

LOWER COLUMBIA – MILL/ABERNATHY/GERMANY CREEKS FALL CHINOOK

The Mill Creek, Abernathy Creek and Germany Creek fall Chinook stocks have been combined into a single stock based on the Lower Columbia Technical Recovery Team’s conclusion that the individual watersheds were too small to support viable Chinook populations.

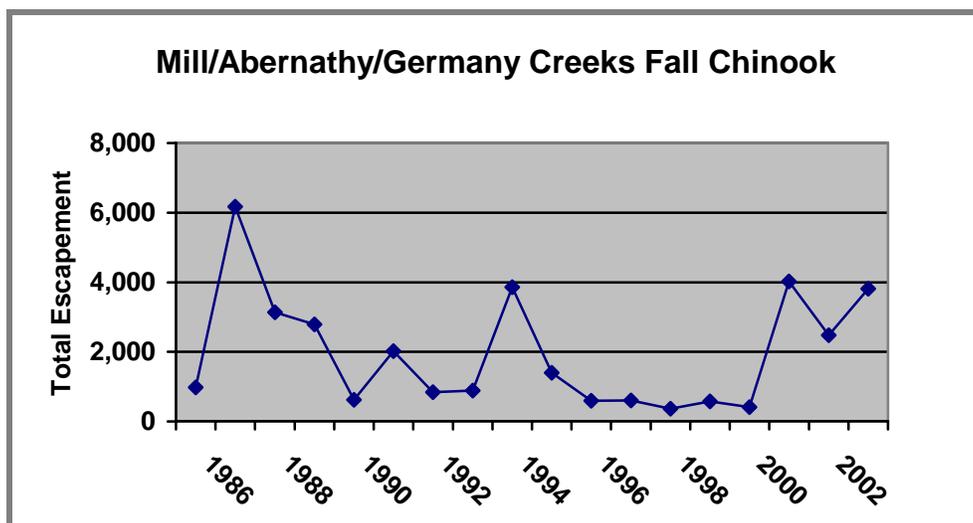
STOCK STATUS

1992 STATUS Healthy	2002 STATUS Depressed
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STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	MILL CREEK	ABERNATHY CREEK	GERMANY CREEK	TOTAL
1986	7	915	57	979
1987	1,867	3,917	384	6,168
1988	927	972	1,234	3,133
1989	1,534	881	377	2,792
1990	132	316	172	620
1991	23	1,877	117	2,017
1992	27	762	50	839
1993	134	444	307	885
1994	220	2,916	718	3,854
1995	406	730	259	1,395
1996	67	545	72	593
1997	8	491	104	603
1998	50	286	32	368
1999	124	376	75	575
2000	56	239	114	409
2001	249	1,617	2,158	4,024
2002	1,045	833	603	2,481
2003	783	1,190	1,837	3,810



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Data for Mill Creek are total escapement estimates expanded from annual peak live plus dead spawner counts from the Mill Creek road bridge (RM 2.0) downstream to the mouth. Data for Abernathy Creek are total escapement estimates expanded from annual peak live plus dead spawner counts from the U.S Fish and Wildlife Service Abernathy Creek Salmon Culture Technology Center weir (RM 3.0) downstream to the mouth of the creek. Data for Germany Creek are total escapement estimates expanded from annual peak live plus dead spawner counts from RM 3.5 downstream to the mouth of the creek.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. Generally, tule fall Chinook stocks, such as Mill/Abernathy/Germany Creeks fall Chinook, experienced poor survival in the 1990s. Natural spawning abundance is probably more a reflection of U.S. Fish and Wildlife Service Abernathy Creek Salmon Culture Technology Center and other hatchery stray rates than of natural production.

STOCK DEFINITION

Mill/Abernathy/Germany Creeks fall Chinook were identified as a stock based on their spawning distribution, proximity, and presumed high levels of contribution from the Lower River Hatchery (LRH) fish. LRH fish are mixed-origin hatchery fish that have been released widely in the lower Columbia River. Fall Chinook from lower Columbia River hatcheries have been transferred freely from hatchery to hatchery [*does this still occur?*] and released throughout the lower Columbia Basin.

The current and historical importance of Chinook spawning in Coal Creek is unclear. Spawner surveys are conducted in Coal Creek sporadically as time and staffing permit. Very few Chinook (usually fewer than 20) are seen, and habitat is limited by an impassable waterfall. Nonetheless, WDFW biologists consider that fall Chinook spawning in Coal Creek would also be part of the Mill/Abernathy/Germany Creeks stock.

SPAWNING DISTRIBUTION: Most spawning in Mill Creek takes place from the mouth upstream to Mill Creek Bridge at RM 2. Spawning in Abernathy Creek takes from the creek mouth upstream to the Abernathy Creek Salmon Culture Technology Center at RM 3. Spawning in Germany Creek takes place from the creek mouth upstream to RM 3.5.

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

GENETIC ANALYSIS: Allozyme allele frequencies from Abernathy Creek Chinook spawners sampled in 1995, 1997 and 1998 were significantly different from other Columbia River Chinook, except Kalama hatchery fall Chinook (Myers et al. 2002). A sample of naturally-produced smolts taken in 1995 was not similar to a sample of hatchery fish from the Abernathy Creek Salmon Culture Technology Center (Anne Marshall, WDFW, personal communication). This result may be due to genetic drift because Abernathy hatchery Chinook have been found spawning in Abernathy Creek. The hatchery fish are derived largely from Spring Creek National Fish Hatchery Chinook. No genetic analysis has been done on fall Chinook in Mill Creek or Germany Creek.

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STOCK ORIGIN

This is a **mixed** stock with **composite** production. Fall Chinook that presently spawn in Mill, Abernathy and Germany creeks are probably a mixture of hatchery fish, and may include Abernathy Creek Salmon Culture Technology Center strays (Marshall 1995).

Based on life history and timing, Mill/Abernathy/Germany Creeks fall Chinook resemble tule fall Chinook stocks from further up the Columbia River such as White Salmon River and Wind tule fall Chinook more closely than neighboring lower Columbia tule fall stocks (Marshall 1995).