

United States National Cruise Plan for BASIS Research, August to October, 2007

Ocean Carrying Capacity Program
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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 over the eastern Bering Sea shelf to provide key ecological data of the eastern Bering Sea salmon stocks during their juvenile life-history stage. The survey is part of an international effort to study the epipelagic ecosystem of the Bering Sea (Bering-Aleutian Salmon International Survey – BASIS). Primary objectives of the survey will be to: 1) determine the extent of offshore migrations of juvenile salmon from rivers draining into the eastern Bering Sea, 2) describe the physical environment of the eastern and northeastern Bering Sea shelf waters occupied by juvenile salmon, and 3) collect biological information on other ecologically important species.

Survey

The annual OCC/BASIS survey will be conducted at stations located over the eastern Bering Sea shelf (Fig. 1). During fall 2007, the survey will begin in Dutch Harbor, Alaska about August 12 and end in Dutch Harbor about October 10 (Table 1). Participating scientists are listed in Table 2.

The cruise will be conducted aboard the chartered fishing vessel *Sea Storm*. Fish samples will be collected using a midwater rope trawl, models 400/580, made by Cantrawl Pacific Limited¹ 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.

Salmon and other fishes will be sorted by species and counted. We expect 12,000 juvenile salmon (pink (750), chum (5,000), sockeye (5,000), coho (750), and chinook (500)) will be caught during the survey. 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, Inc¹, 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.

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

Continuous measurements of surface temperature and salinity will be collected with a thermosalinograph (SBE-45, Sea-Bird Electronics, Inc¹). 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.

Table 1. Tentative cruise itinerary for the NMFS, OCC August 12 – October 10, 2007 BASIS research cruise – F/V *Sea Storm*.

Date	Location/Activity
Leg 1	
11-August	Scientists arrive in Dutch Harbor, AK
12-August	Load scientists and gear
13-August	Load scientists and gear
14-August	Leave Dutch Harbor, AK; Begin sampling stations west of 166.5°W (51 Stations)
31-August	Arrive Dutch Harbor, AK; Exchange Scientists
1-September	Depart Dutch Harbor, AK; Evening
Leg 2	
2-September	Begin BASIS stations east of 166.5°W and south of 60°N (56 Stations)
20-September	Arrive Nome, AK; Exchange Scientists
21-September	Depart Nome, AK; Evening
Leg 3	
22-September	Begin BASIS stations south of 64.5°N to 60°N (49 Stations)
9-October	Arrive Dutch Harbor, Unload scientists and gear
10-October	Unload scientists and gear
11-October	Scientists depart Dutch Harbor, AK

Table 2. Participating Scientists during the August 12 – October 10, 2007 OCC, BASIS research cruise aboard the contract vessel F/V *Sea Storm* in the coastal waters of the eastern Bering Sea.

Scientists		Affiliation
Leg 1 (Aug 12 – 31)		
FPC	Ed Farley	NMFS/ABL
	Kris Cieciel	NMFS/ABL
	Oleg Ivanov	TINRO
	Natalia Kuznetsova	TINRO
	Sea Bird Observer	TBD
Leg 2 (Sept 1 – 20)		
FPC	Jamal Moss	NMFS/ABL
	John Pohl	NMFS/ABL
	Oleg Ivanov	TINRO
	Natalia Kuznetsova	TINRO
	Sea Bird Observer	TBD
Leg 3 (Sept 21 – Oct 10)		
FPC	Jamal Moss	NMFS/ABL
	Kris Cieciel	NMFS/ABL
	Oleg Ivanov	TINRO
	Natalia Kuznetsova	TINRO
	Sea Bird Observer	TBD

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

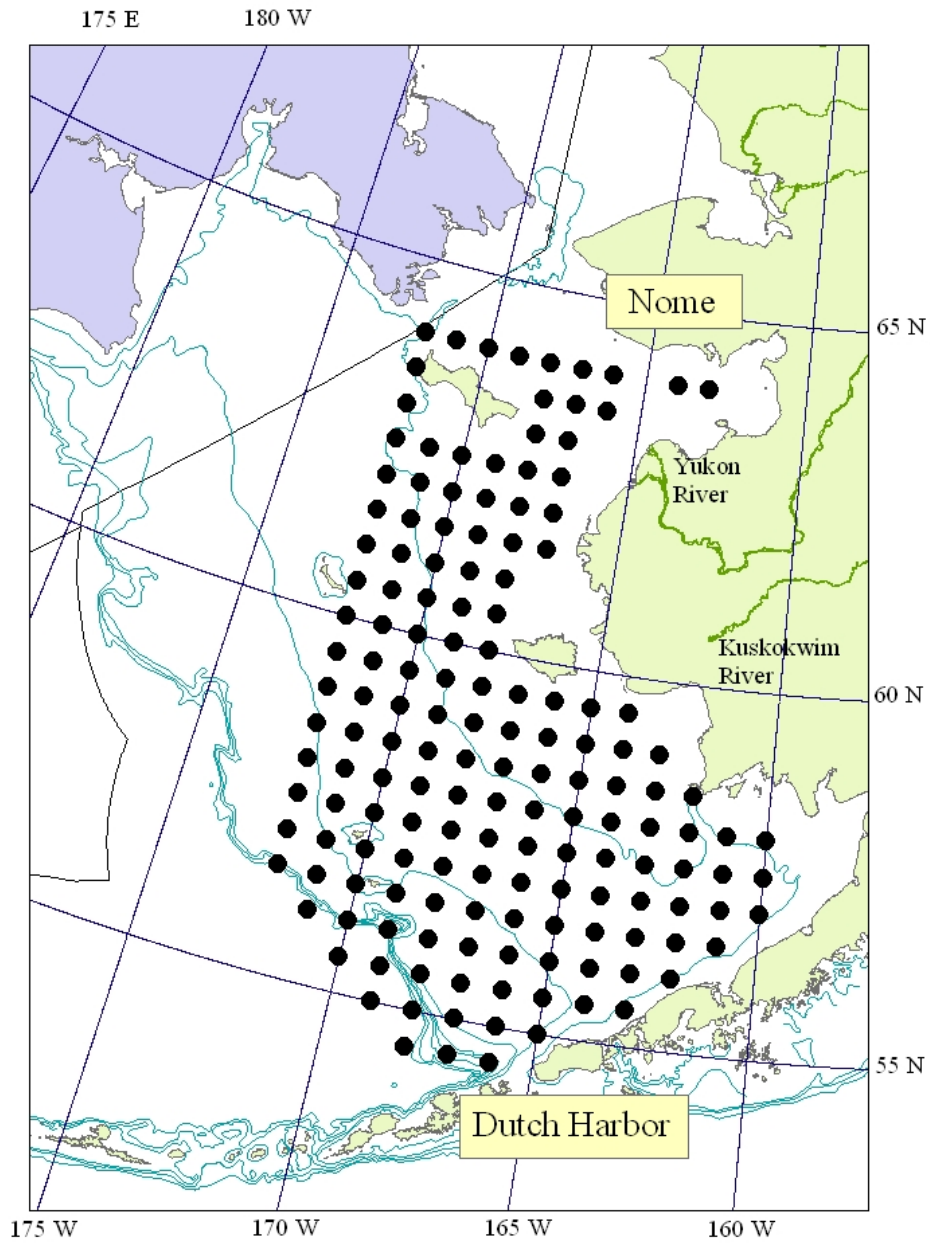


Fig. 1. Proposed survey stations for the Bering Aleutian Salmon International Survey along the eastern Bering Sea shelf, August 12 – October 10, 2007 to be sampled by the F/V *Sea Storm*.