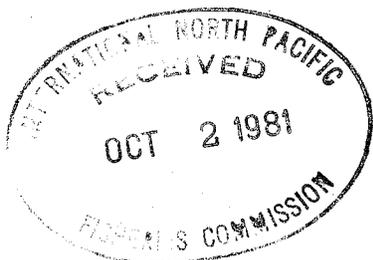


1981 U.S. RESEARCH SURVEYS AND RESEARCH PLANS

FOR 1982 IN THE EASTERN BERING SEA

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1981 U.S. Research Surveys and Research Plans
for 1982 in the Eastern Bering Sea

by T. Sample*

1. Research Activities in the Eastern Bering Sea During 1981

(a) Cooperative NWAFC-IPHC Pacific Halibut - Groundfish Survey

In February 1981 a trawl survey to examine Pacific halibut distribution and abundance in mid-winter was conducted by the Northwest and Alaska Fisheries Center in conjunction with the International Pacific Halibut Commission (IPHC). The survey area was generally restricted to the slope and shelf region between Unimak Pass and the Pribilof Islands in the southeastern Bering Sea and was conducted by the NOAA research vessel MILLER FREEMAN.

A total of 60 demersal trawl hauls were successfully completed. Catch information including species composition by weight and number, size composition on selected species of fish and crab, age structures, and other pertinent biological data was collected at each haul. A total of 237 Pacific halibut were tagged and released for subsequent movement and recapture studies. Tissue and organ samples were retained from 60 halibut for biochemical racial studies. Catch data from this survey have been related to information obtained during summer surveys for examining seasonal changes in species composition and distribution.

(b) Eastern Bering Sea Crab/Groundfish Survey

The Bering Sea crab/groundfish survey was conducted during May-August 1981. The primary purpose of this survey was to assess the distribution and

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abundance of commercially important fish and shellfish stocks. This was a continuation of the annual series of eastern Bering Sea crab/groundfish assessment surveys. The area examined extended from approximately 60°N and 175°W, south along the 100 fathom contour, and east to the mainland.

This was a cooperative U.S.-Japan research program conducted by 2 U.S. vessels, the NOAA research vessel CHAPMAN and the chartered University of Washington research vessel ALASKA, and the Japanese research vessel RYOAN MARU No. 31. The U.S. vessels sampled the waters of the continental shelf with the Japanese vessel primarily sampling the deeper waters of the slope region.

The CHAPMAN and the ALASKA successfully completed 370 demersal trawl hauls including 76 comparative side by side trawls. The CHAPMAN conducted an additional 22 comparative tows with the Japanese research vessel RYOAN MARU No. 31. Information obtained from the comparative exercises will be used to determine relative fishing power coefficients between research vessels and the standardization of a common data base. Thirty-six opportunistic hauls were completed for the purpose of obtaining additional biological samples and the examination of potential Pacific ocean perch index sites.

The catch at each survey station was sorted, weighed, and counted by species. Length frequencies, age structures, and other biological data were collected from fish species of interest. Length/width measurements, shell condition, clutch size, and egg condition were recorded for selected crab species. Over 2,000 Pacific cod stomachs were collected and preserved for subsequent food habit studies. A limited number of ichthyoplankton samples were also collected and preserved for laboratory identification and analysis by scientists at the University of Washington.

(c) Eastern Bering Sea Pinniped Survey

In September-October 1981 the NOAA research vessel MILLER FREEMAN will conduct a pinniped food habit study in the area of the southeastern Bering Sea between Unimak Pass and the Pribilof Islands. The primary objective of this study is to compare stomach content of the northern sea lion and the northern fur seal to the species composition and relative abundance of finfish in the feeding areas. Both pelagic and demersal sampling gear will be used. Catch information including species composition, weights and number by species, and other biological information collected on selected species will be recorded from each haul.

(d) Bering Sea Herring Cruise

In October 1981 the NOAA research vessel MILLER FREEMAN will conduct a demersal/pelagic herring resource survey. The primary purpose of this survey is to assess the herring population of the eastern Bering Sea and collect related biological information. The area encompassed by the survey region will extend north from Unimak Pass on the continental shelf to approximately 62°N and east to the mainland and outer Bristol Bay. Species composition by weight and number, size composition, etc. will be recorded for each trawl catch. Trawling operations will be conducted on a 24-hour basis.

2. Research Activities Planned in the Eastern Bering Sea During 1982

Two resource assessment surveys are tentatively scheduled for 1982. However, at this time, survey plans and vessel schedules have not been finalized.

(a) Hydroacoustical Survey of Spawning Pollock in the Aleutian Basin

A hydroacoustic survey to observe spawning walleye pollock concentrations on the outer shelf and slope of the southeast Bering Sea will be conducted by the NOAA research vessel CHAPMAN in March-April 1982. This will be a cooperative survey with Japan which will examine the pelagic pollock in the Aleutian

Basin. The Japanese portion of the survey is scheduled to begin in January and be concluded by March. Since the spawning period of pollock in the Bering Sea extends beyond March, the U.S. vessel will continue to monitor the pollock stocks through April.

(b) Summer Triennial Eastern Bering Sea Crab/Groundfish Survey

The extensive triennial eastern Bering Sea crab/groundfish survey will be conducted during May-August 1981. This will be a cooperative research effort with Japan. The primary objectives of this survey are:

1. to provide a continuing annual assessment of crab and groundfish resources of the eastern Bering Sea;
2. to study long-term changes in the demersal fish and invertebrate community of the eastern Bering Sea by relating the results of the 1982 survey to the results of the large-scale 1979 and 1975 surveys and to planned future large-scale surveys at three-year intervals; and
3. to hydroacoustically assess the abundance and distribution of pelagic pollock concentrations; and
4. to measure water temperature and other selected oceanographic parameters which may affect the abundance and distribution of fish and crab.

The survey area will extend from Unimak Pass and the Alaska Peninsula north to the latitude of St. Lawrence Island and from nearshore waters of the Alaskan coast to depths of 600 fm on the continental slope. The study area may be extended northward to encompass the region of Norton Sound. The United States initially plans to have three research vessels available for this survey, and Japan anticipates at least one Japanese vessel will participate. Biological information will be collected on selected species of fish and crab.