

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

Principal Investigator(s) and Recipient Organization(s):

John F. Piatt, Marine Ecology Project Leader, Alaska Science Center, BRD/USGS, 1011 E. Tudor Road, Anchorage, Alaska, U.S.A. 99503. Work ph: (907) 786-3549; Fax: (907) 786-3636,

E-mail: john_piatt@usgs.gov

Web: <http://www.absc.usgs.gov/research/seabird&foragefish/index.html>

Gary S. Drew, Marine Ecology Project, Alaska Science Center, BRD/USGS, 1011 E. Tudor Road, Anchorage, Alaska, U.S.A. 99503. Work ph: (907) 786-3475; Fax: (907) 786-3636,

E-mail: gary_drew@usgs.gov

Web: <http://www.absc.usgs.gov/research/NPPSD/index.htm>

David Irons, Migratory Bird Management, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, AK 99503 Work ph: 907 786-3376,

E-mail: david_irons@fws.gov

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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:

In the current NPRB reporting period (July 1- Dec. 31, 2003) we have completed our work identifying errors and organizing the OCSEAP dataset that makes up the core of the NPPSD. The 141 additional cruises located in the previous reporting period, from U.S. Fish and Wildlife Service (USFWS) have been proofed and are ready to merge with the OCSEAP dataset. One problem that has cropped up is the lack of a universal taxonomic code. The OCSEAP code list was implemented for all of the OCSEAP data; however, it was not included in post OCSEAP data collection. Additionally, the taxonomic status of some species has changed. The four letter codes used in most at-sea surveys is in even worse shape, with different researchers using different codes for the same species and the same codes for different species. Out of necessity we have had to deal with this problem and bring all old data sets up to current standards. We have adopted the "Integrated Taxonomic Information System" (ITIS) as our taxonomic standard. Given that the four letter codes are so useful for field data collection, we are providing a crosswalk between the ITIS code list and the American Ornithological Union Bird Species List. We are projecting to have version 1.0 of the NPPSD completed by the end of February 2004. While this first version will only encompass about half of our current raw data files, it will make up the largest single set of seabird data in the world. As we add data sets, we will change versions. We decided on this level of formality because we wanted to be sure that as the NPPSD grows in size that there is a clear distinction as to what data is included, i.e. analysis conducted on version 1.0 data may not be identical to version 1.1. The current dataset (389 surveys) is comprised of approximately 70,000 standard transects and more than 6,000,000 animals.

We acquired five surveys (2001-2003) of seabirds' from Glacier Bay Alaska conducted by USGS, Alaska Science Center staff. This data will be merged with the four previous surveys of Glacier Bay (1999-2000). These datasets as well as those collected by USFWS in prince William Sound (1990-2003) were collected with instantaneous location data, a completely different format then the standard ten minute counts of the 1970s and 1980s. We have developed a protocol for archiving this new data and summarizing it in a format compatible with the current NPPSD data tables. The summarized data will be integrated into the NPPSD. We are also continuing our work on developing strategies to integrate data from Russian seabird surveys (from V.P. Shuntov).

Our "Metadata Database" (Figure 1) is now complete for all of the data in the working version of the NPPSD. We are now working on a method to serve this information on the internet. One problem that has arisen is that the server that was to be used with both the metadata and the data itself has not been certified by the USFWS. This step is necessary if we are to use the USFWS server. If this problem is not addressed in a timely manner, we will investigate the use of other data servers.

Gary Drew (USGS) continues to be in charge of the development of the database and its associated metadata catalog. A GS-9 Biologist and a GS-5 Biological Technician are also working full time on this project. Gary recently attended the recent Pacific Seabird Group meeting in Mexico where new commitments for data sets were received from George Hunt and Bob Day. We also are keeping our web site up to date <http://www.absc.usgs.gov/research/NPPSD/index.htm>.

In the current reporting period, we have provided data and GIS support for a number of new projects.

- We provided data on short-tailed albatross distribution to Greg Balogh of the U.S. Fish and Wildlife service who is conducting a review of this species (Fig.2).
- We worked with George Hunt on a presentation at PICES. This presentation "Prey Consumption and Energy Transfer by Seabirds in the Gulf of Alaska" was given at the 12th annual PICES meeting in Seoul, Korea. This work is being followed up with a publication on which we are also coauthors (Fig. 3).

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		CURRENT PRINCIPAL INVESTIGATOR INFORMATION			
Last Name	DeGange			Last Name	Piatt
First Name	Anthony	M.I.	R.	First Name	John
					M.I.
					F.
CONTACT INFORMATION (ADDRESS ETC.)				Street 1	ABSC/USGS-BRD
Street 1:				Street 2	1011 E. Tudor Rd.
Street 2:				City	Anchorage
City:				State/Province	AK
State/Province:				Zip/Postal Code	99503-
Zip/Postal Code:				Phone	907.786.3549
Phone:				Email	john_piatt@usgs.gov
Email:				Fax	907.786.3636
Fax:				DATA USE RESTRICTION / CONTACT INFORMATION	
SURVEY INFORMATION				Restrictions	Unrestricted
Trip ID	FW7042			Last Name	Piatt
File Name	FNEW.145			First Name	John
Publication Date (YYYY/MM/D)	1997/04/24			DATA QUALITY INFORMATION	
Other Citation Details				Positional Accuracy:	
				Project Name	OCSEAP
				Reference	
				Reference	
				General Comments	
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: Sows	7				
3:	8				
4:	9				
5:	10				

Figure 1. Screenshot of the NPPSD Metadata entry form.

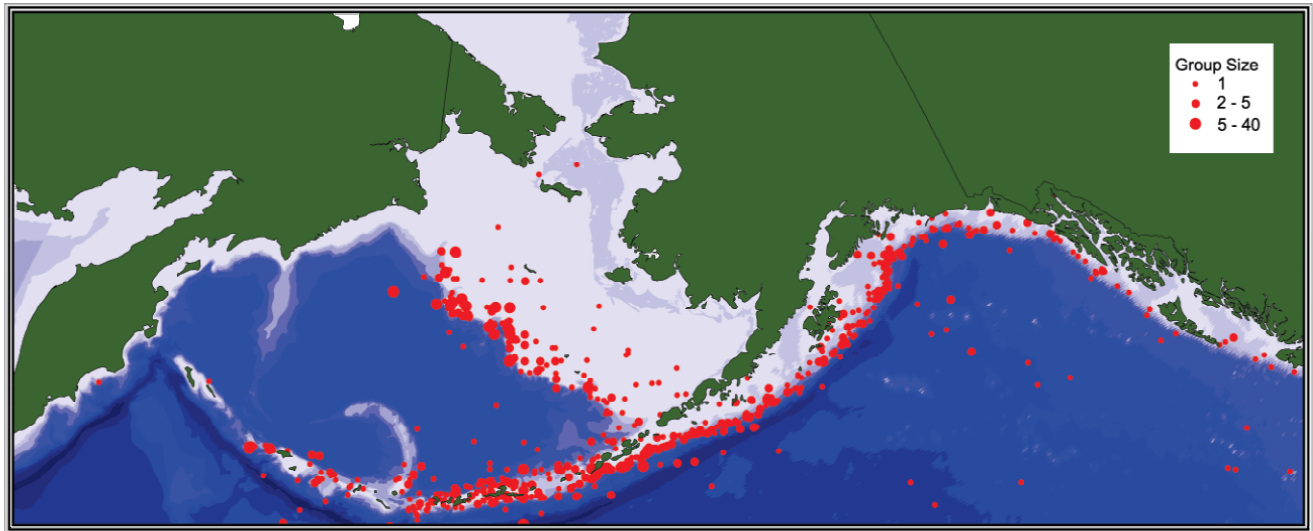


Figure 2. Distribution of short-tailed albatross 1905-2003 in and around Alaska. Data include information from the literature, fisheries observers, and data from the NPPSD. Depth is depicted as a range from pale blue (0-150m) to dark blue (6600-8000m) making shelf breaks clearly visible..

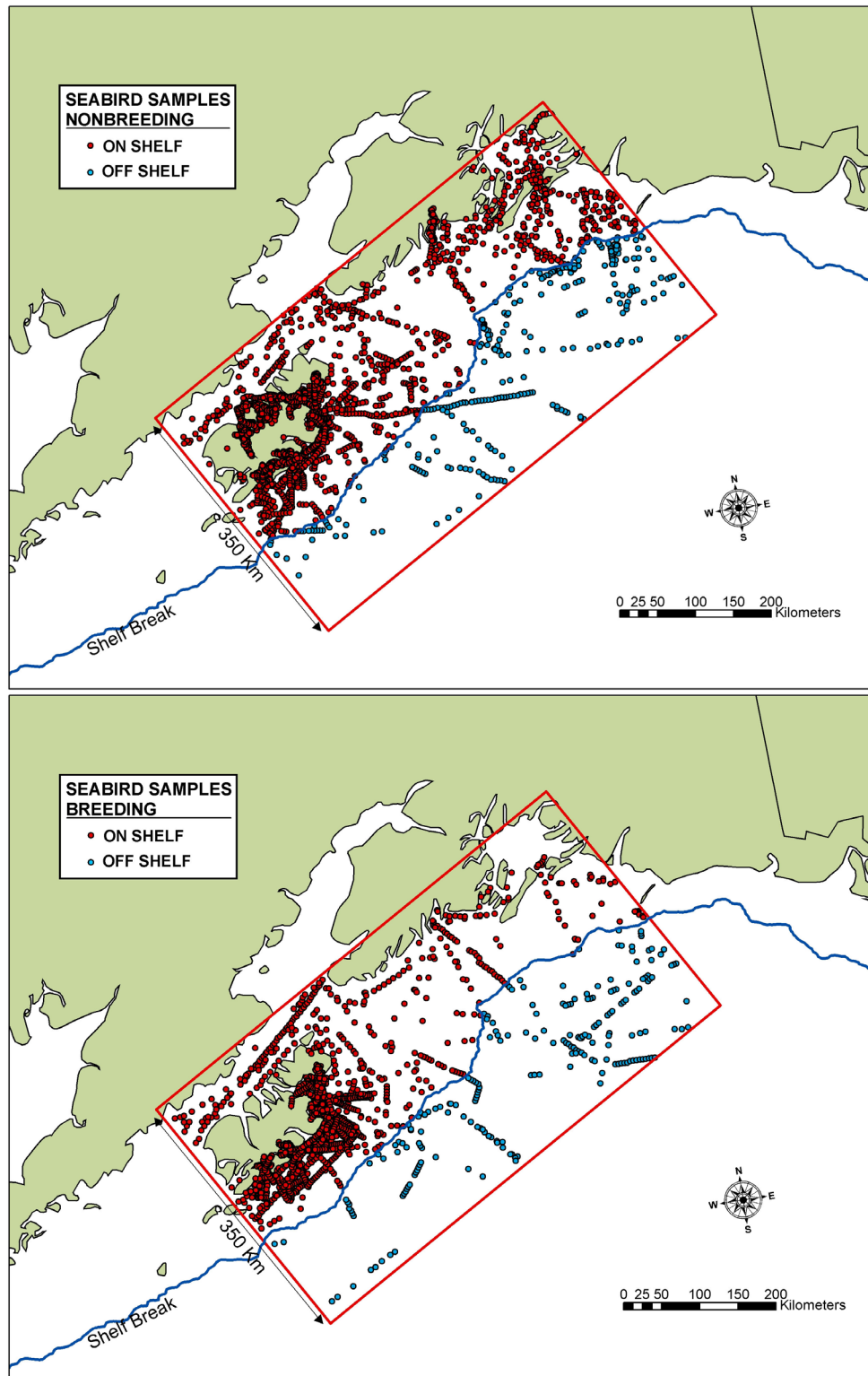


Figure 3. Seabird distribution in a 350 km by 660 km box bisected by the shelf break (300 m) in the northern Gulf of Alaska.