

North Pacific Marine Research Institute: Semiannual Progress Report

Project #: NPMRI 18 (T2110)

Title: North Pacific Pelagic Seabird Database (NPPSD): Compiling Datasets and Creating an Archive, Accessible Database, and Pelagic Seabird Atlas

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Contract Period and Amount of Funding: 10/02 – 9/04

Report Period: January 1, 2003 – June 30, 2003

Report Date: July 15, 2003

Lead Author of Report: Gary S. Drew

Project Summary: The need for comprehensive geographic data on the pelagic distribution of seabirds in Alaska and the Northern Pacific has long been recognized. Data on the pelagic distribution and abundance of seabirds are critical for understanding the basic ecology of marine birds, monitoring population trends, assessing impacts of human activities, identifying critical marine habitats, and assisting seabird conservation. During the Outer Continental Shelf Environmental Assessment Program (OCSEAP) of the 1970's, millions of dollars were spent to gather these data in advance of oil development on Alaska's continental shelves. This work culminated in an atlas on the "Pelagic Distribution and Abundance of Seabirds in the Gulf of Alaska and Eastern Bering Sea" (a 1982 FWS publication by Patrick J. Gould and others) that documented the at-sea distribution and abundance of 16 common seabird species in Alaska. Since the collection of the OCSEAP data, a large number of surveys have been conducted to determine the pelagic distribution of seabirds in Alaska. These data exceed the original OCSEAP database in size, and include extensive new data sets from areas that were poorly sampled in OCSEAP studies (e.g., SE Alaska, Prince William Sound, Cook Inlet, western Aleutians, western Bering Sea), as well as systematic and repetitive surveys in some of these areas.

In a collaborative effort between the U.S. Geological Survey, U.S. Fish and Wildlife Service, and several independent investigators, we are in the process of compiling all available data sets, archiving them in a common format, developing Windows-based tools for analyzing and mapping the data, and creating web-based and hard-copy products for dissemination of the data to scientists, resource managers and the general public. This project was initiated in 2001 through a cooperative agreement between the U.S. Fish and Wildlife Service and U.S. Geological Survey. Work commenced in 2002 and funding from the North Pacific Research Board (via North Pacific Marine Research Institute) is being used to hire additional staff to work on the database for two years.

Progress Summary:

The NPPSD project has made significant progress in the most recent NPRB reporting period (Jan 1- June 30, 2003). We have continued our work identifying errors and organizing the OCSEAP dataset that still makes up the core of the NPPSD. This dataset (245 surveys) comprising >60,000 standard transects with >325,000 records that document the environment, distribution and group size of >4,000,000 animals has been proofed and archived. We have also added 25 surveys that were initially excluded due to errors in the data files. Fortunately, we were able to locate hard copies of questionable datasets and locate entry errors that previously made these datasets unusable. An additional 141 surveys were found on 9-track tapes in the Fish and Wildlife Service warehouse. Data from these cruises have been imported to a Microsoft Access database. These data were in a similar format as the OCSEAP data and will be merged following proofing. We have also begun to receive Russian seabird survey data from V.P. Shuntov (Figure 1) and Western Canadian data from Ken Morgan (Figure 2). These additions are particularly important because they add considerable data from areas that were not well represented in the current database. Protocols for importation of continuous datasets, i.e. recent data from Cook Inlet, Prince William Sound, and Glacier Bay are nearly complete. A dataset from Glacier Bay (1999) has been tested using Microsoft Access queries to make the data comparable to that already in the NPPSD Database. The development of tools for data integration remains a primary goal of the NPPSD. During this reporting period we have focused on the development of our "Metadata Database" (Figure 3). We are nearing completion of this database that will eventually be linked to the seabird data. Currently this database is a standalone product that can be searched by any of the fields. We are working on making this metadata tool available on the web in the near future. One unforeseen benefit from compiling this metadata is that several data errors (dropped transects) were uncovered through our crosschecking.

Gary Drew (USGS) was tasked with the initial development of the database and its associated metadata catalog. An Information Technologist recently hired by the Alaska Science Center will be analyzing the database and its structure to assure maximum efficiency and discuss integration of data sets. Additionally, a GS-9 Biologist and a GS-5 Biological Technician are working full time on this project.

Our discovery of numerous entry and cataloging errors in the digital data obtained from NODC has led us to begin discussions with NODC personnel with regard to updating the OCSEAP seabird survey data. We have suggested that we might pass back to them a proofed and verified data set; however, the format would not match that of the original dataset. An alternative solution would be to ask them to use their web site to identify the problems with the original data and redirect data queries to our web site.

The NPPSD continues to be used as a source for data calls. As we reported previously, we have provided information on seabird distribution to various government agencies for a variety of purposes. We have provided the U.S. Fish and Wildlife Service and National Marine Fisheries Service with information about the pelagic distribution of Black-Footed and Laysan Albatrosses to help in the development of long-line fishing regulations in Alaska. Additionally we provided distribution data on Kittlitz's Murrelet to the FWS for use in development of a status report on that species. Our distribution maps for Kittlitz's Murrelets have also been used to develop inventory plans for this species. We also provided the Minerals Management Service with a general broad-scale map of seabird distribution in Alaska to assist in the assessment of environmental risk for offshore drilling lease areas in the Gulf of Alaska (Figure 4).

In efforts to inform other resource scientists and managers of our work, we reported on our project at the "Marine Science In The Northeast Pacific: Science For Resource Dependent Communities" symposium in Anchorage, AK January 2003 and at the Pacific Seabird Group's Annual meeting in Santa Barbara, CA. Both posters can be viewed at our web site <http://www.absc.usgs.gov/research/NPPSD/index.htm> under "Products".

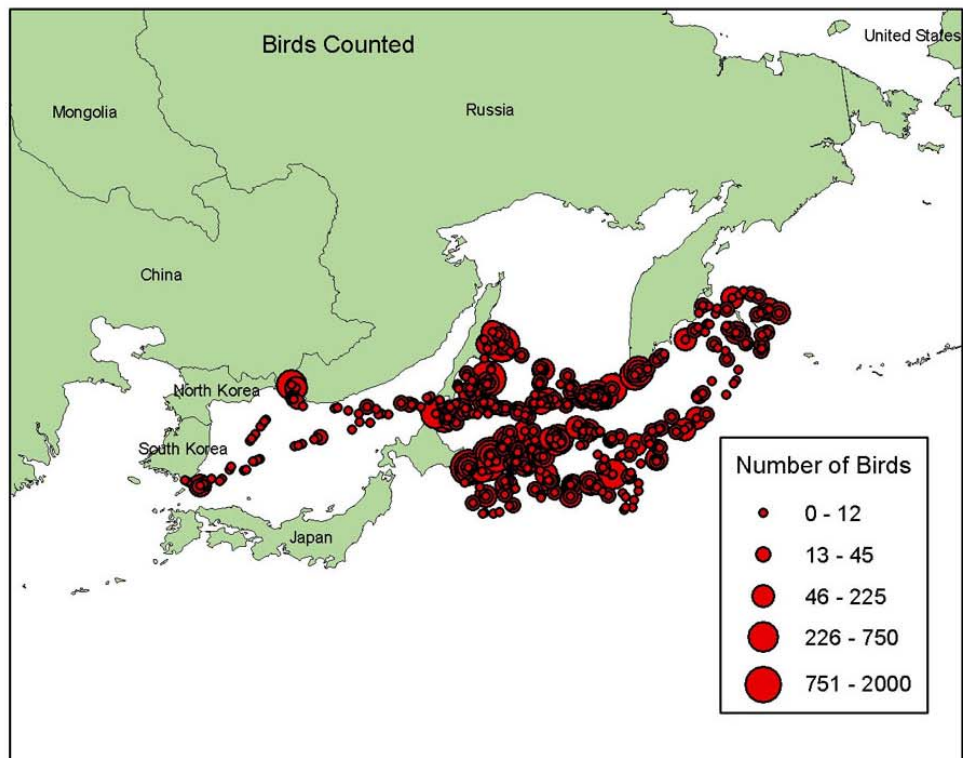
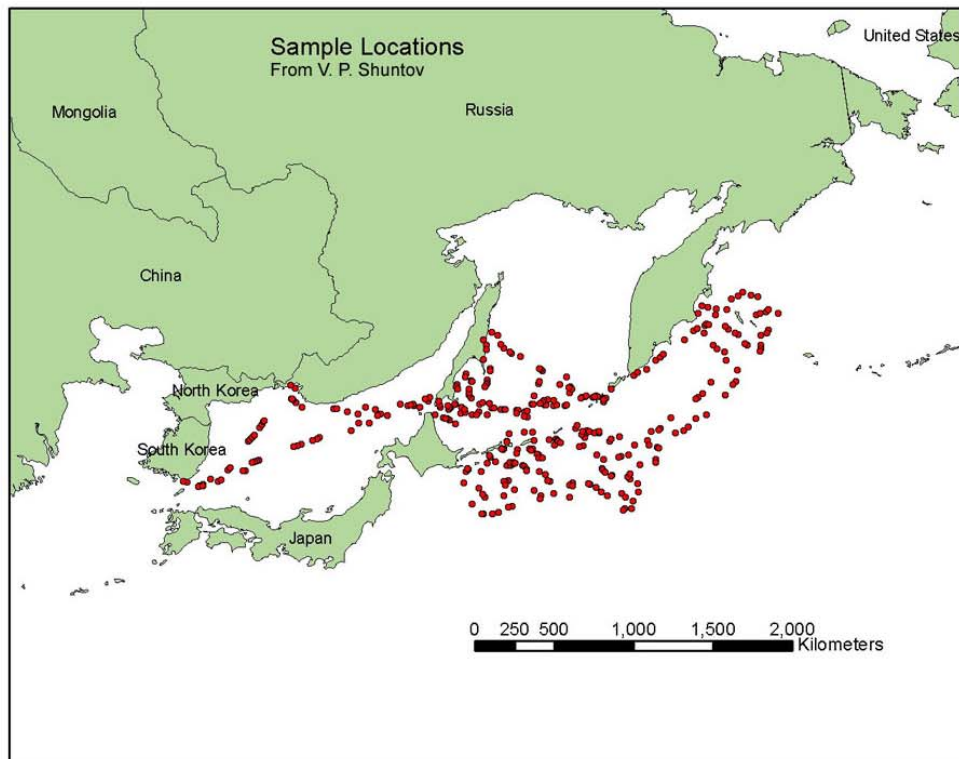


Figure 1. Seabird survey data from V. P. Shuntov. Surveys were conducted June 18 through August 29, 1993.

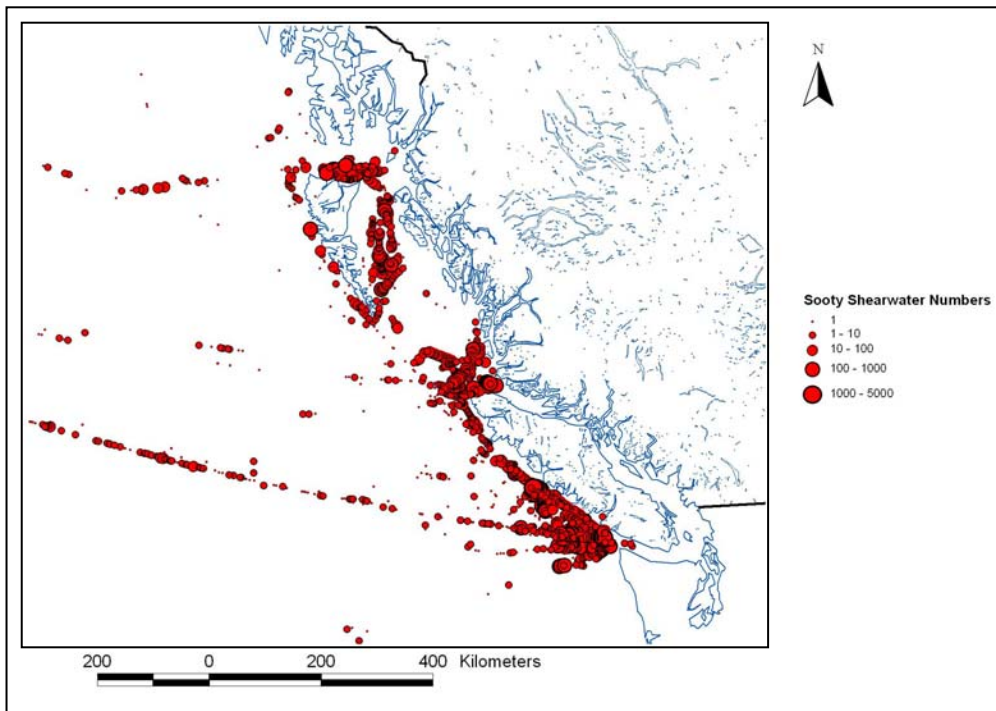


Figure 2. Canadian seabird survey data from Ken Morgan.

IDENTIFICATION INFORMATION		HELP		ADDITIONAL SURVEY INFORMATION	
Abstract:	Surveys conducted under the OCSEAP program.			Survey Platform	Ship greater than 100 ft
Purpose:	Surveys conducted under the OCSEAP program.			Vessel Name	Surveyor
Supplemental Information:				General Area:	Western Gulf of Alaska + Bering Sea
				Local Area:	Kodiak to St. Matthew
				Data Type:	Discrete
				Minimum Unit of Measure	10 minute transect
				General Survey Effort	Four day survey in Western G.O.A. and Bering Sea.
				# of Transect	62
				# of Station Count	
				# of Observations:	62
				Frequency of Survey	unknown
DATA SET CREDIT INFORMATION					
Last Name	DeGange				
First Name	Anthony	M.I.	R.		
CONTACT INFORMATION (ADDRESS ETC.)					
Street 1:					
Street 2					
City:					
State/Province					
Zip/Postal Code:					
Phone:					
Email:					
Fax:					
SURVEY INFORMATION					
Trip ID	FW7042				
File Name	FNEW.145				
Publication Date (YYYY/MM/D)	1997/04/24				
Other Citation Details					
START DATE OF SURVEY (enter 9999, 99, 99 if unknown)					
Year (YYY)	1977	Month (MM)	06	Day (DD)	23
END DATE OF SURVEY (enter 9999, 99, 99 if unknown)					
Year (YYY)	1977	Month (MM)	06	Day (DD)	26
BOUNDING COORDINATES (in decimal degrees)					
North	58.18278	South	54.44167		
East	-152.10000	West	-169.35972		
OBSERVERS (if known)					
Last Name	Last Name				
1: DeGange	6				
2: SOWLS	7				
3:	8				
4:	9				
5:	10				
CURRENT PRINCIPAL INVESTIGATOR INFORMATION					
Last Name	Piatt				
First Name	John	M.I.	F.		
Street 1	ABSC/USGS-BRD				
Street 2	1011 E. Tudor Rd.				
City	Anchorage				
State/Province	AK				
Zip/Postal Code	99503-				
Phone	907.786.3549				
Email	john_piatt@usgs.gov				
Fax	907.786.3636				
DATA USE RESTRICTION / CONTACT INFORMATION					
Restrictions	Unrestricted				
Last Name	Piatt				
First Name	John				
DATA QUALITY INFORMATION					
Positional Accuracy:					
Project Name	OCSEAP				
Reference					
Reference					
General Comments					

Figure 3. Screenshot of the NPPSD Metadata entry form.

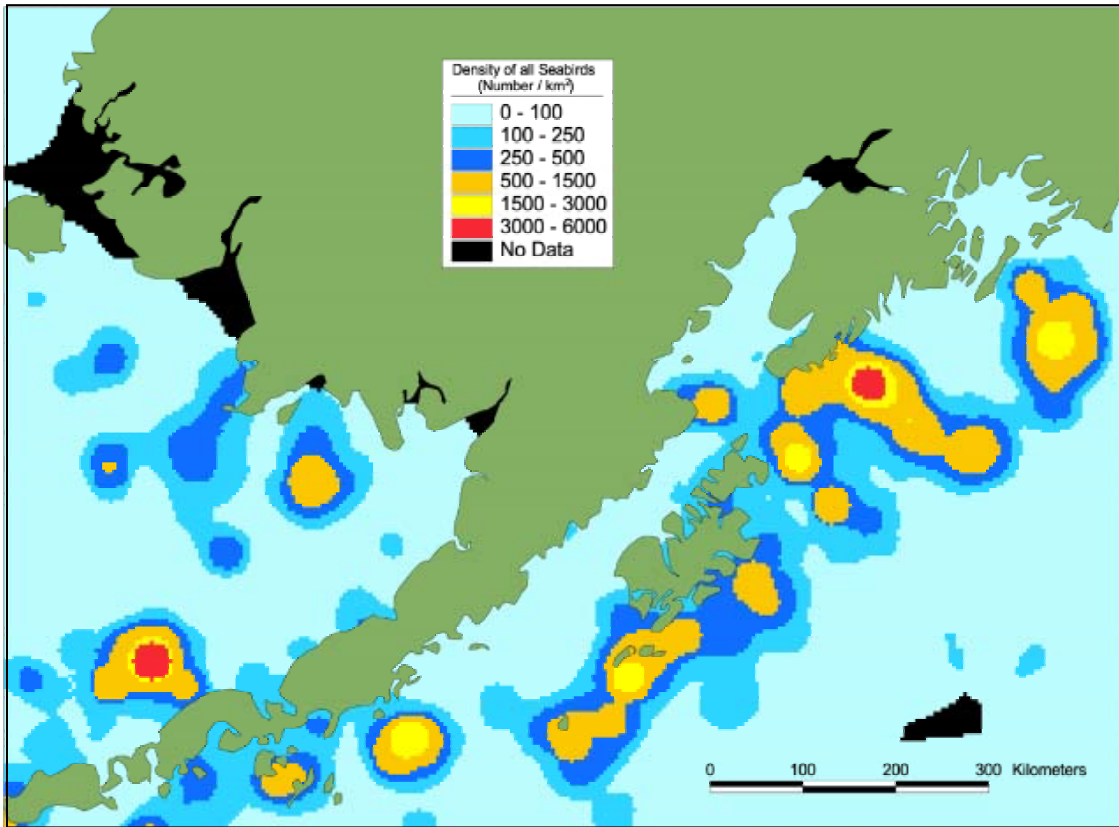


Figure 4. Seabird density map based on surveys conducted between 1972-1984.