



APPENDIX D
BOCACCIO

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Science Center
Tiburon Laboratory
3150 Paradise Drive
Tiburon, California 94920

May 10, 1991 F/SWC3:JRB

MEMORANDUM FOR: F/AFSC: Rick Methot
FROM: James R. Bence *JRB*
SUBJECT: Bocaccio

Although we are not conducting a full assessment of bocaccio this year I have compiled some information that may be useful to the groundfish team and the council. I have reviewed new length distribution data and it appears that this information is consistent with the previous assessment. With only another year of trawl data, and no new auxiliary data, a full assessment at this point in time does not seem warranted. As I am sure you are aware, the information content in just one year of fishery length composition data is not high, and a substantial change in the size of the assessed stock is not to be expected unless we also change our assumptions. Also, as I explain below, fish in the recent year classes that might change our perception of the stock's status are still too young (small) to have a substantial impact on the current reproductive potential of the stock.

Attached are length distribution data for trawl-caught bocaccio in 1990, and for trawl-caught bocaccio in 1986, and information on how the maturity and fecundity of female bocaccio increases with length.

In the 1990 assessment we estimated the 1988 year class to be of moderate size and somewhat larger than the 1987 year class, both of which were estimated to be substantially smaller in magnitude than the 1984 year class. The 1984 year class was, in turn, estimated to be substantially smaller than the 1977 year class. The 1990 trawl data are consistent with the assessment. The 1990 data show a distinct mode at about 40 cm corresponding to the expected lengths of 2-3 year old fish. This mode does not completely dominate the length composition of the catch, with a substantial fraction of the catch apparently still coming from the 1984 year class. In contrast, in 1986, the length distribution of the trawl catch was dominated by fish from a mode at about 40 cm, which was skewed somewhat toward the left (smaller fish). The 1986 length distribution data reflect the recruitment of the 1984 year class. There is no signal in these data suggesting that the 1990 assessment was in error and that the 1988 year class is an exceptionally large one.

It is also worth noting that 50% maturity of females is at 48 cm total length and that females less than 50 cm have small brood sizes (see attached figures). As a consequence, fecundity (the product of probability of being mature and brood size) is quite low for fish less than 50 cm and increases approximately with weight after this point. Thus, even if the 1988 year class were quite strong it would have little influence on the spawning capacity of the stock this year. This is important because our assessment of the current status of the stock is



based on the stock's reproductive capacity as a percentage of its virgin capacity. Even an influx of large numbers of fish less than 40 cm will have little impact on this capacity.

Based on the facts reviewed above, I recommend status quo for the upcoming year. I expect to be working on a full assessment for the 1992 cycle.

For your information, 1990 reported landings (from ComCal) were 1374 mt (trawl) and 195 mt (set net). These landings are approximately the same as we have seen in last few years, and substantially below peak landings in the early 1980's. There was no NMFS west coast recreational survey in either 1990 or 1991. John Witzig (NMFS DC) indicated that there may be a survey in 1992.



