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**RESEARCH PLAN FOR THE UNITED STATES CRUISE IN THE  
EASTERN BERING SEA JULY, 1999**

by

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## ABSTRACT

A research cruise to study distribution and migration of Bristol Bay juvenile sockeye salmon along the coastal waters of the eastern Bering Sea during July 12 – 26, 1999 is described. Primary objectives of the cruise are: to determine the extent of seaward migrations of Bristol Bay juvenile sockeye salmon; and to describe the physical environment of coastal waters used by migrating juvenile sockeye salmon as they leave Bristol Bay.

The cruise will begin in Dutch Harbor, Alaska on July 12 and end in Dutch Harbor on July 26 (Table 1). Sampling will begin at Cape Cheerful on Unalaska Island; transects will be perpendicular to shore, 30 nautical miles apart, and will be at least 60 nautical miles in length (Figure 1). The first trawl station for each transect will begin as nearshore as possible with the second trawl station starting at ten nautical miles from shore. The remaining trawl stations will be located every ten nautical miles, thereafter, to at least 60 nautical miles or further if juvenile salmon are still present. Trawl gear will be deployed for 15 or 30 minutes at each station (depending on salmon density) and then retrieved.

The cruise will be conducted aboard the contracted fishing vessel (F/V) *Great Pacific*. The vessel is a 38-m stern trawler with a main engine of 1450 horsepower and a cruising speed of 10 kts. Fish samples will be collected using a midwater rope trawl, which is 198 m long, has hexagonal mesh in wings and body, and has a 1.2-cm mesh liner in the codend. The rope trawl is towed at 5 kts, at or near surface, and has a typical spread of 52 m horizontally and 18 m vertically.

Salmon and other fishes will be sorted by species and counted. Standard biological measurements including fork length, body weight, and sex as well as scale samples from the preferred area will be taken from subsamples of all salmon species. All other fish species will be counted and subsamples frozen for later laboratory analyses.

Oceanographic data will be collected at each trawl station. Depth profiles of salinity and temperature will be taken from surface to near bottom depths at each trawl station using a conductivity, temperature, and depth (CTD) meter. Plankton samples will be collected at each trawl station using double oblique bongo tows taken to near bottom depths using a 60-cm diameter frame with 505 and 333 micron mesh nets.

Table 1. Proposed cruise itinerary for July 1999 research cruise.

| Date    | Location/Activity  |
|---------|--|
| 12-July | Depart Dutch Harbor, run to Cape Cheerful and begin sampling |
| 14-July | Begin sampling next transect, 30 nmi east                    |
| 15-July | Begin sampling next transect, 30 nmi east                    |
| 16-July | Begin sampling next transect, 30 nmi east                    |
| 17-July | Begin sampling next transect, 30 nmi east                    |
| 18-July | Begin sampling next transect, 30 nmi east                    |
| 19-July | Begin sampling next transect, 30 nmi east                    |
| 20-July | Begin sampling next transect, 30 nmi east                    |
| 21-July | Begin sampling next transect, 30 nmi east                    |
| 22-July | Begin sampling next transect, 30 nmi east                    |
| 23-July | Begin sampling next transect, 30 nmi east                    |
| 24-July | Underway enroute Dutch Harbor                                |
| 25-July | Arrive Dutch Harbor, begin offloading samples and gear       |
| 26-July | Disembark scientists   |

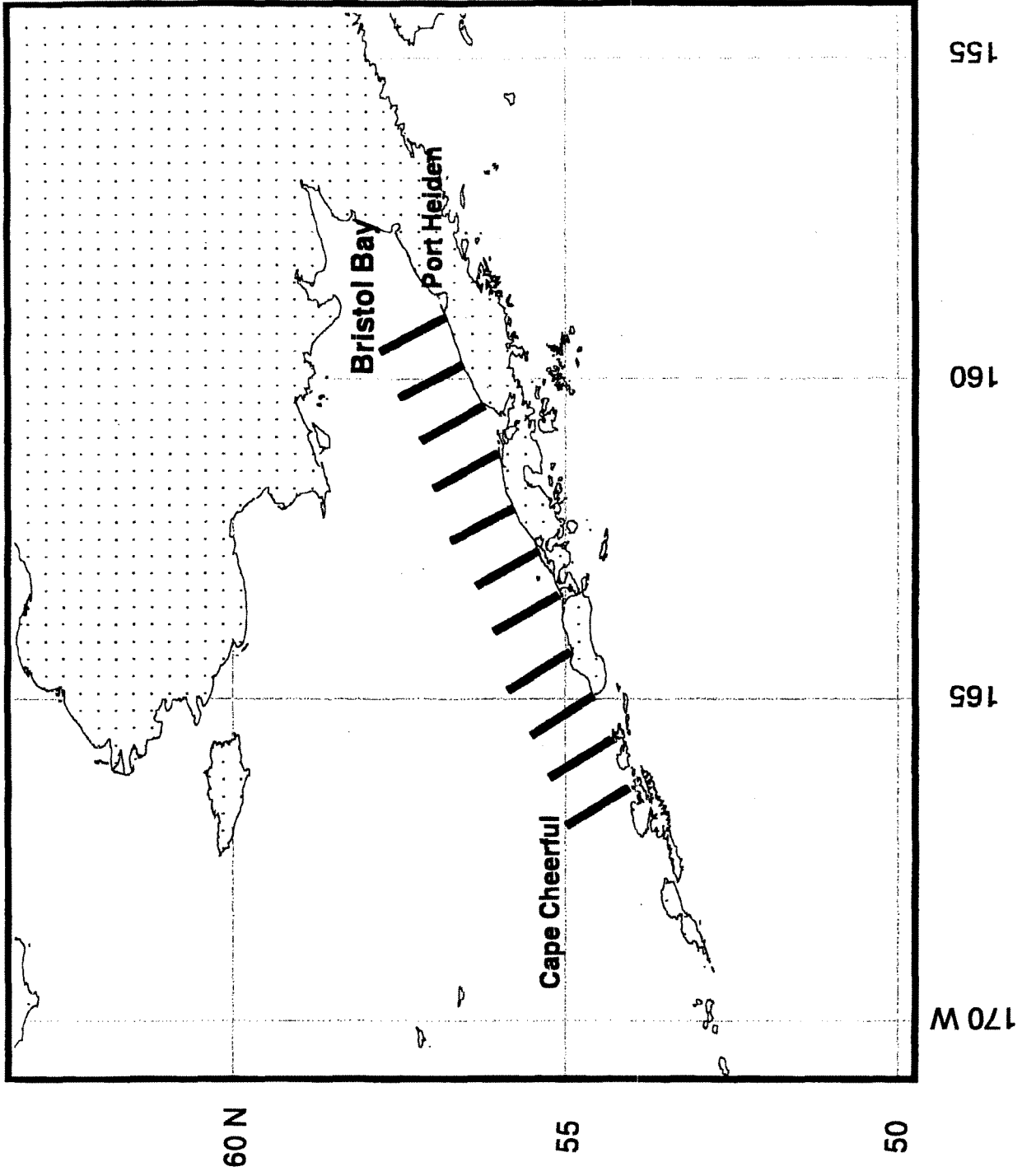


Figure 1. Planned transects for July 1999 research cruise.