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United States National Cruise Plan for the NOAA Ship Oscar Dyson in the Chukchi Sea and eastern Bering Sea shelf, September, 2007

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Introduction

Scientists from the National Marine Fisheries Service (NMFS), Ocean Carrying Capacity (OCC) program will conduct a survey during Fall 2007 within the Chukchi Sea and eastern Bering Sea to provide key ecological data on the pelagic ecosystem and salmon stocks during their juvenile and immature life-history stage. Primary objectives of the survey will be to: 1) collect biological information on salmon and other ecologically important species, 2) describe the physical environment of the Chukchi Sea and eastern Bering Sea waters, 3) conduct diel trawling experiments, and 4) tag salmon with data storage tags.

Survey

The survey will begin 2 September 2007 in Dutch Harbor, Alaska and end on 29 September 2007 in Dutch Harbor, for a total of 29 sea days (Fig. 1; Table 1). Participating scientists are listed in Table 2.

The cruise will be conducted aboard the NOAA ship *Oscar Dyson*. Fish samples will be collected using a midwater rope trawl, models 400/580, made by Cantrawl Pacific Limited[1] of Richmond, B.C., Canada. The net is approximately 198 m long, has hexagonal mesh in wings and body, and a 1.2-cm mesh liner in the codend. The 400/580 has a typical spread of 50 m horizontally and 18 m vertically. At each station, the net will be towed at or near the surface for 30 minutes at speeds between 3.5 and 5 kts.

Standard biological measurements including fork length, body weight, and sex as well as scale samples from the preferred area (for growth analyses) will be taken from subsamples of all salmon species. All other fish species will be counted and standard biological measurements including length and weight will be taken from subsamples of each species. Diets of subsamples of salmon as well as other marine fish will be examined onboard.

Oceanographic data will be collected at each trawl station. Depth profiles of salinity, temperature, density, chlorophyll a fluorescence (indicates phytoplankton biomass), beam transmission (indicates particle load), irradiance (light) and dissolved oxygen will be taken from surface to near bottom depths at each trawl station using a CTD (conductivity, temperature, and depth meter, SBE-25 or SBE-911, Sea-Bird Electronics, Inc[1], Bellevue, WA). Water samples for nutrients, phytoplankton and microzooplankton species and chlorophyll a (size fractionated and total) will be collected at 5 m and below the thermocline. Continuous measurements of surface temperature and salinity will be collected with a thermosalinograph (SBE-45, Sea-Bird Electronics, Inc[1]). Zooplankton 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.

[1] Reference to trade names does not imply endorsement by the National Marine Fisheries Service, NOAA.

During Leg 2 of the survey, the *Oscar Dyson* will conduct diel trawling experiments in the eastern Bering Sea. Specific locations selected for the diel experiments will be based on catch information collected during the 2007 BASIS survey aboard the *F/V Sea Storm*. Live-box trawling will be conducted opportunistically for salmon tagging.

Table 1. Tentative cruise itinerary for the NMFS, OCC September 2 – 29, 2007 research cruise – R/V *Oscar Dyson*.

Date	Location/Activity
Leg 1	
Sep 2 - 4	Embark scientific party/Load Gear
Sep 4	Depart Dutch Harbor (evening);
Sep 5	Test trawl gear,live box, and oceanographic equipment at stations located offshore of Dutch Harbor (165W to 166W; 54.5N to 55.5N; 5 stations).
Sep 6	Transit north to 64N
Sep 7	Transit north to 64N
Sep 8-16	Begin stations along 64N to 70N (40 stations – Fig.1); Inport Nome, Alaska (evening of Sep 16)
Sep 17	Inport Nome, Alaska; Exchange scientists and gear
Leg 2	
Sep 18	Depart Nome, Alaska (morning)
Sep 19	In Transit
Sep 20-27	Conduct tagging and diel trawling experiments.
Sep 28	Inport Dutch Harbor; Unload scientists and gear
Sep 29	Inport Dutch Harbor; Unload scientists and gear
Sep 30	Scientists leave Dutch Harbor

Table 2. Participating Scientists during the September 2 – 29, 2007 OCC, research cruise aboard the R/V *Oscar Dyson* in the Chukchi Sea and eastern Bering Sea[1].

	Scientists	Affiliation
Leg 1 (Sep 2 – 17)		
FPC	Lisa Eisner	NMFS/ABL
	Ellen Martinson	NMFS/ABL
	Jim Murphy	NMFS/ABL
	Bruce Wing	NMFS/ABL
	Sea Bird Observer	TBD
Leg 2 (Sept 18 – 29)		
FPC	Jim Murphy	NMFS/ABL
	Lisa Eisner	NMFS/ABL
	Bruce Wing	NMFS/ABL
	Sharon Hawkins	NMFS/ABL
	Sea Bird Observer	TBD

1 NPAFC scientists are invited to participate.

FPC	-	Field Party Chief
NMFS	-	National Marine Fisheries Service
ABL	-	Auke Bay Laboratory
TBD	-	To be determined

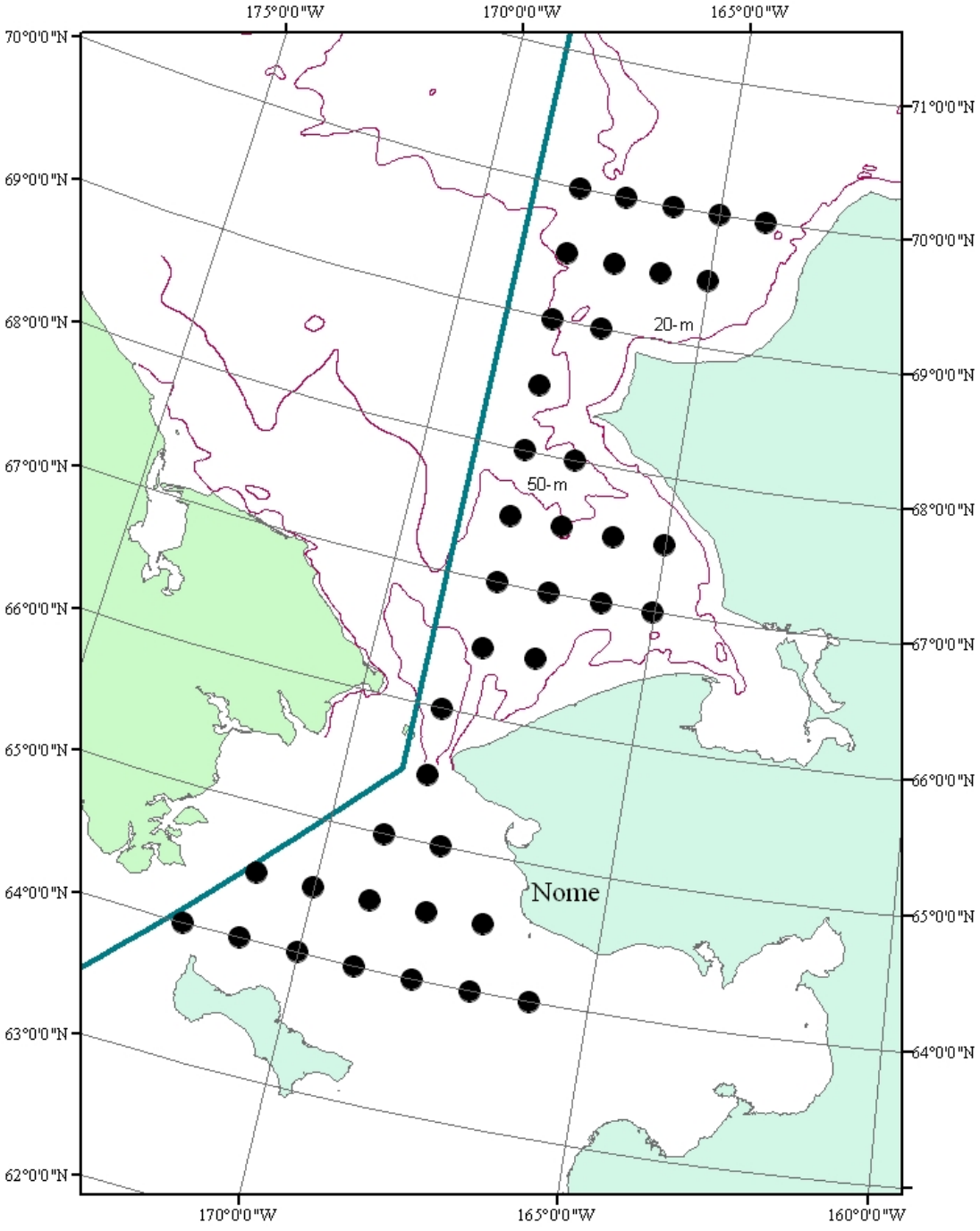

Fig. 1. Proposed survey stations for the Chukchi Sea during the Bering Aleutian Salmon International Survey, Sep 2–16, 2007.

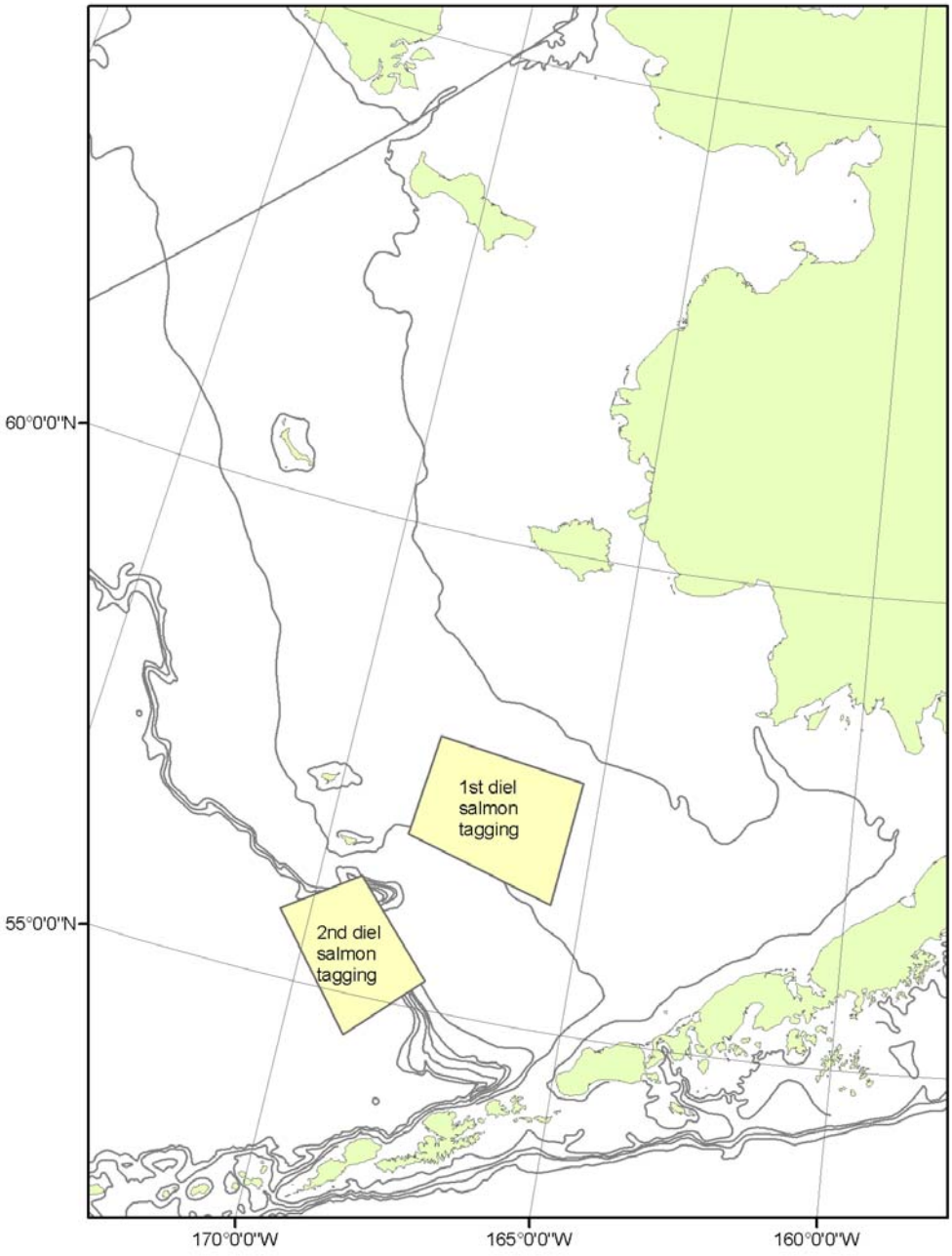

Fig. 2. Proposed locations for experimental trawling in the eastern Bering Sea, September 18 – 29, 2007.