1994 Ocean Salmon Fisheries.'' In particular, the predictor for the OCN river component did not adequately incorporate environmental variability. Therefore, an environment-based model used to predict abundance in 1994 is again being used in 1995. This model incorporates upwelling and sea surface temperatures by year, but its long-term usefulness is doubtful, because it does not take into account the number of spawners. Future use of this model will be evaluated before the 1996 season. The 1995 OPI is forecast to be 443,000 coho, 85 percent above the 1994 preseason forecast of 239,700 coho, and 30 percent above the 1994 observed level of 341,000 fish. The 1995 estimate includes one of the lowest on record for OCN coho: 219,000 fish, 61 percent above the record low abundance of 136,200 OCN fish observed in 1994. The 1994 spawning escapement of the OCN stock was 133,300 fish.

All Washington coastal natural coho stocks and Puget Sound combined natural coho stocks are expected to be more abundant in 1995 than forecast in 1994. Abundances for Washington coastal stocks of Hoh, Queets, and Grays Harbor natural coho are projected to be 36 percent, 75 percent, and 70–92 percent above the 1994 preseason predictions, respectively. Abundances for Puget Sound stocks of Skagit, Stillaguamish, and Hood Canal natural coho are projected to be 66 percent, more than 3 times, and 43 percent above the 1994 preseason predictions, respectively. Despite increased abundance, many natural coho run sizes are forecast to be well below maximum sustainable yield (MSY) spawning escapement goals. Abundance forecasts for coho hatchery production are well above 1994 expectations for most Washington coastal stocks and 10 percent below the 1994 forecast for Puget Sound combined stocks.

Coho populations in California have not been monitored closely nor have they been a controlling factor in establishing ocean salmon management measures in the past. Although no forecast of the ocean abundance of coho originating from California are available, these runs have been generally at low abundance levels for several years. Concern for California coho has prompted petitions to list these runs under the ESA and a formal review of their status has confirmed that concern is well founded. NMFS is considering the results of the status review and may soon propose to list appropriate groups of coho stocks in California as well as elsewhere on the coast.

Pink Salmon Stocks

Major pink salmon runs return to the Fraser River and Puget Sound only in odd-numbered years. In 1995, abundance expectations are for 20 million Fraser River pink salmon and 3.4 million Puget Sound pink salmon.

Management Measures for 1995

The Council adopted allowable ocean harvest levels and management measures for 1995 that are designed to apportion the burden of protecting the weak stocks discussed above equitably among ocean fisheries and to allow maximum harvest of natural and hatchery runs surplus to inside fishery and spawning needs. The management measures below reflect the Council's recommendations.

A. South of Cape Falcon

In the area south of Cape Falcon, the management measures in this rule are based primarily on concerns for Klamath River fall chinook, Sacramento River winter chinook, and California and OCN coho stocks.

The low abundance of Klamath River fall chinook resulted in restrictive fishing seasons in the area between Humbug Mountain, OR, and Horse Mountain, CA, termed the Klamath management zone (KMZ), as well as in the areas adjacent to the KMZ. The Council recommended measures that equally distribute Klamath River fall chinook impacts north and south of the KMZ and provide for a target ocean exploitation rate on age-4 Klamath fall chinook of 9 percent. This level of ocean harvest is intended to provide equal sharing of the harvest of Klamath River fall chinook between the Klamath River Indian Tribes and non-Indian fishers, as well as meet the spawning escapement floor of 35,000 natural adult spawners.

Sacramento River winter-run chinook are listed as an endangered species under the ESA. In 1991, NMFS concluded a formal consultation regarding the impacts of the ocean salmon fishing regulations on the winter run. The biological opinion issued from that consultation concluded that the 1990 level of incidental harvest by ocean fisheries should allow the recovery of the winter-run. NMFS recommended shortening the recreational fishing season off central California and closure of an area at the mouth of San Francisco Bay during the time when the winter-run are entering the Bay. These recommended conservation measures were implemented in 1991 and remain a part of the salmon management measures for 1995. NMFS also recommended reducing ocean impacts on winter-run chinook from their 1990 levels. The overall impact of the 1995 salmon management program on the winter-run is expected to be less than in 1990, the base year for the biological opinion. This expectation is based on the ocean exploitation index model for the Central Valley Index stocks of fall chinook, which predicts an ocean exploitation index of 0.72 in 1995 as compared to 0.79 in 1990. These indices only indicate the relative impact on the winter-run, because these fish are less vulnerable to the ocean fisheries than fall-run chinook due to the timing of the seasons as well as their growth and migration patterns.

Since 1991, all hatchery-reared Sacramento River winter chinook have been tagged. Based on ocean recoveries of tagged winter chinook, it is estimated that approximately 100 hatchery produced winter chinook were taken in the 1994 sport and commercial harvests. There are no estimates of the ocean abundance of either hatchery or wild winter-run chinook, nor are there estimates of the numbers of wild winter-run chinook taken by ocean fisheries. As a result, it is not possible to assess what fraction of the total winter-run chinook population the estimated 100 hatchery-reared adults taken in ocean fisheries represent. NMFS intends to reinitiate consultation prior to next year's seasons under section 7 of the ESA to determine whether further steps are necessary to reduce overall mortality of the stock.

The 1995 abundance estimate for OCN coho is a near-record low of 219,000 fish. At this abundance level, the FMP only allows up to a 20 percent incidental exploitation rate that would result in a spawner escapement of 35 adults per mile on standard index surveys. The 1995 management measures result in a total OCN coho exploitation rate of 12 percent, of which 5 percent are impacts associated with non-Council fisheries (Canadian, Alaskan, and inside fisheries). At this exploitation rate, the expected spawner escapement is 38 adults per mile on standard index surveys—less than the spawning escapement goal of 42 adults per mile. There is also ongoing concern for specific individual stocks within the OCN complex, given the disproportionate geographic distribution of OCN coho spawners. The Council's recommendations include time and area closures, and gear restrictions intended to minimize incidental fishing contact with OCN coho and subsequent hook-and-release mortality while allowing access to harvestable stocks of chinook salmon.