



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
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May 22, 1991 F/SWC3:JEH

MEMORANDUM FOR: F/AFSC – Richard D. Methot
FROM: F/SWC3 – Joseph E. Hightower
SUBJECT: Update of widow rockfish assessment

As we discussed previously, a full assessment for widow rockfish is planned for 1992. For this year, I have compiled the 1990 landings data provided by the three state agencies, and compared the 1990 catch age composition to that observed in previous years and predicted by the stock synthesis model in last year's assessment. Results in this update are generally summarized for the two areas (VAN-COL – Vancouver and Columbia; EUR-CON – Eureka, Monterey, and Conception) used in the 1990 assessment.

Landings in 1990 (11,430 t) substantially exceeded both the 1990 ABC (8,900 t) and OY (9,800 – 10,000 t). The distribution of landings by area (Table 1, Figure 1) was similar to prior years, although landings continued to decrease in the northern COL area and increase in the VAN area.

The age composition of 1990 landings is consistent with patterns from previous years (Figure 2). In the VAN-COL area, the 1981 year class continues to dominate the landings, with 1982–1985 year classes appearing to be, at most, average in size. In the EUR-CON area, the 1984 year class appears to be quite strong, in agreement with data from 1988 and 1989, and the 1982–1983 year classes appear to be weak. The true strength of the 1984 year class remains uncertain, however, because of its apparent average size in VAN-COL catches. Younger fish (ages 5–8) tend to be selected more strongly in VAN-COL than EUR-CON landings, and other strong year classes (e.g. 1977, 1978, 1980, 1981) have first been identified in VAN-COL landings.

The predicted age composition of 1990 landings from the most recent assessment was generally similar to the observed composition in the EUR-CON area, except that the oldest fish (age 20+) were considerably less common than expected (Figure 3). It is worth noting, however, that the EUR-CON area only contributes about 20% of total landings in recent years (Table 1). Within the VAN-COL area, the observed strength of the 1984 year class was much lower than expected, whereas the relative frequency of the 1979–1983 year classes was higher than expected. There are several possible explanations for these differences, including: (1) differences in year class strength between the VAN-COL and EUR-CON areas, changes in selectivity patterns over time, and ageing error. It may be appropriate to give greater weight to the VAN-COL data in subsequent assessments because of its contribution to total landings.

There is no clear indication from the 1990 data that the most recent assessment was in error, and Bill Lenarz and I support maintaining the current ABC (7,000 t) for 1992. Even if next year's assessment can be refined to improve the fit to the area-specific age composition data, estimates of current abundance will continue to be highly uncertain because of the lack of auxiliary data. There is some possibility of a pilot hydroacoustic survey for widow rockfish,



following the completion of the Pacific whiting survey next year. I recommend that the Groundfish Management Team support pilot surveys using any promising approaches (e.g., hydroacoustic, ROVs, longline) that might provide indices of abundance for west coast Sebastes spp. Given the current absence of reliable survey data, an index of either relative or absolute abundance should greatly improve our assessment capabilities.

copy: W. Lenarz (SWFC3)

Table 1. Landings (mt) of widow rockfish by area and year for 1979-1990.

Area	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
INPFC Van.	329	143	1991	3969	1596	594	446	557	501	272	700	1435
N. Col.	432	9426	7969	4625	2490	2086	2128	3508	6603	4222	4534	2530
S. Col.	1894	5781	12301	6929	2129	3747	2993	2662	2689	3589	4822	5382
INPFC Col.	2326	15207	20270	11554	4619	5833	5120	6170	9292	7811	9356	7912
INPFC Eur.	2166	4736	3430	3993	2442	2256	2313	1632	1598	1340	1323	1145
INPFC Mon.	120	304	2000	6997	1554	988	977	971	799	535	627	938
-Con.												
Total	4941	20390	27691	26513	10211	9671	8856	9329	12190	9958	12006	11430

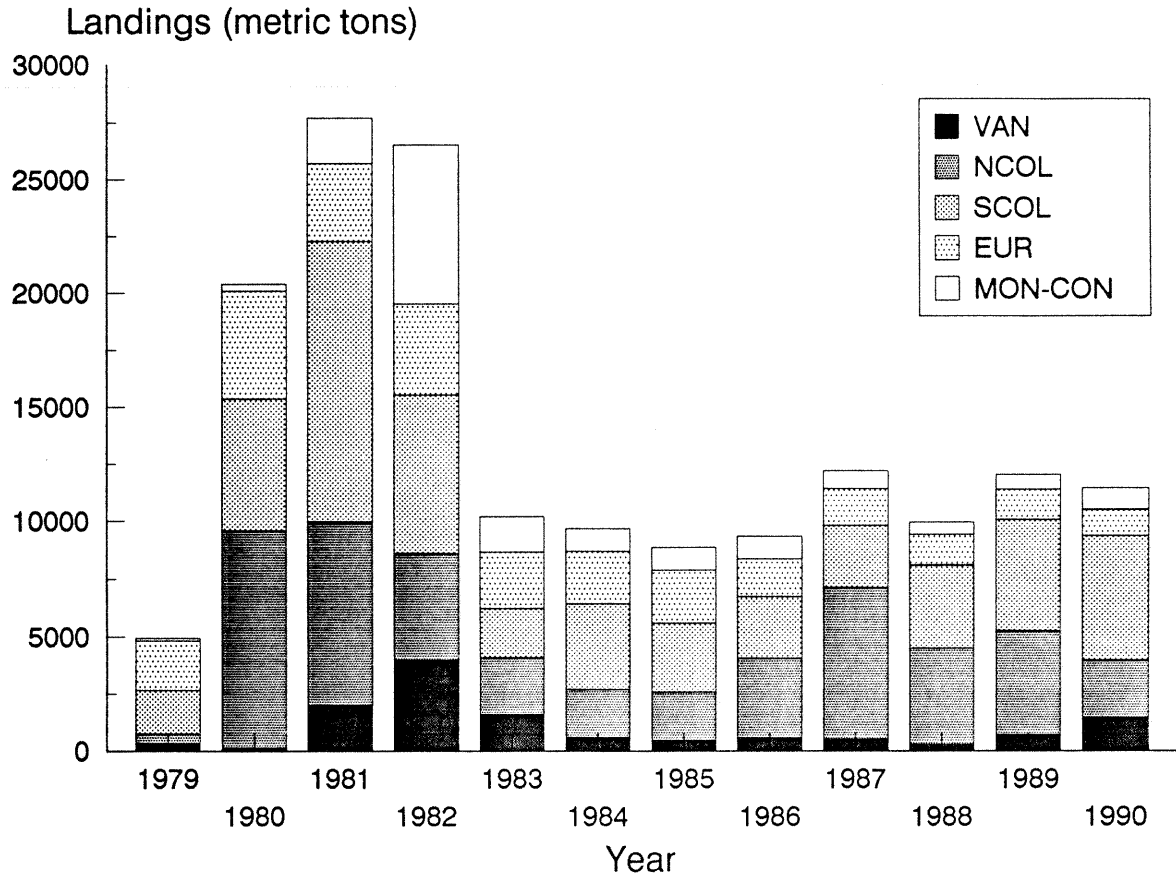


Figure 1. Landings (t) of widow rockfish for the Vancouver (VAN), northern and southern Columbia (NCOL, SCOL), Eureka (EUR), and Monterey-Conception (MON-CON) INPFC areas from 1979 to 1990.

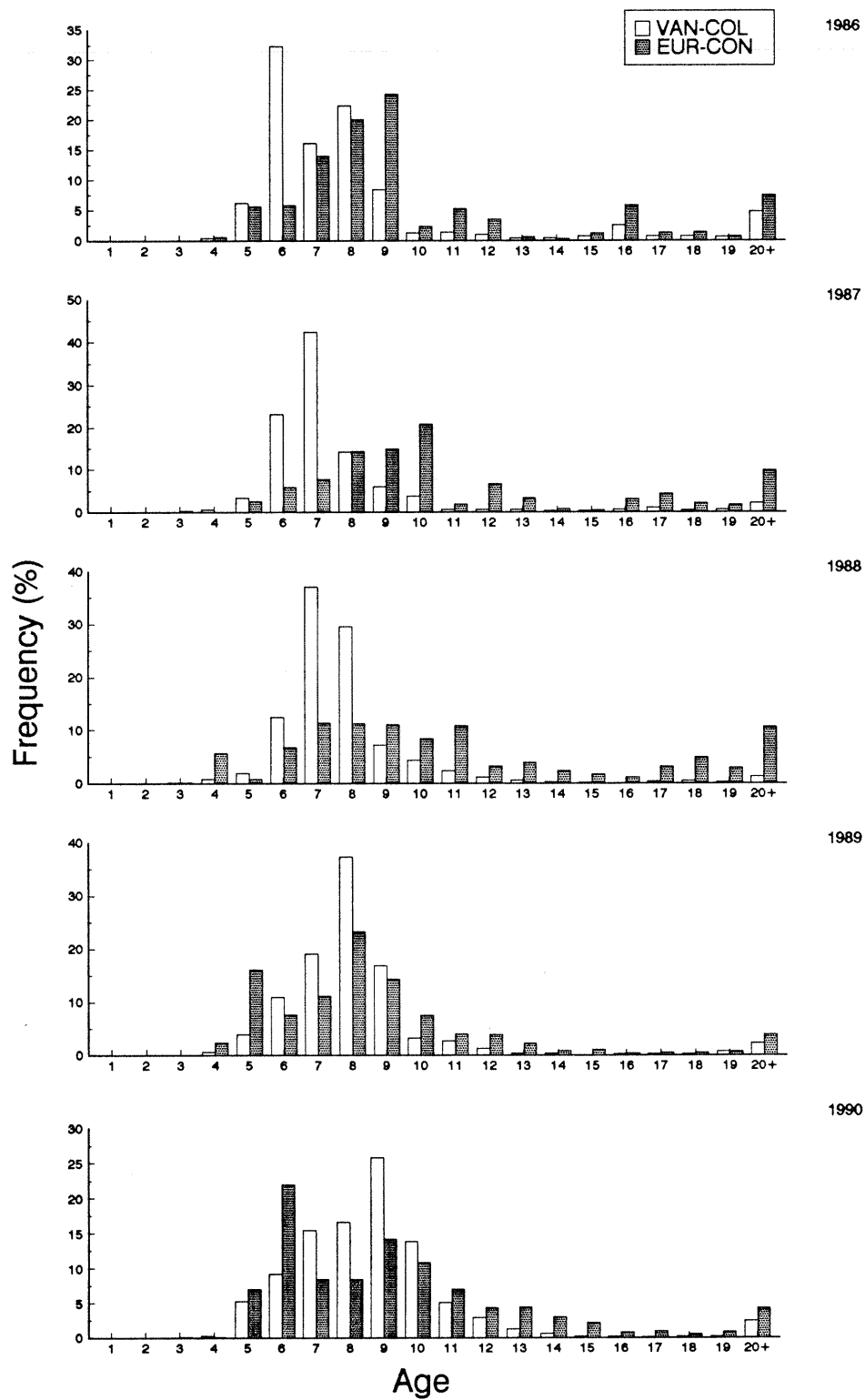


Figure 2. Age composition of 1986–1990 widow rockfish landings for the VAN–COL and EUR–CON areas treated as separate fisheries in the most recent stock assessment.

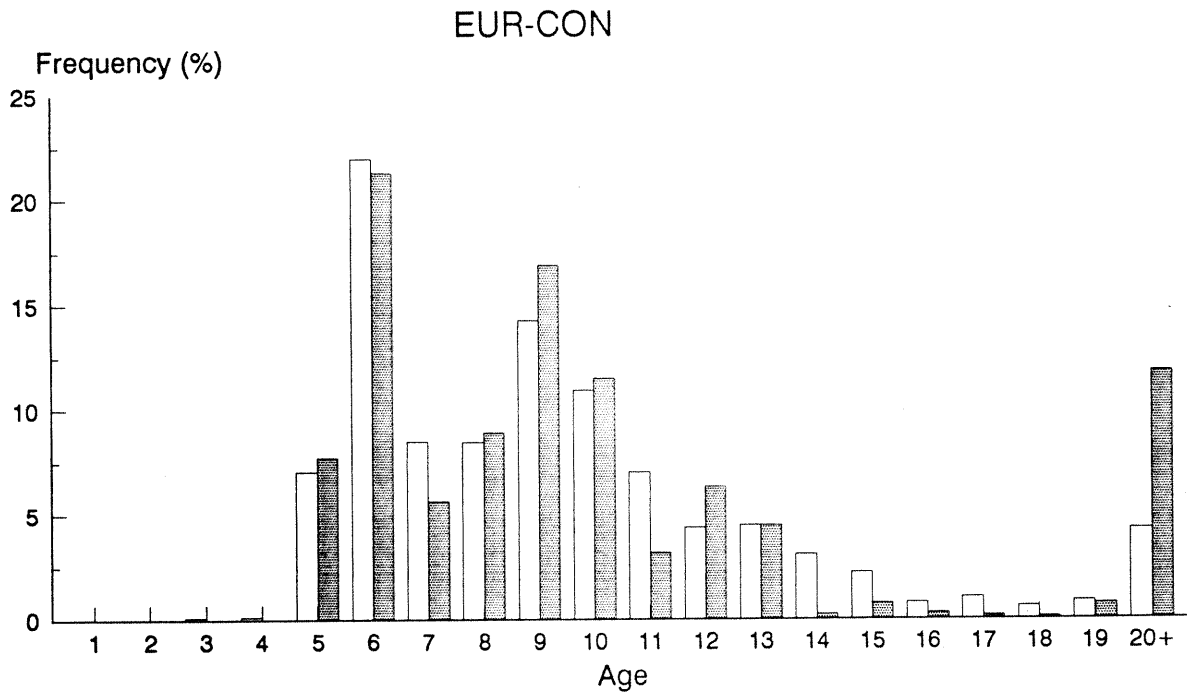
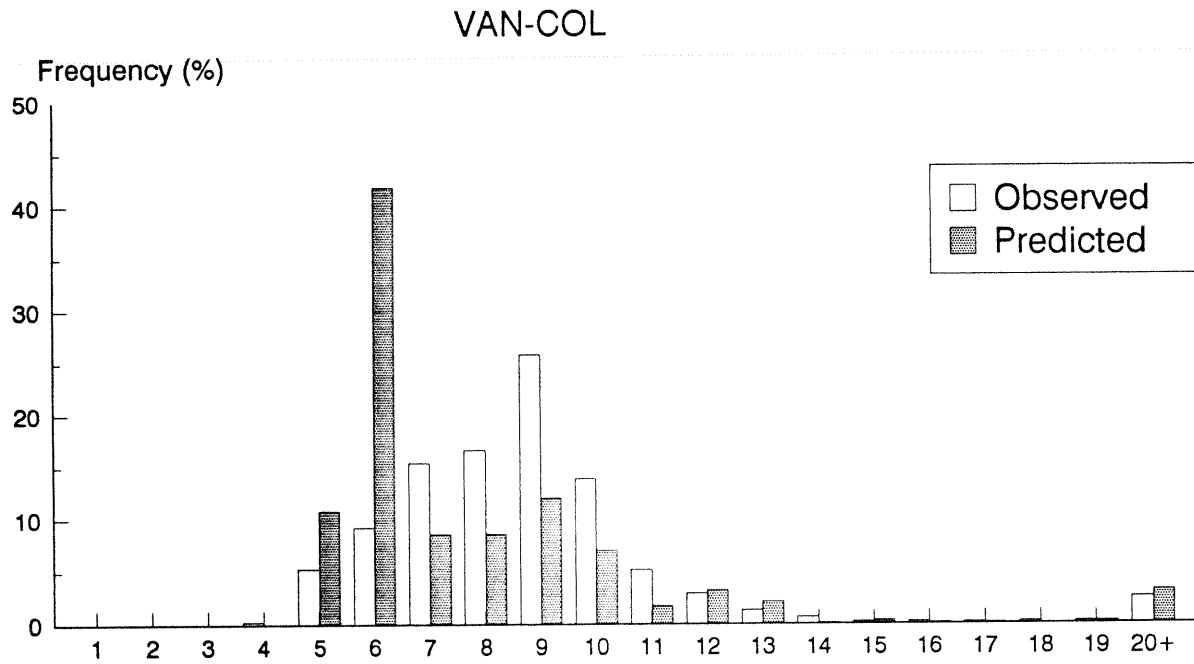


Figure 3. Age composition of 1990 landings for the VAN-COL and EUR-CON areas and predicted values using the stock synthesis model from the most recent assessment.