CONTRIBUTION OF WILD AND HATCHERY-REARED COHO SALMON, *ONCORHYNCHUS KISUTCH*, TO THE OREGON OCEAN SPORT FISHERY

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ABSTRACT

Eight scale characters of known hatchery and wild coho salmon, *Oncorhynchus kisutch*, were compared, and a linear discriminant function was used to determine whether hatchery and wild adult coho [illegible] on the basis of scale characteristics. Attempted separation was

rivers (Berry[6]; Cummings see footnote 5). The escapement of wild fish is also declining in the lower Columbia River (Oregon Department of Fish and Wildlife and Washington Department of Fisheries 1976).

Management agencies do not know how many wild fish are caught in Oregon's troll and sport

ings. We obtained scales from 178 adipose clipped salmon and from 2,054 unmarked salmon (Table 1).

Because few wild fish were available, we had to use wild fish of several different brood years to increase our sample. Geographic location, brood year, and number of scale samples used in the

TABLE 3.—Description of scale characters measured or counted [illegible] and wild coho salmon. All

axis. The two solid outer lines then enclosed a [illegible] area. Within this area, we counted

sured from scales from 2,054 unmarked coho salmon (Table 1). In all scale readings only scales

marked hatchery fish to find the total number of hatchery fish caught in that stratum (Table 5).

Fewer than 0.5% of the fish were age 2.1, and the scales indicated that the fish grew slowly in their first year of life.[8] These scales were assumed to be from wild fish.

Wild and hatchery fish were assumed to have similar numbers of regenerated scales, most of which were regrown because of scale loss during freshwater rearing. If wild fish tend to lose more from unmarked fish for several strata, we combined 2-wk periods for a given port where necessary to obtain a sample of at least 50 fish. Small sample sizes necessitated combining samples for Brookings and Gold Beach.

The observed percentage of hatchery coho salmon in the unmarked sample was corrected for wild fish incorrectly classified as hatchery fish, and

and 63 at Brookings/Gold Beach. An estimated 75% of all coho salmon landed by the entire sport fishery from mid-June to mid-September 1977 originated from hatchery releases. Percentages of hatchery coho salmon by port and period, along with confidence intervals, are shown in Table 6.

Since the sport fishery is mainly composed of private and charter boats on day-long trips, our estimated percentages of hatchery and wild fish by port probably reflect fairly well the actual percentages occurring near each port, assuming similar Winchester Bay (Table 6). Late in the season, hatchery fish may be proportionately less abundant along the south and central coast, since most Columbia River fish would have moved northward by this time, leaving mostly coastal hatchery and wild fish contributing to the south and central coast fisheries. The lowest percentage of hatchery fish noted was 49.7 at Winchester Bay, from 1 August to 15 September.

Another possible factor contributing to lower percentage of hatchery coho salmon in the fishery

fish intermingle extensively with wild fish, it will be difficult to protect wild stocks while maintaining high rates of harvest of hatchery fish in the

fering valuable comments; Robert Mullin, Robert McQueen, and District Biologists of the Oregon Department of Fish and Wildlife for providing the

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