diminished and are now composed largely of hatchery fish, although there may be small wild runs remaining in some tributaries (CDFG 1994). Of 396 streams within the range of this ESU identified as once having coho salmon runs, Brown et al. (1994) were able to find recent survey information on 117 (30 percent) streams. Of these 117 streams, 73 (64 percent) still supported coho salmon runs while 42 (36 percent) have lost their coho salmon runs. The streams identified as presently lacking coho salmon runs were all tributaries of the Klamath and Eel River systems (Brown et al. 1994). The rivers and tributaries in the California portion of this ESU were estimated to have average recent runs of 7,080 natural spawners and 17,156 hatchery returns, with 4,480 identified as ''native'' fish occurring in tributaries having little history of supplementation with non-native fish. In this region of California, Nehlsen et al. (1991) identified coho salmon in the Klamath River as of special concern, and those in small northern streams as at moderate risk of extinction. Higgins et al. (1992) identified 10 coho salmon stocks as of special concern, and 6 as at high risk of extinction.

While there are limited data to assess population numbers or trends in this ESU, NMFS has determined that all coho salmon stocks between Punta Gorda and Cape Blanco are depressed relative to their past abundance. The main stocks in this region (Rogue River, Klamath River, and Trinity River) are heavily influenced by hatcheries, apparently with little natural production in mainstem rivers. The apparent declines in production in these rivers, in conjunction with heavy hatchery production, suggest that the natural populations are not self-sustaining. The status of coho salmon stocks in most small coastal tributaries is not well known, but these populations are small. NMFS concludes that coho salmon in this ESU are presently threatened, i.e., the ESU is likely to become in danger of extinction in the foreseeable future if present trends continue. At least within the California portion of this ESU, NMFS believes that the NCCP conservation planning process described for the Central California Coast ESU is the best approach for developing and implementing a successful conservation and recovery strategy for coho salmon.

3. *Oregon coast*—NMFS bases its proposed listing of this ESU on the following types of information: Historical estimates of abundance, extensive spawner survey records (Cooney and Jacobs 1994), estimates of ocean harvest rates (PFMC 1993), and previous assessments of stock status. Based on historical commercial landing statistics and estimated exploitation rates, Mullen (1981) estimated escapement of coho salmon in coastal Oregon to be nearly 1 million fish in the early 1900's, with harvest of nearly 400,000 fish. In a more extensive analysis of similar data, Lichatowich (1989) concluded that coho salmon abundance in the same region at that time was about 1.4 million fish. Lichatowich also concluded that current production potential (based on stock-recruit models) for coho salmon in Oregon coastal rivers was about 800,000 fish, a reduction of nearly 50 percent in habitat capacity. Recent spawning escapement estimates indicate an average spawning escapement of less than 30,000 adults (Jacobs and Cooney 1991, 1992, 1993). While the methods of estimating total escapement are not comparable between the historical and recent periods, these numbers suggest that current abundance of coho salmon on the Oregon coast may be less than 5 percent of that in the early part of this century.

Kostow et al. (1994) provide estimates of hatchery composition of naturally-spawning coho salmon in several Oregon coastal rivers, ranging from 18 to 62 percent. These estimates are for rivers that are known to have high hatchery influence, so do not represent the average condition along the Oregon coast. However, these rivers represent a substantial portion of natural coho salmon production in Oregon, and indicate that hatchery fish have an extensive presence within the Oregon coastal ESU.

Based on NMFS's examination of the available information, it is apparent that spawning escapements for coho salmon populations in the Oregon coastal ESU have declined substantially during this century. Average spawner abundance has been relatively constant since the late 1970's, but pre-harvest abundance has declined. Spawner-to-spawner return ratios (based on peak counts) have been below replacement in 5 of the past 6 years, in spite of reductions in harvest, and average recruits-per-spawner may also be declining. Of the 43 Oregon coho salmon stocks north of Cape Blanco identified by Nickelson et al. (1992), 31 were considered as either depressed or special concern, and only 6 stocks were considered healthy (the remaining 6 stocks were listed as ''unknown''). In this same region, Nehlsen et al. (1991), classified two stocks (Sixes River and New River) to be at high risk of extinction and 14 stocks at moderate risk of extinction. The heavy hatchery influence on many rivers within this ESU is a cause for concern about the sustainability of natural production in these systems. Also, coastwide abundance of many stocks appears to be very low this year, and there has been a complete ban of most ocean fishing for coho salmon. For these reasons, NMFS concludes that coho salmon in the Oregon coast ESU are presently threatened.

4. *Lower Columbia River/southwest Washington coast*—A status review of lower Columbia River coho salmon stocks outside of the Willamette River Basin has been published by NMFS (Johnson et al. 1991). NMFS concluded that, historically, at least one ESU of coho salmon probably occurred in the lower Columbia River Basin, but the agency was unable to identify any remaining natural populations that warranted protection under the ESA. The information considered in this earlier status review is not repeated here. Based on its present status review, NMFS has determined that the range of the historic ESU probably extended beyond the lower Columbia River to include coho salmon populations from the southwest Washington coast and the Willamette River below Willamette Falls (including the Clackamas River). However, the relationship of natural populations of coho salmon in these two areas to the historic ESU is uncertain.

Several recent reports have evaluated the status of coho salmon in the Columbia River Basin. Nehlsen et al. (1991) classified all coho salmon stocks above Bonneville Dam (except Hood River) as extinct; Hood River, Sandy River, and all other lower Columbia tributary stocks were classified as at high risk of extinction, except the Clackamas River stock, which was classified as at moderate risk of extinction. The historic ESU also included populations in portions of the southwest Washington coast. Nehlsen et al (1991) identified coho salmon stocks in Willapa Bay as at high risk of extinction. WDF et al. (1993) identified the Willapa Bay stocks as of unknown status, but of mixed origin and composite production; they identified all stocks in Grays Harbor tributaries as healthy, but of mixed origin and composite production.

The largest production of coho salmon along the southwest Washington coast is in the Chehalis River Basin. Hiss and Knudsen (1993) estimated that current coho salmon run sizes (before terminal harvest) in this basin (including the Humptulips River) total about 266,000 adults, of which 135,000 are naturally-produced and 131,000 are of hatchery origin. They noted that hatchery influence on these runs has