

FOCI Recruitment Prediction - Fall 1992

FOCI made predictions in Fall 1992 for the 1989, 1990, 1991 and 1992 year classes of walleye pollock recruiting to the Shelikof Strait fishery. The preliminary prediction scheme used objective statistical analyses of spawner-recruit data and the FOCI-extended recruitment time series. Predictions were modified subjectively by researchers' knowledge of the environment. FOCI's predictions helped the Resource Ecology and Fisheries Management (REFM) division of NOAA's Alaska Fisheries Science Center define recruitment scenarios for the stock projection model. Analysis of stock projections and catch scenarios results in fishing quota recommendations to the North Pacific Fishery Management Council.

FOCI's predictions for year-class recruitment to the Shelikof Strait fishery were

1989 - weak

1990 - weak to average (modified to weak by REFM based on hydroacoustic survey)

1991 - weak (modified to weak or average by REFM based on hydroacoustic survey)

1992 - strong (downgraded to average by REFM for conservation)

FOCI's predictions of weak 1991 and strong 1992 year classes are supported by analyses of sea-bird diet and the character of the local ocean circulation.

These predictions defined the two recruitment scenarios that REFM used for its stock projection model: weak, weak, weak; and weak, average, average for the 1990, 1991 and 1992 year classes, respectively.

Incorporation of physical environmental data into the prediction scheme will begin in Fall 1993 with completion of FOCI's data base. Initial research examining relationships between recruitment and wind mixing, volume transport, freshwater input, air and sea temperature, sea-ice extent, climate indices, and other variables has indicated candidate mechanisms, such as large-scale atmospheric circulation, affecting recruitment.