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FOR IMMEDIATE RELEASE
Mar. 3, 2008

Unfavorable Ocean Conditions Likely Cause of Low 2007 Salmon Returns Along West Coast

NOAA scientists are reviewing unusual environmental conditions in the Pacific Ocean as the likely culprit for the dramatically low returns of Chinook and coho salmon to rivers and streams along the West Coast of the United States in 2007.

Researchers from NOAA's Northwest and Southwest Fisheries Science Centers are comparing data on the low food production of the California Current in 2005 that occurred when this year's returning salmon would have been entering the ocean from their natal streams to feed and grow.

The cold waters of the California Current flow southward from the northern Pacific along the West Coast and are associated with upwelling, an ocean condition caused by winds that bring nutrients to the ocean's surface and is the main source of nourishment for the ocean's food web. In 2005 a southward shift in the jet stream, delayed favorable winds and upwelling for the California Current, which normally begins in spring. The winds instead arrived in mid-July, causing high surface water temperatures and very low nutrient production within the nearshore marine ecosystem.

"We are not dismissing other potential causes for this year's low salmon returns," said Usha Varanasi, NOAA Fisheries Service Science Center Director for the Northwest Region. "But the widespread pattern of low returns along the West Coast for two species of salmon indicates an environmental anomaly occurred in the California Current in 2005."

Data released Thursday by the Pacific Fisheries Management Council indicate the 2007 returns of fall Chinook salmon to the Sacramento River in California's Central Valley were approximately 33 percent of what fishery biologists expected. Projections for 2008 are substantially lower than last year's estimate.
[http://www.pcouncil.org/newsreleases/Feb_2008_Sacramento_News_Release.pdf]

Coho salmon returning to spawning streams in California and Oregon are also considerably lower than predicted. A preliminary analysis found an average 27 percent of the parental stock returning in 12 streams monitored in California. Even though coho returns appear to improve along the coast from south to north, Oregon Coast coho salmon had less than 30 percent of their parental stock return.

Coho salmon are listed as either endangered or threatened under the Endangered Species Act in the Central/Northern California and Southern Oregon watersheds.

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