however, different from all other Washington Chinook stocks examined (Marshall et al. 1995).

STOCK ORIGIN

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

SKAGIT - SUIATTLE CHINOOK

This stock was called Suiattle spring Chinook in the 1992 SASSI. In this SaSI revision, the run-timing designations have been dropped from most Puget Sound Chinook stock names because they have been applied inconsistently.

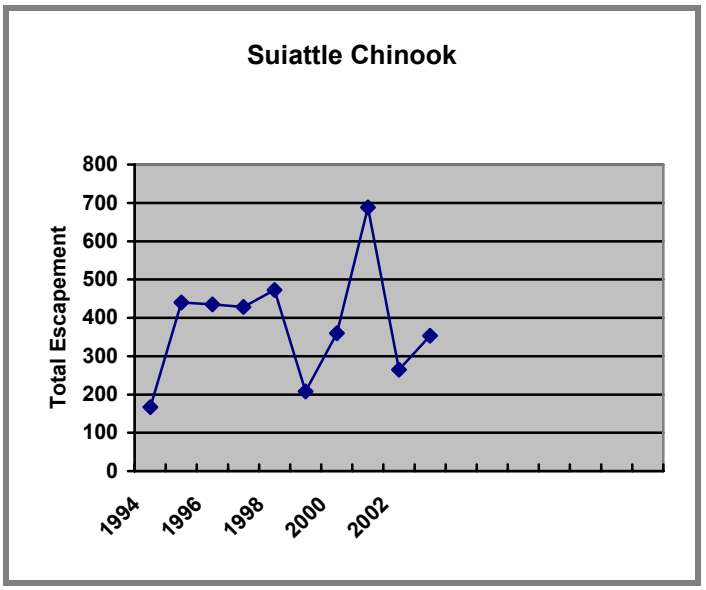
Stock Status

1992 Status	2002 Status
Depressed	Healthy

Stock Status Rating Data

Usefulness for rating stock status: Excellent

Year	Total Escapement
1994	167
1995	440
1996	435
1997	428
1998	473
1999	208
2000	360
2001	688
2002	265
2003	353



Data are total escapement estimates based on redd counts in Big, Tenas, Straight, Circle, Buck, Lime, Downey, Sulphur, Milk creeks. A new escapement methodology was applied beginning in 1994. Expanded cumulative redd counts are thought to represent the total spawner population better than peak live plus dead counts which were used prior to 1994 (Pete Castle, WDFW, personal communication). New estimates are not comparable to the estimates in the 1992 SASSI.

Stock status is rated **Healthy** in 2002. The mean escapement of 368 spawners for brood years 1994 through 1997 is greater than the recovery goal of 160 established for the stock by EDT analysis (Koenings et al. 2002). Stock productivity is also high. The status of this stock is subject to change as values for recruits, provided by NOAA Fisheries, change during on-going analyses.

Stock Definition

Suiattle Chinook were identified as a stock based on their distinct spawning distribution, spawning timing and genetic composition.

SKAGIT - SUIATTLE CHINOOK

SPAWNING DISTRIBUTION: Most spawning takes place in tributaries such as Big, Tenas, Straight, Circle, Buck, Lime, Downey, Sulphur and Milk creeks. Some spawning also occurs in the mainstem Suiattle River.

SPAWNING TIMING: Spawning generally occurs from late July through early September.

GENETIC ANALYSIS: Genetic analysis of samples over a period of six years has shown that Suiattle Chinook is genetically distinct from all other Washington Chinook stocks examined (Marshall et al. 1995).

STOCK ORIGIN

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

SKAGIT - UPPER CASCADE CHINOOK

This stock was called Upper Cascade spring Chinook in the 1992 SASSI. In this SaSI revision, the run-timing designations have been dropped from most Puget Sound Chinook stock names because they have been applied inconsistently.

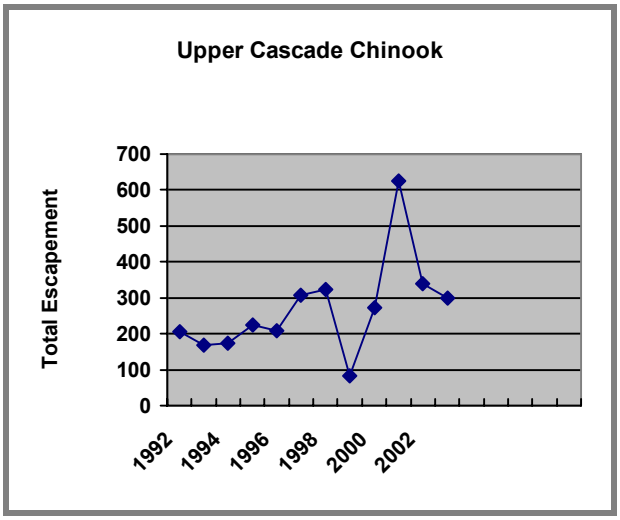
STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:
Excellent

YEAR	TOTAL ESCAPEMENT
1992	205
1993	168
1994	173
1995	225
1996	208
1997	308
1998	323
1999	83
2000	273
2001	625
2002	340
2003	298



Data are total escapement estimates based on redd counts in the mainstem Cascade River above RM 7.8; in the lower reaches of the North and South forks of the Cascade; and in Marble, Found, Kindy, and Sonny Boy creeks. A new escapement methodology was applied beginning in 1992. Expanded cumulative redd counts are thought to represent the total spawner population better than peak live plus dead counts which were used prior to 1992 (Pete Castle, WDFW, personal communication). New estimates are not comparable to the estimates in the 1992 SASSI.

Stock status is rated **Depressed** in 2002 due primarily to low stock productivity. A mean spawner number of 215 for brood years 1992 through 1997 should produce a mean of 796 recruits. However, the observed mean is 731. In addition, the mean number of spawners is less than the recovery goal of 290 spawners established for the stock by EDT analysis (Koenings et al. 2002). The status of this stock is subject to change as values for recruits, provided by NOAA Fisheries, change during on-going analyses.

STOCK DEFINITION

Upper Cascade Chinook were identified as a stock based on their distinct spawning distribution and spawning timing.

SKAGIT - UPPER CASCADE CHINOOK

SPAWNING DISTRIBUTION: Most spawning takes place in the Cascade River from RM 7.8 to at least RM 19.2, in the North Fork Cascade River (RM 0.0 to 0.2) and in Marble, Found, and Kindy creeks.

SPAWNING TIMING: Spawning generally occurs from late July through early September.

GENETIC ANALYSIS: Allozyme analysis of Upper Cascade Chinook has shown them to be genetically distinct from all other Washington Chinook stocks examined (Marshall et al. 1995). In this analysis Upper Cascade Chinook were more similar to other wild Skagit-basin Chinook stocks than they were to other early-timed Puget Sound Chinook stocks such as those in the Nooksack basin and the White River (Puyallup). They were also significantly different from the spring Chinook stock maintained at the WDFW Marblemount Hatchery in the Cascade River basin.

STOCK ORIGIN

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

STILLAGUAMISH– NORTH FORK STILLAGUAMISH CHINOOK

This stock was called Stillaguamish summer Chinook in the 1992 SASSI. In this SaSI revision run timing designations have been dropped from most Puget Sound Chinook stock names because they have been inconsistently applied. The major spawning location (North Fork) has been substituted in this stock name.

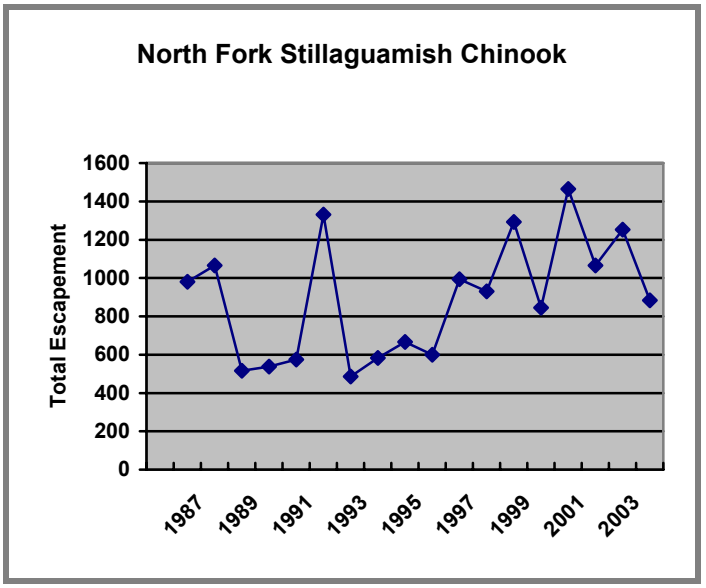
Stock Status

1992 Status	2002 Status
Depressed	Depressed

Stock Status Rating Data

Usefulness for rating stock status: Very Good

Year	Total Escapement
1986	980
1987	1,065
1988	516
1989	537
1990	575
1991	1,331
1992	486
1993	583
1994	667
1995	599
1996	993
1997	930
1998	1,292
1999	845
2000	1,464
2001	1,066
2002	1,253
2003	883



Data are total escapement estimates based on redd counts in the entire North Fork Stillaguamish basin.

Stock status is rated **Depressed** in 2002 due primarily to low stock productivity. A mean spawner number of 722 for brood years 1988 through 1997 should produce a mean of 5,958 recruits. However, the observed mean is 1,993 recruits. In addition, the mean number of spawners is less than the recovery goal of 4,000 spawners established for the stock by EDT analysis (Koenings, Williams and Goodridge 2002).

Stock Definition

North Fork Stillaguamish Chinook were identified as a stock based on their distinct spawning distribution, early spawning timing and genetic composition.

STILLAGUAMISH– NORTH FORK STILLAGUAMISH CHINOOK

Spawning Distribution: Most spawning takes place in the North Fork Stillaguamish River from the mouth upriver to RM 34.4, especially between RM 14.3 to 30.0. Spawning is also observed in the Boulder River (RM 0.0 to 2.9), Squire Creek (RM 0.0 to 4.0), French Creek (RM 0.0 to 2.9), Deer Creek (RM 0.0 to 1.5), and Grant Creek (RM 0.0 to 0.4). In years of higher stream flows, spawning can also take place in smaller tributaries including Rollins, Ashland, Furland, Brown's, and Fortson creeks.

Spawning Timing: Spawning generally occurs from mid-August through the end of October.

Genetic Analysis: Allozyme analysis has shown that North Fork Stillaguamish Chinook are genetically distinct from the South Fork stock (Marshall et al. 1995). North Fork Chinook more closely resemble Skagit basin Chinook stocks than do South Fork Chinook. About 11,000 years ago, the Sauk-Suiattle river system flowed into the North Fork until glacial erosion lowered the divide between the Skagit and Stillaguamish basins, and the Sauk-Suiattle became a tributary of the Skagit (Marshall et al. 1995).

Stock Origin

This is a **native** stock with **composite** production. A hatchery supplementation-based recovery program for North Fork Chinook was initiated in 1980. This program continues today with an annual goal of 200,000 fingerlings released. Although total spawner abundance has increased, the estimated numbers of naturally produced spawners remains at about 400 to 600 fish annually (Puget Sound TRT abundance and productivity tables), which is cause for concern.

Green River-origin Chinook were released into the North Fork Stillaguamish nearly every year from the early 1950s through 1974.

STILLAGUAMISH – SOUTH FORK STILLAGUAMISH CHINOOK

This stock was called Stillaguamish fall Chinook in the 1992 SASSI. In this SaSI revision run timing designations have been dropped from most Puget Sound Chinook stock names because they have been inconsistently applied. The major spawning location (South Fork) has been substituted in this stock name.

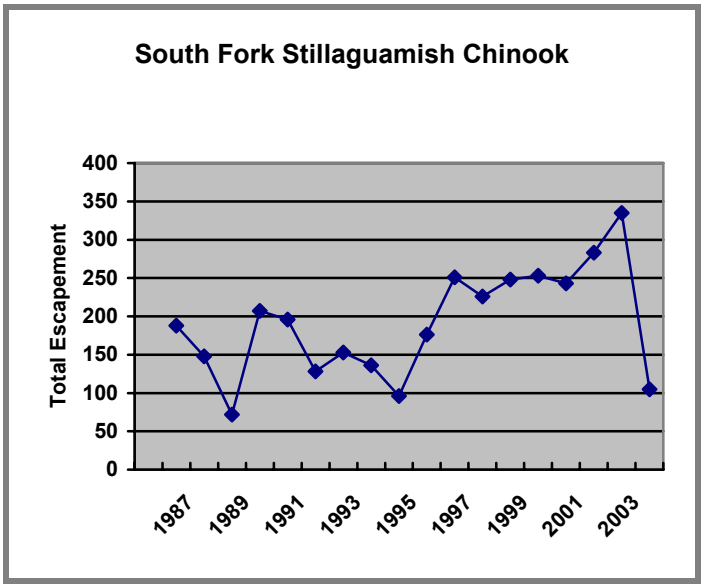
Stock Status

1992 Status	2002 Status
Depressed	Depressed

Stock Status Rating Data

Usefulness for rating stock status: Good

Year	Total Escapement
1986	297
1987	256
1988	210
1989	274
1990	267
1991	301
1992	294
1993	345
1994	287
1995	223
1996	251
1997	226
1998	248
1999	253
2000	243
2001	283
2002	335
2003	105



Data are total escapement estimates based on redd counts for the entire South Fork Stillaguamish basin.

Stock status is rated **Depressed** in 2002 due primarily to low stock productivity. The mean number of spawners for brood years 1988 through 1997 is 267, which should have 2,281 recruits. However, the observed mean is only 908 recruits. In addition, the mean number of spawners is less than the recovery goal of 3,600 spawners established for the stock by EDT analysis (Koenings, Williams and Goodridge 2002).

Stock Definition

South Fork Stillaguamish Chinook were identified as a stock based on their distinct spawning distribution and spawning timing.

STILLAGUAMISH – SOUTH FORK STILLAGUAMISH CHINOOK

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem and South Fork Stillaguamish and in Canyon, Jim and Pilchuck creeks.

SPAWNING TIMING: Spawning generally occurs in September and October.

GENETIC ANALYSIS: Genetic analysis has shown that this stock is genetically distinct from the North Fork Chinook stock. It is more closely related to Snohomish basin Chinook stocks than is the North Fork stock (Marshall et al. 1995).

STOCK ORIGIN

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

SNOHOMISH - SKYKOMISH CHINOOK

The four Snohomish basin Chinook stocks originally described in the 1992 SASSI have been reorganized into two stocks--Skykomish and Snoqualmie--following the Chinook population delineation used by the Puget Sound Technical Recovery Team (Puget Sound TRT 2001). The Skykomish Chinook stock combines the 1992 SASSI Snohomish summer, Wallace summer, and Bridal Veil Creek fall Chinook stocks and a portion of the Snohomish fall Chinook stock.

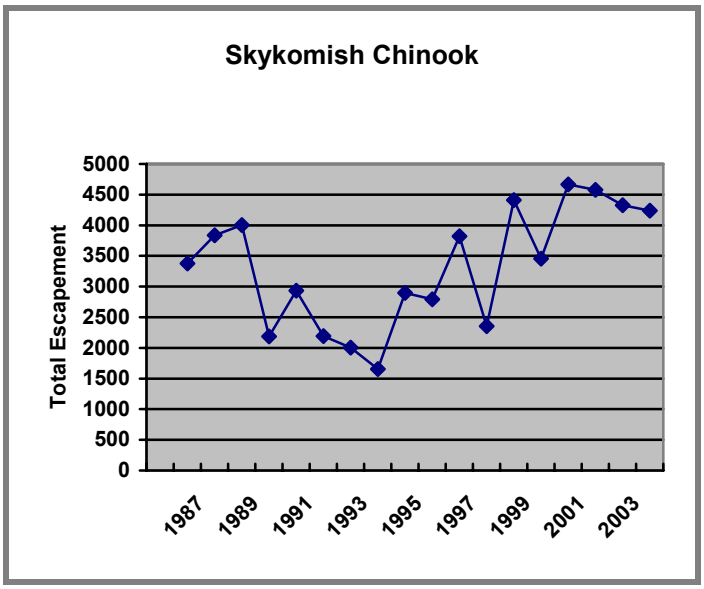
Stock Status

1992 Status	2002 Status
Not rated	Depressed

Stock Status Rating Data

Usefulness for Rating Stock Status: Good

Year	Total Escapement
1986	3,377
1987	3,834
1988	4,004
1989	2,186
1990	2,932
1991	2,192
1992	2,002
1993	1,653
1994	2,898
1995	2,791
1996	3,819
1997	2,355
1998	4,412
1999	3,455
2000	4,665
2001	4,575
2002	4,325
2003	4,239



Data are total escapement estimates based on total redd counts for the basin plus Sunset Falls trap counts. Some increase in escapement has been shown in 2000-2001.

Stock status is rated **Depressed** in 2002 due primarily to low stock productivity. The mean number of spawners from brood years 1988 through 1997 is 2,687. The expected mean number of recruits would be 17,352, however the observed value is only 5,257 recruits. In addition, the mean escapement is less than the recovery goal of 8,700 spawners established for the stock by EDT analysis (Koenings and Williams 2002). The status of this stock is subject to change as values for recruits, provided by NOAA Fisheries, change during on-going analyses.

SNOHOMISH - SKYKOMISH CHINOOK

Stock Definition

Skykomish Chinook were identified as a stock based on their distinct spawning distribution and genetic composition (Puget Sound TRT 2001).

Spawning Distribution: Spawning takes place throughout the mainstem Skykomish and Snohomish rivers. Spawning also occurs in the Pilchuck River, Wallace River, Bridal Veil Creek, Sultan River, Elwell Creek, and in the North and South forks of the Skykomish, including spawning areas above Sunset Falls on the South Fork.

Spawning Timing: Spawning generally occurs mainly from September through October.

Genetic Analysis: Allozyme analysis has shown that Skykomish summer Chinook are genetically distinct from all other Puget Sound Chinook stocks examined (Puget Sound TRT 2001).

Stock Origin

This is a **native** stock with **composite** production. Green River-origin Chinook were released from Wallace Hatchery. However, that practice has been discontinued, and only Wallace River Chinook are now released.

SNOHOMISH - SNOQUALMIE CHINOOK

The four Snohomish basin Chinook stocks originally described in the 1992 SASSI have been reorganized into two stocks--Skykomish and Snoqualmie--following the Chinook population delineation used by the Puget Sound Technical Recovery Team (Puget Sound TRT 2001). The Snoqualmie Chinook stock is composed of fish from the 1992 SASSI Snohomish fall Chinook stock that spawn in the Snoqualmie River and its tributaries.

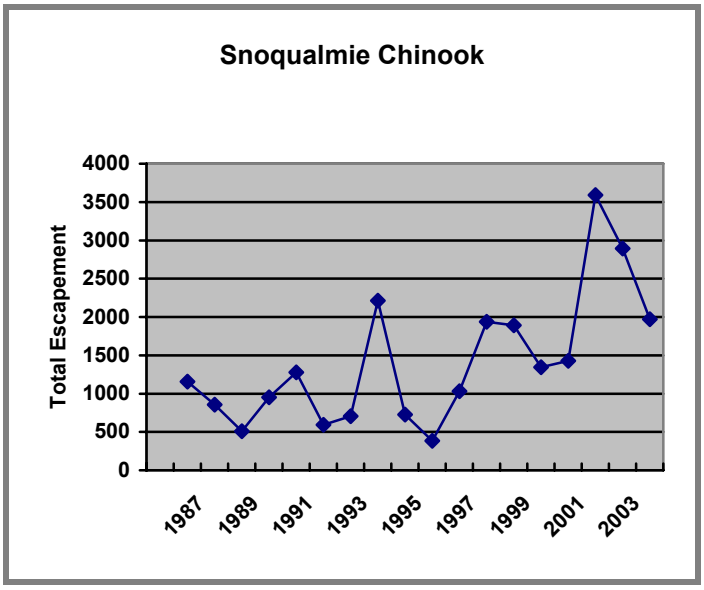
Stock Status

1992 Status	2002 Status
Not rated	Depressed

Stock Status Rating Data

Usefulness for Rating Stock Status: *Good*

Year	Total Escapement
1986	1,157
1987	855
1988	509
1989	952
1990	1,277
1991	591
1992	706
1993	2,213
1994	728
1995	385
1996	1,032
1997	1,937
1998	1,892
1999	1,344
2000	1,427
2001	3,589
2002	2,895
2003	1,972



Data are total escapement estimates based on total redd counts for the basin from surveys conducted on the mainstem Snoqualmie, Tolt, and Raging rivers and Tokul Creek.

Stock status is rated **Depressed** in 2002 due primarily to low productivity. The mean number of spawners for brood years 1988 through 1997 is 1,052. The expected mean number of recruits would be 8,923, however the observed mean number of recruits is 3,520. In addition, the mean number of spawners is less than the recovery goal of 5,500 established for the stock by EDT analysis (Koenings and Williams 2002). The status of this stock is subject to change as values for recruits, provided by NOAA Fisheries, change during on-going analyses.

SNOHOMISH - SNOQUALMIE CHINOOK

Stock Definition

Snoqualmie Chinook were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place throughout the Snoqualmie River and major tributaries including Raging and Tolt rivers and Tokul Creek.

Spawning Timing: Spawning generally occurs from mid-September through October but can be later in some years.

Genetic Analysis: Allozyme analysis has shown that this stock is genetically distinct from all other Puget Sound Chinook stocks examined (Marshall 1997).

Stock Origin

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

TRANSBOUNDARY INDEPENDENTS - SUMAS/CHILLIWACK FALL CHUM

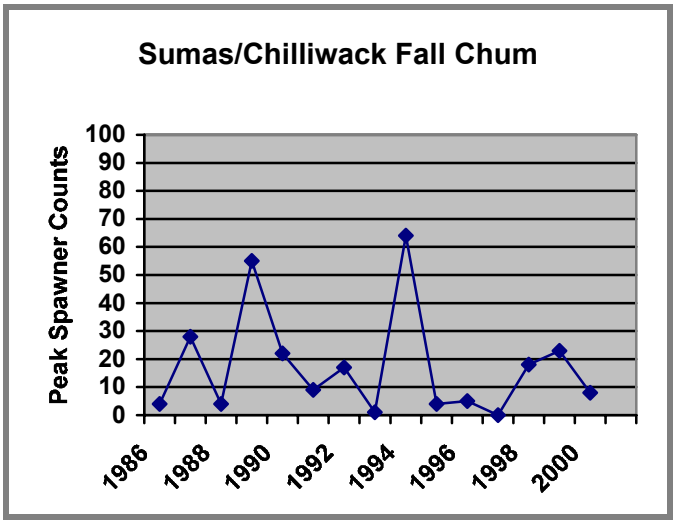
STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	**Unknown**

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	PEAK SPAWNER COUNTS
1986	4
1987	28
1988	4
1989	55
1990	22
1991	9
1992	17
1993	1
1994	64
1995	4
1996	5
1997	0
1998	18
1999	23
2000	8



Data are peak counts of spawners in Saar Creek (RM 7.3 to 8.5).

Stock status is **Unknown** in 2002 due to a lack of knowledge regarding total numbers of chum salmon spawning in the Sumas River. Based on annual escapements, the Chilliwack chum component is apparently healthy. However, the proportion of Sumas chum represented by spawners in Washington waters is not known.

STOCK DEFINITION

Sumas/Chilliwack fall chum were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: The Sumas River flows north from its headwaters in Washington into British Columbia and enters the Fraser River via the Vedder-Chilliwack system. This stock spawns throughout the Vedder-Chilliwack drainage, with the majority of spawning activity occurring in Canadian waters. Most spawning in U.S. waters takes place in Saar Creek, a tributary to the Sumas River. Occasionally, chum have been seen in other Sumas tributaries including Breckenridge and North Fork Johnson creeks.

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

GENETIC ANALYSIS: Although no genetic analysis has been done on chum from the Sumas, chum from the Chilliwack have been analyzed and shown to be distinct from all Washington chum and other Fraser chum stocks examined (Phelps et al. 1995).

TRANSBOUNDARY INDEPENDENTS - SUMAS/CHILLIWACK FALL CHUM

Stock Origin

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

NOOKSACK/SAMISH - NORTH FORK NOOKSACK FALL CHUM

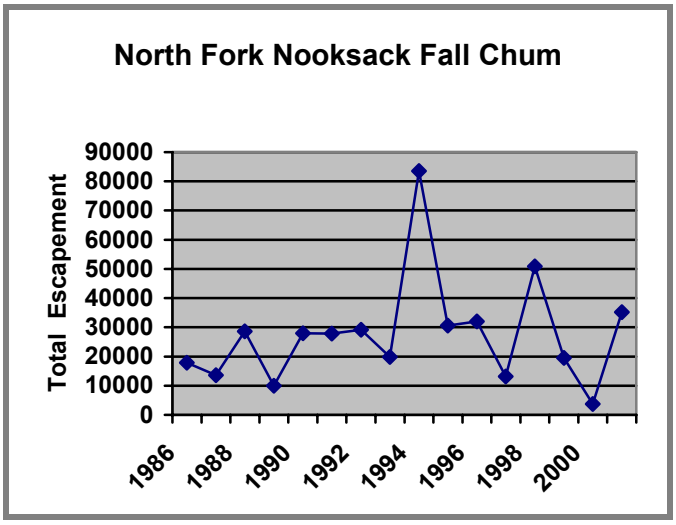
Stock Status

1992 Status	2002 Status
Healthy	**Healthy**

Stock Status Rating Data

Usefulness for Rating Stock Status: Good

Year	Total Escapement
1986	17,879
1987	13,589
1988	28,612
1989	9,992
1990	27,995
1991	27,888
1992	29,137
1993	19,855
1994	83,503
1995	30,621
1996	31,969
1997	13,198
1998	50,911
1999	19,547
2000	3,760
2001	35,148



Data are total escapement estimates based on the comparison of annual live spawner curves for the North Fork Nooksack, side channels, and Maple Creek to curves for the same areas in 1978 and 1979 when escapements were estimated by mark-and-recapture tagging studies.

North Fork Nooksack fall chum escapements have displayed a modest increase since the early 1980s with large escapements in excess of 50,000 spawners in 1994 and 1998. Escapement was low in 2000; however, escapements in other recent years have been strong. Stock status is rated **Healthy** in 2002.

Stock Definition

North Fork Nooksack fall chum were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in North Fork Nooksack River sloughs, side channels and in large tributaries such as Maple Creek and Racehorse Slough.

Spawning Timing: Spawning generally occurs from late November through early January.

Genetic Analysis: Allozyme analysis has shown North Fork chum to be genetically distinct from all other Washington and Canadian chum stocks examined (Phelps et al. 1995).

NOOKSACK/SAMISH - NORTH FORK NOOKSACK FALL CHUM

Stock Origin

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

NOOKSACK/SAMISH - MAINSTEM/SOUTH FORK NOOKSACK FALL CHUM

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Mainstem/South Fork Nooksack fall chum, so their status remains **Unknown** in 2002. Abundance appears to be low.

Stock Definition

Mainstem/South Fork Nooksack fall chum were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in side channels of the South Fork and mainstem Nooksack River and in tributaries such as Fishtrap, Burtrand and Ten Mile creeks.

Spawning Timing: Spawning generally occurs from November through December.

Genetic Analysis: Genetic analysis is still in progress. A small sample of chum salmon from the mainstem Nooksack taken in 1992 showed considerable differences from other Puget Sound chum stocks (Phelps et al. 1995). No genetic analysis has been done on South Fork Nooksack chum.

Stock Origin

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

NOOKSACK/SAMISH - SAMISH/INDEPENDENTS FALL CHUM

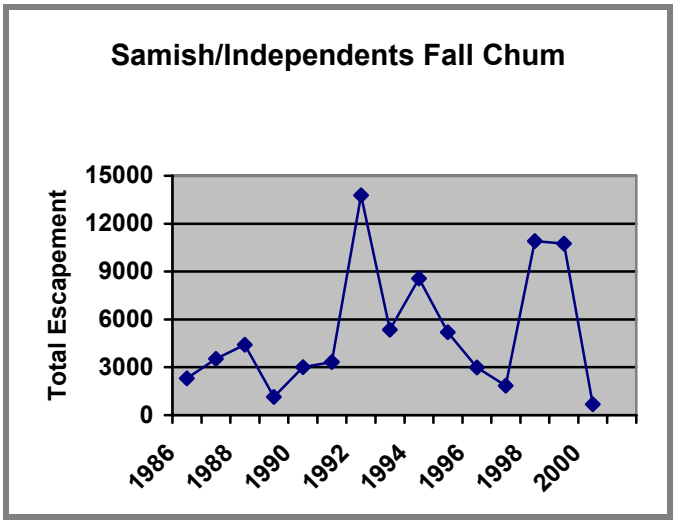
Stock Status

1992 Status	2002 Status
Healthy	**Healthy**

Stock Status Rating Data

Usefulness for Rating Stock Status: Good

Year	Total Escapement
1986	2,303
1987	3,537
1988	4,404
1989	1,150
1990	3,016
1991	3,330
1992	13,785
1993	5,351
1994	8,553
1995	5,185
1996	2,989
1997	1,835
1998	10,915
1999	10,746
2000	680
2001	7,903



Data are total escapement estimates based on live spawner counts in the Samish River, Bob Smith and Thomas creeks (Samish River tributaries), and in Chuckanut, Oyster, Colony and Whitehall creeks.

Although the 2000 escapement of Samish/Independent fall chum was low, escapements for recent years have been in the normal range for this stock. Stock status is rated **Healthy** in 2002.

Stock Definition

Samish/Independents fall chum were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the Samish River system and in Squalicum, Whatcom, Padden, Chuckanut, Oyster, Colony, and Whitehall creeks. Chum have also been documented spawning in Dakota and California creeks.

Spawning Timing: Spawning generally occurs from late October through early December.

Genetic Analysis: Allozyme analysis has shown Samish/Independent fall chum to be genetically distinct from all other Washington and Canadian chum stocks examined (Phelps et al. 1995).

NOOKSACK/SAMISH - SAMISH/INDEPENDENTS FALL CHUM

Stock Origin

This is a **mixed** stock with **composite** production. Hood Canal and Quilcene chum have been released into the Samish River and Chuckanut, Oyster, Whitehall, and Dakota Creeks. The Maritime Heritage Hatchery in Bellingham has released Samish Hatchery chum into Squalicum, Whatcom and Padden creeks and is in the process of changing their chum broodstock to North Fork Nooksack chum. Other chum releases into the Samish River have included hatchery stocks from Grays Harbor and Garrison Springs (South Puget Sound).

SKAGIT - MAINSTEM SKAGIT FALL CHUM

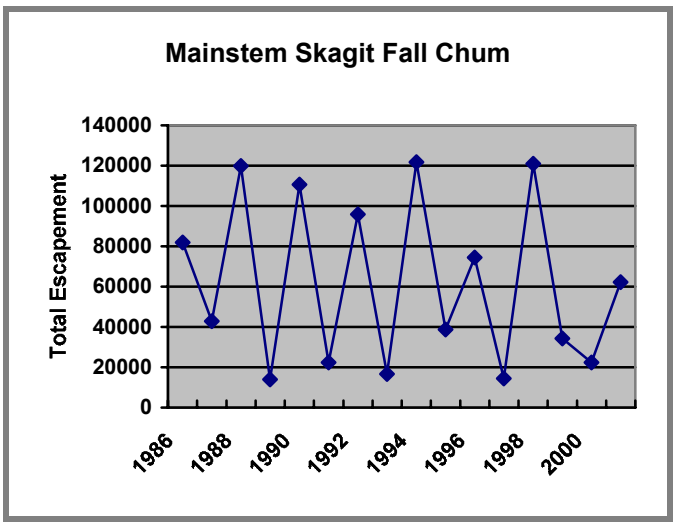
Stock Status

1992 Status	2002 Status
Healthy	**Healthy**

Stock Status Rating Data

Usefulness for Rating Stock Status: Excellent

Year	Total Escapement
1986	81,869
1987	42,853
1988	119,791
1989	13,904
1990	110,567
1991	22,364
1992	95,940
1993	16,673
1994	121,775
1995	38,666
1996	74,474
1997	14,392
1998	120,875
1999	34,311
2000	22,321
2001	62,262



Data are total escapement estimates based on live spawner counts in the Skagit River mainstem and side channel index areas. The estimates include counts for the Sauk fall chum stock. We believe that these numbers adequately reflect the status of the Mainstem Skagit fall chum stock.

The Mainstem Skagit fall chum stock has a long-term pattern of relatively stable, but inter-annually variable escapements. Stock status is rated **Healthy** in 2002.

Stock Definition

Mainstem Skagit fall chum were identified as a stock based on their distinct spawner distribution, spawning timing and genetic composition.

Spawning Distribution: Spawning takes place in the mainstem Skagit River from RM 34 to 93. Spawning also occurs in larger tributaries such as the Cascade River, Nookachamps, Gilligan, Illabot, and Bacon creeks.

Spawning Timing: Spawning generally occurs from mid-November through December, which is later than spawning by the Lower Skagit Tribs fall chum stock.

SKAGIT - MAINSTEM SKAGIT FALL CHUM

Genetic Analysis: Allozyme analysis has shown Mainstem Skagit fall chum to be genetically distinct from all other Washington chum and Canadian chum stocks examined (Phelps et al. 1995).

Stock Origin

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

SKAGIT – LOWER SKAGIT TRIBS FALL CHUM

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Lower Skagit Tribs fall chum. Peak counts are available only for Finney Creek, so the status of the stock remains **Unknown** in 2002.

Stock Definition

Lower Skagit Tribs fall chum were identified as a stock based on their distinct spawner distribution and spawning timing.

Spawning Distribution: Most spawning takes place in Finney, O'Toole, Pressentin, Mill, and Turner creeks.

Spawning Timing: Spawning generally occurs from October through November. This is earlier than spawning in other Skagit fall chum stocks.

Genetic Analysis: Allozyme analysis has shown Lower Skagit Tribs fall chum to be genetically distinct from all other Washington and Canadian chum stocks examined (Phelps et al. 1995).

Stock Origin

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

SKAGIT - SAUK FALL CHUM

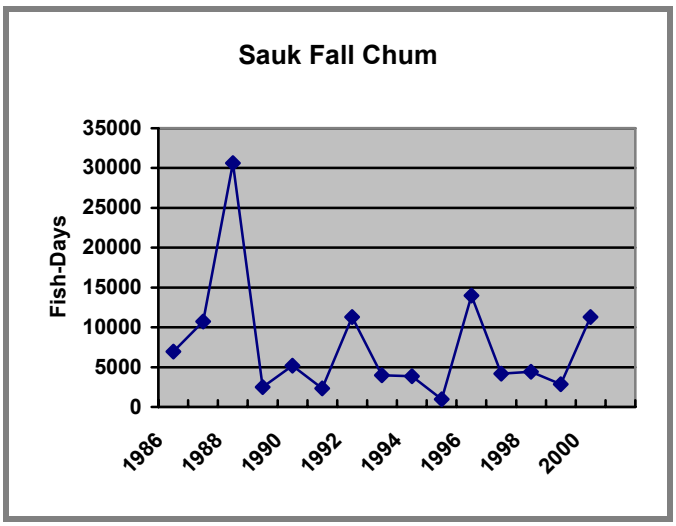
Stock Status

1992 Status	2002 Status
Healthy	**Healthy**

Stock Status Rating Data

Usefulness for Rating Stock Status: Good

Year	Fish-days
1986	6,959
1987	10,740
1988	30,621
1989	2,502
1990	5,186
1991	2,339
1992	11,292
1993	3,991
1994	3,861
1995	956
1996	14,002
1997	4,160
1998	4,424
1999	2,836
2000	11,283



Data are fish-days for index areas in Dan Creek and Dan Creek Slough located on right bank of the Skagit River between RM 16.5 and 19.

The Sauk fall chum stock has a long-term pattern of stable escapement estimates since the late 1970s. Stock status is rated **Healthy** in 2002.

Stock Definition

Sauk fall chum were identified as a stock based on their distinct spawner distribution and spawning timing.

Spawning Distribution: Spawning takes place throughout the Sauk drainage from the mouth at least to RM 39 (Martin Creek).

Spawning Timing: Spawning generally occurs from mid-October through mid-December. This is earlier than the Mainstem Skagit fall chum stock and later than the Lower Skagit Tribs fall chum stock.

Genetic Analysis: No genetic analysis has been done on Sauk fall chum.

SKAGIT - SAUK FALL CHUM

Stock Origin

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

STILLAGUAMISH - NORTH FORK STILLAGUAMISH FALL CHUM

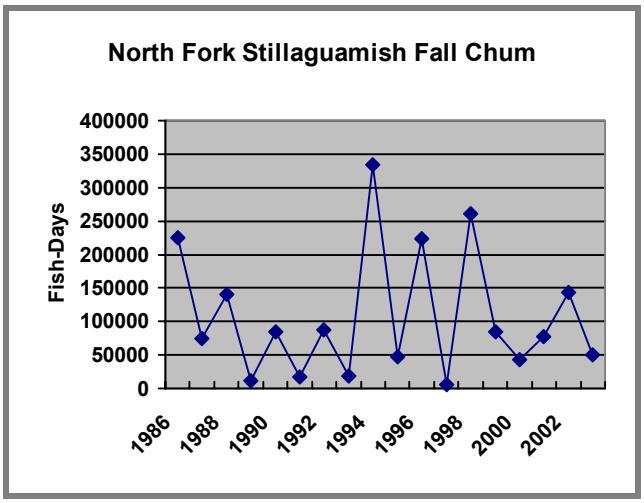
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	FISH-DAYS
1986	225,209
1987	74,232
1988	139,902
1989	11,804
1990	84,773
1991	17,749
1992	86,967
1993	19,118
1994	334,318
1995	47,974
1996	223,705
1997	5,748
1998	260,446
1999	85,269
2000	43,555
2001	76,729
2002	142,880
2003	50,658



Data are live fish-days from spawner index areas on the mainstem North Fork Stillaguamish between Hazel and Whitehorse creeks and in Brown's, Squire, Furland, Ashton, Fortson, Little French, and Grant creeks.

The North Fork Stillaguamish fall chum stock has a long-term pattern of relatively stable escapements, with somewhat higher escapements in the 1990s. Stock status is rated **Healthy** in 2002.

STOCK DEFINITION

North Fork Stillaguamish fall chum were identified as a stock based on their distinct spawner distribution and genetic composition.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem North Fork and accessible tributaries such as those of the Squire Creek drainage.

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

STILLAGUAMISH - NORTH FORK STILLAGUAMISH FALL CHUM

GENETIC ANALYSIS: Allozyme analysis has shown North Fork Stillaguamish fall chum to be genetically distinct from all Washington chum stocks outside of the Stillaguamish basin. However, stock separations within the system are unclear (Phelps et al. 1995).

STOCK ORIGIN

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

STILLAGUAMISH - SOUTH FORK STILLAGUAMISH FALL CHUM

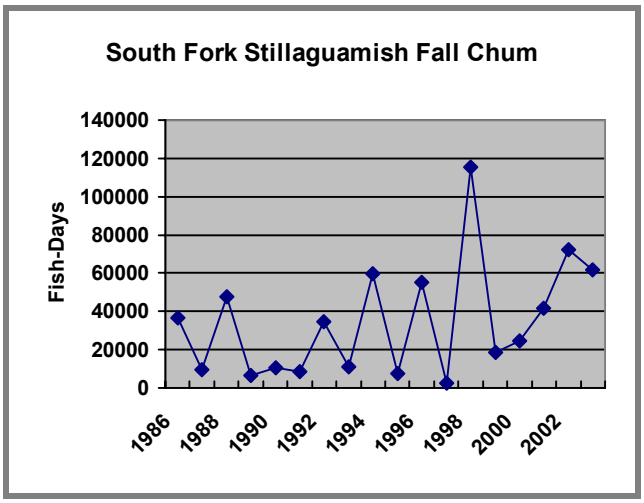
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	FISH-DAYS
1986	36,707
1987	9,491
1988	47,757
1989	6,767
1990	10,763
1991	8,539
1992	34,845
1993	10,952
1994	59,550
1995	7,663
1996	54,989
1997	2,559
1998	115,236
1999	18,393
2000	24,420
2001	41,547
2002	72,022
2003	61,799



Data are fish-days from spawner index areas on Jim and Siberia creeks.

The South Fork Stillaguamish fall chum stock has been strong since the mid-1980s, with one extraordinary count of 115,236 fish-days in 1998. Stock status is rated **Healthy** in 2002.

STOCK DEFINITION

South Fork Stillaguamish fall chum were identified as a stock based on their distinct spawner distribution and genetic composition.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem South Fork Stillaguamish up to RM 34 and in tributaries such as Jim Creek and Siberia Creek.

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

STILLAGUAMISH - SOUTH FORK STILLAGUAMISH FALL CHUM

GENETIC ANALYSIS: Allozyme analysis has shown South Fork Stillaguamish fall chum to be genetically distinct from all Washington chum stocks outside of the Stillaguamish basin. However, stock separations within the system are unclear (Phelps et al. 1995).

STOCK ORIGIN

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

SNOHOMISH - SKYKOMISH FALL CHUM

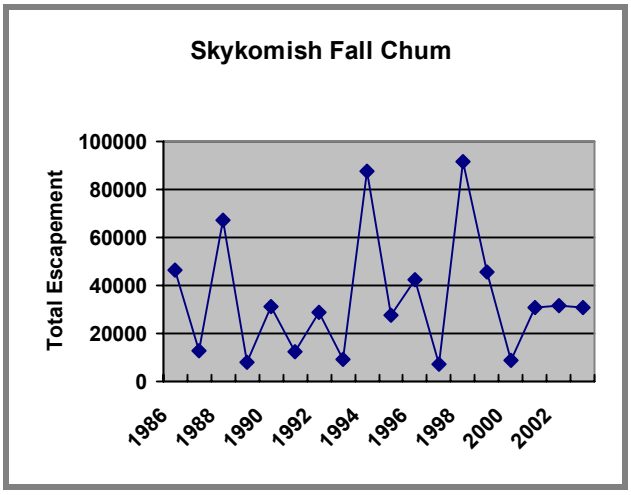
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	46,586
1987	12,864
1988	67,053
1989	7,822
1990	31,269
1991	12,413
1992	28,647
1993	9,027
1994	87,764
1995	27,600
1996	42,295
1997	7,295
1998	91,776
1999	45,766
2000	8,864
2001	30,916
2002	31,631
2003	30,630



Data are total escapement estimates based on a comparison of live spawner curves for side channels and sloughs on the Skykomish River between the towns of Sultan and Gold Bar to data from 1977, when the escapement was estimated by a mark-and-recapture tagging study.

The Skykomish fall chum stock has been strong since 1982, with very large escapements in excess of 85,000 spawners in 1994 and 1998. This stock is rated as **Healthy** in 2002.

STOCK DEFINITION

Skykomish fall chum were identified as a stock based on their distinct spawning distribution and genetic composition.

SPAWNING DISTRIBUTION: Most spawning takes place in Skykomish side channels and in larger tributaries such as Woods Creek and the Sultan River.

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

SNOHOMISH - SKYKOMISH FALL CHUM

GENETIC ANALYSIS: Allozyme analysis has shown Skykomish fall chum to be genetically distinct from all other Washington chum stocks examined (Phelps et al. 1995).

STOCK ORIGIN

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

SNOHOMISH – SNOQUALMIE FALL CHUM

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Snoqualmie fall chum, so their status remains **Unknown** in 2002.

Stock Definition

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

Spawning Distribution: Most spawning takes place in a side channel in the mainstem Snoqualmie River near Fall City and in the Tolt and South Fork Tolt rivers.

Spawning Timing: Spawning generally occurs from mid-November through December.

Genetic Analysis: Genetic analysis has shown Snoqualmie fall chum to be genetically distinct from all other Washington chum and Canadian chum stocks sampled (Phelps et al. 1995).

Stock Origin

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

SNOHOMISH - WALLACE FALL CHUM

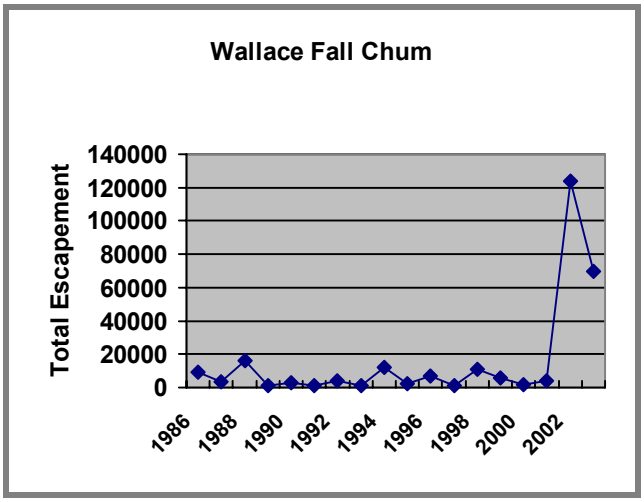
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	8,951
1987	3,466
1988	16,281
1989	1,187
1990	2,919
1991	1,370
1992	4,231
1993	1,022
1994	12,271
1995	2,364
1996	6,926
1997	1,025
1998	11,114
1999	5,809
2000	1,693
2001	4,170
2002	123,969
2003	69,688



Data are total escapement estimates based on live spawner curves from the Wallace and Ruggs sloughs.

The Wallace fall chum stock has been strong since the early 1980s, with large escapements of more than 10,000 spawners in 1988, 1994 and 1998. This stock is rated **Healthy** in 2002.

STOCK DEFINITION

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

SPAWNING DISTRIBUTION: Most spawning takes place in the Wallace River upstream to Gold Bar and in tributaries such as Olney Creek and Ruggs Slough.

SPAWNING TIMING: Spawning generally occurs from November through December.

GENETIC ANALYSIS: Genetic analysis has shown Wallace fall chum to be genetically distinct from all other Washington chum stocks examined (Phelps et al. 1995).

STOCK ORIGIN

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

TRANSBOUNDARY INDEPENDENTS - SUMAS/CHILLIWACK COHO

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

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

Stock Definition

Sumas/Chilliwack coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in tributaries to the Sumas River including Saar, Breckenridge and North Fork Johnson creeks. The Sumas River flows north from its headwaters in Washington into British Columbia and enters the Fraser River via the Vedder-Chilliwack system.

Spawning Timing: Spawning generally occurs from late October through December.

Genetic Analysis: No genetic analysis has been done on Sumas/Chilliwack coho spawning in Washington waters. The relationship of this stock to other Fraser-system coho is unknown.

Stock Origin

This is a **native** stock with **wild** production. There is a Canadian hatchery component that originated from native broodstock. Coho ascending through Chilliwack Lake may be of mixed wild and hatchery origin. Nooksack River coho were planted into the system as unfed fry. These releases ended in 1985, and their survival is thought to have been poor.

NOOKSACK/SAMISH - NOOKSACK COHO

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

Historical annual escapement estimations that have been generated for management purposes used undocumented methodologies, with unknown precision and accuracy. The utility of the estimates as either absolute escapement values or relative indices of escapement is unknown at this time. Stock status remains **Unknown** in 2002 due to the uncertainties associated with the historical escapement data for this basin.

Stock Definition

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

Spawning Distribution: Spawning takes place in suitable and accessible habitat throughout the Nooksack River system.

Spawning Timing: Spawning generally occurs from mid-October to mid-January.

Genetic Analysis: Microsatellite DNA analysis has been conducted on collections of adult coho spawning naturally in the Nooksack and Samish rivers and of adults returning to hatcheries in the Nooksack system (Small 2003). Comparisons were made among coho spawning just above RM 48 in the North Fork Nooksack, coho spawning above RM 61 in the North Fork Nooksack, coho at the Kendall Creek Hatchery (North Fork Nooksack RM 46), at the Skookum Creek Hatchery (South Fork Nooksack), and coho spawning in the Samish River at RM 10.5. Results of the analysis indicate that a genetically distinct, perhaps native, coho population exists in the upper North Fork Nooksack (>RM 61). Spawners sampled from just above RM 48 in the North Fork Nooksack were more similar to fish from the hatchery collections than they were to fish from the North Fork Nooksack above RM 61. Coho spawning in the Samish River also resembled Nooksack hatchery coho.

Stock Origin

This is a **mixed** stock with **composite** production. Various non-native hatchery-origin stocks, including Baker (Skagit), Skagit, Skykomish and Dungeness coho, were released into Kendall Creek on the North Fork Nooksack between 1952 and 1992. Non-native hatchery-origin coho from the Kalama, Samish, May Creek, Skagit, Clark Creek, and Skykomish systems were released from the Skookum Creek Hatchery into the South Fork Nooksack between 1974 and 1995. A native component may exist in the upper North Fork Nooksack (Small 2003).

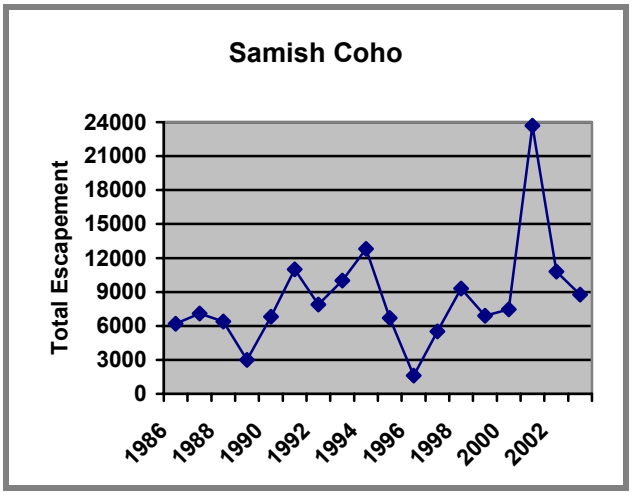
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:
Fair

YEAR	TOTAL ESCAPEMENT
1986	6,200
1987	7,100
1988	6,400
1989	3,000
1990	6,800
1991	11,000
1992	7,900
1993	10,000
1994	12,800
1995	6,700
1996	1,600
1997	5,500
1998	9,300
1999	6,900
2000	7,463
2001	23,698
2002	10,790
2003	8,756



Data are total escapement estimates based on live spawner counts in index reaches and/or Samish Hatchery rack passage counts. Stock status is rated **Healthy** in 2002 because escapements have been consistently robust.

STOCK DEFINITION

Samish coho were identified as a stock based on their distinct spawning distribution. Stock identification is supported by recent genetic analysis.

SPAWNING DISTRIBUTION: Spawning takes place throughout the Samish River system.

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

GENETIC ANALYSIS: Microsatellite DNA analysis of coho spawning naturally in the Samish River in 1997 and 1998 indicated that they were similar to hatchery coho from the Kendall Creek and Skookum Creek hatcheries in the Nooksack River system (Small 2003). This result suggests that Samish coho are a mixture of hatchery releases and, presumably, of native fish.

STOCK ORIGIN

This is a **mixed** stock with **wild** production. Non-native coho (Skagit, Skykomish, Green River (Duwamish), Pilchuck, and Big Beef Creek (Hood Canal) coho were released from the Samish Hatchery or into the Samish basin until 1979. The Samish Hatchery coho program was terminated in 1977.

NOOKSACK/SAMISH - NORTH PUGET SOUND TRIBS COHO

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for North Puget Sound Tribs coho, so their status remains **Unknown** in 2002.

Stock Definition

North Puget Sound Tribs coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in Dakota, California, Chuckanut, Oyster, and Colony creeks.

Spawning Timing: Spawning generally occurs from mid-November through mid-January.

Genetic Analysis: No genetic analysis has been done on North Puget Sound Tribs coho.

Stock Origin

This is a **mixed** stock with **wild** production. Various non-native hatchery-origin coho stocks were released into north Puget Sound tributaries between 1956 and 1979.

North Sound Independents – Orcas Island Coho

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Orcas Island coho, so their status remains **Unknown** in 2002.

Stock Definition

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

Spawning Distribution: Spawning takes place in Cascade Creek and perhaps in other Orcas Island streams.

Spawning Timing: Spawning timing is unknown.

Genetic Analysis: No genetic analysis has been done on Orcas Island coho.

Stock Origin

This is a stock of **unknown** origin with **wild** production.

SKAGIT – WHIDBEY ISLAND COHO

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for Whidbey Island coho, so their status remains **Unknown** in 2002.

Stock Definition

Whidbey Island coho were identified as a stock due to their distinct spawning distribution.

Spawning Distribution: Spawning takes place in Maxwelton Creek and perhaps in other streams on southern Whidbey Island.

Spawning Timing: Spawning timing is unknown.

Genetic Analysis: No genetic analysis has been done for Whidbey Island coho.

Stock Origin

This is a stock of **unknown** origin with **wild** production.

SKAGIT – SKAGIT COHO

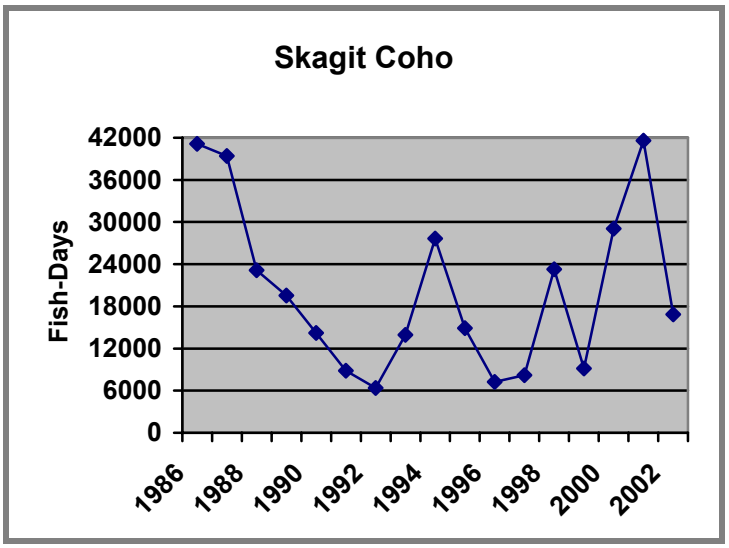
STOCK STATUS

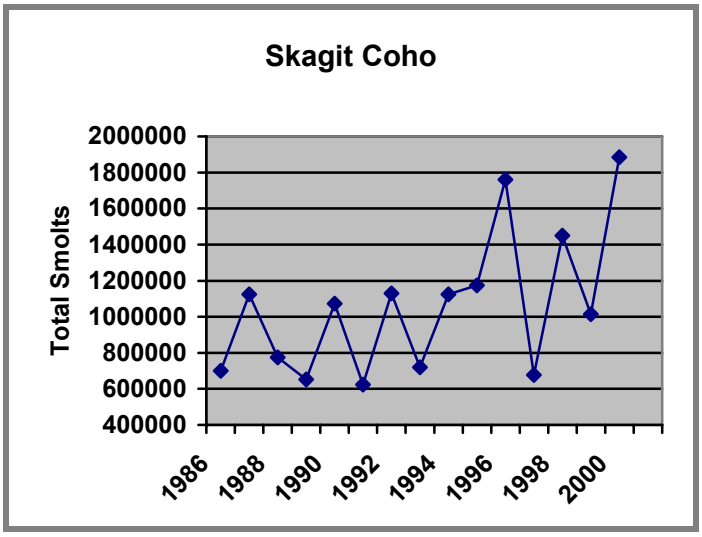
1992 STATUS	2002 STATUS
Depressed	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair (adults)
Good (smolts)

YEAR	FISH-DAYS	BROOD YEAR SMOLT COUNTS
1986	41,153	700,700
1987	39,417	1,123,700
1988	23,123	774,6000
1989	19,539	652,000
1990	14,223	1,073,000
1991	8,815	623,000
1992	6,400	1,129,000
1993	13,917	720,000
1994	27,641	1,125,000
1995	14,889	1,174,000
1996	7,230	1,760,000
1997	8,210	675,500
1998	23,260	1,450,000
1999	9,153	1,014,000
2000	29,071	1,885,000
2001	41,580	Not yet available
2002	16,874	Not yet available





The adult data are the annual sum of season-cumulative fish-days values from 20 survey indices in the basin (Nookachamps Cr, Mundt Cr, Walker Cr, Unnamed stream 03.0241, Wiseman Cr., Anderson Cr, Sorenson Cr, Parker Cr, Jones Cr, Etach Cr., Hilt Cr, Mouse Cr., Unnamed stream 03.0189, Unnamed stream 03.1094, and County Line Ponds). Juvenile data are basin-total smolt numbers based on counts from the smolt trap located at Mt.Vernon (RM 16.3).

Basin total escapement estimates are also derived annually for management purposes, but precision and accuracy concerns with these estimates currently preclude their use for abundance trend analysis.

The status of Skagit coho is rated **Healthy** in 2002 due to the relative stability of smolt numbers over a wide range of escapements, which indicates that freshwater habitat is being fully utilized.

Stock Definition

Skagit coho were identified as a stock 1992 due to their distinct spawning distribution. Genetic analyses, which were not available in 1992, suggest that multiple coho stocks are present in the Skagit basin (David Teel, NMFS, personal communication).

Spawning Distribution: Spawning takes place throughout the Skagit River basin below the Gorge Dam.

Spawning Timing: Spawning generally occurs from early October through mid-February.

Genetic Analysis: Allozyme analyses on coho collected in the late 1980s and early 1990s show that significant genetic differences exist within the basin. All Skagit coho collections show similarities to one another and are quite different from South Puget Sound, Strait of Juan de Fuca and Columbia River coho (David Teel, NMFS, personal communication).

Stock Origin

This is a **native** stock with **composite** production. The WDFW Marblemount Hatchery has generally used native Skagit coho for broodstock.

SKAGIT – BAKER COHO

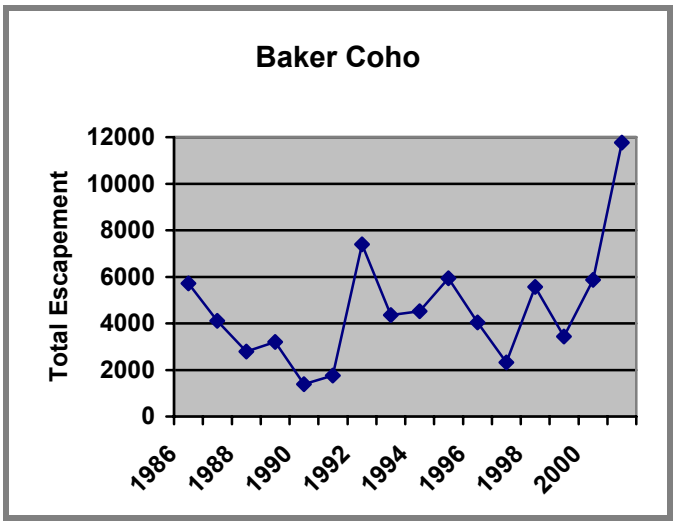
Stock Status

1992 Status	2002 Status
Unknown	Healthy

Stock Status Rating Data

Usefulness for rating stock status: Very Good

Year	Total Escapement
1986	5,718
1987	4,116
1988	2,792
1989	3,209
1990	1,394
1991	1,792
1992	7,401
1993	4,362
1994	4,525
1995	5,937
1996	4,042
1997	2,320
1998	5,569
1999	3,431
2000	5,875
2001	11,769
2002	7,648
2003	7,334



Data are adult counts from the lower Baker River fish trap (RM 0.25). Because all fish returning to the Baker system are trapped and trucked above the two dams, trap counts serve as the total escapement estimates.

Recent-year adult escapement trends, and absolute numbers of fish observed indicate that the stock can be rated **Healthy** in 2002.

Stock Definition

Baker coho were identified as a stock based on their distinct spawning distribution, river entry timing (July through early August) which is earlier than that of Skagit coho (September to October), somewhat late spawn timing and small average size (two to four pounds) compared to Skagit coho (six to seven pounds)

Spawning Distribution: Spawning takes place in the Baker River and in some tributaries above the upper Baker dam.

SKAGIT – BAKER COHO

SPAWNING TIMING: Spawning generally occurs from the beginning of January until early February.

GENETIC ANALYSIS: No genetic analysis has been done on Baker coho.

STOCK ORIGIN

This is a stock of **mixed** origin with **composite** production. A "Baker coho" stock was maintained at the WDFW Marblemount Hatchery but was hybridized with the Clark Creek (Skagit) coho stock. The stock is no longer maintained.

STILLAGUAMISH – STILLAGUAMISH COHO

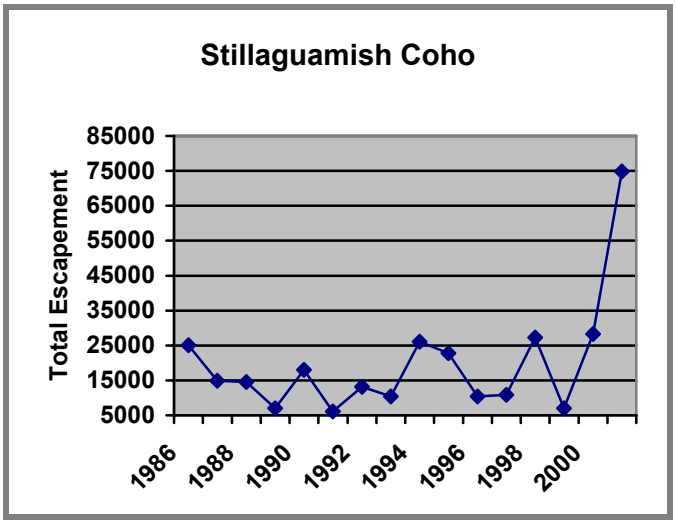
Stock Status

1992 Status	2002 Status
Depressed	Healthy

Stock Status Rating Data

Usefulness for rating stock status: Fair

Year	Total Escapement
1986	25,100
1987	14,900
1988	14,500
1989	7,000
1990	18,000
1991	6,100
1992	13,200
1993	10,400
1994	26,100
1995	22,800
1996	10,400
1997	10,900
1998	27,300
1999	7,000
2000	28,300
2001	74,800
2002	27,305



Data are total escapement estimates based on cumulative fish-days counts in index reaches (Unnamed stream 05.0030, Fish Cr, Unnamed streams 05.0064, 05.0150, and 05.0152, Furland Cr, Ashton Cr, Brown's Cr, Unnamed stream 05.0338C, Naval Base Cr (05.0339), Jordan Cr, Unnamed stream 05.0358A, Tiger Cr, Bensen Cr, Hemple Cr, Schweitzer Cr, and unnamed stream 05.0434B).

In considering the 2002 status rating, we noted that the 1998 and 2000 escapements were similar to the higher years observed in the past. This observation was tempered by the relatively low 1996, 1997, and 1999 escapements. Given that even the lower escapements observed are likely adequate to maintain stock productivity, and that there is no consistent downward trend in escapements, stock status is rated **Healthy** in 2002.

Stock Definition

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

STILLAGUAMISH – STILLAGUAMISH COHO

Spawning Distribution: Spawning takes place throughout the basin unless access is blocked by natural or man-made barriers. Some important spawning areas are not accessible when flows are below normal during periods of adult migration to the spawning grounds.

Spawning Timing: Spawning generally occurs from November until mid-January and occasionally into February.

Genetic Analysis: Allozyme analysis of coho sampled from Fortson Creek and McGovern Creek (both North Fork Stillaguamish tributaries) in 1987 and 1989 showed no significant differences between fish from these two tributaries. They differed significantly from all other Washington coho examined but were generally similar to Skagit basin coho (David Teel, NMFS, personal communication).

Stock Origin

This is a **mixed** stock with **wild** production. Skagit, Skykomish, Samish, Green River (Duwamish), and Issaquah Creek hatchery-origin coho were released into the Stillaguamish drainage from the early 1950s to 1981. Hybridization between the native stock and introduced non-native stocks may have occurred.

STILLAGUAMISH – DEER CREEK COHO

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

A limited fry-density monitoring program for Deer Creek coho has provided information for most years since 1984, but fry production data are typically of limited utility for assessing stock abundance trends. Stock status remains **Unknown** in 2002. This stock has been impacted by severe habitat problems in this basin, and status may be Depressed or Critical.

Stock Definition

Deer Creek coho were identified as a stock due to their distinct spawning distribution.

Spawning Distribution: Exact spawning locations within the Deer Creek drainage are unknown. Attempts to conduct spawner surveys have been unsuccessful due to poor visibility and lack of access to the creek.

Spawning Timing: Spawning timing is unknown.

Genetic Analysis: No genetic analysis has been done on Deer Creek coho.

Stock Origin

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

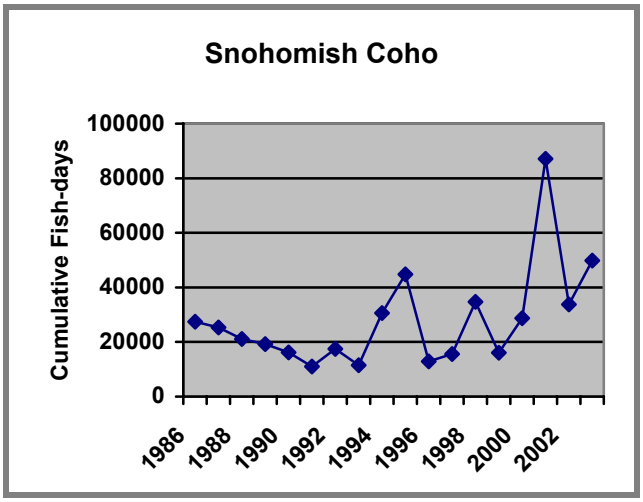
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	CUMULATIVE FISH-DAYS
1986	27,378
1987	25,366
1988	21,154
1989	19,264
1990	16,126
1991	11,029
1992	17,487
1993	11,485
1994	30,628
1995	44,750
1996	12,949
1997	15,633
1998	34,739
1999	16,033
2000	28,664
2001	87,162
2002	33,729
2003	49,775



Data are cumulative fish-days counts in index reaches (Middle Fork Quilceda Creek, two unnamed Quilceda Creek tributaries (07.0060 and 07.0063), Allen Creek, two unnamed Allen Creek tributaries (07.0078 and 07.0079), Dubuque Creek, Panther Creek, Catherine Creek, Bosworth Creek, Worthy Creek, two unnamed Worthy Creek tributaries (07.0166A and 07.0166B), Boyd Lake Creek, and unnamed Boyd Lake Creek tributary (07.1064A).

Snohomish coho were rated depressed in 1992 due to a multiple-year decline in the escapement indicator data. This trend was reversed in the mid-1990s, with escapements that were higher than those observed prior to 1992. Consequently, the stock is rated **Healthy** in 2002.

STOCK DEFINITION

Snohomish coho were identified as a stock due to their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in Snohomish tributaries, especially in Quilceda Creek, Pilchuck River, and French Creek.

SPAWNING TIMING: Spawning generally occurs from late October through mid-January and occasionally into early February.

GENETIC ANALYSIS: Allozyme analysis of coho sampled from the Pilchuck River in 1987 showed that they were significantly different from all other Washington coho examined (David Teel, NMFS, personal communication).

STOCK ORIGIN

This is a **mixed** stock with **wild** production. Skykomish, Issaquah, Green River (Duwamish), and University of Washington hatchery-origin coho were released into the Pilchuck River system and Worthy Creek between 1952 and 1969.

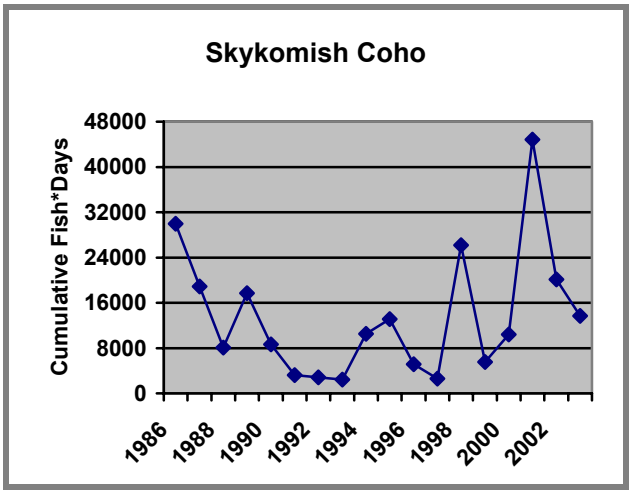
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	CUMULATIVE FISH*DAYS
1986	29,946
1987	18,885
1988	8,106
1989	17,722
1990	8,653
1991	3,195
1992	2,810
1993	2,435
1994	10,514
1995	13,139
1996	5,134
1997	2,594
1998	26,177
1999	5,550
2000	10,405
2001	44,854
2002	20,102
2003	13,684



Data are cumulative fish-days counts in index reaches (Foye Cr, unnamed stream 07.0820, unnamed stream 07.0822, Carpenter Cr, unnamed stream 07.0839, unnamed stream 07.0841, Deer Cr, unnamed stream 07.0979A, Lewis Cr, Bridal Veil Cr, unnamed stream 07.1248A, and unnamed stream 07.0961).

Although cumulative fish-days values were low in 1992, 1993 and 1997, values since then have been considerably higher, suggesting no systematic declining trend in escapement. Given this information, the stock is again rated **Healthy** in 2002.

STOCK DEFINITION

Skykomish coho were identified as stock due to their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place throughout the Skykomish system.

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

GENETIC ANALYSIS: Allozyme analysis of coho sampled from Lewis Creek in the North Fork Skykomish in 1995 showed they are significantly different from other Snohomish basin coho stocks and from all other Washington coho stocks examined (David Teel, NMFS, personal communication).

STOCK ORIGIN

This is a **mixed** stock with **composite** production. Various non-native hatchery-origin coho stocks were released into the Skykomish drainage between 1952 and 1990.

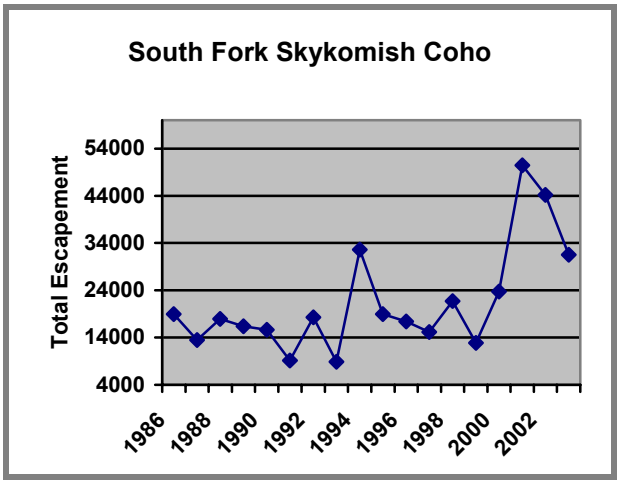
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:
Very good

YEAR	TOTAL ESCAPEMENT
1986	18,929
1987	13,472
1988	17,935
1989	16,396
1990	15,663
1991	9,115
1992	18,266
1993	8,900
1994	32,607
1995	18,839
1996	17,395
1997	15,152
1998	21,695
1999	12,839
2000	23,726
2001	50,434
2002	44,152
2003	31,558



Data are counts of adult coho at the Sunset Falls adult fish trap (RM 51).

South Fork Skykomish coho were rated **Healthy** in both 1992 and 2002 because escapements were strong and stable through the period of record.

STOCK DEFINITION

South Fork Skykomish coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place in accessible waters of the South Fork Skykomish above Sunset Falls. Sunset Falls was an impassable barrier to upstream migration until a trapping and hauling program began in the mid-1950s.

SPAWNING TIMING: Spawning timing is unknown because no systematic spawner surveys have been conducted in the South Fork.

GENETIC ANALYSIS: No genetic analysis has been done on South Fork Skykomish coho.

STOCK ORIGIN

This is a **non-native** stock with **wild** production. Skykomish hatchery fry and fingerlings were released into the South Fork Skykomish from 1952 through 1956 and in 1958; Green River hatchery fry were released in 1952, 1957 and 1958 (WDFW and WWTIT 1994). Periodic sampling at the Sunset Falls adult trap has indicated there is very limited straying of hatchery origin coho originating from other locations into this basin (Jeff Haymes, WDFW, personal communication.).

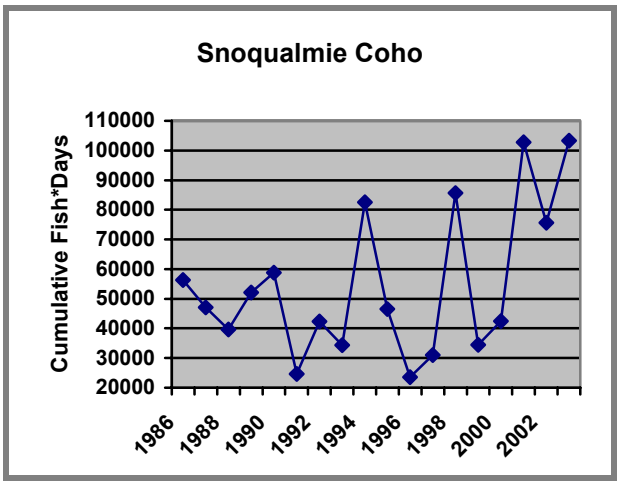
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	CUMULATIVE FISH*DAYS
1986	56,304
1987	47,094
1988	39,612
1989	52,110
1990	58,776
1991	24,639
1992	42,272
1993	34,385
1994	82,511
1995	46,496
1996	23,570
1997	30,973
1998	85,624
1999	34,462
2000	42,422
2001	102,827
2002	75,640
2003	103,339



Data are cumulative fish-days counts in index areas (Peoples Cr, Unnamed stream 07.0244, Unnamed North Fork Cherry Cr tributary 07.0247, Harris Cr, Drainage ditch 07.0285B, 07.0285C, 07.0285D, Unnamed stream 07.0286A, Langlois Cr, Unnamed stream 07.0301, Griffin Cr, Unnamed stream 07.0369, East Fork Griffin Cr, Unnamed stream 07.0372, Patterson Cr, Canyon Cr, Unnamed stream 07.0383A, Lake Cr, and Deep Cr).

Snoqualmie coho were rated **Healthy** in both 1992 and 2002 due to strong, stable escapement indicator values through the period of record.

STOCK DEFINITION

Snoqualmie coho were identified as a stock based on their distinct spawning distribution. Genetic analysis conducted since 1992 suggests that there are at least two coho stocks in the Snoqualmie drainage.

SPAWNING DISTRIBUTION: Spawning takes place throughout the mainstem Snoqualmie River and tributaries downstream from Snoqualmie Falls.

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

GENETIC ANALYSIS: Allozyme analysis of coho sampled from Harris Creek (1987) and Grizzly Creek (mid-1990s) showed that these two collections are significantly different from one another and from all other Washington coho examined (David Teel, NMFS, personal communication).

STOCK ORIGIN

This is a **mixed** stock with **wild** production. Substantial releases of non-native hatchery coho were released into the Snoqualmie drainage between 1952 and 1972.

NOOKSACK/SAMISH – NOOKSACK PINK

In 1992 two Nooksack basin pink salmon stocks were identified: North Fork/Middle Fork Nooksack pinks and South Fork Nooksack pinks. The two stocks have now been combined into a single stock based on genetic analyses (Shaklee 2001) that showed no compelling evidence for the existence of more than one pink salmon stock in the Nooksack basin.

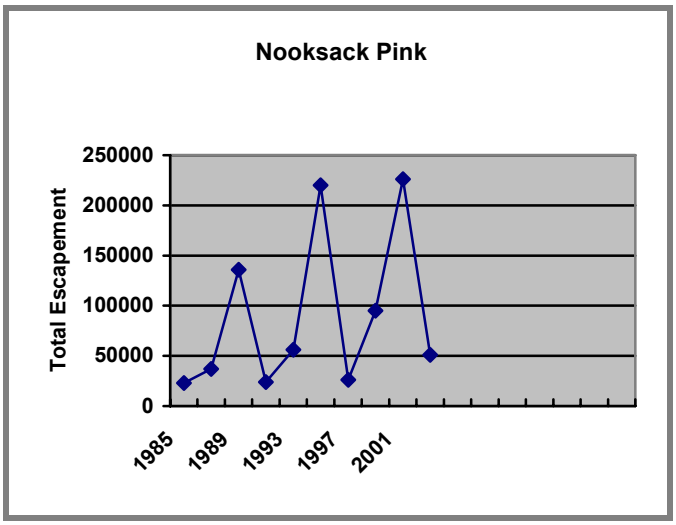
Stock Status

1992 Status	2002 Status
Unknown	Healthy

Stock Status Rating Data

Usefulness for rating stock status: Fair

Year	Total Escapement
1985	23,000
1987	37,000
1989	136,000
1991	24,000
1993	56,000
1995	220,000
1997	26,000
1999	95,000
2001	226,000
2003	51,000



Data are total escapement estimates for the Nooksack basin based on live spawner counts from index areas in Racehorse, Kendall, Maple, Boulder, Cornell, Hedrick, Gallop, Thompson, Deadhorse and Hutchinson creeks. Live spawner curves for these indices are compared to curves for 1959, 1961, and 1963 when escapements were estimated by mark-and-recapture.

The Nooksack pink salmon stock is rated **Healthy** in 2002. The escapements for this stock increased in the late 1980s, with much higher escapements in 1995 and 2001. The stock experiences substantial biannual variability, characteristic of many other Puget Sound pink stocks. This stock has been severely impacted by habitat degradation, and escapements fluctuate greatly due to environmental instability. Although the status of pinks in the Nooksack basin as a whole has been rated healthy, there are considerable differences in abundance within the basin, with largest abundances in the North Fork and its tributaries.

Stock Definition

Nooksack pink salmon were identified as a stock based on their distinct spawning distribution, early return timing (beginning in July), small size and their distinct genetic profile. The genetic distinctiveness

of Nooksack pinks led Shaklee et al. (1995) to place them in a separate genetic diversity unit (GDU) from other north Puget Sound pink stocks. This is an odd-year pink stock.

Spawning Distribution: Pink salmon spawn in the mainstem Nooksack, the North Fork, Middle Fork and South Fork Nooksack River. Spawning in the North Fork takes place in the mainstem, side channel and sloughs from RM 40 to RM 65 (a natural falls) and in most year-round North Fork tributaries including Deadhorse, Boyd, Glacier, Thompson (to river mile 1.6), Gallup, Cornell, Hedrick, Canyon (to river mile 1.6), Boulder, McDonald, Maple, Kendall Racehorse and Kinney creeks. Spawning in the Middle Fork takes place in the mainstem, side channels and sloughs from RM 0.0 to RM 7.2, (the City of Bellingham's water diversion, an18-foot high dam), and in several year-round Middle Fork tributaries including Peat Bog (WRIA 01-0352) and Bear (WRIA 01-0353) creeks (local names). Spawning in the South Fork takes place in the mainstem, side channels and sloughs from RM 0.0 to RM 25 (a bedrock gorge) and in several South Fork tributaries including Hutchinson, Skookum, Cavanaugh, Roaring and Deer creeks.

Spawning Timing: Spawning generally occurs from late August through September in odd-numbered years.

Genetic Analysis: A recent genetic analysis showed no significant differences between pink salmon spawning in the North Fork/Middle Fork Nooksack and the South Fork Nooksack. However, Nooksack pinks are genetically distinct from all other Washington and Canadian pink stocks examined (Shaklee 2001).

Stock Origin

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

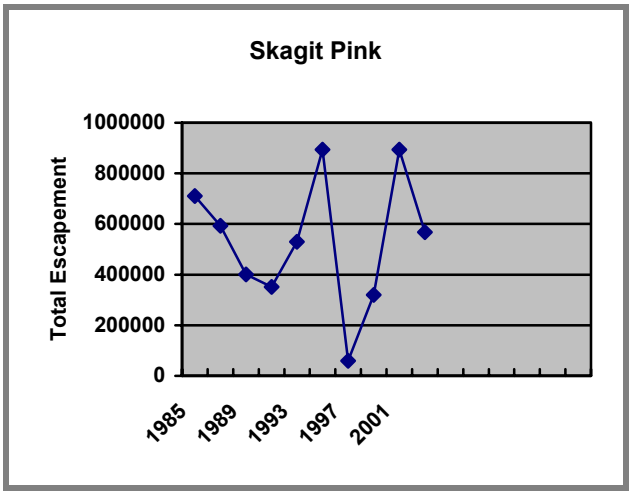
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:
Fair

YEAR	TOTAL ESCAPEMENT
1985	710,030
1987	593,535
1989	401,300
1991	351,000
1993	530,000
1995	894,061
1997	60,000
1999	320,000
2001	894,061
2003	567,080



Data are total escapement estimates based on comparison of live spawner curves from index areas in Bacon, Diobsud, Goodell, Cascade, Illabot, Finney and Day creeks and mainstem carcass counts to similar data collected during 1959, 1961, and 1963, when escapements were estimated by mark-and-recapture tagging studies.

The Skagit pink salmon stock is rated **Healthy** in 2002. The escapements of this stock have generally been increasing since the late 1960s, with substantial inter-annual variability (six-year cycles), which is characteristic of many other Puget Sound pink stocks.

STOCK DEFINITION

Skagit pink salmon were identified as a stock due to their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place in the mainstem Skagit River and tributaries such as Bacon, Diobsud, Goodell, Cascade, Illabot, Finney and Day creeks.

SPAWNING TIMING: Spawning generally occurs from late August through October in odd-numbered years.

GENETIC ANALYSIS: Allozyme analysis indicates that gene flow occurs at fairly high levels among pink salmon in the Skagit, Stillaguamish, and Snohomish (odd-year stock) basins (Shaklee 2001).

STOCK ORIGIN

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

STILLAGUAMISH –STILLAGUAMISH PINK

In 1992 two Stillaguamish basin pink salmon stocks were identified: North Fork Stillaguamish pinks and South Fork Stillaguamish pinks. The two stocks have now been combined into a single stock based on genetic analyses (Shaklee 2001) that showed no compelling evidence for the existence of more than one pink salmon stock in the Stillaguamish basin.

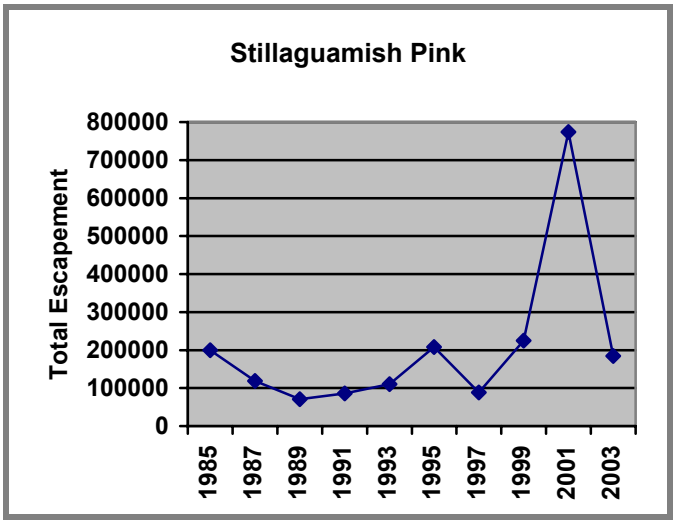
Stock Status

1992 Status	2002 Status
Healthy	Healthy

Stock Status Rating Data

Usefulness for rating stock status: Good

Year	Total Escapement
1985	200,000
1987	119,000
1989	70,400
1991	86,000
1993	110,000
1995	208,000
1997	88,572
1999	224,486
2001	774,279
2003	184,433



Data are total escapement estimates based on annual live spawner curves in the North and South forks of the Stillaguamish. Counts in the North Fork are made in the mainstem between RM 27 and RM 34 and in Squire, Boulder and Grant creeks. Counts in the South Fork are made in the mainstem and in Pilchuck, Jim, Siberia, and Canyon creeks. The live spawner curves are compared to curves from 1959, 1961, 1963 and/or 1987 when mark-and-recapture tagging studies were conducted.

Stock status is rated **Healthy** in 2002. Escapements have been increasing since 1975 with very large escapements (in excess of 150,000 spawners) in 1995, 1999, 2001 and 2003.

Stock Definition

Stillaguamish pink salmon were identified as a stock based on their distinct spawning distribution and genetic composition.

Spawning Distribution: Most spawning takes place in the mainstem Stillaguamish, the North Fork, South Fork and their larger tributaries. Spawning usually occurs in North Fork tributaries such as Squire and Boulder creeks. If sufficient flows exist, spawning may also take place in Grant, French, Segelsen and Brown's creeks. Spawning in the South Fork takes place up to RM 34 and in Pilchuck, Jim, Siberia and Canyon creeks.

STILLAGUAMISH –STILLAGUAMISH PINK

Spawning Timing: Spawning generally occurs from late September through October in odd-numbered years.

Genetic Analysis: Recent allozyme analysis has found no significant differences between the North and South Fork Stillaguamish pink stocks. In addition, there is evidence of significant gene flow among pink salmon in the Skagit, Stillaguamish and Snohomish (odd-year stock) basins (Shaklee 2001).

Stock Origin

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

SNOHOMISH – SNOHOMISH ODD-YEAR PINK

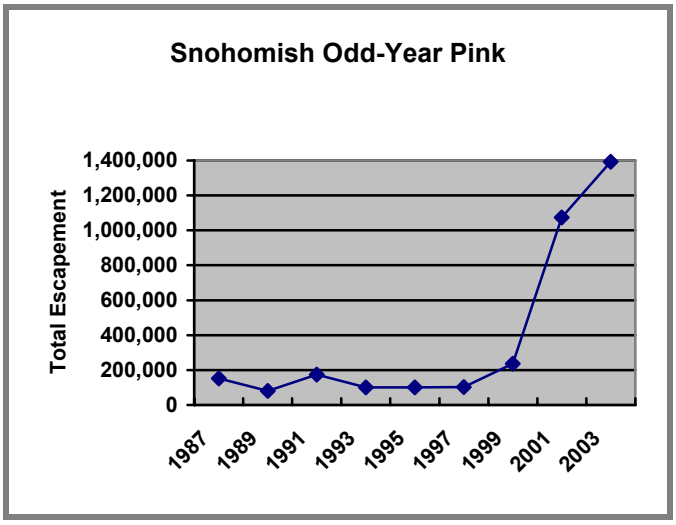
Stock Status

1992 Status	2002 Status
Healthy	Healthy

Stock Status Rating Data

Usefulness for Rating Stock Status: Good

Year	Total Escapement
1987	152,418
1989	80,149
1991	174,000
1993	100,000
1995	101,600
1997	103,537
1999	237,057
2001	1,073,369
2003	1,392,568



Data are total wild spawner escapement estimates based on a comparison of carcass counts from the mainstem Snohomish and Skykomish rivers and live spawner curves from the Wallace River and Elwell Creek to data from 1959, 1961, and 1963 when the escapements were estimated by mark-and-recapture. Sunset Falls trap counts are included.

The Snohomish odd-year pink salmon stock is rated **Healthy** in 2002. The escapements of this stock have been very stable, showing a slight increasing trend over the last 40 years with a very high value in 2001. This stock experiences moderate inter-annual variability, which is characteristic of many other Puget Sound pink stocks.

Stock Definition

Snohomish pink salmon were identified as a stock based on their distinct spawning distribution, run timing (odd-numbered years), and genetic composition.

Spawning Distribution: Most spawning takes place in the mainstem Snohomish, Skykomish, Snoqualmie rivers and in larger tributaries such as Wallace, Sultan, Pilchuck, Beckler, and Tolt rivers. Spawning also occurs in Woods, Elwell, McCoy, Olney, Proctor, Deer, Lewis, Bridal Veil, and Cherry creeks.

Spawning Timing: Spawning generally occurs from late September through October in odd-numbered years.

Genetic Analysis: Allozyme analysis has shown Snohomish odd-year pinks to be genetically distinct from all other Washington pink stocks examined (Shaklee 2001).

SNOHOMISH – SNOHOMISH ODD-YEAR PINK

Stock Origin

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

SNOHOMISH – SNOHOMISH EVEN-YEAR PINK

Stock Status

1992 Status	2002 Status
Healthy	Healthy

Stock Status Rating Data

Usefulness for Rating Stock Status: Good

Year	Total Escapement
1986	1,016
1988	1,097
1990	2,187
1992	2,723
1994	1,640
1996	3,734
1998	6,078
2000	12,869
2002	44,282

Data are total escapement estimates based on redd counts in the mainstem Snohomish and Skykomish rivers. The Snohomish even-year pink salmon stock is rated **Healthy** in 2002. The escapements of this stock have substantially increased through the years since enumeration began in 1984.

Stock Definition

Snohomish even-year pink salmon were identified as a stock based on their distinct spawning distribution, run timing (even-numbered years only), and genetic composition.

Spawning Distribution: Most spawning takes place in the mainstem Snohomish and lower Skykomish Rivers and possibly in the Snoqualmie River.

Spawning Timing: Spawning generally occurs in September of even-numbered years only.

Genetic Analysis: Genetic analysis has shown Snohomish even-year pink to be significantly different from all other Washington pink stocks examined (Shaklee 2001).

Stock Origin

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

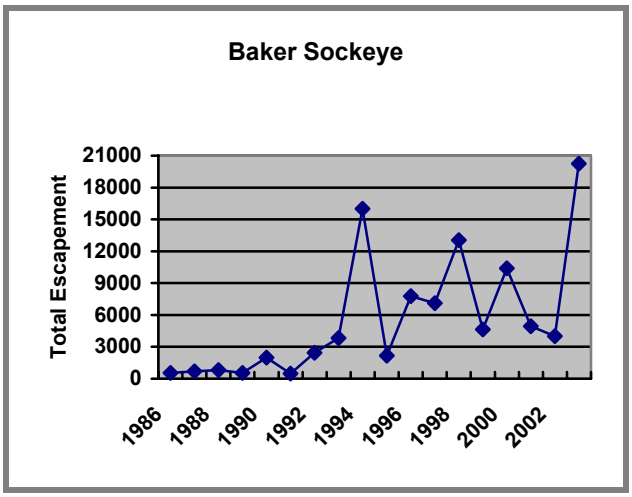
STOCK STATUS

1992 STATUS	2002 STATUS
Critical	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS:
Excellent

YEAR	TOTAL ESCAPEMENT
1986	542
1987	683
1988	818
1989	536
1990	1,977
1991	481
1992	2,443
1993	3,818
1994	15,991
1995	2,181
1996	7,769
1997	7,099
1998	13,059
1999	4,646
2000	10,385
2001	4,942
2002	4,021
2003	20,236



Data are counts at the Baker River adult trap at RM 0.25. They serve as estimates of total escapement since harvest of adult sockeye above the trap is negligible.

The Baker sockeye salmon stock has shown a remarkable recovery from its critical status in 1992. Between 1979 and 1991, spawning escapements exceeded a thousand fish in just two years and reached an all-time low of only 99 spawners in 1985. Since 1992, escapements have ranged from 2,155 to 15,991. The escapement goal for Baker sockeye is about 5,000 fish but varies annually depending on the annual capacity of artificial spawning beaches and research needs. The fact that in most years the entire escapement or most of the entire escapement is placed in an artificial spawning facility is a cause for concern. However, based on spawner abundance, Baker sockeye are rated **Healthy** in 2002.

STOCK DEFINITION

Baker sockeye were identified as a stock based on their distinct spawning distribution and genetic differences.

SPAWNING DISTRIBUTION: Historically, spawning took place in the Baker River and Baker Lake. Access to these areas is now blocked by two dams. All returning adults are trapped and hauled above the dams. In many years all adults are taken to artificial spawning beaches. In years when the capacity of the spawning beaches is exceeded, fish that cannot be placed in the spawning beaches are released into Baker Lake and spawn mainly in the Baker River above the lake.

SPAWNING TIMING: Spawning generally occurs from late September through December.

GENETIC ANALYSIS: Allozyme analysis has shown Baker sockeye to be genetically distinct from all other Washington sockeye stocks examined (Gustafson and Winans 1999).

STOCK ORIGIN

This is a **native** stock with **cultured** production. Spawning of all or part of each year's escapement takes place in artificial spawning beaches. Fry are transported to Baker Lake for rearing, then are trapped as smolts and trucked to the Baker River below the lower dam.

NOOKSACK/SAMISH – DAKOTA CREEK WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Dakota Creek winter steelhead, so their status in 2002 remains **Unknown**. Escapement is not monitored, and sport harvest data are no longer useful for rating status since wild steelhead release was implemented in the Dakota Creek sport fishery in 1993.

Stock Definition

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

Spawning Distribution: Spawning takes place in Dakota Creek and its forks and tributaries.

Spawning Timing: Spawning timing is unknown but is thought to occur from mid-February through early June.

Genetic Analysis: No genetic analysis has been done on Dakota Creek winter steelhead.

Stock Origin

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

NOOKSACK/SAMISH – MAINSTEM/NORTH FORK NOOKSACK WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

Escapement data have been collected inconsistently for this stock. Consequently stock status is rated **Unknown** in 2002. Aerial surveys of the North Fork and Middle Fork are now being conducted, but escapement estimates are not yet available. Status may be Depressed because of recent flooding and habitat instability.

Stock Definition

Mainstem/North Fork Nooksack winter steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in the mainstem Nooksack, North Fork Nooksack and their tributaries.

Spawning Timing: Spawning generally occurs from early March to early July.

Genetic Analysis: Allozyme analysis of steelhead sampled from the North Fork Nooksack in 1995 showed them to be very different from the South Fork Nooksack summer steelhead stock. They clustered with Finney Creek (Skagit basin) summer steelhead, a mixed sample of Cascade (Skagit basin) summer and winter steelhead and to Deer Creek (Stillaguamish basin) summer steelhead (Phelps et al. 1997).

Stock Origin

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

NOOKSACK/SAMISH – SOUTH FORK NOOKSACK SUMMER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no abundance trend data for South Fork Nooksack summer steelhead, so their status remains **Unknown** in 2002.

Stock Definition

South Fork Nookack summer steelhead were identified as a stock based on their early freshwater return timing and distinct spawning distribution.

Spawning Distribution: Spawning is thought to take place mainly upstream from RM 25 and in upper South Fork tributaries such as Wanlick Creek and may also take place throughout the South Fork Nooksack and its tributaries such as Hutchinson Creek.

Spawning Timing: Spawning timing is unknown but is thought to occur from February through April.

Genetic Analysis: Allozyme analysis of South Fork Nooksack summer steelhead showed them to be very different from other Nooksack and north Puget Sound steelhead stocks (Phelps et al. 1997).

Stock Origin

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

NOOKSACK/SAMISH – SOUTH FORK NOOKSACK WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

The South Fork Nooksack now contains too much suspended sediment to survey redds in the spring. Consequently status remains **Unknown** in 2002.

Stock Definition

South Fork Nooksack winter steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place throughout the South Fork Nooksack and its tributaries.

Spawning Timing: Spawning generally occurs from mid-February to mid-June.

Genetic Analysis: Allozyme analysis of winter steelhead collected in the South Fork Nooksack in 1995 has shown that they are very different from the South Fork Nooksack summer stock. They are similar to Finney Creek (Skagit basin) summer steelhead, a mixed sample of summer and winter steelhead in the Cascade (Skagit basin), and Deer Creek (Stillaguamish basin) summer steelhead (Phelps et al. 1997).

Stock Origin

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

STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

STOCK STATUS RATING DATA

Redd counts for this stock have been conducted inconsistently in the past. Aerial surveys of the Middle Fork are now being conducted, but escapement estimates are not yet available. Consequently, stock status remains **Unknown** in 2002.

STOCK DEFINITION

Middle Fork Nooksack winter steelhead were identified as a stock based on their distinct spawning distribution and early river entry timing. Steelhead spawning in the mainstem Middle Fork may contain remnants of the summer steelhead that spawned higher up in the drainage prior to construction of the city of Bellingham diversion dam.

SPAWNING DISTRIBUTION: Spawning takes place throughout the lower Middle Fork Nooksack and its tributaries up to the diversion dam, which blocks upstream passage.

SPAWNING TIMING: Spawning generally occurs from early March to mid-June (Paul Schlenger, Anchor Environmental, personal communication).

GENETIC ANALYSIS: No genetic analysis has been done on Middle Fork Nooksack winter steelhead.

STOCK ORIGIN

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

NOOKSACK/SAMISH – SAMISH WINTER STEELHEAD

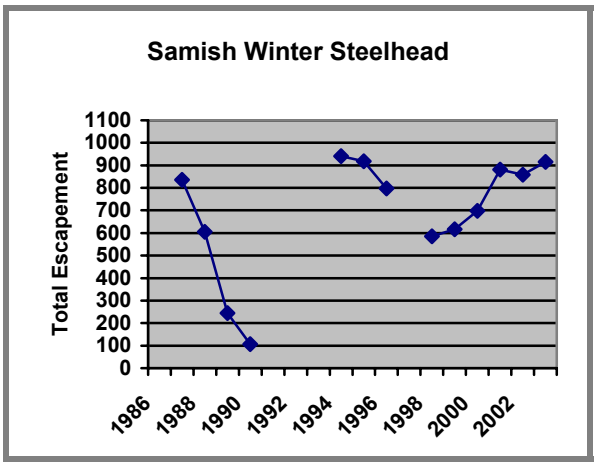
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	No data
1987	836
1988	606
1989	244
1990	106
1991	No data
1992	No data
1993	No data
1994	941
1995	918
1996	797
1997	No data
1998	586
1999	617
2000	698
2001	881
2002	859
2003	915



Data are total escapement estimates based on cumulative redd counts in the mainstem Samish and in Friday Creek.

Stock status is rated **Healthy** in 2002 because the escapements since 1992 have consistently exceeded the escapement goal of 700 wild adults.

STOCK DEFINITION

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

SPAWNING DISTRIBUTION: Spawning takes place throughout the Samish River and in Friday Creek and its tributaries.

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

GENETIC ANALYSIS: No genetic analysis has been done on Samish winter steelhead.

STOCK ORIGIN

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

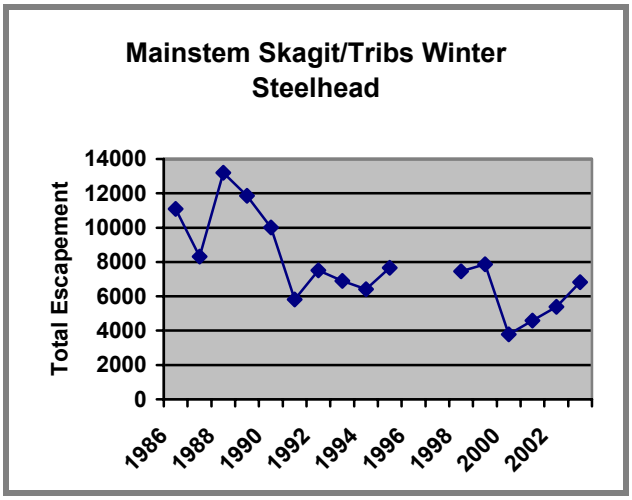
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

Usefulness for Rating Stock Status: Excellent

YEAR	TOTAL ESCAPEMENT
1986	11,098
1987	8,305
1988	13,194
1989	11,854
1990	10,017
1991	5,818
1992	7,514
1993	6,900
1994	6,412
1995	7,656
1996	No data
1997	No data
1998	7,448
1999	7,870
2000	3,780
2001	4,584
2002	5,394
2003	6,818



Data are total escapement estimates for all Skagit winter steelhead based on cumulative redd counts in the mainstem Skagit River from RM 22.5 to 94.1 and in Alder, Diobsud, Rocky, O'Toole, Cumberland, Day, Sorenson, Hansen and Jones creeks. The estimates include winter steelhead in the Sauk and Cascade rivers.

In 2002 stock status is rated **Depressed** due to a **long-term negative trend** in escapements since 1992 and a **short-term severe decline** in 2000 and 2001. Production in the mainstem Skagit and tributaries appears to be very poor at present. In 2001 only 232 cumulative redds were counted in the mainstem (3 redds/mile) and only about 120 redds in the tributaries (Pete Castle, WDFW, personal communication).

STOCK DEFINITION

Mainstem Skagit/Tribs winter steelhead were identified as a stock because they spawn in the mainstem Skagit and tributaries, excluding the Sauk and Cascade Rivers. However, the distribution of redds in the mainstem Skagit and the lower Sauk is continuous (Curt Kraemer, WDFW, personal communication).

SPAWNING DISTRIBUTION: Spawning takes place in the mainstem Skagit and all major tributaries including the Sauk and Cascade rivers.

SPAWNING TIMING: Spawning generally occurs from early March to early June.

GENETIC ANALYSIS: Allozyme analysis of Skagit winter steelhead sampled in 1994 clustered them with Sauk steelhead (summer and winter); Suiattle winter steelhead; North Fork Stillaguamish steelhead; and with steelhead from the Skokomish, Dosewallips, and Dungeness rivers (Phelps et al 1997).

STOCK ORIGIN

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

SKAGIT – FINNEY CREEK SUMMER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Finney Creek summer steelhead, so their status remains **Unknown** in 2002.. Escapement is not monitored and, sport harvest data are no longer useful for rating status since wild steelhead release was implemented in Finney Creek in 1993.

Stock Definition

Finney Creek summer steelhead were identified as a stock based on their distinct spawning distribution. Stock identification is supported by genetic analysis.

Spawning Distribution: Precise spawning locations are unknown, but spawning is probably confined below the falls at RM 11.7.

Spawning Timing: Spawning timing is unknown but may be from February to April.

Genetic Analysis: Allozyme analysis of a small number steelhead sampled in 1995 suggests that Finney Creek fish are genetically distinct from other Skagit basin steelhead stocks (Phelps et al. 1997). They are similar to North Fork and South Fork Nooksack winter steelhead, a mixed sample of Cascade summer and winter steelhead, and to Deer Creek (Stillaguamish basin) summer steelhead (Phelps et al. 1997).

Stock Origin

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

SKAGIT – SAUK SUMMER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Sauk summer steelhead, so their status remains **Unknown** in 2002. Escapement is not monitored, and sport harvest data are no longer useful for rating status since wild steelhead release was implemented in parts of the Skagit basin in 1988.

It is likely that the stock has historically been small and that it is currently stable but fragile due to its small population size. Numbers are probably limited by habitat availability and by competition with wild winter steelhead in the system.

Stock Definition

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

Spawning Distribution: Spawning takes place in the North Fork and South Fork Sauk and possibly slightly below the forks. This distribution separates the stock from other summer steelhead stocks in the Skagit basin by more than 50 miles.

Spawning Timing: Spawning generally occurs from mid-April to early June.

Genetic Analysis: No genetic analysis has been done on Sauk summer steelhead.

Stock Origin

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

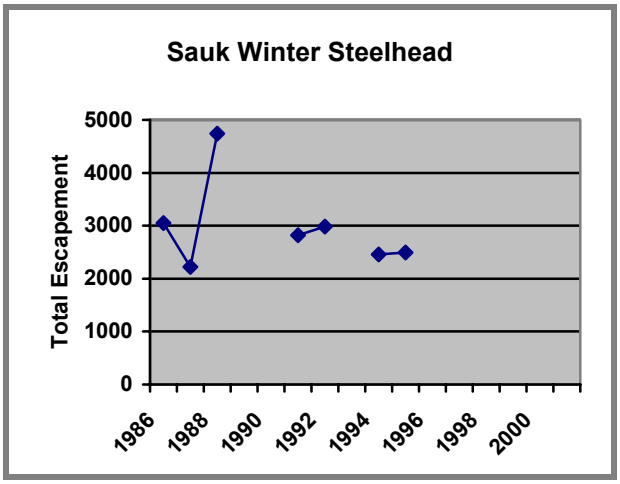
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Unknown

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	3,047
1987	2,225
1988	4,740
1989	No data
1990	No data
1991	2,818
1992	2,982
1993	No data
1994	2,460
1995	2,494
1996	No data
1997	No data
1998	No data
1999	No data
2000	No data
2001	No data
2002	No data
2003	No data



Data are total escapement estimates based on redd counts in the mainstem Sauk from the mouth to RM 41, to RM 2.0 on the South Fork Sauk, and in White, Dan, Murphy and Falls creeks. Survey data are now combined with data from the Mainstem Skagit/Tribs surveys so the status of the Sauk winter steelhead stock is **Unknown** in 2002.

STOCK DEFINITION

Sauk winter steelhead were identified as a stock based on their distinct spawning distribution and later spawning timing than most Puget Sound winter steelhead. However, the distribution of redds in the mainstem Skagit and the lower Sauk is continuous (Curt Kraemer, WDFW, personal communication).

SPAWNING DISTRIBUTION: Spawning takes place in the Sauk, Suiattle, and Whitechuck rivers and their tributaries.

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

GENETIC ANALYSIS: Allozyme analysis of Sauk winter steelhead collected in 1994 clustered them with Mainstem Skagit/Tribs and Suiattle winter steelhead, Sauk summer steelhead, and with steelhead from the Skokomish, Dosewallips and Dungeness rivers (Phelps et al 1997).

STOCK ORIGIN

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

STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

STOCK STATUS RATING DATA

There are no adequate abundance trend data for Cascade summer steelhead, so their status remains **Unknown** in 2002. Spawning escapement is not monitored. Sport fisheries have frequently been closed, so sport harvest numbers are not adequate to assess abundance.

STOCK DEFINITION

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

SPAWNING DISTRIBUTION: Exact spawning locations are unknown, but spawning is thought to take place in the upper reaches of the Cascade River and its forks. This distribution would separate the stock from other Skagit basin summer stocks by a distance of 40 miles.

SPAWNING TIMING: Spawning generally occurs from mid-January to early May.

GENETIC ANALYSIS: Allozyme analysis of steelhead sampled in the Cascade River in 1994 suggests that they are genetically distinct from the other Skagit basin steelhead stocks examined but this result should be interpreted with caution because the sample contained both summer and winter steelhead. The sample clustered with North Fork and South Fork Nooksack winter steelhead, Finney Creek (Skagit basin) summer steelhead, and Deer Creek (Stillaguamish basin) summer steelhead (Phelps et al. 1997).

STOCK ORIGIN

This is a stock of **unknown** origin with **wild** production.

SKAGIT – CASCADE WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data Cascade winter steelhead, so their status remains **Unknown** in 2002. Spawning escapement is not monitored. Sport harvest data are available for years when the fishery was open, but because of low harvest numbers and fisheries closures, sport harvest is no longer adequate to assess stock status.

Stock Definition

Cascade winter steelhead were identified as a stock because they spawn in the Cascade River and its forks. However, there is no break separating Cascade River spawning areas from mainstem Skagit spawning areas (Curt Kraemer, WDFW, personal communication).

Spawning Distribution: Exact spawning locations are unknown.

Spawning Timing: Spawning timing is unknown but is thought to be from early March to late June.

Genetic Analysis: Allozyme analysis has been conducted on a sample of steelhead from the Cascade in 1994. The analysis showed that Cascade steelhead are significantly different from other Skagit stocks examined, but this result should be interpreted with caution because the sample contained summer and winter steelhead, and possibly non-native hatchery steelhead (Phelps et al. 1997).

Stock Origin

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

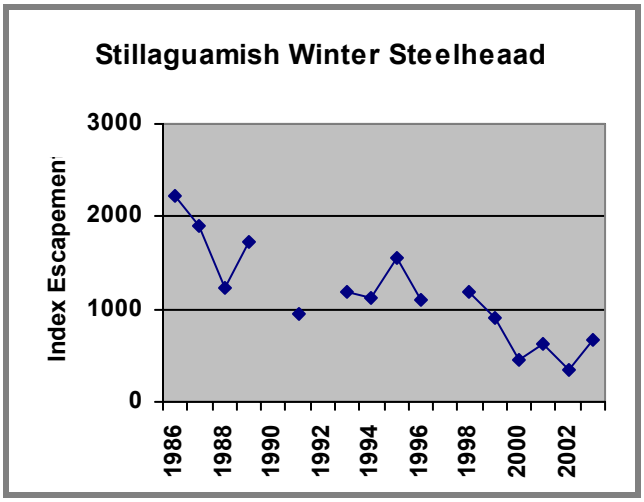
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	INDEX ESCAPEMENT
1986	2,226
1987	1,892
1988	1,222
1989	1,718
1990	No data
1991	950
1992	No data
1993	1,178
1994	1,118
1995	1,556
1996	1,094
1997	No data
1998	1,185
1999	917
2000	463
2001	630
2002	354
2003	660



Data are counts of spawners in the North Fork and tributaries upstream from Deer Creek. The escapement goal for the stock is 950 spawners. In 2002 the stock is rated **Depressed** because of a **long-term negative trend** and **severe short-term decline** in recent index escapement counts.

STOCK DEFINITION

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

SPAWNING DISTRIBUTION: Spawning takes place in the mainstem Stillaguamish, the north and south forks of the Stillaguamish, Pilchuck River, Jim Creek, Canyon Creek and its tributaries.

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

GENETIC ANALYSIS: Allozyme analysis of Stillaguamish winter steelhead collected in 1993 clustered them with Sauk winter and summer steelhead, Suiattle winter steelhead and with winter steelhead in the Skokomish, Dosewallips and Dungeness rivers (Phelps et al. 1997).

STOCK ORIGIN

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

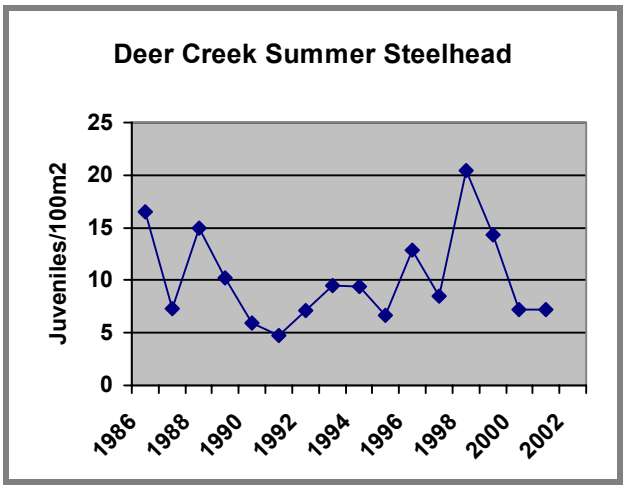
STOCK STATUS

1992 STATUS	2002 STATUS
Critical	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	JUVENILES/100M^2
1986	16.5
1987	7.3
1988	15
1989	10.2
1990	5.9
1991	4.7
1992	7.1
1993	9.5
1994	9.4
1995	6.7
1996	12.9
1997	8.5
1998	20.4
1999	14.3
2000	7.2
2001	7.2
2002	No data
2003	No data



Data are estimates of the number of 1-year old juveniles from six index areas in Deer Creek.

The stock is rated **Depressed** in 2002 due to **chronically low** juvenile densities. Status has been upgraded from critical to depressed based on sporadic aerial counts of adults. From 1996 to 2001, numbers of adults ranged from 500 to 1,000 (Curt Kraemer, WDFW, personal communication). Improved status may reflect improved overwintering habitat and increased parr-to-smolt survival following flooding in 1995 that cleaned some sediment from the streambed (Curt Kraemer, WDFW, personal communication).

STOCK DEFINITION

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

SPAWNING DISTRIBUTION: Most spawning takes place in the upper Deer Creek drainage.

SPAWNING TIMING: Spawning generally occurs from early April to early June.

GENETIC ANALYSIS: Allozyme analysis of Deer Creek summer steelhead sampled in 1993, 1994 and 1995 clustered them with Nooksack winter steelhead, Finney Creek (Skagit basin) summer steelhead,

Cascade steelhead and with winter steelhead in the Skokomish, Dosewallips and Dungeness rivers (Phelps et al. 1997).

STOCK ORIGIN

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

STILLAGUAMISH – SOUTH FORK STILLAGUAMISH SUMMER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no good abundance trend data for this stock. Escapement is not monitored. Sport harvest data are no longer useful for rating status since wild steelhead release was implemented in the Stillaguamish in 1993. Stock status remains **Unknown** in 2002.

Stock Definition

South Fork Stillaguamish summer steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in the South Fork Stillaguamish upstream from Granite Falls.

Spawning Timing: Spawning generally occurs from mid-January to late April.

Genetic Analysis: No genetic analysis has been done on South Fork Stillaguamish summer steelhead.

Stock Origin

This is a **non-native** stock with **wild** production. A non-native hatchery stock was introduced into the drainage following completion of the Granite Falls fish ladder in the mid-1950s. The stock is now self-sustaining.

STILLAGUAMISH – CANYON CREEK SUMMER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Canyon Creek summer steelhead, so their status remains **Unknown** in 2002. Escapement is not monitored. Sport harvest data are no longer useful for rating status since wild steelhead release in sport fisheries was implemented in the Stillaguamish basin in 1993.

Stock Definition

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

Spawning Distribution: Spawning takes place in Canyon Creek and its forks.

Spawning Timing: Spawning timing is unknown but is thought to be from February to April.

Genetic Analysis: No genetic analysis has been done on Canyon Creek summer steelhead.

Stock Origin

This is a **mixed** stock with **wild** production. Non-native hatchery-origin summer steelhead have been introduced into Canyon Creek where they are now commingled with or are hybridizing with the native stock.

SNOHOMISH – SNOHOMISH/SKYKOMISH WINTER STEELHEAD

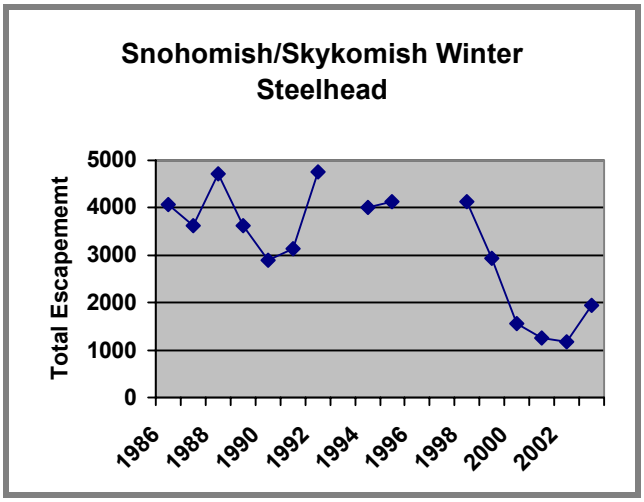
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	4,076
1987	3,628
1988	4,710
1989	3,618
1990	2,896
1991	3,136
1992	4,760
1993	No data
1994	4,014
1995	4,130
1996	No data
1997	No data
1998	4,132
1999	2,937
2000	1,558
2001	1,265
2002	1,166
2003	1,940



Data are total escapement estimates based on redd counts from RM 16.0 in the mainstem Snohomish to RM 51.5 on the South Fork Skykomish, in the Wallace River from RM 0.0 to 5.8, in the Sultan River from RM 0.0 to 15.0 (Snohomish PUD surveys), and in Proctor Creek, Elwell/Young's Creek, the East and West forks of Woods Creek, Olney Creek, Lewis Creek and Salmon Creek.

The stock is rated **Depressed** in 2002 due to a **severe short-term decline** in total escapements since 1999.

STOCK DEFINITION

Snohomish/Skykomish winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem Snohomish, Skykomish, Sultan, and Wallace rivers and their tributaries.

SPAWNING TIMING: Spawning generally occurs from early March through mid-June.

SNOHOMISH – SNOHOMISH/SKYKOMISH WINTER STEELHEAD

GENETIC ANALYSIS: Allozyme analysis of winter steelhead sampled from the Skykomish River in 1993 clustered them with Tolt, Snoqualmie and Pilchuck steelhead and with South Sound steelhead from the Cedar, Green, White, and Puyallup rivers (Phelps et al. 1997).

STOCK ORIGIN

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

SNOHOMISH – PILCHUCK WINTER STEELHEAD

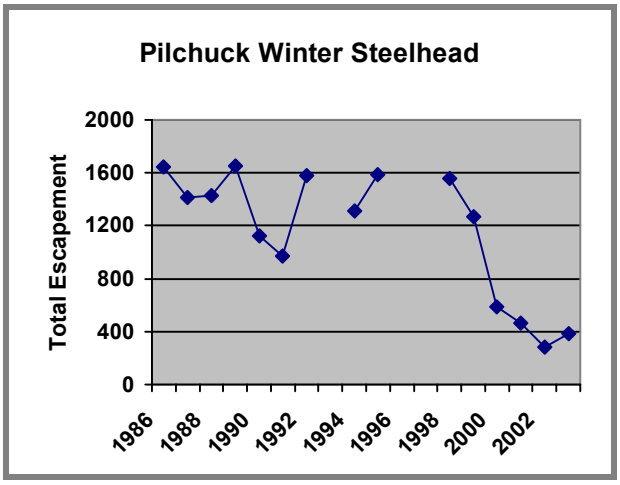
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	1,644
1987	1,416
1988	1,424
1989	1,650
1990	1,124
1991	968
1992	1,582
1993	No data
1994	1,308
1995	1,588
1996	No data
1997	No data
1998	1,558
1999	1,270
2000	590
2001	462
2002	279
2003	384



Data are total escapement estimates based on redd counts on the mainstem Pilchuck River from RM 0.0 to 15.3 (counts from RM 0.0 to 7.5 are peak counts) and in Worthy, Dubuque and Little Pilchuck creeks.

The stock is rated **Depressed** in 2002 because of a **short-term severe decline** in total escapement since 1999.

STOCK DEFINITION

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

SPAWNING DISTRIBUTION: Spawning occurs throughout the Pilchuck River and its tributaries.

SPAWNING TIMING: Spawning generally occurs from early March through early June.

GENETIC ANALYSIS: Allozyme analysis of Pilchuck winter steelhead sampled in 1993 clustered them with Tolt, Skykomish and Snoqualmie steelhead and with South Sound steelhead from the Cedar, Green, White, and Puyallup rivers (Phelps et al. 1997).

SNOHOMISH – PILCHUCK WINTER STEELHEAD

STOCK ORIGIN

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

SNOHOMISH – NORTH FORK SKYKOMISH SUMMER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for North Fork Skykomish summer steelhead, so their status remains **Unknown** in 2002. Escapement is not monitored, and sport harvest data are no longer useful for rating status since wild steelhead release was implemented in the Skykomish in 1993.

Stock Definition

North Fork Skykomish summer steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the North Fork Skykomish and tributaries upstream from Bear Creek Falls.

Spawning Timing: Spawning timing is unknown.

Genetic Analysis: Allozyme analysis of North Fork Skykomish steelhead sampled in 1993 showed that they are very distinct from other Snohomish basin steelhead stocks (Phelps et al. 1997).

Stock Origin

This is largely a **native** stock with **wild** production. There may be low levels of interaction with non-native hatchery-origin summer steelhead.

SNOHOMISH – SOUTH FORK SKYKOMISH SUMMER STEELHEAD

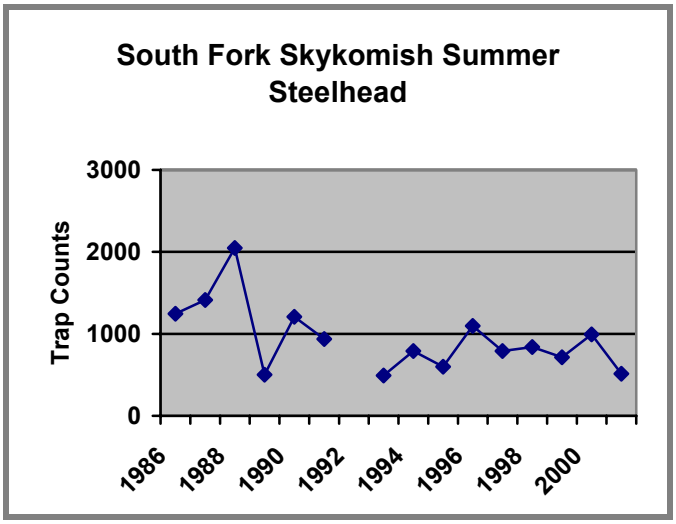
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	**Healthy**

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TRAP COUNTS
1986	1,245
1987	1,414
1988	2,048
1989	502
1990	1,208
1991	936
1992	No data
1993	492
1994	791
1995	600
1996	1,096
1997	791
1998	840
1999	715
2000	994
2001	513



SNOHOMISH – SOUTH FORK SKYKOMISH SUMMER STEELHEAD

The data are counts of adult steelhead at the Sunset Falls trap (RM. 51).

The stock is rated **Healthy** in 2002 because trap counts have been fairly high and stable.

STOCK DEFINITION

South Fork Skykomish summer steelhead were identified as a stock based on their distinct spawner distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the South Fork Skykomish and tributaries above Sunset Falls, particularly in the Beckler River.

SPAWNING TIMING: Spawning timing is unknown.

GENETIC ANALYSIS: No genetic analysis has been completed on South Fork Skykomish summer steelhead, however, recent genetic work on this stock indicates they are very closely related to Skamania stock summer steelhead. This data analysis has not been finalized (Chad Jackson, WDFW, personal communication).

STOCK ORIGIN

This is a **non-native** stock with **wild** production. Hatchery-origin summer steelhead, mainly Skamania Hatchery stock (WDFW and WWTIT 1994), were introduced into the South Fork Skykomish and are now self-sustaining.

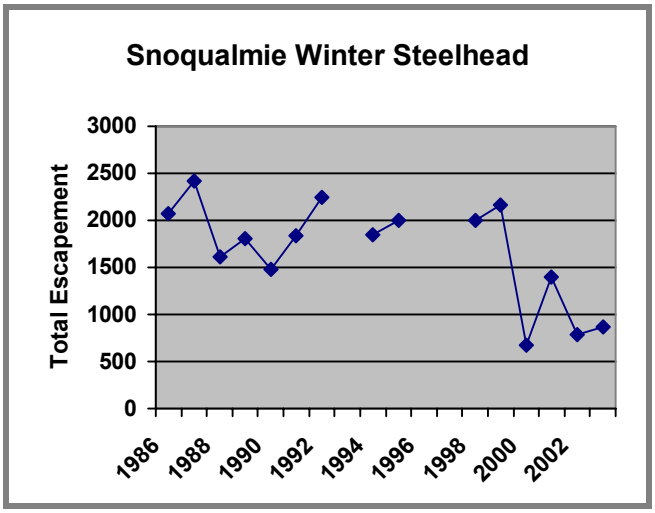
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	2,070
1987	2,420
1988	1,610
1989	1,810
1990	1,478
1991	1,832
1992	2,246
1993	No data
1994	1,848
1995	2,004
1996	No data
1997	No data
1998	2,004
1999	2,164
2000	674
2001	1,395
2002	789
2003	864



Data are total escapement estimates based on redd counts in the mainstem Snoqualmie from the mouth upstream to Snoqualmie Falls (RM 40.5), in the mainstem Tolt, North and South forks of the Tolt, and Raging rivers and in Tokul, Cherry, Harris, Griffin, Patterson, Canyon, and Deep creeks.

In 2002 the stock is rated **Depressed** because of a **short-term severe decline** in total escapement estimates since 1999.

STOCK DEFINITION

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

SPAWNING DISTRIBUTION: Most spawning occurs in the mainstem Snoqualmie, Tolt and Raging rivers.

SPAWNING TIMING: Spawning generally occurs from early March through early June.

GENETIC ANALYSIS: Allozyme analysis of Snoqualmie winter steelhead sampled in 1993 showed that they cluster with Tolt, Skykomish and Pilchuck steelhead and with South Sound steelhead from the Cedar, Green, White and Puyallup rivers (Phelps et al. 1997).

STOCK ORIGIN

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

SNOHOMISH – TOLT SUMMER STEELHEAD

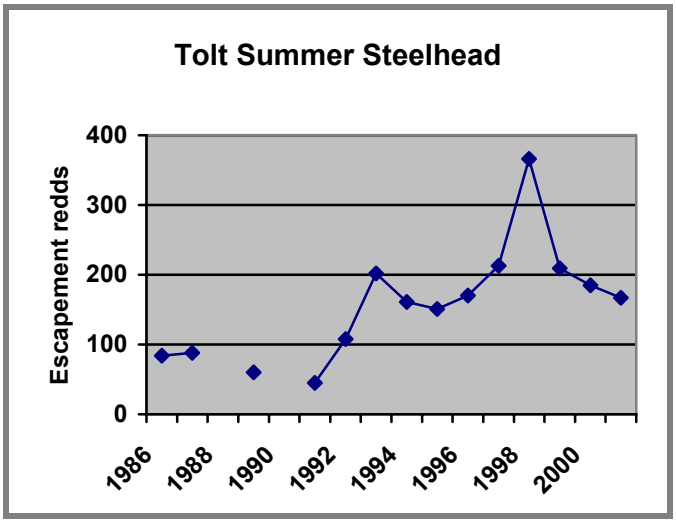
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	**Healthy**

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	ESCAPEMENT REDDS
1986	84
1987	88
1988	No data
1989	60
1990	No data
1991	45
1992	108
1993	202
1994	161
1995	151
1996	170
1997	213
1998	366
1999	209
2000	185
2001	167



SNOHOMISH – TOLT SUMMER STEELHEAD

Data are redd counts from Sunset Falls.

In 2002 the stock is rated **Healthy** due to a consistent increase in redd counts, which have exceeded the escapement goal of 121 adults in every year since 1992.

STOCK DEFINITION

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

SPAWNING DISTRIBUTION: Most spawning takes place in the forks of the Tolt River.

SPAWNING TIMING: Spawning timing is unknown.

GENETIC ANALYSIS: Allozyme analysis of Tolt summer steelhead sampled in 1993 clustered them with Skykomish, Pilchuck and Snoqualmie steelhead and with South Sound steelhead from the Cedar, Green, White, and Puyallup rivers (Phelps et al. 1997).

STOCK ORIGIN

This is a stock of **unknown** origin with **wild** production. The level of non-native hatchery-origin summer steelhead spawning in the wild is unknown.