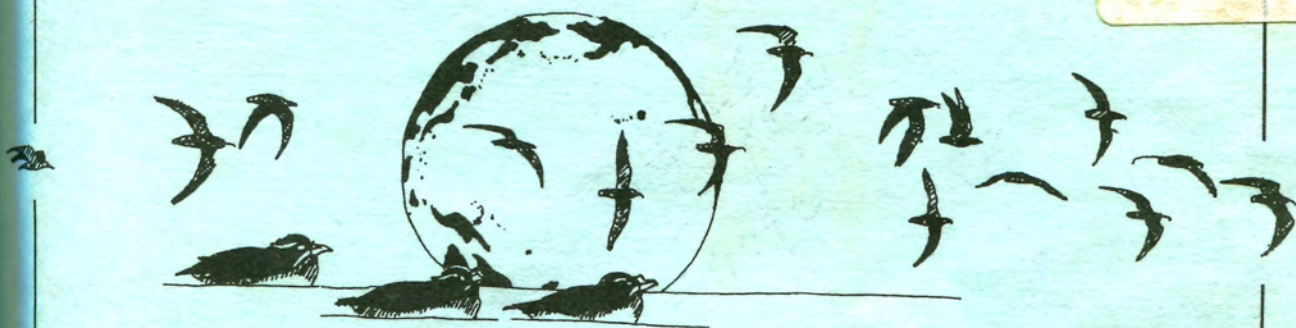


Pacific Seabird Group



BULLETIN

Volume 9 Number 1

Summer 1982

PACIFIC SEABIRD GROUP

The Pacific Seabird Group (PSG) was formed in 1972 out of a need for better communication among Pacific seabird researchers. The Group acts to coordinate and stimulate the field activities of its members and to inform its membership and the general public of conservation issues relating to Pacific seabirds and the marine environment. Current activities include involvement in seabird sanctuaries, human disturbances, coastal surveys, seabird/fisheries interactions, and legislation. Policy statements are issued on conservation issues of critical importance. While the PSG's primary area of interest is the west coast of North America and adjacent areas of the Pacific, it is hoped that seabird enthusiasts in other parts of the world will join and participate in the PSG. Annual dues for membership in the PSG are \$10.00 and are payable to the Treasurer (address on back cover). Members receive the PSG Bulletin.

PACIFIC SEABIRD GROUP BULLETIN

The Pacific Seabird Group Bulletin is issued in the spring or summer and fall or winter of each year. It contains news of interest to PSG members. Regional reports include a listing of current research and information on seabird conservation. The PSG Bulletin does not act as an outlet for the results of scientific research, but welcomes articles on seabird conservation, seabird research activities or other topics that relate to the objectives of the PSG. Articles and all other materials should be submitted to the Editor. Back issues of the PSG Bulletin (starting with Spring 1974) are available from the Treasurer for \$2.50 each.

PERMANENT ADDRESS

Pacific Seabird Group, c/o Point Reyes Bird Observatory, 4990 Shoreline Highway, Stinson Beach, CA 94970.

Note: This address is only for use of people who lose track of the current officers. Routine correspondence should be sent to the appropriate council member as listed on the back cover.

PACIFIC SEABIRD GROUP

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Common Puffin
(*Fratercula arctica*)

There are 20 species of marine birds hidden in this puffin; can you find them? If you'd like a poster of this picture see page,51.



THE CHAIRMAN'S PAGE

I welcome this opportunity to tell you about several items of PGS business.

Plans are being completed for the joint meeting of the PSG and the Australasian Seabird Group in Honolulu on 1-3 December 1982. You should have received a meeting announcement and call for papers. If you have not received them, contact Stewart Fefer or Craig Harrison in Honolulu. Ralph Schreiber will be editor for the proceedings of the symposium on tropical seabirds. The volume will be published by the Cooper Ornithological Society as part of its Studies in Avian Biology series. I suggest that you contact your travel agent soon to learn about reduced fares and other special offers that may apply to your travel to Hawaii. Travel may be less expensive than you fear, and the hotel has given us a good rate for rooms. Let's have another good crowd at the meeting this year!

All manuscripts for the Seattle symposium sessions have been submitted to the session chairmen (David Nettleship, Paul Springer, and Gerry Sanger), who will edit the proceedings volume. Each manuscript has been reviewed by the editors and two outside peers and returned to the authors. About half of them have been returned to the editors in final form, and authors are now revising the others. We may still meet our target publication date of December 1982; if not, the proceedings will surely be out early in 1983. A complimentary copy will be sent to each PSG member.

I have authorized Craig Harrison to represent PSG at the ICBP seabird workshop and symposium in Cambridge, England, during August 1982. The objectives of the workshop include reviewing information on distribution and status of seabirds throughout the world, identifying threats facing seabirds, identifying gaps in our knowledge of the first two topics, establishing priorities for future work and publishing a review document to serve as the basis for an ICBP action plan. We should hear more about this at the meeting in Honolulu. The program for regional papers at the workshop, on which PSG is well represented, appears later in the Bulletin.

There are currently six PSG standing committees; some have been active in recent years and others not. I have asked each chairman to prepare a brief report of the activities and accomplishments of his committee since its formation and to recommend whether the committee should continue to exist. I had hoped to include these status reports in this issue of the Bulletin. However, because my field season this spring was a busy one -- as it was for the chairmen whom I was trying to contact -- I will have to send these reports out in a separate mailing before the annual meeting. The matter of PSG standing committees will be one of the items for discussion and decision during the Executive Council meeting.

The previous Bulletin (1981. 8:71-72) briefly outlined a proposal that David Nettleship presented more fully at the Seattle meeting; members were requested to express their views by completing a form and sending it to me. I received only 50 replies; results are:

19 support the proposal

30 do not support the proposal

1 had no opinion.

This is a disappointing small percentage (less than 15%) of our membership, so it is difficult to know how to interpret the results of this informal poll. Perhaps the problem was partly in the wording on the form we provided; was "informal poll" equated to "it doesn't matter whether I send this in" by our members? Were those who were opposed to the proposal more likely to reply than those who supported it or did not object strongly? (If that's the case, maybe only about 10% of our members are opposed to the proposal as it was presented.) In any event, here are some of the comments I received. As it seems premature to make final decisions on the basis of the poll, I will try to summarize the general sentiment as gathered from the forms received (and from telephone calls), and suggest how we might proceed on this important matter.

Among those who do not support the proposal are some who said they would support it if PSG "needs new blood" or "remains static." (In a later item one of those respondents said that PSG "needs an infusion of fresh thinking... it has become ingrown." Thus, I suppose the vote is really 20 to 29.) Others who "do not support" suggested that seabird biologists from eastern Canada and the northeastern United States should consider becoming affiliated with the Colonial Waterbird Group or The (British) Seabird Group. Perhaps because I asked Dr. Nettleship to prepare only a brief version of the proposal, he did not fully explain the background and all considerations that were involved in their reaching the decision to approach PSG with the proposal. The seabird biologists in eastern Canada and the northeastern United States did consider becoming affiliated with other seabird groups, but because of the faunistic similarities, the type of research being conducted, and geographical considerations, they felt that PSG could best meet their needs. I believe the presentation of this additional information in Seattle affected the degree of support the proposal received there, for the vast majority (about 95%) of about 100 members who attended initially supported it.

Among those who support the proposal are several who said that it did not go far enough -- we should "think bigger," "it's time to grow or quit," etc.; we should try to increase contacts (if not combine) with other seabird groups to have a broader perspective on seabird biology. One respondent enclosed a map that outlined regions of focus for seabird groups around the world so that all oceanic areas would be included in one of four seabird groups: American (currently PSG, but including also all the Nearctic and the Neotropical Atlantic), European (British to include all the western Palearctic), African (as it is now), Australasian (to include the Pacific Ocean archipelago and islands, adjacent subantarctic islands, and eastern Indian Ocean). These groups might become affiliated as subunits of an international seabird society. This suggestion warrants our serious consideration because it makes good sense; however, I do not feel that I can properly address it here.

PSG could benefit by making some changes to reflect the evolving composition of its membership and to meet their needs. However, this issue is too important for us to act hastily; the contradictory responses by the members who were present in Seattle and those who sent responses in the poll leave me unclear as to what you want.

Joe Strauch will serve as chairman of a committee to consider this matter further. I have sent him all the replies I received in the recent poll. If you have not previously sent in comments but wish to do so, please send them to him (7892 Greenbriar Cir., Boulder, CO 80301, U.S.A.). I have asked the committee to evaluate the responses I received and suggest some options on how to proceed. Some of their proposed options may require revision of our bylaws or otherwise require a vote by members. If this happens, I hope we can get a representative expression of the views of PSG members. I will keep you informed of the committee's activities and hope to include this information in a special mailing to members in early October.

Most of those who responded to the item concerning our system of regional representatives suggested that the system be changed. The suggestions varied, but the common thread seemed to be that the system should reflect the distribution and abundance of members, at least in a general way. I agree, and I have asked Joe's committee to also consider this matter.

Several members expressed as "other concerns" the feeling that PSG should remain an organization that is informal but professional. There seems to be fear that having a larger organization will cause us to sacrifice the informality that we have enjoyed. This may be true, but I don't think it necessarily follows that a change in name or modest changes in organizational structure will lead to greater formality. On the other hand, if many PSG members are not willing to make a contribution by serving as regional representatives or carrying out other activities to benefit the organization (or even express an opinion about the future direction of PSG), we will lumber along with just a few individuals dominating PSG activities. Informality can be maintained without becoming inactivity. Let's all help keep PSG informal and alive.

Comments concerning the conservation role of PSG also varied widely. However, the gist of most comments was that PSG should play a role: The organization should emphasize gathering of sound data concerning the biology of seabirds but it should use this information to further conservation of seabirds. The feeling of most respondents is perhaps best typified by this comment: "Good science produces a knowledge base from which the Group can make meaningful recommendations (re need for conservation, protection, or otherwise)... Scientists have a social responsibility to report the implications of their findings, and conservationists likewise have a responsibility to ensure that what they propose or identify has

a basis in fact." I agree with the suggestion that we need a Conservation Committee to consider important issues affecting seabirds. For such a committee to be effective it is essential that committee members, and especially the committee chairman, be interested in conservation matters. Therefore, I will appreciate hearing from any PSG members who are willing to serve on a conservation committee. Please let me know of your interests so this matter can be considered at the meeting in Honolulu. As I noted above, we will be reaching decisions there concerning the future structure of other PSG committees.

A few members expressed comments about our publishing a journal. This matter was the subject of an earlier survey of members (see 1981. PSG Bulletin 8:83). In that survey, as in the present comments, the views of most members who expressed an opinion were either strongly in favor or strongly opposed. (Is it just a coincidence that only 50 members expressed an opinion in that survey, as in the one about the proposal discussed above?)

The Seabird Group has decided not to go ahead with a journal. Instead they plan to issue their annual report as a "strictly annual publication with refereed papers, accepted regardless of geographic origin." It will be called Seabirds, produced by photo-offset, and edited by Peter Evans and Tony Birkhead. The first issue is planned for February 1983.

I'm looking forward to seeing many of you in Honolulu.

Harry M. Ohlendorf
Chairman





PACIFIC SEABIRD GROUP NEWS

1982 Elections

A ballot for the election of new officers and regional representatives for Alaska, Hawaii, Mexico, Northern California, and Washington is enclosed in this issue. Please mark your choices and return the ballot as soon as possible.

Resolutions

Some members have expressed the desire for PSG to issue more policy statements and resolutions. Two resolutions concerning conservation matters were adopted at the Seattle meeting, but they were discussed only briefly. Regional representatives are responsible for keeping abreast of marine conservation issues in their regions. The Chairman would like those representatives who feel that an issue in their region warrants a resolution or policy statement by PSG to write a draft and send it to Bob Boekelheide (Point Reyes Bird Observatory, 4990 Shoreline Highway, Stinson Beach, CA 94970) well in advance of the Hawaii meeting. Bob will act as Resolutions Committee Chairman for that meeting and will coordinate the presentations of resolutions at the Executive Council meeting. Resolutions that are approved by the Executive Council will be presented at the business meeting for approval of the members who are present.

Illustrations for the Bulletin

The backlog of drawings of seabirds for illustrating the Bulletin is exhausted. The Editor welcomes the contribution of original drawings or those used to illustrate other publications for possible use in the Bulletin. A glossy print with an image in the size range used in previous Bulletins is preferred over original artwork.

REGIONAL REPORTS

ALASKA, MARGARET PETERSEN

A significant event this year for federal and state waterbird researches in Alaska was the Alaska Migratory Bird Conference held 15-18 March 1982 in Anchorage. The conference was to acquaint Fish and Wildlife Service (FWS) and Alaska Department of Fish and Game (ADF&G) personnel with the studies being conducted by people within their respective organizations. Fifty-five papers were presented on the biology and management of waterfowl, shorebirds, seabirds, and wetland habitats conducted by FWS, ADF&G, and University of Alaska (UA) Fairbanks personnel in Alaska. Abstracts and a summary of the conference can be obtained from: Dirk V. Derksen, U.S. Fish and Wildlife Service, 1011 E. Tudor Rd., Anchorage, AK 99503.

Pelagic Studies

Bob Day, UA Fairbanks, will be on a two-month cruise aboard the TV Oshoro Maru between Hakodate, Japan, and Sitka, AK. His work will emphasize distribution, feeding ecology, foods, and gill net mortality of birds in the Bering Sea. Tony DeGange, FWS Anchorage, is continuing a study on the impact of Japanese gill net fisheries on marine birds. This field season, he will be monitoring the activity of the gill net fishery from Japanese motherships and catcher boats in the western Aleutians in cooperation with the Marine Mammal Division, National Marine Fisheries Service. He will estimate the magnitude and composition of losses, attempt to identify colonies from which the birds were derived, and evaluate the biological significance of the losses.

George Hunt, UC Irvine, is continuing work in the southeastern Bering Sea. George, Nancy Harrison, Dave Schneider, and others will continue to collect birds for data on food habits and will examine the distribution of seabirds in relation to physical and biological oceanographic features. And, as part of the OCSEAP, Hunt and others will continue studies on seabird distribution in the Navarin Basin in May, August, and October.

Patrick Gould, FWS Anchorage, plans to establish standard, repeatable transects to measure the distribution of seabirds between Prince William Sound, Kodiak, and Dutch Harbor. The project is tentative, pending cooperation from the Alaska Ferry System, but surveys could begin this fall or winter.

Nearshore and Estuarine Studies

Paul Arneson, ADF&G Anchorage, Sue Quinlan, ADF&G Fairbanks, and others will inventory species and habitats in southeastern Alaska. They will look for Marbled Murrelets as well as other species, and hope to find a student to begin a study of murrelets by summer 1983.

Lynne Krasnow, FWS Anchorage, will gather preliminary data on Kodiak Island on the relationship of the seasonal variation in productivity of Black-legged Kittiwakes and Tufted Puffins to the availability of capelin and sandlance.

Colleen Handel and Bob Gill, FWS Anchorage, will continue work on the annual variation in mortality and production of Black Turnstones breeding on the Yukon-Kuskokwim Delta.

Personnel of the coastal refuges and the Wildlife Operations Program, FWS, will be continuing or initiating studies and inventories of seabirds and marine ducks in coastal and nearshore waters. Standard winter surveys are to be continued again next winter at Kodiak Island by Dennis Zwiefelhofer and others of the Kodiak NWR, and in southeastern Alaska by Bruce Conant and Jim King, FWS Juneau. Personnel of the Alaska Maritime NWR, Alaska Peninsula NWR, Becharof NWR, and Togiak NWR will begin surveying birds in the coastal portions of their refuges.

Colony Studies

Art SOWls, FWS Anchorage, and others are at St. Matthew Island to gather baseline information on the flora and fauna of the island to assess possible effects of a proposed onshore support facility for oil and gas activities in the Navarin Basin. They will monitor spring bird migration, establish plots to monitor numbers of nesting seabirds, observed Arctic foxes, document numbers and species of terrestrial breeding birds, conduct beached bird and mammal surveys, begin studies on the natural history of Rock Sandpipers and McKay's Bunting, and collect birds for analysis of hydrocarbon and heavy metal concentrations. Also at St. Matthew, Allen Springer and Dave Roseneau, FALCO Fairbanks, and Ed Murphy, UA Fairbanks, are initiating studies of reproductive success and food habits of murrelets, kittiwakes, auklets, and fulmars.

John Trapp, FWS Anchorage, Ed Bailey, FWS Homer, and others will conduct a biological reconnaissance of the Islands of Four Mountains, between Amukta and Samalga passes in the eastern Aleutian Islands. They will survey colonies and establish plots for monitoring populations of seabirds. Doug Forsell, FWS Anchorage, began a study of seabirds in the Near Islands, western Aleutians. Doug will band birds and collect samples of eggs and blood for analysis of serum proteins and enzyme systems. This is coordinated with DeGange's study of inci-

dental mortality of seabirds in gill nets in the western Aleutian Islands area.

In southeastern Alaska, Jay Nelson, FWS Anchorage, and others will conduct a biological reconnaissance of the Hazy Islands and will monitor storm-petrel populations at St. Lazaria and Petrel islands. They are developing a suitable study design and sampling scheme to monitor population trends of selected species of marine birds. Also at St. Lazaria, Dee Boersma, UW Seattle, will gather food samples from storm-petrels as part of her continuing program to monitor fossil-fuel hydrocarbons ingested by storm-petrels.

Dave Nysewander and Patrick Gould, FWS Anchorage, will assess the population level and breeding status of kittiwakes, murre, and puffins, and monitor their productivity at Middleton Island, Gulf of Alaska. They are continuing to develop and test suitable study designs and sampling schemes to monitor population trends of several species of seabirds. Also in the Gulf of Alaska, Dee Boersma and others will be at the Barren Islands to continue to gather food samples from storm-petrels to monitor fossil-fuel hydrocarbons, and to collect natural history information on storm-petrels and Tufted Puffins. They are particularly interested in growth rates, burrow attendance, food load and delivery rates, and behavior of undisturbed puffins.

Farther north, Vernon Byrd, Barry Reiswig, and others of Yukon Delta NWR will be monitoring seabird colonies at Nunivak Island. They are to census murre and kittiwake colonies censused originally in 1954 by Peter Stettenheim and again in 1978 by Bob Ritchie, and plan to gather productivity information on plots.

Dave Roseneau and Allen Springer, FALCO Fairbanks, and Ed Murphy, UA Fairbanks, will continue to monitor numbers of birds and reproductive success of birds at Bluff and Cape Thompson. This study, begun in 1976, was designed to monitor long-term changes in populations of murre and kittiwakes and to study their population dynamics and trophic relationships.

BRITISH COLUMBIA, K. VERMEER

Current Research

1. Feeding behaviour and ecology of Black Oystercatchers on Cleland Island; M. Coleman and E. Miller.
2. Flight range of migrant Western Sandpipers; G. Kaiser.
3. Inventory of "open nesting" seabirds in British Columbia; G. Kaiser, R.W. Campbell, and M. Rodway.

4. Late summer distribution of molting seabirds along the British Columbia coast; G. Kaiser and J.P. Savard.

5. Commencement of long-term computer program on the overall and pelagic distribution of seabirds along the British Columbia coast; R. McKelvey.

6. Pelagic distribution of seabirds in relation to physical and biotic parameters over British Columbia's continental shelf; K. Vermeer.

7. Pelagic distribution of seabirds between Victoria and Station Papa in relation to physical parameters; L McIntosh.

8. Nesting and feeding ecology and breeding populations of burrow-nesting seabirds in the Queen Charlotte Islands; K. Vermeer, M. Lemon, and M. Rodway.

9. Commencement of long-term monitoring program on burrow-nesting seabirds in British Columbia; K. Vermeer, M. Lemon, and M. Rodway.

10. Metal residues in waterbirds near downstream copper mines on the coasts of Chile and British Columbia; K. Vermeer, J. Castilla, and D.A. Peakall.

WASHINGTON, P. DEE BOERSMA

University of Washington

a. Institute for Environmental studies. The role of environmental variability and species interactions on reproductive patterns of Leach's and Fork-tailed Storm-Petrels on Tatoosh Island, Washington, P. Dee Boersma. (Over 600 birds have been banded and flyways, food, predation, and oil contaminants are being studied.) See also Alaska.

The effect of resource productivity on the interspecific variations in reproductive behavior of the American Coot. Wendy Hill.

b. Department of Zoology. Effects of Willet foraging on color polymorphism in bivalves. Chris Stinson.

Fratricide in boobies. Mike Hutchins and Alan Harper. They have a proposal under consideration by the National Geographic Society to work in the Galapagos Islands.

c. Wildlife Sciences Group, College of Forest Resources. Biology of Daurumped Petrel in Hawaii. Ted Simons. Three field seasons completed and in the last two seasons predators have been successfully controlled at the colony and reproductive success was improved greatly (from 25% to 70%).

Biozoogeography and phylogeny of alcids and their parasites. Eric Holberg. He will collect birds on St. Matthew Island, Alaska, this summer and may visit Antarctica in the fall.

U.S. Fish and Wildlife Service

The Rhinoceros Auklet as an indicator species on Protection and Destruction islands. William and Lora Leschner in cooperation with the Washington State Department of Game.

Seabird census of the outer coast refuge. Ulrich Wilson.

Breeding biology of the Rhinoceros Auklet on Destruction and Protection islands. Ulrich Wilson. Artificial nesting burrows are being used.

Pollutants in Fork-tailed Storm-Petrel eggs. Chuck Henny.

Washington State Department of Game

Long-term banding study of Caspian Terns, gulls, and shorebirds in Grays Harbor Estuary. Eric Cummins.

Heavy metals and oil pollutants in Rhinoceros Auklet. Lora Leschner.

Winter marine bird survey of southern Puget Sound. Lora Leschner and Eric Cummins.

Colonial seabird study focusing on Black Terns. Ron Friesz.

Evergreen State College

Wintering shorebirds of Grays Harbor. Steve Herman.

Battelle Northwest Laboratories

Banding studies of Forster's Tern. Dick Fitzer.

Distribution and abundance of California and Ring-billed gulls on the Hanford Reach. Dick Fitzer. (They will be analyzing over 1000 banding returns.)

Walla Walla College

Gull behavior study on Protection Island. Joe Galushi.

Seattle Aquarium

Food utilization and growth of captive Rhinoceros Auklets, Tufted Puffins, and Common Murres. Gary Ballew and John Nightengale.

Molt of Rhinoceros Auklet. Gary Ballew.

Private Consultants

Subarctic, Pacific Ocean seabird data analysis. Terry Wahl and David Ainley. The oceanographic regimes and distribution patterns of seabirds will be correlated. (Over 4000 census tracks to be analyzed.)

Location of nesting seabirds in Puget Sound south of Port Townsend. Terry Wahl and Steve Speich.

Continued surveys of seabirds off Grays Harbor. Terry Wahl.

Field guide to Washington birds. Dennis Paulson.

Homosexuality in Ring-billed and California gulls in eastern Washington. Mike Conover.

National Marine Fisheries Service

Marine seabird entanglement in Japanese salmon gillnets in the North Pacific. Linda Jones and Tony DeGange. This is a cooperative project with FWS Anchorage.

Seabird entanglement and its relation to distribution and abundance of seabirds in the North Pacific. Linda Jones and P. Dee Boersma.

Protection Island

Anyone interested in adopting a seabird on Protection Island may write: Eleanor Stopp, Rt. 1, Box 525 B, Port Ludlow, WA 98355. Funds collected will be used to buy land and save the wildlife. A bill is now being considered by the U.S. Senate to set Protection Island aside as a federal refuge.

OREGON, DANIEL H. VAROUJEAN

The Portland chapter of the Audubon Society and the Oregon Field Ornithologist Society are compiling a publication on the status, distribution, and preferred habitat of all avian species in the state. This publication, which includes up-to-date information on seabirds and shorebirds occurring in Oregon's coastal waters, is to become available for purchase shortly before the end of the year.

Individuals

Robert L. Pitman is continuing a study, begun in 1979, of Leach's Storm-Petrel nesting on Saddle Rock. He is banding adult birds and chicks, analyzing stomach contents regurgitated by birds removed from mist nets, and documenting breeding chronology and fledging success.

U.S. Fish and Wildlife Service

The Office of Biological Services, Portland, has contracted with Robert L. Pitman, Michael R. Graybill, and Daniel H. Varoujean to compile a catalog of Oregon seabird colonies. Colony field data collected in 1979 and historical information, gathered in large part by R.L. Pitman over the last two years, will be incorporated into the seabird colony catalog system for Washington, Oregon, and California.

U.S. Bureau of Land Management

As part of the Seabird/Oil Toxicity Study being conducted for BLM by Nero and Associates, Inc., Dick Grau, Michael Fry, and others (see Northern California report) have placed 250 nest boxes in the Leach's Storm-Petrel colony on Hunters

Island. The boxes will be monitored through the 1982 breeding season to determine whether and how commonly Leach's Storm-Petrel use artificial nest sites.

Oregon State University

Christopher P. Marsh has completed field sampling to document prey selection and foraging tactics of Surfbirds and turnstones in the rocky intertidal zone. The study included observations of prey capture, collection of birds for stomach contents analysis, and setting out exclusion cages to measure the influence of foraging birds on invertebrate distribution and abundance in the rocky intertidal. Chris is also examining the seasonal changes in large Larus prey selection in the rocky intertidal.

Daniel R. Matthews, Holly Hansell, and D. H. Varoujean (Oregon Inst. Marine Biology) are continuing a study on the influence of Common Murre foraging on coho salmon smolts released by private and public hatcheries in Oregon. They are analyzing the stomach contents of birds collected off Coos Bay, Yaquina Bay, and the Columbia River, and censusing seabirds in these areas. Daniel Matthews is also comparing the seasonal changes in diets of murre collected off Coos Bay. Holly Hansell has initiated a study on the blood chemistry of Common Murres. She is examining various parameters including blood volume, hemoglobin and myoglobin concentrations, O₂ carrying capacity, and the build-up of lactate during prolonged dives.

After successfully rearing six captive Common Murre chicks last summer (1981), several students and I have completed a study that was designed to document, in part, the growth rate of murre chicks during the at-sea phase of development, the degree to which chicks depend on accompanying adults for sustenance, and the energy requirements of chicks and adult murre.

Jan Hodder will quantify the dependence of waterfowl, primarily Brant, on eelgrass (Zostera) and green algae (Ulva) as forage. She is using exclusion cages placed in eelgrass and Ulva beds in Coos Bay. Preliminary results indicate the Brant appear to prefer Ulva, when this alga and eelgrass are both available.

Michael R. Graybill, Oregon Inst. Marine Biology, has initiated a study of the breeding biology of Pigeon Guillemots nesting among the timbers of piers in Coos Bay.

Current Research

a. Coastal Surveys and Habitat Studies

Ken Briggs, Dave Lewis, Breck Tyler, and Kathleen Dettman, UC Santa Cruz, are continuing pelagic surveys of marine birds in central and northern California, emphasizing population sizes, species composition, distribution, and seasonality of occurrences. Gary Page, Lynne Stenzel, David Ainley, and Dave Shuford, Point Reyes Bird Observatory (PRBO), are completing a study of seabird use of inshore habitats in the Point Reyes area. Alan Baldrige, Hopkins Marine Station, continues long-term observations of distribution, abundance, and behavior of seabirds in Monterey Bay. Dan Anderson, UC Davis, Ken Briggs, UC Santa Cruz, and Doug Siegel-Causey, University of Arizona, are assessing marine bird habitat use in the Gulf of California this spring. Paul Kelly, California Fish and Game (CF&G), and Roy Lowe and Tom Harvey, San Francisco NWR, are studying waterbird use of solar salt evaporation ponds in south San Francisco Bay.

b. Toxicology and Habitat Monitoring

Harry Ohlendorf and Roy Lowe, FWS, Paul Kelly, CF&G, Mike Rigney, South Bay Inst. Avian Studies, and Mike Fry, UC Davis, are investigating the effects of environmental contaminants on waterfowl and fish-eating birds in San Francisco Bay. Dan Anderson and Frank Gress, UC Davis, with the National Park Service, are developing a protocol for seabird monitoring in the Channel Islands. Dan Anderson and Miguel Mara, UC Davis, are studying pesticide accumulation in Pintails and whistling ducks in coastal marshes of western Mexico and Baja California. Dick Grau, Mike Fry, Lee Boekelheide, Ann Brice, Sherry Goldfarb, and Nannette Pratini, UC Davis, and Bob Boekelheide, Teya McElroy, and Kevin Schafer, PRBO, are studying the long-term effects of sublethal doses of oil on Cassin's Auklets at the Farallon Islands. The UC Davis portion of this study is also working with storm-petrels in Oregon and Wedge-tailed Shearwaters in Hawaii. James Hardwick, Dan Miller, Don Croll, Tom Keating, and Frank Henry, CF&G, are monitoring mortality of seabirds in gill and trammel nets in Monterey Bay by observing commercial fishermen hauling their nets and by counting dead birds on beaches.

c. Breeding and Physiological Ecology

Bob Boekelheide, Teya McElroy, Larry Spear, Chris Swarth, and Kevin Schafer, PRBO, are continuing long-term studies of breeding and population ecology of seabirds at the Farallon Islands, concentrating on known-age banded populations of

Brandt's Cormorants, Western Gulls, and Cassin's Auklets. Lee Boekelheide and Dick Grau, UC Davis, are continuing their studies of the dynamics of egg formation and embryo metabolism at the Farallon Islands and other localities. Dave Winkler, UC Berkeley, continues his studies of the breeding biology of California Gulls, both at Mono Lake with Virginia Norris and others, and at Great Salt Lake, Utah. His studies emphasize differing breeding effort and parental care with food and climate conditions. Frank Gress and Dan Anderson, UC Davis, are continuing ecological studies of Brown Pelicans at Anacapa Island. Wayne Trivelpiece, PRBO, is studying the breeding and feeding ecology of sympatric pygoscelid penguins at the South Shetland Islands, Antarctica. Also in Antarctica, David Ainley continues studies with known-age South Polar Skuas and with bird use of the Ross Sea. Gary Page, Lynne Stenzel, and others are continuing studies of coastal- and inland-breeding Snowy Plovers.

d. Feeding Ecology

Roy Lowe and Tom Harvey, FWS, and Paul Kelly, CF&G, are analyzing the food habits of wintering Surf Scoters and Greater Scaup in south San Francisco Bay. Tom and Roy are also observing surface feeding behavior by Brown Pelicans at salt evaporation ponds in San Francisco Bay. Don Croll, Moss Landing Marine Lab, is studying the feeding ecology of Common Murres in Monterey Bay. Ken Briggs, Dave Lewis, Breck Tyler, and Kathleen Dettman, UC Santa Cruz, are observing the relationships between feeding seabirds and oceanographic fronts in central and northern California.

e. Conservation News

Mono Lake continues to shrink, as Los Angeles Dept. Water and Power continues to divert major tributaries of the lake. It is too early to tell whether the runoff from the heavy snow pack in the Sierra Nevada will spill over the diversion dams this year, but there is hope. The California Gull population is even more scattered now, mostly using small offshore islets in place of the former breeding islands which are connected to the lake's shoreline. In south San Francisco Bay the population of California Gulls breeding has increased tremendously in the last two years, now up to a reported 1000 pairs. It is not known whether these are deserters from Mono Lake colonies. At Mono Lake this spring there was a large die-off of Eared Grebes, possibly due to failures in the brine shrimp population. The decline in brine shrimp has been attributed to the increasing salinity in the lake. For more information, write: Mono Lake Committee, P.O. Box 2764, Oakland, CA 94602.

Increased use of gill nets in Monterey Bay has resulted in high numbers of seabird deaths, especially during 1981, when an estimated 22,000 birds died. Common Murres made up 42% of birds caught in nets, mostly in July and August, when parent-chick pairs were moving to sea. Sooty Shearwaters comprised another large segment of the killed birds, with fewer cormorants, loons, grebes, gull-mots, auklets, murrelets, and scoters. Legislation introduced by Senator Henry Mello (SB 1475) and supported by Assemblyman Sam Farr will limit gill netting in Monterey Bay to water deeper than 60 feet, beyond the usual feeding range of most birds. The bill has passed the state senate and is moving to the assembly, but there is no provision in the bill for monitoring continued kills of birds in the nets. Obviously murre populations in the area cannot tolerate this level of mortality: about 10% of the population of murres in central California were killed in one year!

The status of oil leases in northern California remains in limbo. Recently Secretary of Interior Watt deleted sections of the original five lease sale area but simultaneously added other sections for possible leasing. Plans at this time remain ambiguous and difficult to stay abreast of, although oil companies still seem interested, recently sending seismic vessels into the Gulf of the Farallones for several weeks.

f. The Oceans

Due to late spring storms interspersed with periods of calm winds, upwelling typically associated with strong northwest winds did not occur in much of coastal California in early spring of 1982. Ocean temperatures at the Farallon Islands and in Monterey Bay rose during March and April, resulting in some of the warmest April temperatures at the Farallones since 1978, the last major breeding failure year for Farallon seabirds. Farallon birds have mostly been feeding long distances from the islands, and murres have been returning with anchovies, a prey species typical of years of warmer water. Possibly related to the warmer water and anchovy availability is the increase in Brown Pelicans this spring in northern California. Gary Page and David Ainley, PRBO, report increased numbers of dead Brandt's Cormorants on beached bird surveys. Among the known-aged Brandt's Cormorants at the Farallon Islands, only old experienced breeders have returned thus far. Cassin's Auklet egg-laying at the Farallon Islands was asynchronous this year, and cormorants and murres delayed egg-laying well into May.

The 1981 breeding season was fair to good for most northern California breeders. Breck Tyler reports that intense upwelling occurred north of Point

Sur throughout spring and summer, 1981, whereas waters south of Point Sur were 1 to 3°C warmer than normal. Many more Brown Pelicans and Heermann's Gulls occurred in northern California in 1981 than in 1980, but fewer occurred in northern California, possibly because of colder coastal waters in the north. Bob Pitman observed several Mexican and central Pacific species (including tropicbirds and Solander's Petrel) in oceanic waters west of the coastal upwelling region, but these species apparently did not enter colder coastal waters of central and northern California. Farallon seabirds which began the 1981 season very strongly, ended by fledging average numbers of chicks. This coincided with an abrupt drop in juvenile rockfish being brought to the young in late June and July, which presumably indicated a decline in the prey population. Cassin's Auklets on the Farallones fledged some late chicks at weights higher than average for the population, a very unusual occurrence. On the basis of prey fed to auklet chicks, euphausiids remained abundant in the Gulf of the Farallones well into the fall.

SOUTHERN CALIFORNIA, JEFF FROKE

Scripps Institution of Oceanography

Lanna Cheng is investigating predation by seabirds on the ocean insect Halobates as a possible route for transfer of cadmium. Halobates, which was found in the diets of nine seabird species in the northwestern Hawaiian Islands by Harrison and Hida (FWS Honolulu), have been found to contain up to 200 ppm Cd, and Cheng is trying to determine to what extent the Cd in the insect contributes to the Cd load of seabirds.

University of California at Los Angeles

Jonathan Atwood, UCLA, and Barbara Massey and Charles T. Collins, CSU Long Beach. Foraging ecology and population dynamics of Least Terns in Southern California.

Elizabeth Flint. Reproductive behavior and ecology of the Sooty Tern, French Frigate Shoals, Hawaiian Islands.

Judith Hand. Pair-bond formation in gulls. A long-term study of the criteria for pair-bond formation and maintenance, using Western Gulls on San Nicolas Island, Channel Islands, California.

Judith Hand and Bryan Obst. Sexing Western Gulls using external measurements.

Thomas R. Howell. Reproductive biology of the Blue-grey Noddy, Christmas Island, Central Pacific. A study of reproductive behavior and incubation physiology.

Larry Hutchinson and Bernice Wenzel. Responsiveness of procellariiform birds to odor cues in foraging. Part of a general program on the procellariiform olfactory system. Field work conducted off the central California coast.

Patrick J. Mock. Breeding ecology and energetics of storm-petrels (Leach's, Black, and Least), San Benito Islands, Baja California. Objectives: to document breeding phenology, behavior, and life history parameters and begin comparative studies of the energetics of breeding.

Bryan Obst. Allometric analysis of energy metabolism, thermoregulatory, and life history parameters in gulls.

Diane Riska. Behavior and vocal communication of the Brown Noddy, Dry Tortugas, Florida.

Conservation News

Interior Secretary James Watt in late April 1982 proposed leases of 172 tracts (856,000 acres) off Orange and Los Angeles Counties for oil drilling. Major sites are offshore of Laguna and Newport beaches, Santa Monica Bay, and Long Beach - Los Angeles Harbors. Governor Brown, Senator Cranston, and local governments are outraged; Brown and the City of Newport Beach will sue the federal government if Watt decides to go through with the proposal. Conservationists and others in the tourism industry are worried that the public outcry is low due to widespread "Watt burn-out." Interested PSG members should communicate with their congressmen, declaring that Watt's proposal is insensitive to legitimate economic and environmental concerns of southern California, and that drilling would threaten marine biological resources including Pacific seabirds.

The Orange County Board of Supervisors approved a Local Coastal Plan calling for intensive residential and recreational development of the Bolsa Chica wetlands near Huntington Beach. Although the proposed development is clearly contrary to the California Coastal Act, strong political pressure by the landowner, Signal Landmark, has required action by conservationists and groups including PSG to support the Coastal Commission in preserving the wetlands and a strong Coastal Act. I attended the Coastal Commission hearing in April, and will present testimony to the Commission at its final hearing on Bolsa Chica in June. (Jeff's testimony follows. Ed. note).

Testimony presented 14 June 1982 to the California Coastal Commission - Naomi Schwartz, Chairwoman

Madam Chairwoman and Commissioners, my name is Jeffrey Froke. I am the Southern California Regional Representative for the Pacific Seabird Group. The Pacific Seabird Group is an international organization of professional and amateur scientists and conservationists who are concerned with the ecology and management of seabirds and their environment.

The Pacific Seabird Group supports the strong protective function of the California Coastal Act and the Coastal Commission. Further, we support your staff's recommendation that you find the Orange County Local Coastal Plan for Bolsa Chica to raise substantial issue with regards to environmental protection of sensitive wetland areas and wildlife populations. We suggest an alternative to the existing LCP including preservation of the total lowlands area to coincide with homesite development on adjacent upland areas, thereby achieving a balance of human needs for present and future generations.

Proponents of the LCP have adopted an inadequate biological definition of viable wetland habitat, and this mistake potentially threatens proper management of Bolsa Chica as a highly productive area capable of supporting healthy wildlife populations. It is axiomatic to wildlife management that alterations of land by humans is not always equivalent to hopeless degradation of wildlife values, and that artificial habitats are often more biologically productive than "pristine" areas. All of the Bolsa Chica wetland system is critically important as feeding and resting habitat for a high diversity and abundance of waterbirds. Recent field data have established that waterfowl populations of Bolsa Chica approximate those of Anaheim Bay and of Upper Newport Bay. Further, winter population surveys of Bolsa Chica waterbirds indicate that the diked wetlands of the Signal Landmark property are of equal or greater importance to birds than wetlands of the State Ecological Reserve.

Remnant links of the chain of California coastal wetlands are each critical elements of the Pacific Flyway for U.S and international migratory birds. Your decision on Bolsa Chica will itself be closely linked to the futures of other key wetland areas, such as those in San Diego and Los Angeles counties, the other ships on your horizon. The LCP would threaten a resource which is more than local in value, and I appreciate your efforts to maintain a proper perspective on Bolsa Chica for the benefit of the public and wildlife.

Thank you, Jeffrey Froke

University of Hawaii

G.C. Whittow, T. Pettit, and H. Ellis continue their work on incubation physiology and seabird energetics on Tern Island, French Frigate Shoals. G.C. Whittow and T. Pettit are also continuing their studies of thermoregulation in Brown Noddies and Red-footed Boobies. S. Conant will work on endemic land birds of Nihoa and Necker islands but will also collect data on the nesting seabirds. M. Rauzon and D. Woodside (FWS) will be on Jarvis Island in June and July studying the ecology of the feral cats.

U.S. Fish and Wildlife Service

C. Harrison and T. Hida (NMFS) are completing their monograph of the feeding habits of the seabirds nesting in the leeward Hawaiian islands. C. Griffin will analyze data collected at sea by the Pacific Oceans Biological Survey Program in the sixties in an effort to identify important foraging areas around the Hawaiian Islands. M. Naughton and A. Newman are analyzing data collected on the leeward islands in the past three years. Eventually these data on seabird populations, food habits, and foraging areas, together with the energetics data collected by Whittow, Pettit, and Ellis, will be put into a model designed to estimate the energy requirements of the seabirds in the area. S. Fefer is active in this project in addition to writing an oil spill contingency plan and providing recommendations to Midway Island on predator control and bird air strike problems.

J. Andre and R. Ittner continue to monitor populations and breeding biology of seabirds breeding on French Frigate Shoals. Volunteer J. Young will be working with them this spring and summer. B. Brady and D. Moriarty will continue studies of Wedge-tailed and Newell's shearwaters at Kilauea Pt., Kauai. C. Kepler will be working with A. Kepler and R. Hobdy on a survey of the islands off Maui.

Hawaii Fish and Game

R. Saito will survey seabird colonies on the small islets off Oahu this year. T. Telfer, J. Sincock (FWS), and B. Brady (FWS) will continue the Newell's Shearwater retrieval program on Kauai this winter.

University of Wisconsin

J. Hailman and J. Reed have been working with J. Sincock (FWS) on shearwater fallout on Kauai. This next year they will be studying the effect of polarized light on the number of shearwaters downed. Last year they found that

fallout at the Kauai Surf Hotel could be reduced by almost 40% by shading the big floodlights. They will also be investigating the spectral sensitivity of Hawaiian seabirds, especially the Dark-rumped Petrel and Newell's Shearwater.

Nature Conservancy

Because of the optimistic findings of Hailman, Reed, and Sincock, the Nature Conservancy bought shades for 14 street lights in the Kauai Surf area to try to demonstrate the efficacy of such shades. The Nature Conservancy is in the process of leasing over 200 acres of land, just outside Kauai. This is the only privately owned land where Newell's Shearwaters are known to nest.

University of California, Los Angeles

E. Flint is using time-lapse photography to study time-energy budgets of Sooty Terns on Tern Island, French Frigate Shoals. She also spent two weeks on Lisianski Island and two weeks on Pearl and Hermes Reef collecting data on seabird populations for the Fish and Wildlife Service.

Other

R. Podolsky of the University of Michigan will be working with Earth Watch volunteers to attract Laysan Albatross to a protected area on Kilauea Pt., Kauai. In recent years, nesting attempts on Kauai by this species have been largely unsuccessful due to severe predation by dogs.

R. Shea of the University of Pennsylvania, is returning to Midway Island to collect data on seabird growth and energetics.

M. Fry, UC Davis, will be studying egg physiology in the Wedge-tailed Shearwaters on Manana Island.

J. de Korte, Inst. voor Taxonomische Zoologie, Nederlands, surveyed four islands in Indonesia last summer to determine the status of the breeding seabirds and also document threats to their existence.

J. Cotton and R.L. Pitman will be spending about eight months at sea studying marine bird and mammal distribution.



The following are seabird studies scheduled for the 1982 field season in the main areas of northeastern North America. The projects have been grouped into five zones according to water type and/or features of the bird community that occupies it. Individual projects within each group are listed alphabetically by surname of the principal investigator. Addresses and telephone numbers appear at the end of the listings.

This approach focuses attention on water characteristics rather than on land with the hope that it will assist the reader in locating projects of interest. People whose studies have been omitted should notify us so that an outline of the research project may be included in the next review.

1. Lancaster Sound and Vicinity, Baffin Bay, Greenland and Norwegian Seas (high arctic waters)

a. Investigation of seabird distribution in late winter in the Greenland and Norwegian seas. To determine the use that seabirds make of different water types (marine habitats). 26 February to 5 April 1982. R.G.B. Brown.

b. Population study of Thick-billed Murres and Black-legged Kittiwakes breeding at Coburg Island, Jones Sound, Northwest Territories. To determine features of chick growth, productivity, and post-breeding dispersal of birds from a high arctic site. 1-31 August 1982. D.N. Nettleship and P. Mineau.

c. Survey of Northern Fulmar populations in Buchan Gulf and Scott Inlet, Baffin Island, Northwest Territories. To determine the distribution and population sizes of colonies of Northern Fulmars at Buchan Gulf and Scott Inlet, northeast Baffin Island. 25 July to 15 August 1982. D.N. Nettleship.

2. Southern Davis Strait, Hudson Strait, and Northern Labrador Sea (low arctic waters)

a. Reproductive ecology of Thick-billed Murres breeding at Akpatok Island, Northwest Territories. To investigate the reproductive ecology of the Thick-billed Murre, establish permanent population monitoring plots, and assess population size and demography. 15 July to 31 August 1982 (2 year study: 1981-1982). G. Chapdelaine, R. Anderson, P. Brousseau, and M. Guellemette.

b. Reproductive ecology of seabirds breeding at Digges Island, Digges Sound, Northwest Territories. To investigate the reproductive ecology of Thick-billed Murres, Black Guillemots, and Iceland Gulls breeding at a low arctic colony, establish permanent population monitoring plots, and determine population size

and demography. 1 June to 1 September (3 year study: 1980-1982). A.J. Gaston, D. Cairns, R.D. Elliot, J. Geale, J. Green, I. James, and D. Noble.

c. Reproductive ecology of Thick-billed Murres and Black-legged Kittiwakes breeding on Hantzsch Island, SE Baffin Island, Northwest Territories. To investigate aspects of the breeding regime of Thick-billed Murres and Black-legged Kittiwakes on Hantzsch Island. late July to 31 August 1982. A.J. Gaston and S. Smith.

d. Common Eider banding, Labrador. To band 500 adult female eiders on the Galvono Island group in Northern Labrador. 14 June to 23 July 1982. A.R. Lock and B. Dodge.

3. Southern Labrador Sea, East Newfoundland, and Northern Gulf of St. Lawrence (low arctic waters)

a. Karyotyping of seabirds, Gull Island, Newfoundland. To determine the interspecific differences in karyotypes of alcids by examining cell cultures obtained from birds breeding on Gull Island. 17 May to August 1982. S. Bartlett and W. Threlfall.

b. Rearing survival of Common Eider chicks in the St. Lawrence River Estuary, Quebec. To determine annual productivity of Common Eiders and factors influencing chick survival to fledging. June to late August 1982. J. Bédard.

c. Relationships between Double-crested Cormorants and Common Eider and their nesting habitats in the St. Lawrence Estuary. To describe and eventually regulate the effect of Double-crested Cormorants on forest cover on islands used for breeding by other aquatic birds. May to September 1982. J. Bédard.

d. Conservation of marine birds breeding on the north shore of the Gulf of St. Lawrence, Quebec. To develop a conservation-management policy and public education program re seabird colonies on the north shore of the Gulf of St. Lawrence by examining: 1) the historical interaction between man and seabirds, 2) current public knowledge and attitude towards seabirds and their management, and 3) requirements for survival of the colonies. 12 June to early August 1982 (continuing). C. Blanchard-French, J. Corroran, and J. Quintrell.

e. Investigation of seabird usage of the oceanographic front at the outer edge of the Labrador Current. To determine the importance of oceanographic factors in concentrating prey on which seabirds can forage economically. October-November 1982. R.G.B. Brown.

f. Breeding biology of the Common Murre in southeast Newfoundland. To examine variation in time budgeting between breeding pairs of Common Murres and its effect on breeding success. 15 May to 1 August 1982. A. Burger.

g. A survey of seabirds breeding in sanctuaries along the north shore of the Gulf of St. Lawrence, Quebec. The continuation of a program initiated in 1925 to census seabird populations breeding in sanctuaries along the north shore of the Gulf of St. Lawrence. 1 June to 6 July 1982. G. Chapdelaine, R. Anderson, P. Brousseau, and M. Guellemette.

h. Study of relationships between tibiotarsus and phalanges of Common and Thick-billed murre. To develop a technique to differentiate between Uria species on the basis of leg and foot characteristics alone (all age cohorts). initiated in 1977 and ongoing. F.G. Cooch.

i. Survey of Common Terns breeding at Terra Nova National Park, Newfoundland. To monitor changes in population size and status of Common Terns breeding in Terra Nova National Park. early June to early August 1982. D. Deichman and park wardens.

j. Comparative wintering ecology of seabirds in southeast Newfoundland. To determine ecological factors influencing the distribution of seabirds (mainly Common Eider, Oldsquaw, Eastern Harlequin, and scoters) in coastal Newfoundland with emphasis on the identification of food usage and availability. September to May (1981/82 and 1982/83). I. Goudie.

k. Breeding biology of Leach's Storm-Petrel on Gull Island, Newfoundland. To compare breeding success and chick growth in relation to nest density. 17 May to 31 October 1982. R. McLagan and W. Threlfall.

l. Population biology of alcids breeding at the Gannet Clusters, southeast Labrador. To compare features of reproduction of large (Razorbill, Common and Thick-billed murre) and intermediate- (Atlantic Puffin) sized alcids breeding on the Gannet Clusters in order to evaluate interpopulation differences and requirements for successful breeding. 24 May to 25 September 1982 (3-year study: 1981-83). D.N. Nettleship, T.R. Birkhead, S. Johnson, R. Milton, and E. Verspoor.

m. Seabird commercial fisheries interrelationships in southeastern Newfoundland. To assess the influence of the major international commercial capelin fishery on reproduction of capelin-associated colonially breeding seabirds, particularly Atlantic Puffin, Common Murre, and Razorbill. 1 May to 10 September 1982 (ongoing long-term study). D.N. Nettleship, A. Burger, I. Goudie, W. Lidster, and J. Piatt.

n. Effects of ingested oil on over-winter survival of Atlantic Puffins breeding on Great Island, Newfoundland. To evaluate over-winter survival of adult

Atlantic Puffins given a sublethal dose of oil. mid-June to 31 August 1982 and 1983. D. Peakall, R. Butler, A. Harenist, D. Jeffries, T. Layton, D.N. Nettleship, and A. Pajor.

o. Effects of ingested oil on Leach's Storm-Petrels breeding on Great Island, Newfoundland. To study the effect of small doses of oil on metabolism of breeding Leach's Storm-Petrel. July to 30 September 1982. D. Peakall, R. Butler, A. Harenist, D. Jeffries, T. Layton, D.N. Nettleship, and A. Pajor.

p. Effects of oil on Herring Gull chicks at colonies in Witless Bay, Newfoundland. To study the effects of oil and oil plus dispersants on the metabolism and osmoregulation of a captive group of Herring Gull chicks, the histopathological changes produced, and the induction of anemia. mid-June to end of July 1982. D.B. Peakall, R. Butler, A. Harenist, D. Jeffries, and A. Pajor.

q. Effects of oil on Atlantic Puffin chicks from colonies in Witless Bay, Newfoundland. To establish a small captive colony of Atlantic Puffin chicks and study the effects of oil plus oil dispersants on their metabolism and osmoregulation, the histopathological changes produced, and the induction of anemia. mid-June to 31 August 1982. D.B. Peakall, R. Butler, A. Harenist, D. Jeffries, T. Layton, D.N. Nettleship, and A. Pajor.

r. Mortality of seabirds by drowning in fish-nets in southeastern Newfoundland. To determine the magnitude and nature of seabird net-mortality in Newfoundland waters, particularly in relation to major sites of breeding alcids. 1 May to 15 September 1982. J. Piatt, and D.N. Nettleship.

s. Effects of crude oil on Black-legged Kittiwakes, Gull Island, Newfoundland. To investigate the effects of crude oil on adult behaviour, chick growth, and the histopathological changes in the liver of Black-legged Kittiwakes. 17 May to 31 August 1982. W. Threlfall and R. McLagan.

t. Annual survey of the hunting kill of murre and sea ducks in Labrador and Newfoundland. To derive estimates of the numbers of birds killed by hunters between 1 September and 31 March and derive the nature (location, timing, and influence of ice inter-year variation) and magnitude of the kill. Multi-year study which commenced in 1977 and is continuing. S. Wendt and F.G. Cooch.

4. Southern Gulf of St. Lawrence, Scotian Shelf, Bay of Fundy, and Gulf of Maine (boreal waters)

a. Survey of Common Terns breeding in Kouchibouguac National Park, New Brunswick. To monitor changes in population size and status of Common Terns breeding in Kouchibouguac National Park. June to August 1982. G. Babin.

b. Leach's Storm-Petrel in Maine and the Maritimes: a study of genetic variation among populations. To characterize the genetic variability of three discrete breeding populations of Leach's Storm Petrel by electrophoretic analysis of individuals from three populations. July to August 1982. R. Baker and D. McCrimmon.

c. Population and distribution of colonial waterbirds on Long Island, New York. A continuation of the investigation into salt marsh nesting Common Terns, and the start of a new study on a population of Laughing Gulls which have recolonized Long Island following a 100-year absence. June 1982 (continuing). P. Buckley, F.G. Buckley.

d. A check on the status of tern colonies along the coast of Maine. To revisit tern colonies along the Maine coast to determine the site of re-establishment of a mixed colony of approximately 2000 pairs of Arctic and Common terns displaced from Petit Manan during 1980. 1 July to 31 August 1982. W. Drury.

e. A census of Leach's Storm-Petrel breeding on Great Duck Island, Maine. To obtain a reliable estimate of the number of Leach's Storm-Petrel breeding on Great Duck Island, Maine, and confirm its status as the largest colony of this species in the Gulf of Maine. mid-June to 31 July 1982. W. Drury and D. Folger.

f. Monitoring of movements of seabirds and large marine mammals in the Gulf of Maine. To record the diversity and timing of movements of seabirds and large mammals past the outermost islands in the Gulf of Maine (Mount Desert Rock and Matinicus Rock). mid-June to 31 July 1982. W. Drury, S. Mullane, and P. Steveck.

g. Comparative foraging habits of Arctic and Common terns breeding on Brier Island, Nova Scotia. An intracolony comparison of the foraging habits, reproductive activities, and breeding success of the Arctic and Common terns breeding on Brier Island. 15 May to mid-August 1982 (3-year study: 1982-1984). I. Kirkham.

h. Census of terns and gulls in Nova Scotia. To determine the location of gull and tern colonies and population sizes by a co-ordinated air and ground count approach. 24 May to 27 June 1982. A.R. Lock and T. Currie.

i. Site selection and breeding performance of Leach's Storm-Petrel on Bon Portage Island, Nova Scotia. To examine the relationships between site characteristics, chick growth, and breeding success of Leach's Storm-Petrels on Bon Portage Island, Nova Scotia. May through October 1982. C. MacKinnon and P.C. Smith.

j. Population census of Great and Double-crested cormorants in Nova Scotia. To determine the change in distribution and abundance of Great and Double-crested cormorants breeding in Nova Scotia between 1971 and 1982. 18 May to 21 May 1982. R. Milton and P.J. Austin-Smith.

k. An examination of the diet of the Great and Double-crested cormorants in Nova Scotia. To examine the diet of the Great and Double-crested cormorants and its relationship to the interests of sport and commercial fisheries. May through July 1982. R. Milton and P.J. Austin-Smith.

l. Pelagic distribution of marine birds off northeastern United States. To outline the distributions of seabirds both chronologically and spatially through the year from Cape Hatteras to Nova Scotia. throughout the year (ca. 30 cruises to be executed in 1982). K.D. Powers.

m. Relationships of marine birds to oceanic fronts in northeastern United States. To assess the importance of frontal regions of the United States continental shelf waters as determinants of the pelagic distributions of Wilson's Storm-Petrels and Red Phalaropes. May, August-October 1982. K.D. Powers and E.H. Backus.

5. Great Lakes (freshwater)

a. Demography of a color-marked Herring Gull colony in Lake Ontario. An examination of the demography of a color-marked Herring Gull colony and the physiological causes of excessive post-fledging male mortality. 25 April to mid-June 1982 (5th year - continuing). G. Fox.

b. Effects of various chemical pollutants on mixed-function oxidase levels in livers of Herring Gull chick embryos. Development of an economical technique to test for exposure of adult seabirds to chemical pollutants by examining mixed-function oxidase levels in livers of 25-day old Herring Gull embryos collected from Great Lakes colonies. 25 April to mid-June 1982. G. Fox.

c. Fish-eating birds in the Great Lakes as indicators of toxic chemical pollution. To monitor changes in diversity or levels of toxic chemicals on the five Great Lakes by analyses of collected material and the impact of these chemicals on Herring Gull and Double-crested Cormorant populations. 15 April to 15 July 1982 (continuing). P. Mineau.

d. Parental care activities and time partitioning in Herring Gulls, Ring-billed Gulls, and Common Terns around Port Colborne, Ontario. To examine parental care activities by mated pairs to clutches and to broods, and the determination of time partitioning effort given to clutch and brood care activities by

the sexes in Herring Gulls, Ring-billed Gulls, and Common Terns around Port Colborne, Ontario. early April to late July 1982. R.D. Morris, J. Chardine, M. Richards, V. Wai-Ping, and D. Wiggins.

e. Egg-laying and hatching synchrony in female-female pairs of Ring-billed Gulls on Granite Island, Black Bay, Lake Superior. To determine whether superclutches of multiple female associations are laid and hatch synchronously or whether females of such associations lay their clutches independently of the mate's laying activities. This investigation attempts to shed light on any adaptive significance of such unusual pair bonds. early May to late July 1982. J.P. Ryder.

f. The relation between egg sequence and sex ratio in Ring-billed Gulls on Granite Island, Black Bay, Lake Superior. To determine whether sex is allocated to specific eggs in clutches or whether sex of eggs results from random sex chromosome placement; to determine whether the secondary sex ratio can account for a skewed sex ratio in Ring-billed Gulls that could explain the origin and maintenance of multiple female associations in this and other larids. early May to late June 1982. J.P. Ryder.

g. Morphometrics of Ring-billed Gulls in Canada. To determine whether individuals within each of two disjunct populations in Canada differ morphometrically. To determine distributional and taxonomic status of disjunct Ring-billed Gulls in Canada. January 1982 (western area only). J.P. Ryder and B. Termaat.

h. Surveys of gulls, terns, and cormorants in the Great Lakes. To assess population status and identify changes in abundance and distributions in the Great Lakes. early May to end of June 1982. H. Blokpoel.

i. Population biology of gulls and terns breeding on Leslie Street Spit (Toronto), Lake Ontario. To monitor the growth, change in status, and interspecific differences in foraging and breeding behaviour, of five species of birds which have established mixed-species formation in 1973-74. mid-April to end of July 1982 (continuing). H. Blokpoel.

j. Distribution and ecology of North American Common Terns wintering in Central and South America. To examine features of the wintering ecology of populations of Common Terns. March 1982. H. Blokpoel and G. Tessier.

Northeastern North America Directory

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SCIENTIFIC TRANSLATIONS COMMITTEE

Current Translations

The following citations are for translations either sent to, or held by, the Josselyn van Tyne Library or the Alexander Library. PSG members may obtain copies of translations held by the JvT library for the cost of photocopying and mailing.

Negotiations between the National Translations Depository (John Crerar Library) and the ornithological community are in stasis. The deadlock is on copyright ownership. The John Crerar Library is in business to sell translations; none of us are in such a position. It appears that any material we send to them is protected from our further use. In other words, they would no longer be available from the JvT library at cost, but supplied by the Crerar Library at their prices. Since many of the translations this committee has sent to the JvT library are the unpaid efforts of PSG members, such a situation would be untenable and unfair. I have every confidence that this will all be settled soon, perhaps in the next century. For the present, translations will be held by the JvT library as always.

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- Ten years of study have shown that both the colony sites and abundance of breeders vary markedly from year to year. The central areas have high productivity and continual use: the peripheral areas are used sporadically through the census period and have low chick production. This has the effect of stabilizing the colony production within a wide range of environmental and seasonal conditions. -D.S.-C.
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PROGRAM, REGIONAL PAPERS, SEABIRD WORKSHOP, ICBP, 3-5 AUGUST 1982

Southern Ocean and Antarctica (introduction: Croxall)

90°W - 20°W (W-South Atlantic; Antarctica Peninsula)

Croxall et al.

20°W - 80°E (E-South Atlantic; Indian Ocean)

Williams

French Austral and Antarctic Territories

Jouventin et al.

Antarctica 45°E - 160°E

Johnstone and Horne

Antarctica 160°E - 150°W (Ross Sea)

Harper et al.

Macquarie Island

Rounsevell

South America (introduction: Devillers)

Chile

Schlatter

Galapagos

Coulter

Brazil

(Sick?)

Caribbean

Van Halewijn

Argentina and other uncovered areas

Devillers

Africa (introduction: Cooper)

Afro-tropical region

Cooper and Williams

East Africa

Britton

Arabian Gulf

Gallagher

South Atlantic Islands

Williams

NE Atlantic (introduction: Bourne)

Atlantic Iberia

Barcena and Bermejo

Northern Norway

Barret

Remaining areas

Bourne

Mediterranean (introduction: Bourne)

Mediterranean Spain

Juana et al.

East Mediterranean

(Watson?)

NW Atlantic and Canadian Arctic (introduction: Brown and Nettleship)

Greenland

Evans

NW Atlantic and Canadian Arctic

Brown and Nettleship

East Coast USA

(to be allocated)

North Pacific (introduction: Schreiber)

Alaska

Lensink

British Columbia

Sealy

Baja California and western USA

Jehl

Japan

(to be allocated)

Hawaii

Harrison

South Pacific

Garnett

Tropical Indian Ocean

Feare

Australia

Fullegar and Van Tets

New Zealand

Bell and Robertson

Synthesis/Review of Conservation Issues

Incidental takes of seabirds in fishing nets

King

Effects of human exploitation of seabird

populations

(Feare?)

Interactions between seabirds and commercial

fisheries

Furness and Ainley

Influence of habitat disturbance and destruction

Vermeer

Pollution and poisoning

Bourne

Influence of natural and introduced predators on

seabird populations

Moors et al.

Other issues

(to be allocated)

As in all marine ecosystems, marine life in the western North Atlantic is supported through a "food-web", with plant plankton providing the basic growth material for all animal life. Marine animals, in a complex web of feeding interrelationships, depend on plankton and each other for nourishment. Within this web, some species of fish and plankton are of fundamental importance and form the critical "cornerstones" of highly structured feeding hierarchies. In Newfoundland waters, capelin Mallotus villosus, a small sardine-sized fish (reaches a length of ca. 174 mm) that normally occurs in immense numbers on the Grand Banks, northeast coast, and Laborador banks, is the basis of the food-web. At certain times of the year (especially summer), this small fish is the single most important food for cod, salmon, halibut, plaice, and many other fish species. It is also a primary food for finback, minke, and humpback whales, harbour porpoise, harp seal, short-finned squid, and many species of seabirds, including important populations of breeding Northern Gannet, Black-legged Kittiwake, Herring Gull, Razorbill, Common and Thick-billed murre, and Atlantic Puffin and the non-breeding summer transequatorial migrants, the Greater and Sooty shearwaters.

The capelin is not unique in its role as a basic food resource for larger fish and other marine animals. Similarly sized fish, with equivalent importance in the food web, occur in most productive marine areas of the world (for example, anchovies off the west coast of North and South America, pilchards off South Africa, and sandlance and sprats in the North Sea). In these and other areas, overfishing of "cornerstone" fishes has resulted in adverse, and sometimes disastrous consequences to dependent marine animal populations. Mounting evidence indicates that a combination of intensive fishing pressure since 1972, both offshore and inshore, and several years of reproductive failure appear to have severely reduced eastern Canadian stocks of capelin and have seriously altered the feeding regime and behaviour of many capelin-dependent marine animals.

Up until the 1970's, capelin in the northwest Atlantic were virtually ignored as a commercial fish. Some tens of thousands of tons of capelin were harvested annually around Newfoundland for use as fertilizer, bait, and food. This localized and relatively small fishing effort apparently had little effect on the total capelin population. Then in the early 1970's a large foreign offshore fishery, led by the Russians, was initiated and permitted to operate

throughout the year on both the spawning and wintering grounds of capelin. Exceptionally large catch rates (up to 50 tons/hr) were achieved during this fishery and huge 'factory ships' processed billions of capelin for fish meal. Although a quota was established, the monitoring of fishing vessels by inspectors was limited, and certainly below the level necessary to assess the catch or determine the accuracy of catch reports submitted by the fishing captains. The failure of some foreign vessels to report their capelin catch accurately led to a closure of Canadian ports to certain vessels in 1975. The capelin fishery peaked in 1976 when 326,000 metric tonnes were "reported" caught in offshore areas. After 1976, catch rates dropped drastically and by 1979 only 11,000 tonnes were caught by offshore fleets. This unprecedented decline in northwest Atlantic capelin stocks was attributed to several years of poor recruitment of young capelin into the breeding population and the offshore fishery was finally closed in 1980.

Capelin are pelagic fish and spend most of their lives offshore. But in June and July of each year, untold millions of them move into the inshore zones of Newfoundland and Labrador to spawn in incredibly dense schools. This migration is the life-blood of the inshore cod fishery since cod follow capelin inshore and feed almost exclusively on capelin at this time. Similarly, many other fishes, marine mammals, and seabirds are also feeding heavily on capelin since the dense schools in relatively shallow waters are particularly easy to exploit. In recent years, man has also been exploiting these inshore spawning schools with capelin traps and purse seiners.

The current inshore capelin fishery is notoriously wasteful. Capelin are harvested for their roe, which is sold to the Japanese. All male and small females are discarded and only prime female capelin make it to market. At a regional capelin seminar held in Clarenville, Newfoundland, 27-29 January 1982, the Newfoundland Fishermen, Food and Allied Workers Union, suggested that the inshore capelin quota, set at about 10% of the estimated total capelin population, may be exceeded annually by a factor of ten since the quota is maintained on the basis of fish sales and not fish catch. With capelin stocks at an all-time low and, presumably, with stiff competition between marine predators for the remaining stocks, we are dismayed at the current policy of allowing an intensive inshore capelin fishery to continue without stringent controls on the dumping of non-marketable capelin and accurate reporting of total fish catch.

The situation may already be critical for seabirds like murre and puffins which have adapted their breeding cycles to the capelin spawning period and depend on capelin as the major food for rearing their young. For example, the largest colony of Atlantic Puffins in North America is at Great Island in Witless Bay, Newfoundland. At this site in 1981, Dr. D.N. Nettleship of the Canadian Wildlife Service found thousands of young puffins dead or dying in their nests from starvation because adults couldn't bring them the amount of capelin they require for development. Even those chicks which were able to leave the colony departed very much underweight, a condition which makes their chances of surviving the winter quite low. Altogether, a disastrous year for puffin at Great Island. Most important, however, is the fact that what was observed and measured in 1981 on Great Island seems likely to have occurred each year since 1978 when capelin numbers first appeared to be declining.

If the breeding success of puffins (and other capelin-dependent species such as murre and Razorbills) is reduced and remain at a low level for several years, fewer young are available to enter the breeding population and maintain its size. Over time, the breeding population will decrease sharply (by about 5% per annum) as old birds die off with too few young birds to take their place. Lower recruitment reflects a reduced level of reproduction or preadult survival. The precise cause, or causes, of such reductions is difficult to determine, but food shortage during the breeding season causing a decline in production or post-fledging survival of young, or both, is a distinct possibility. Moreover, if food shortage in winter is also occurring, a substantial reduction in bird numbers is to be expected.

The situation on Great Island, Newfoundland, in 1981 has an exact parallel with events observed at seabird colonies in the Lofoten Islands, northern Norway, the details of which have recently been reported by Dr. G. Lid, Zoological Museum, University of Oslo, in a prominent Norwegian scientific journal (*Fauna Norvegica*, Ser. C, Cinclus 4:30-39, 1981). The breeding performance of puffins at Røst, the largest colony of the Lofoten group and one of the most important sites for puffins in the northeast Atlantic, has been examined each year between 1964 and 1980. The principal food here for puffin chicks was not capelin but small herring *Clupea harengus*, a species which was commercially fished until 1969 when the stocks collapsed. Before the depletion of the stocks (1964-1968) the production of puffin chicks was normal. But from 1969 onwards (except for 1974) breeding success at Røst has been very low due to a high mortality of chicks before fledging. (In 1975, 1977, 1978, 1979, and 1980 chick production

was virtually zero.) Dr. Lid demonstrates that this high chick mortality has been caused by food shortage which appears to be due to overfishing of herring and sandlance by man. Declines in puffin numbers have already been detected at Røst (about 15%), declines which we would expect to continue by about 5% per year until the population either stabilizes at a very low level (maintained by the small number of birds produced by the population or by birds immigrating in to the area from outside) or becomes extinct. Species such as puffins, murre, and Razorbills are especially vulnerable as they have a very low reproductive rate (only one chick per year) and reach sexual maturity slowly (breeding for the first time when 4-5 years old), making each breeding season and chick important.

As has been the case in the past (for example: widespread pesticide toxicity, oil pollution, etc.) birds are providing us with information which serves as an excellent indicator of what is happening to our marine environment. They are our "early-warning system", one which we would be fools to ignore. The situation in Norway continued in relative obscurity for 10 years. We hope that by bringing the situation here to the attention of public and government organizations, we can avert a similar problem in Canadian waters.

On the basis of past and current trends of the capelin fishery in Newfoundland and the potential adverse effects of a continuing inshore capelin fishery on seabird populations in Newfoundland and Labrador, we, as a concerned group of seabird biologists, make the following recommendations:

- 1) the offshore capelin fishery should remain closed until sufficient information on predator dynamics and capelin abundance is available to manage this vital fish properly.

- 2) the inshore capelin fishery should be strictly controlled and monitored, and the dumping of unmarketable capelin at sea should cease completely so that total fish catches can be accurately assessed from recorded landings. If the inshore fishery is to continue, markets must be found for the presently unmarketable male and small female capelin to provide an incentive for fishermen to land all capelin catches.

- 3) A great deal more support, should be directed towards capelin research in Newfoundland regardless of its importance (or lack of importance) as a commercial fish. The future of many major commercial fishes depend on the vitality of the capelin stocks.

4) Research on the feeding habits of marine animals dependent on capelin (e.g., cod seals, whales, and seabirds) should be accelerated so that the detrimental effects of the recent capelin decline may be fully understood, and its impact assessed.

The Working Group on Atlantic Seabirds
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BOOK REVIEWS

Marine Birds of the Southeastern United States and Gulf of Mexico. Part I. Gaviiformes through Pelicaniformes. 1982. Clapp, R. B., R. C. Banks, D. Morgan-Jacobs, and W. A. Hoffman. U. S. Fish and Wildlife Service. Office of Biological Services. Washington, D. C. FWS/OBS-82/01. 637p. (Available from Information Transfer Specialist, U. S. Fish and Wildlife Service, Slidell Computer Complex, 1010 Gause Blvd., Slidell, LA 70458.)

This volume and those to follow (Part II will cover waterfowl and Part III Charadriiformes.) were written to "summarize the status of marine birds in the southeastern United States and explore the potential effects on these species of the development of petroleum resources on the outer continental shelf (OCS)." Introductory material includes a brief description of the habitats and climate of the region, a discussion of the literature covered, and the problems encountered in obtaining it (I completely agree with the authors' comments on the inadequacies of the highly promoted computer information retrieval systems for supplying basic ornithological data.), a discussion of the arrangement and content of the species accounts, a discussion of oil pollution and marine birds, and recommendations for future research.

The section on future research points out that information necessary to make management decisions and even that needed to detect the effects of pollution is lacking. Although the Georgia Embayment is the second most important site for

oil development on the Atlantic Coast, the status of marine birds there is less well known than any in other area along the Atlantic Coast. Much of the information needed requires the methodical gathering of distribution and abundance data. Such data could easily be gathered by organized volunteers; all that is necessary is leadership.

The major part of the volume is devoted to 39 species accounts which are comparable to those in the Handbook of North American Birds (Palmer, 1962, Vol. 1, Yale). There are, however, no sections on description, field identification, voice, and displays. The distribution sections are quite detailed. Winter distribution maps for the area are based on the 1973-77 Christmas bird counts. Breeding colonies have been mapped for five species. Distributional data are given for each state covered followed by a synopsis of present distribution. The state accounts indicate the large differences in the availability of local information and are inconsistent in the terms used and manner of presentation. Large tables of each recorded occurrence of rare and accidental species are presented. Their content is not well integrated into the text. The synopses often appear to have been written independently of the state accounts and often cover different information. These sections give too much emphasis to fragmentary information and would have been better if good summaries had been presented. The sections on habitat, food and feeding, and important biological parameters are thorough and include much information not found in Palmer. The sections on susceptibility to oil pollution are usually short and suffer from a lack of information.

Each species account is followed by a bibliography. The bibliographies include about 10,000 citations and will be valuable to anyone requiring information on these species. The entries are listed by year to emphasize recent work. I found this awkward and doubt that there is a correlation between importance of content and date of publication. A general bibliography of all citations in the text appears at the end of the volume.

The text and maps are well reproduced, and there are few typos. Numbers have been omitted on the maps, although they are referred to in the text and table of contents. The cover on my copy fell off the third time I opened it.

This is an important and valuable contribution to the literature of marine birds. Although slanted toward the southeastern U. S., complete literature surveys have been made for most of the topics covered and thus this work will be a valuable reference for many years. I look forward to the appearance of the remaining parts.

J.G.S., Jr.

Feeding and Survival Strategies of Estuarine Organisms. 1981. N. V. Jones and W. J. Wolff (eds.). Plenum Press. 304p. \$37.50.

This volume contains 22 papers which were presented at a meeting in September 1980. The term "strategy" has many meanings, and the authors interpreted it variously. The aim of the meeting was "to try to understand how estuarine organisms of different sorts manage to make a living." The papers include one on bacteria, two on algae, nine on invertebrates (three of these on molluscs), one on fish, and seven on shorebirds. There are no unifying themes among the nonbird papers. Some are based on details of work in progress while others present short reviews of isolated topics.

This book will be most valuable to shorebird biologists. The shorebird papers center on the questions of how shorebirds respond to different levels of food availability and the environmental conditions causing these different levels. A detailed and broad picture of current work in Britain and Europe is presented. American workers will find an abundance of ideas for research. Curiously, there is only one citation of a paper in the PSG shorebird symposium volume. Indeed, few North American papers are cited in the shorebird papers, but, then, few British and European papers are cited in the PSG symposium. Does this indicate that neither group of researchers reads the literature of the other or that they are interested in different avenues of research?

This book is outrageously overpriced. It is about the same length as the PSG symposium volume (293 pages for the papers vs. 253), contains one fewer paper, took about the same length of time to produce after the meeting, has about 90% of the content (based on word count), but costs almost five times as much. The text was produced directly and cheaply from typed copy; no effort was made to use italic type where needed. The paste-up is sloppy, and not all of the text is parallel. When symbols were needed in figure captions they were inserted by hand with what appears to have been a dull felt-tipped pen. The profits from one copy would have paid for a couple of sheets of press-on symbols. The style of the headings and references is not uniform.

Books such as this one do not aid science. They restrict the flow of research results and place an unnecessary burden on library budgets. (For related views see Van Valen. 1978. *Paleobiology* 4:210-217.) Individual and institutional funds would be better spent on supporting scientific journals. Some of the authors have separates available (which are also priced to insure their restricted purchase).

J.G.S., Jr.

Birds of the North Solomons. 1981. D. Hadden. Wau Ecology Handbook No. 8. 107p.
(Available for \$9.50, postpaid, from Bishop Museum Press, Box 19000-A, Honolulu,
HI 96819.)

Birds of the North Solomons is more of a field guide than a handbook, but it will be useful to armchair travelers as well as those who are fortunate enough to visit Bougainville or Buka islands. Most of the text consists of species descriptions, supplemented by remarks on habitat, voice, field notes, and general distribution. Seventy-six of the 155 species are illustrated with color photographs. The photographs are of good quality and most would help in the field. Experienced birders should have little trouble identifying all species they see well. Some might want to bring along an Australian field guide for wide-ranging species or consult the keys in Mayr (1945. Birds of the Southwest Pacific. Macmillan) for sorting out species such as the pigeons and cuckooshrikes.

There is a short history of the ornithology of the islands, a description of habitats, a list of references, and an index. A guide to places to visit will be especially useful to those who want to see as many species as possible in a short time. A chance to identify the Odedi, an unidentified species, which has a song of "beauty and human quality of... pure whistled tones" will intrigue those with a bent toward mystery. The volume is of a convenient size and well produced. I recommend it to all those interested in the birds of this area.

J.G.S., Jr.



NEW PUBLICATIONS

The Thick-billed Murres of Prince Leopold Island

An announcement and order form for this monograph published by the Canadian Wildlife Service is included in this issue of the Bulletin. A review is planned for the next issue.

Organochlorine Residues in eggs of Alaskan Seabirds

Organochlorine residues in eggs of Alaskan seabirds. 1982. Ohlendorf, H.M., J.C. Bartonek, G.J. Divoky, E.E. Klaas, and A.J. Krynitsky. Fish and Wildlife Service Special Scientific Report -- Wildlife No. 245. Available from Harry Ohlendorf.



The results of the analyses of eggs from 440 clutches of 19 species of Alaskan seabirds collected in 1973-76 are reported. Concentrations of organochlorines in the samples were generally low. On a regional basis, mean concentrations of DDE and PCB's varied significantly among species, but there were few consistent patterns of species differences, except that levels of DDE were always lowest in Black-legged Kittiwakes and

concentrations of PCB's were usually lowest in murres. Also, concentrations of both chemicals (except PCB's in the Gulf of Alaska) were usually higher in Northern Fulmars than in other species, and the highest concentrations of both DDE and PCB's found in this study were in Glaucous-winged Gulls in the Aleutian Islands (from the Abstract).

OBS Publications

The Office of Biological Service, U.S. Fish and Wildlife Service has recently published an Atlas of gull and tern colonies: North Carolina to Key West, Florida (including pelicans, cormorants, and skimmers), Publ. No. FWS/OBS-80/05 and Piolet study of the marine mammals, birds, and turtles of OCS areas of the Gulf of Mexico, Publ. No. FWS/OBS-81/36. These publications are available from Information Transfer Specialist, U.S. Fish and Wildlife Service, Slidell Computer Complex, 1010 Gause Blvd., Slidell, LA 70458.

BULLETIN BOARD

Colonial Waterbird Group Annual Meeting

The sixth Annual Meeting of the Colonial Waterbird Group will be held 4-7 November 1982 in Washington, D.C. A symposium on the feeding biology of waterbirds is planned. Anyone wishing to contribute to either the symposium (deadline 1 September) or the general session (deadline 15 September) should contact Dr. Michael Erwin, U.S. Fish and Wildlife Service, Patuxent Wildlife Research Center, Laurel, MD 20708. Information concerning registration can also be obtained from Dr. Erwin.

New Waterbird Journal

Colonial Waterbirds, the new journal of the Colonial Waterbird Group, is now available. The first issue is numbered 4 in order to maintain continuity with its predecessor, Proceedings of the Colonial Waterbird Group, which were the published papers of research reports presented at meetings held 1977-1979. Future volumes of Colonial Waterbirds will include papers not necessarily presented at the organization's annual meetings as has been past policy. Unsolicited manuscripts should be sent to the Editor, Dr. Herbert Kale II, Florida Audubon Society, 1101 Audubon Way, Maitland, FL 32751. All papers submitted for publication will be subject to page charges (not mandatory) and peer review.

To order back issues of the Proceedings, send \$12.00 U.S. or equivalent to Iola M. Price, Treasurer, Colonial Waterbird Group, 564 Fairview Ave., Ottawa, ON K1M 0X4, Canada. Volume 4 of Colonial Waterbirds is available at \$20.00 from the Treasurer.

Membership in the Colonial Waterbird Group is available to individuals (\$20.00), families (\$25.00), and students (\$15.00) by applying to the Treasurer at the above address. Colonial Waterbirds and the CWG Newsletter are included with membership. For further information, contact CWG Secretary, Francine G. Buckley, 372 South St., Carlisle, MA 01741, U.S.A.

Symposium on the Effects of Oil on Birds

A multi-discipline symposium on The Effects of Oil on Birds: Physiological Research, Clinical Applications, and Rehabilitation, 17-19 September 1982, The Wetlands Institute, Cape May County, New Jersey. Sponsored by Tri-State Bird Rescue, Inc. Limited number of travel grants available for accepted papers. Direct inquiries to Lynne Frink, P.O. Box 1713, Wilmington, DE 19899.

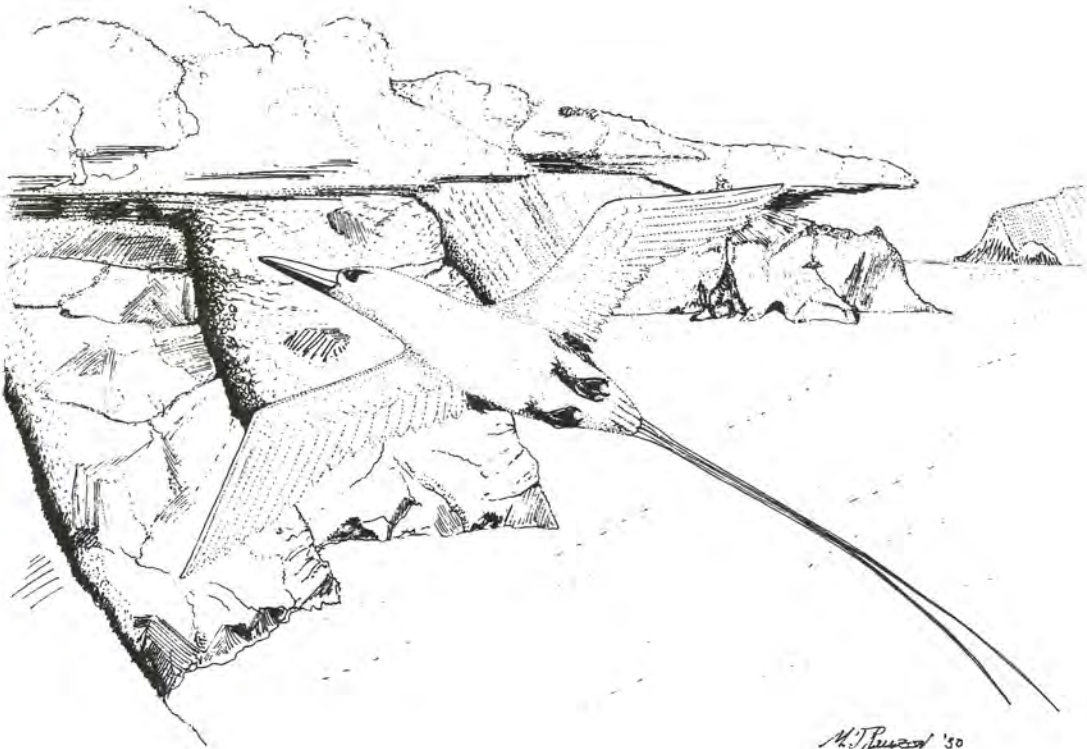
INTECOL

It is with great regret that the Board of INTECOL has found it inevitable to cancel the Third International Congress of Ecology scheduled for Warsaw, Poland, 5-11 September 1982.

Puffin Poster

The drawing of a Common (Atlantic) Puffin appearing on the back of the Table of Contents is available as an 18" X 24" poster from the artist, Duff Wehle, RD #3, Box 346. Trumansburg, NY 14886, for \$5.00 plus \$1.50 shipping and handling.

There are 20 species of marine birds hidden within the puffin. Duff will send a free poster to the first person who correctly identifies all of them. Entries should be sent directly to Duff; none will be returned or acknowledged. Duff's judgement of the winner will be final and will be announced in the next issue of the Bulletin.



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North Carolina Museum
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Raleigh, NC 27611

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Interests: Breeding biology, ecology, general
behavior and physiology

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Halifax, NS B3H 3R7
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Studies: Attendance patterns of Northern Fulmars
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Midway Island
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Wildlife manager, pest controller
Interests: Study and conservation of seabirds

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200 N. Prom
Seaside, OR 97138

Research biologist
Interests: Marine mammals and seabirds

Ogle, Susan
1303 W. 25th
Anchorage, AK 99503

Artist
Studies: Background studies for bird paintings
and prints
Interests: Ocean kayaking in Prince William Sound

Savard, Jean-Pierre
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Population biologist
Studies: Influence of habitat structure on the
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