Pacific Seabird Group

BULLETIN

Volume 16 Number 2 1989

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THE CHAIR'S PAGE

This has been a very busy year for seabirds and seabird biologists in the Pacific. The field season of most PSG members in Alaska was severely modified in the wake of the unparalled environmental disaster, the wreck of the tanker "Exxon Valdez". Over the course of the spring and summer more than 35,000 dead birds were collected from beaches along the Gulf of Alaska, and the cleanup, assessment and documentation of environmental damage has consumed nearly every waking hour of both the State of Alaska and the US Fish and WIldlife Service biologists. I've written a synopsis of the spill elsewhere in this Bulletin.

In spite of the Spill, the world has moved along, not always ahead, but generally in an identifable direction. PSG made recommendations to several National Forests with regard to management concerns over Marbled Murrelets, and the cascade of Environmental Impact reports and Management Guides which arrived on my desk in response was astounding--no wonder the trees are in danger of being consumed, the paper trail is overwhelming. The bottom line in forest management appears to be deliberately murky, I hope some dedicated individuals will keep on top of the issues in Alaska, Washington, Oregon, and California to insure some Marbled Murrelet habitat is conserved.

This year also saw the genesis of a program in the US Fish and Wildlife Service to developing a Plan for management of Non-game Wildlife Species, including the non-edible (non-waterfowl) seabirds. Several of us reviewed the plan and collectively made suggestions through PSG (review reprinted in this Bulletin). The status of this plan, as with most current Federal programs, is budget (and budget deficit) driven, meaning that whatever can be done without spending money the Service will consider. Suddenly, when the polls show the Environment to be of increasing importance to voters, the taxpayers representatives have decided the US is the poorest country around. We still manage to consume and squander energy and other natural resources at an alarming pace, but we can't afford to clean up the toxics or protect and improve the quality of bird habitats. I hope the fallout from the Exxon Valdez makes some impact on our government and its priorities. Judging from the flyers from conservation organizations, they are not going to let us forget about the spill. Good for them.

Within PSG this year there has been some interesting action as well. There has been talk, recurring after a several year quiet, of PSG publishing or collaborating in publishing a Marine Ornithology/Waterbird/Seabird Journal. A straw poll sent with your dues notices showed members to be enthusiastic over the idea of a journal, and the majority clearly would like to work with the Colonial Waterbird Society to produce a first-rate publication. I will continue to pursue this with the Executive Council and with the Colonial Waterbird Society, and I hope that the in-comming Chair, Doug Siegel-Causey will work with the Executive Council and continue the dialog. I hope to have more information for the membership at the next Annual Meeting.

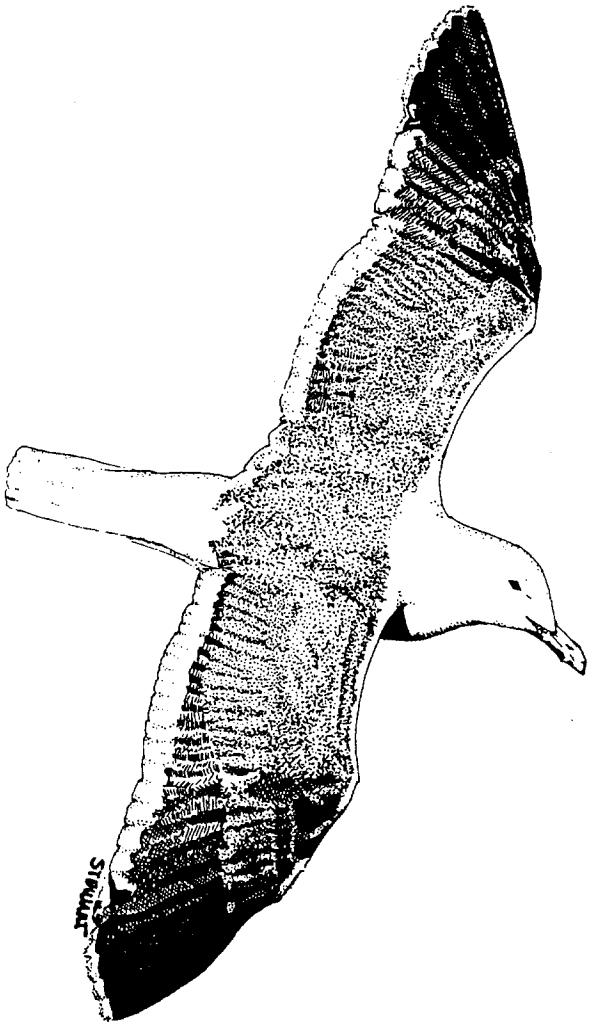
Which brings me to the topic of the Annual Meeting, to be held in Victoria, British Columbia, February 21-24, 1990. Kees Veermer and Alan Burger are organizing a very strong program which will include a symposium entitled "The Status, Ecology, and Conservation of Marine Birds of the Temperate North Pacific", a very timely topic this year. I hope we have lots

of individually submitted papers as well, especially on Marbled Murrelets - to keep the recent flurry of MAMU research in the news, and I would like to see individual papers on aspects of the Exxon Spill, if such information is permitted to see the light of day, pending our nation's largest environmental law suit.

I would like to take this last opportunity to say that I have had a most enjoyable experience this year as Chair of PSG. I have enjoyed working with many of you, I think our membership is healthy, and I hope we can successfully work with the Colonial Waterbird Society to produce an excellent marine and esturine ornithological journal.

Thanks.

D. Michael Fry



RESULTS OF STRAW POLL ON PUBLICATION OF A JOURNAL

Our Treasurer Ellen Chu has mailed me the informal ballots which I included at the bottom of the PSG dues notice last spring. The poll is not complete, as it lacks the response from most Life Members, but the results are definitely worth serious discussion by the Executive Committee.

182 members returned their straw polls, and only 12 were unmarked. The vast majority (81%) would like to see PSG participate in a Journal. The tabulated results are listed below, along with unsolicited comments and testimonials volunteered by respondents:

1) TOTAL RESPONDING:	182	100%
2) DISAPPROVE OF PUBLISHING A JOURNAL:	23	13%
COMMENTS OF THOSE DISAPPROVING:		
A) SHOULD PUBLISH IN *COLONIAL WATERBIRDS*:	7	30%*
B) WOULD COST TOO MUCH:	5	22%*
C) TOO MANY JOURNALS ALREADY:	8	35%*
D) NEED A REVIEW JOURNAL INSTEAD:	1	4%*
E) TOO MUCH WORK FOR PSG:	4	17%*
3) APPROVE OF PUBLISHING A JOURNAL:	147	81%
A) PSG SHOULD PUBLISH WITH CWBS:	76	52%*
WITH OTHER SOCIETIES ALSO	6	8%*
WITH NAME CHANGE OF *C.W.*:	5	7%*
B) PSG SHOULD PUBLISH ON ITS OWN:	46	31%*
C) NO OPINION AS TO ALONE OR JOINTLY:	25	17%*
4) RESPONDENTS WITH RESERVATIONS AS TO COST OF PUBLISHING A JOURNAL:	11	6%
A) WOULD BE WILLING TO PAY HIGHER DUES:	2	1%*
B) WOULD QUIT THE GROUP IF COSTS INCREASED:	2	1%*

*: Percent of subgroup responding with this comment.

While comments were not specifically requested in the straw poll, the results and the comments are clearly important. The comments do not add up to 100% because many respondents made several different comments, and some made none at all. A small number of people thought we should conduct a real poll after doing homework on the issue. I see the straw poll as a starting place for homework, and quite illustrative of the mood of the Group.

As part of the analysis of this poll, I separated the responses of about 70 very active and/or long-term members, and tabulated them separately as a second look of the "active" membership. I was gratified that the results were similar to the membership as a whole, with 23% (compared to 13%)

disapproving, 76% (compared to 81%) approving, and 1% with no opinion. More of the old-timers have reservations about publishing, but, at the same time, a higher percentage wants to publish with the Colonial Waterbird Society (61%), and when those that disapprove, but want people to publish in *Colonial Waterbirds* are combined with those who approve, and want to publish with the Colonaial Waterbird Society, a majority of 83% wants to work with *Colonial Waterbirds*. Several respondents (5) were forceful in their remarks to have a neutral journal name.

I think the number of respondents is good, although the number of Life Members is under-represented, and the results are pretty clear: members want to participate in publishing a journal, and most want to work with CWBS (and with other seabird groups). A strong contingent feel that the direction of PSG would be significantly altered if dues went up, and they clearly desire to have a choice in not paying for a journal. Many see PSG as a conservation organization different from a scientific society, and as such would like to concentrate on issues rather than on publication. I hope we could do both.

I would like the PSG Executive Council to authorize a committee to meet with the Colonial Waterbird Society and the Editor of *Colonial Waterbirds* to seriously investigate the costs and structure of joint publication of a Journal. I believe we have concerns over the name of the Journal, of the financial structure of the two organizations, and of independence of the Groups, but I hope none of these issues will prove to be insurmountable.

- D. Michael Fry
October 15, 1989

1989 ANNUAL MEETING

The Pacific Seabird Group will hold its 1989 annual meeting at the Royal British Columbia Museum, Victoria, British Columbia, from 21 to 25 February, 1990. In addition to contributed papers and posters, the meeting will include a symposium on the Status, Ecology and Conservation of Marine Birds of the Temperate North Pacific. The meeting is sponsored by the Royal British Columbia Museum, the Wildlife Branch (Province of British Columbia) and the Canadian Wildlife Service. Local organizers are Dr. Kees Vermeer, Institute of Ocean Sciences, Sidney, B.C., Canada V8L 4B2 (604-356-7537) and Dr. Alan Burger, Royal British Columbia Museum, Victoria, B.C. V8V 1X4 (604-387-3544).

REGIONAL REPORTS

ALASKA, JOEL HUBBARD

With the release of more than 11 million gallons of crude oil following the grounding of the tanker Exxon Valdez in Prince William Sound yet another superlative was added to the lexicon of Alaskana, but it is not likely we shall speak of the March 24th incident in such glowing terms. Among all of the uncertainties associated with this event, it is certain that 1989 will be remembered as the year of The Great Alaska Oilspill. By the end of March many kilometers of shoreline in western Prince William Sound were heavily oiled, slicks covered much of the open water, and a substantial proportion of the oil had escaped from the sound and was moving west in the Alaska Coastal Current. By mid-April oil had contacted offshore islands and headlands along the entire southern Kenai Peninsula, moved north into Lower Cook Inlet, and surrounded the Barren Islands, a major seabird colony area at the mouth of the inlet. By late April winds had driven oil into bays and fjords of the Kenai Peninsula and mousse (oil-in-water emulsion) was reported to the southwest along the length of Katmai National Park on the Alaska Peninsula. Over the next several weeks mousse was reported along the peninsula southwest of the park as well as in Shelikof Strait and the west coasts of most islands in the Kodiak Archipelago, over 700 kilometers from the original spill site. Later in May, small amounts of mousse and oil sheen were reported as far southwest as the Shumagin Islands.

Initial surveys in Prince William Sound, conducted immediately following the spill, indicated bird numbers and species similar to those found on historical surveys in the area impacted, with an overwintering population in excess of 40,000, mainly seaducks, gulls, cormorants, murres, grebes, loons and murrelets. Proportionately more carcasses of oiled loons, grebes, cormorants, murres, murrelets and eagles were retrieved. Likewise, proportionately greater numbers of diving species' carcasses were retrieved from most areas surveyed southwest of the sound than were observed prior to oil contact or expected on the basis of historical information. Along the Kenai Peninsula murres and procellarids (mainly shearwaters) were over-represented among cataloged specimens while there was a decrease in most other groups. Tens of thousands of puffins breed in this area but fortunately had not arrived at the colonies by the time of oil contact. In the Barren Islands, where an estimated 650,000 birds are present during the breeding season, murres were especially hard hit. Several lines of evidence suggest that a substantial proportion of carcasses recovered from Alaska Peninsula and other southern sites originated in the Barren Islands, some drifting 240 kilometers before beaching.

Approximately 25,000 marine bird carcasses, of at least 74 species, 2had been recovered and identified by mid-June. This represents an unknown fraction of the total kill, but could be in the range of 10-30% based on experimental results reported in the literature. The extreme length, intricacy and isolation of coastline in the region impacted precluded a thorough search, and together with the fact that a substantial proportion of carcasses are likely to sink or drift out to sea and thus not be recovered suggests that this number represents a relatively small proportion of the total. The impact of this mortality will be under study for some time to come, and although statewide effects may not be significant for most species, it appears likely that some local populations will require several decades to

recover to pre-spill levels. The above information was made available through the efforts of Cal Lensink and John Piatt (USFWS, Alaska Fish and Wildlife Research Center), and a small army of professional and amateur volunteers.

Although problems associated with the oilspill are preoccupying some researchers, many of the this summer's marine bird projects are proceeding as anticipated.

COLONY STUDIES

The Fish and Wildlife Service and Minerals Management Service continue to jointly fund colony monitoring studies in the Bering Sea. This year's effort will determine population changes for cormorants, kittiwakes and murres through repeated counts on plots on the Pribilof Islands (Art Sowls with Don Dragoo, Alaska Maritime NWR, will head this team), Cape Peirce in northern Bristol Bay (Lisa Haggblom, Togiak NWR) and at Bluff on Norton Sound (Ed Murphy, Univ. of Alaska). Productivity plots also will be monitored for nesting chronology and breeding success. Vivian Mendenhall (USFWS) is the principal investigator for this project. Vern Byrd (Alaska Maritime NWR) is monitoring population trends and productivity of cormorants, kittiwakes and murres on Agattu, Buldir, Amukta, Bogoslof and Aiktak Islands in the western and eastern Aleutians. Vern also is investigating the possibility of using diurnal activity patterns to develop an index for use in monitoring horned puffin population trends at Buldir, and investigating trends in populations and productivity of tufted puffins in western Aleutian areas where the gill net salmon fishery, stopped in 1988, was responsible for killing thousands of puffins each year. Mike Nishimoto (Alaska Maritime NWR) will continue monitoring cormorant and kittiwake population trends and productivity in Kachemak Bay.

Scott Hatch, Bay Roberts and Brian Fadely (Alaska Fish & Wildlife Research Center) are investigating adult kittiwake survival, and weight dynamics as it relates to energetics of breeding success, on Middleton Island in the Gulf of Alaska. Dave Irons (USFWS) will continue studying the relation of food availability, foraging distance and predation to kittiwake reproductive success in Prince William Sound.

PELAGIC AND COASTAL STUDIES

John Piatt, with the assistance of Scott Hatch, Brian Fadely and Alan Springer (Univ. of Alaska), is continuing his study of temporal and spatial associations between seabirds and their prey in relation to oceanographic conditions using hydroacoustic instrumentation on the MV Eagle-Tiglax. Information concerning seabird diets also is being gathered. George Hunt and Beth Flint (Univ. Calif. at Irvine) will continue their bioacoustic study of prey distribution and seabird use of prey concentrations near the Pribilof Islands, as well as relationships between murres and shearwaters. Dirk Derksen, Dave Ward and Bob Stehn (Alaska Fish and Wildlife Research Center) will radio tag Pacific brant in Canada, Russia and Alaska to monitor their distribution at staging, migration and wintering areas on the Alaska Peninsula and Pacific coast. Vern Byrd will search several of the Aleutian Islands for Aleutian Canada geese to determine if they have recently become re-established. Minerals Management Service will fund aerial surveys to determine the distribution, habitat utilization and densities of waterfowl

and seabirds in Kasegeluk Lagoon (northwest Alaska) and lagoons in the Beaufort Sea.

OILSPILL STUDIES

Several types of studies have been initiated, principally by USFWS personnel, or are anticipated shortly in response to the need for assessing impacts of the spill on marine bird populations. Beached bird surveys will be carried out in Prince William Sound (PWS) and elsewhere as personnel availability dictates. Recensus of PWS seabird colonies will be coordinated by Dave Nysewander (Alaska Maritime NWR). Fortunately all PWS colonies were censused recently. Seasonal distribution of seabirds in PWS will be accomplished by both aerial and boat surveys. A preliminary carcass drift experiment has been done by John Piatt; further release experiments may be tried to determine recovery rates and origin of beached carcasses. Effect of the oilspill on reproductive success for black-legged kittiwake, glaucous-winged gull, marbled murrelet, and pigeon guillemot in PWS and fork-tailed storm petrel on the Barren Islands will be assessed by Dave Irons, Sam Patten (Alaska Dept. of Fish and Game), Kathy Kuletz (USFWS), Karen Oakley (USFWS) and Mike Nishimoto, respectively. These studies will include determination of population losses where historical data is sufficiently accurate, numbers of adults, eggs and chicks oiled, mortality, foraging patterns, chick feeding rates, and collection of tissue samples for histopathological and contaminant analyses. Comparison will be made between control and oiled areas.

Though we tend to dwell on the negative aspects of the spill, and there certainly are those in abundance, something positive could arise from the muck on the beaches, the tainted fish, the thousands of garbage bags full of oiled birds and mammals, the unknown thousands that disappeared without trace, and those still living that were cleaned and pampered hour after hour, only to finally succumb. And it is this. The time has come to admit that the oilspill contingency plans so carefully formulated to deal with all theoretical aspects of a spill, and the equipment and personnel upon which they depend for success, are almost completely inadequate to deal with a large spill under even the most benign marine conditions. Based on the deficiencies in equipment and trained personnel availability, lack of organization and coordination among regulatory agencies and the oil industry, and lack of expeditious response apparent in the Exxon Valdez spill, obviously it is time first to commit major funding to the development of equipment and techniques for responding adequately to a spill under at-sea conditions, and secondly, to make certain that adequate equipment, supplies and trained personnel always are available within a short timeframe to back up an oilspill contingency plan for any area where the probability of spilling large amounts of oil and/or impacting major biological resources is high.

NORTHEAST REGION, MARK TASKER

WESTERN ATLANTIC

David Nettleship writes to inform of the following major projects being undertaken by the Canadian Wildlife Service:

1. A reassessment of the status of high Arctic Thick-billed Murres: Cape Hay & Graham Moore, Bylot Island, NWT - this project is counting long-established monitoring plots in order to follow changes in number.

2. Modeling the effects of hunting on Thick-billed Murre populations breeding in eastern Canada and West Greenland - development of a simulation model that will allow (a) predictions of future population size to be made; (b) identification of the relative importance of parameters in the model (through sensitivity analysis) and therefore indicative where research needs are highest; and (c) an assessment of the effectiveness of potential management strategies.

3. Population status of Atlantic Puffin - a continuation of monitoring in study plots established in 1968 on Great Island, Witless Bay, Newfoundland.

4. Atlantic Puffin reintroduction study: Newfoundland/Maine - a long-term Canada/USA conservation effort to reintroduce the Atlantic Puffin to Seal Island and Eastern Egg Rock, both formerly important breeding sites for Puffins in New England.

5. Population Biology of the Atlantic Puffin at Machias Seal Island, New Brunswick, Canada - a long-term study of post-fledging survival, migratory and inter-colony movements of puffins at a small colony on the southern edge of its North American breeding range.

6. Canadian Wildlife Service Seabird Colony Registry - a new database for all seabird colony survey/census data for the whole of Canada. This database is being upgraded and improved, a process expected to be complete at the end of 1989.

Bill Drury (College of the Atlantic, Bar Harbor, Maine 04609) informs that his plans include a census of terns, gulls and Double-crested Cormorants in mid-coastal Maine. In this area, Glen Mittelhausen found 450 Harlequin Ducks wintering around Isle au Haut. This is the largest known concentration on the east coast of the USA. Various groups will be studying terns and puffins on Petit Manan, Seal Island, Matinicus Rock, Eastern Egg Rock and Stratton Island. Jane Arbucle is studying terns in southern Maine. Diane Evans is working on ensuring that terns return to a traditional nesting site at the Isles of Shoals in New Hampshire. Scott Melvin is co-ordinating the development of a plan for management of terns (defense against Herring Gulls) on the Maine coast.

Ruud van Halewyn (Adelaarhof 14, 3514 TZ Utrecht, Netherlands) is continuing his conservation oriented work on Aruba in the southern Caribbean, where eight larid species breed. He is experiencing difficulties in preventing tourist developments on four small keys where 5,000 pairs of seabirds (mainly Cayenne and Sooty Terns) breed.

EASTERN ATLANTIC

Rob Barrett writes from Norway with a summary of seabird work being carried out by various institutions there. Projects based from the University of Tromso include a study on a Barents Sea seabird colony before and after a collapse in Capelin stocks; a study of population changes, seasonal dispersal, food and breeding success of the North Atlantic Gannet in North Norway; monitoring numbers and breeding success of seabird populations in North Norway; studies of biometrics of Norwegian seabirds; monitoring levels of persistent organochlorines and heavy metals in eggs and feathers of North Norwegian seabirds; community structure of internal parasites in Black-legged Kittiwake and Atlantic Puffin chicks at Bleiksoy Vesteralen; ;pelagic distribution of seabirds in the Barents Sea in relation to marine biological factors; population ecology, egg parasitism and brood behavior in the Common Eider; effects of bird predation on an intertidal and sublittoral hard-bottom community; mitochondrial DNA studies in NOrwegian Alcidae; reproduction and feeding biology of fish-eating seabirds and spring migration patterns of sea ducks and divers in North Norway. These many projects are not all being carried out by Rob, but he will pass any letters on to the relevant people (University of Tromso, Tromso Museum, 9000 Tromso, Norway). Contacts are also improving with Russian seabird ornithologists and several collaborative projects are planned.

Bill Bourne (3 Contlaw Place, Milltimber, Aberdeen, AB1 0DS, Scotland) continues to conduct observations from a fleet support ship from various waters of the world, and reports recent visits to the Gulf of Iran and the waters off NW Europe. In his time off, the second Medmarvis conference in Mallorca proved to be a good meeting, due especially to accounts of work in progress in the Black Sea.

Lance Tickell (Department of Zoology, University of Bristol, woodland Road, Bristol, BS8 1UG, England) has been carrying out work on Waved Albatrosses, particularly reporting on possibly the last pair on Isla de la Plata, Ecuador. this colony has only bee known for a few years, and appears to have suffered from its close proximity to mainland Ecuador. Lance has also been examining egg rolling behavior by Waved Albatrosses on Galapagos. This behavior appears to be a hazard to successful breeding of some birds, and is possibly exacerbated by tourist disturbance at the tourist site on Española Island where the birds breed.

Mike Harris and Sarah Wanless (Institute of Terrestrial Ecology, Brathens, Banchory, Kincardineshire, Scotland) continue their long-term studies on Common Murre, Razorbill and Atlantic Puffin biology and breeding success on the Isle of May. In addition, they have been radio-tracking Shags in order to examine feeding biology and its relation to breeding performance. The results will be compared to work to be carried out during winter 1989/90 on Blue-eyed Shags around South Georgia.

Mark Tasker continues studies of all aspects of seabird conservation around the British Isles. Mark spent part of winter 1988/89 at Palmer Station, Antarctica helping Zoe Eppley with her work on Charadriiform phylogeny.

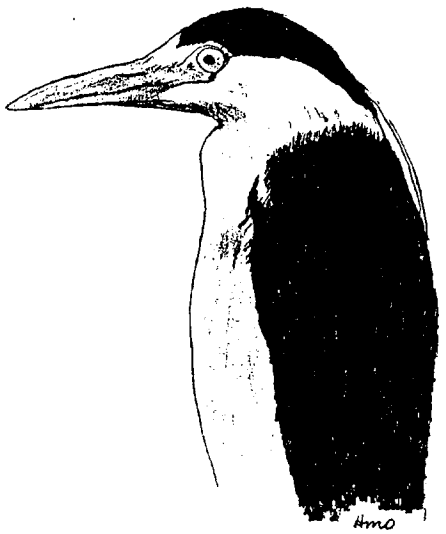
Clare Lloyd has completed work on establishing the British Seabird Colony Register, and has written a book (co-authored) with Mark Tasker) on the results of a total census of Britain and Ireland in the mid-1980's.

The British Seabirds at Sea Team, which includes Nancy Harrison, have completed fieldwork on waters to the west of Scotland and in the Irish Sea, and are no writing up. This summers work included an evaluation of the feeding grounds for seabirds around the vast colonies on St. Kilda. The Team hopes to continue work in the English Channel and southwestern approaches to the UK starting in 1990, funding permitting.

Several aspects of work related to the failure of surface-feeding seabirds to breed successfully in Shetland in recent years are under way in the UK.

Martin Heubeck continues to monitor numbers and performance in Shetland, while a Nature Conservancy Council (NCC)/(British) Seabird Group scheme covers the remainder of the UK and some of Ireland. This scheme is being organized by Paul Walsh of NCC. Pat Monaghan (University of Glasgow) has been researching tern breeding performance in relation to food supply with funding from NCC and the Royal Society for the Protection of Birds. She has also recently been granted for a wider project on seabird breeding success and sandeel availability in Shetland waters. All above researcher can be contacted via Mark Tasker, NCC, 17 Rubislaw Terrace, Aberdeen, AB1 1XE, Scotland.

Finally, if you work in the Northeastern region, and your work is not mentioned here, why not write to Mark Tasker so that it can be included in the next regional report.



REPORT FROM THE MARBLED MURRELET TECHNICAL COMMITTEE

MARBLED MURRELET NEST SITE SAMPLING PROTOCOL

Dan Varoujean and Harry Carter finished the final draft of the Pacific Seabird Groups 1989 Marbled Murrelet Nest Site Sampling Protocol. Letters were sent to agencies encouraging research and inventories of marbled murrelets.

REGIONAL REPORTS

California

Harry Carter, USFWS, Davis, CA. Marbled murrelet at-sea census of the entire California coast as part of an update of the California Seabird Colony Catalog. Harry replicated earlier surveys by Sowls et al. and found the same statewide distribution of marbled murrelets as Sowls found 10 years ago. There are 2 populations of marbled murrelets in California.

C.J. Ralph and Peter Paton, Range and Forest Experiment Station, USFS, Arcata, CA. Marbled murrelet at-sea surveys in Northern California. Surveys consist of a grid of transects parallel to shore at 400m, 800m, 1400m, 2000m, 3000m distances. The transects are surveyed once a week. They are also surveying some ocean areas from the shore.

Intensive surveys at inland sites - Looking at behavior differences and changes throughout the year and trying to locate nests. Plan to monitor some of the land and sea surveys all year.

Peter and C.J. experimented with catching marbled murrelets with mist nets in the forest canopy. Mist nets were placed 140 feet high in the Forest Canopy along a travel corridor used by marbled murrelets. Tree climbers strung cable across the corridor and mist nets were then clipped to the cable. Nets were raised and lowered by pulleys.

They caught 3 murrelets and fitted them with transmitters. The birds moved north and south along the coast, but never returned inland. The signals were lost after a week.

C.J. experimented with spot-lighting marbled murrelets at night. He succeeded and caught 1 bird with a salmon dip net!

Nancy Naslund, Steve Singer, Stephanie Singer, Gary Strachan, and Robert Burton, Santa Cruz marbled murrelet research team, Univ of Ca., Santa Cruz CA. Two marbled murrelet nests were found 8.5 km inland in the Santa Cruz mountains. The nests were less than 1.6 km apart. A video camera on a meade telescope was set approximately 65m from the nest. Flight patterns, vocalizations, incubation and chick rearing were studied at those nests. They also did some filming at night with night-viewing equipment. The analysis of the film is not completed, but they have documented multiple feedings during the day, and incubation exchanges at dawn.

At the first nest, the egg and possibly the incubating adult were preyed on by a raven. The raven visited the nest on several occasions, but the incubating adult bluffed the predation attempts. The raven was observed on the nest and neither the egg or adult were observed again.

The 2 - 8 day old chick in the second nest was preyed on by a stellers jay. The stellers jay visited the nest several times and jumped on the adult at least twice before predating on the chick.

Nancy and Steve are developing a ground search technique that they can share with other researchers.

Oregon

Kim Nelson, Oregon Cooperative Wildlife Research Unit, Corvallis, OR. Kim's project is the Distribution of Marbled Murrelets in Western Oregon. Surveys were conducted on 137 transects throughout the coast range. There were marbled murrelets heard or seen along 77 (56%) of those transects as of July 20, 1989. There were no marbled murrelets detected in the coast range north of Tillamook. The farthest north transect with birds was in Kilchetz County Park. Marbled murrelets were also missing from Eugene and Roseburg BLM lands (east crest of coast range). The Central coast, Siuslaw National Forest seems to have largest numbers.

The greatest distance inland for marbled murrelets in Oregon was 55 km, west of the town of Pedee on Salem BLM land. The old record was 47 km inland.

Marbled Murrelets were detected until 1124 AM at Cape Meares State Park.

Dan Varoujean, MARZET, North Bend, OR. Dan caught 1 marbled murrelet and attached a radio transmitter. The bird foraged along the coast but never went inland. The radio transmitter remained operable for at least a month.

Washington

Lora Leschner and Eric Cummins, Washington Department of Wildlife, Mill Creek and Olympia, WA. A poster about the mystery of the marbled murrelet was produced. Fred Sharpe was the artist and the text explained why biologists are interested in this seabird. Inland observations and volunteers for surveys are solicited.

Department of Wildlife biologists and volunteers surveyed areas in the Cascade mountains and on the Olympic Peninsula. Several new areas were discovered. Two of these sites near Darrington, Goodman Creek and Deer Creek, are 52 km from Puget Sound. This is farther east into the Cascade than earlier records.

Jean Cross, Volunteer for WDW, surveyed areas in the Cascades and found marbled murrelets in several creek drainages that flow into the S. Fork of the Stillaguamish River. She continues to work eastward in the hope of finding marbled murrelets even farther from Puget Sound. Jean has recorded activity at 1 site for the past two years. She uses that area as a control for activity comparisons to new areas that she discovers.

Ron Barnes, volunteer for WDW, surveyed areas in the Olympics. In one area, the Hamma Hamma River, he compared numbers of marbled murrelets detected in the forest to at-sea counts from shore at the mouth of the river. Ron also surveyed sites near Willipa Bay and Grays Harbor.

Steve Speich and Tracy Fleming, NCASI, Olympia WA. Attachment design and transmitter testing.

Phyllis Reed, USFS, Darrington WA. and Ron Tresseler, Envirosphere, Bellevue WA. Phyllis and Ron found a dead chick in Helena Creek Southeast of Darrington. Chris Wood, Burke Museum, confirmed that the chick was a marbled murrelet. Phyllis and Ron are preparing a site description.

Ann Lettenberger, Washington Department of Wildlife, found an egg shell fragment on a later visit to the site. The fragment was on the ground 1.5 m from the location of the chick. Chris Wood identified it as part of a marbled murrelet egg.

A spotted owl team survey team detected marbled murrelets in the Boulder River Wilderness.

Jim Adkinson, USFWS, Willipa National Wildlife Refuge, WA, Steve Manlow, Grays Harbor County Planning Dept, Aberdeen, WA, and Daren Manlow, USFWS, Willapa, WA. Daren found a marbled murrelet egg when he was trapping small mammals on Long Island in Willipa Bay. Chris Wood, Burke Museum, confirmed the identification.

They are monitoring an old growth stand between the middle and north forks of the Nemah River. They estimate that there is at least 20 pair of marbled murrelets in the stand.

British Columbia

Jean Pierre Savard, Canadian Wildlife Service, Delta BC. Jean and other researchers have conducted inland surveys in a few areas near Vancouver, on Vancouver Island, and in the Queen Charlotte Islands for Marbled Murrelets. The timber industry has become interested in this species and there may be funding for research next year.

Alaska

Kathy Kuletz, USFWS, Homer, AK. Kathy is continuing the at-sea surveys in Katchemak Bay. This is the second year of the survey effort. She is comparing the surveys to shore surveys on land. In addition, she is monitoring a forested area where marbled murrelets have been detected.

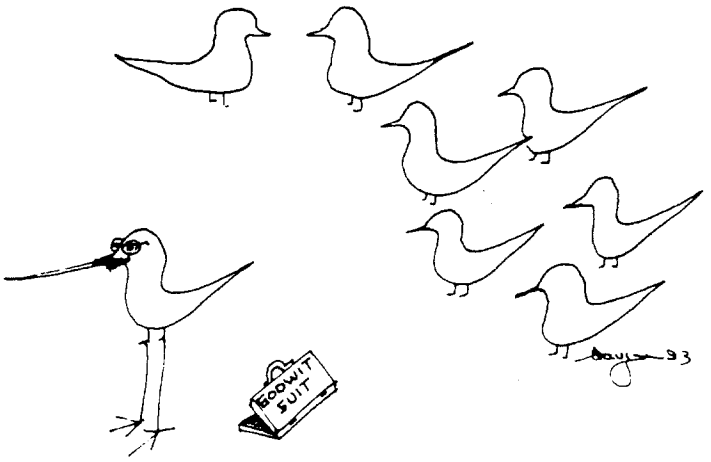
Kathy is assessing the impacts of the oil spill on marbled murrelet populations in Prince William Sound. She conducted surveys several years ago and is now repeating those survey routes to determine any changes in numbers.

Vivian Mendenhall reports that there were many marbled murrelets found in the oil spill, especially in Prince William Sound. It was probably the second or third in terms of carcasses recovered. The number of marbled murrelets was probably underestimated because small birds are difficult to find in the oily debris.

MARBLED MURRELET MEETING AT THE NEXT PSG MEETING

We are planning a marbled murrelet meeting in conjunction with PSG in February. It will be an informal opportunity to share research results and exchange ideas.

- Lora L. Leschner
  August, 1989

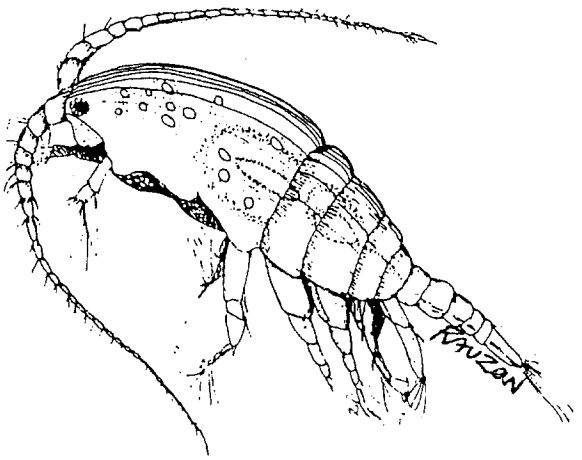


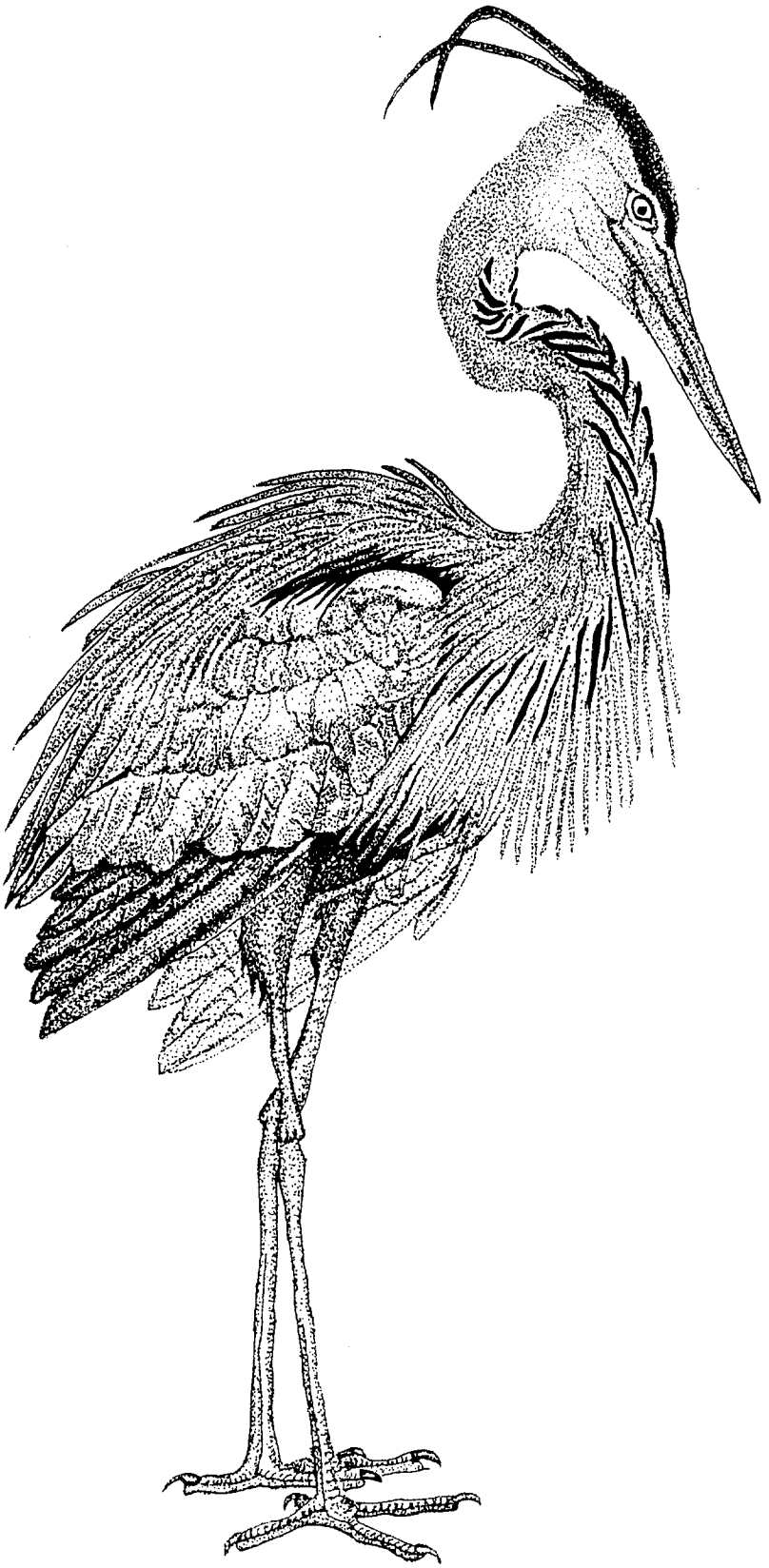
THAT HENRY! ALWAYS PLAYING GODWIT...

SEABIRD NEWS

MEDITERRANEAN MARINE BIRD ASSOCIATION (MEDMARVIS), CALVIA SYMPOSIUM

The second MEDMARVIS seabird symposium was held in Calvia, Mallorca, in March, 1989. The title of the meeting was *Status and conservation of seabirds: ecogeography and Mediterranean Action Plan.* About 70 seabird researchers, largely from the eastern Mediterranean, but with the notable addition of one representative from Bulgaria and one from the Ukrainian SSR. The symposium included more than 40 papers and 15 posters. There were four sessions dealing with the status and distribution of breeding populations, post-nuptial distribution, recent ecological research and habitat conservation, and the Mediterranean Action Plan. The conference produced the Calvia Declaration, known as the Calvia Action Plan for Mediterranean Island and Coastal Ecosystems. This has been discussed in an earlier issue of the PSG Bulletin (16,1). The proceedings of the symposium are planned to appear in ARDEOLA this winter. The third MEDMARVIS symposium is tentatively planned for 1992 in the eastern Mediterranean.





CONSERVATION NEWS

HAWAIIAN POPULATION OF BAND-RUMPED PETREL PETITIONED FOR ENDANGERED STATUS

The U. S. Fish and Wildlife Service was recently petitioned to add the Hawaiian population of the Band-rumped (Harcourt's) Storm Petrel (*Oceanodroma castro cryptoleucura*) to the Federal list of endangered species. In the Pacific there are populations of this species in Japan, Hawaii, and the Galapagos. Depending on the taxonomist, these populations have been described as being either distinct subspecies, or as all belonging to a single subspecies. In the September 21, 1989 Federal Register, the Service announced a status review for the Band-rumped. The Service is soliciting information on the petrel and would appreciate any data, comments, and suggestions from interested parties. Of particular interest is information that would verify the validity of the subspecific status, or would otherwise indicate genetic isolation of the Hawaiian population. Responses can be sent to Join Engbring, U.S. Fish and Wildlife Service, P.O. Box 50167, Honolulu, Hawaii 56850.

NOTE: The Hawaiian population was apparently common before the Polynesian colonization of the archipelago, but these colonists ate many of the birds. Their bones are common in middens. At present there may be less than 300 of these petrels that breed in Hawaii.

- Craig Harrison

OCEAN SHORES OIL SPILL: AFFECTS IN BRITISH COLUMBIA

Over 2,000 dead birds washed ashore on Vancouver Island as the direct result of oiling during the Ocean Shores Oil Spill off of the Washington coast. (In Washington, 8,200 dead birds were found.) Fewer than 100 live oiled birds were treated in British Columbia. Common Murres, Red-necked and Horned Grebes, White-winged Scoters, Pacific and Common Loons, and Glaucous-winged Gulls were the dominant species treated.

- from Langelier's article in Wildlife Veterinary Report, summarized by Tony DeGange

MEDITERRANEAN STRATEGY AND ACTION PLAN

The European Commission launched the Mediterranean Strategy and Action Plan last November (1988). This is an ambitious ten-year program for environmental conservation in the Mediterranean. The projects will be financed under existing European Commission procedures and must meet the following criteria: specific to the Mediterranean, of common interest to several countries, and requiring urgent action. Priorities for the first five years will concentrate on: conservation of endangered fauna and flora, management and rehabilitation of fragile ecosystems, freshwater supply problems in islands, waste disposal, and recycling of agricultural waste, information of the public at large about environmental priorities, training of staff in national parks and reserves, and creation and use of data banks.

- News from Medmarvis

PRO ESTEROS

At the Pacific Seabird Group 1988 annual meeting, the executive council voted to endorse Pro Esteros, the new organization dedicated to the conservation of coastal wetlands in the Sea of Cortez. During its first year the organization has concentrated its efforts on two large esteros: at Punta Banda and San Quintin. The first shorebird counts of the two estuaries were conducted in April as part of the Point Reyes Bird Obseratory's "BC to BC" census, extending from British Columbia through Baja California. At Punta Band, the Koster Group (the resort developers of the Baja Beach and Tennis Club) has applied for a permit to dig a deepwater channel and marina. As yet no dredging permit has been issued. Pro Esteros has begun the process of applying for reserve status of the Estero de Punta Banda and San Quintin.

CHEYENNE BOTTOMS

Cheyenne Bottoms, Colorado, is believed to be the most important inland stopover for shorebirds in the interior U.S. It is visited by up to 50% of all shorebirds migrating east of the Rockies. In April, 1989, during the spring migration, these wetlands dried up, and many birds left the area without putting on enough fat for completing their northward flight to the breeding grounds. It is unknown how this may have affected the number of birds reaching their breeding areas, their breeding success or even their survival.

- Network News

WESTERN HEMISPHERE SHOREBIRD RESERVE NETWORK

Through the efforts of Point Reyes Bird Observatory, we know that over 800,000 shorebirds in the spring and over 375,000 in the fall use the bay area. San Francisco Bay recently joined the Western Hemisphere Shorebird Reserve Network as a Hemisphere Reserve.

- Network News

THE U.S. FISH AND WILDLIFE SERVICE'S NONGAME BIRD STRATEGIES

The U.S. Fish and Wildlife Service has traditionally concentrated its efforts on game birds and those that are either endangered or threatened, and has generally ignored other species. In 1988, the USFWS attempted to rectify the situation when it produced a draft strategy for nongame birds, acknowledging responsibility for nongame birds. This first draft was weak in many areas, and various U. S. ornithological groups have commented on the draft. The USFWS is presently revising the draft, responding to the comments received. The Comments of the Pacific Seabird Group are listed below.

THE PACIFIC SEABIRD GROUP'S COMMENTS

I General Comments

This document is important as a first attempt by the U.S. Fish and Wildlife Service to define its national approach to management and conservation of species of migratory birds that are not included in the definition of game birds, or endangered species. We appreciate the opportunity to comment on the document. The scope of the document is excellent. The overall goal appears to include the necessary research and management needed to develop an overall strategy for assessing and maintaining species not already protected.

The usefulness of the document, however, is limited because it is restricted to programs that are already in progress or those that have been planned for the next five years. The scope deals only with those activities that can be covered by present finances. Instead, the document should include a wider scope and a long-term perspective, outlining an agenda for research, management, and conservation without regard to present budgetary constraints. It should include the scope of areas that would be considered and the programs that would be undertaken if funding were available. This would present a better idea of the directions that the Service feels are important.

The development and implementation of the program will not rest solely with the USFWS. It will require a cooperative effort among federal, state, private, and international agencies. It will be important that the service initiate and support communication and cooperation among these many groups.

The position that fiscal *constraints* have limited the service's nongame program and delayed the initial funding and implementation of the Conservation Act of 1980 is misleading. Rather it has been due to fiscal *priorities*. In the past, the service has largely ignored the non-consumptive users of our natural resources and has traditionally favored the exploiters. The non-consumers should be considered in developing the nongame program. The non-consumptive users form a large and growing political community, and are a vast pool within which funding mechanism can be developed.

II Specific comments on Objectives and Strategies

Objective 1. Service coordination is very necessary regardless of the magnitude of available funds.

Strategy 1. A brief description of the additional nongame actions which would be conducted by the USFWS if funding becomes available would be very useful in order to provide arguments to procure additional funding. Delineating specific subject areas would be helpful.

Task 1.1. The provision of additional manpower dedicated to nongame functions is very important. One individual for each region is less than is needed, however, and this should be stated clearly regardless of funding available. These positions should be given specific descriptions to ensure that the efforts of the individuals are not diverted to unrelated activities.

Task 1.2. A brief list of the types of permits reviewed would be helpful to readers who are not familiar with the specific Acts mentioned. Permit review *should* include nongame birds or urban wildlife species.

Task 1.4. The coordination, documentation and dissemination of information will be useful. What form will it take and who will receive them?

Task 1.5. Contaminant assessment is viewed by many as one of the most important functions of the Service and of EPA. Coordination of the data and interpretation of results is critical and requires additional personnel, either within the Service, or as hired consultants from Universities and private organizations. The concept of indicator species is excellent and should be expanded as widely as possible to monitor each diverse segment of the environment.

Task 1.6. It is unclear how considerations of nongame birds will be integrated into the USFWS planning and budgeting. This should be explained in more detail.

Task 1.7. In addition to *reviewing* legislation, nongame staff should *recommend* legislation related to nongame birds issues. The professional staff of the USFWS are in the best position to assess the need for legislation in their areas of expertise. A specific coordinator should be identified and included in the budget to act as a liaison between the research and management sections and the legislative branch of the USFWS.

Objective 1/Strategy 2.

Task 2.2. The USFWS should deal more aggressively with the effects of deforestation in the tropics on North American nongame birds. This section should be dealt with as a major problem.

Task 2.3. This is an extremely important task. An explanation of how the emphasis on nongame birds will be increased in the management of Federal lands.

The Minerals Management Service should be included in the list of Federal Agencies with whom the USFWS should develop a formal mechanisms for coordination on nongame birds issues, especially with regard to seabirds. The MMS does not manage offshore water in the same way as the other agencies manage Federal lands, but the policies and sales of offshore leaseholding directly affect many nongame birds. The impact of a lease sale on management of seabirds and marine mammals should be reflected by increased funding for additional personnel to monitor and manage the wildlife at risk from oil operations.

The open ocean is an important habitat for seabirds and other species. It is important to clarify which Federal agency (the USFWS or NOAA) is in charge of seabirds and other nongame birds beyond the three-mile territorial line and within the 200-mile fisheries management zone.

Objective 2. Assessing the status of nongame bird populations is probably the most important objective listed. Monitoring populations of non-threatened species and accurately assessing population trends cannot be overemphasized. The strategies and subtasks are well organized.

Task 1.1. Five years is probably a good time interval for assessing populations, if fluctuations in numbers due to major natural weather fluctuations can be evaluated.

Subtask 3.1.2. Colonial waterbird surveys. Many of the surveys mentioned are primarily concerned with seabirds. Most of the ornithological community does not automatically associate the term *colonial waterbird* with *seabird*. Perhaps inclusion of both terms would clarify the scope of the surveys.

Why are regions outside the Pacific not given priority? Why are wading birds not given priority?

Subtasks 3.2.2, 3.2.3, 3.2.4, 3.2.5, and 3.2.6. Each of these surveys and projects is an important contribution to our knowledge of nongame bird populations. The USFWS should attempt to coordinate and fund the publishing of these results and the publishing of breeding bird atlases. Active USFWS participation in these projects would probably improve them, stimulate interest by private volunteers, and help to maintain a standard format which would be of greater utility for long-term data. This is an area where the Service should actively contribute funding and seek additional funding. The reorganization of hawk migration surveys should be undertaken at high priority, with standardization of survey techniques and overlap of new and original techniques for several years to be able to interpret old and new data sets. Seabird and colonial waterbird surveys on lands other than Federal lands should be coordinated by the USFWS for standardization. All of these items require money, and should be addressed specifically in future budgets.

Subtask 3.2.6. The Colonial Waterbird Register at Cornell Laboratory of Ornithology is now defunct. It should be reconstituted and brought up to date.

Strategy 4. The development and improvement of techniques to monitor populations of birds for which there is inadequate data is of great importance. Raptors, especially forest species, and seabirds are at risk from several sources and must be adequately assessed.

Objective 3. This objective is the most difficult to complete. Identification of causes of population changes will require intensive research, much of which should be conducted in cooperation with universities and State Agencies. It is very likely that causative agents will not be discovered for all trends, and, therefore, interim management

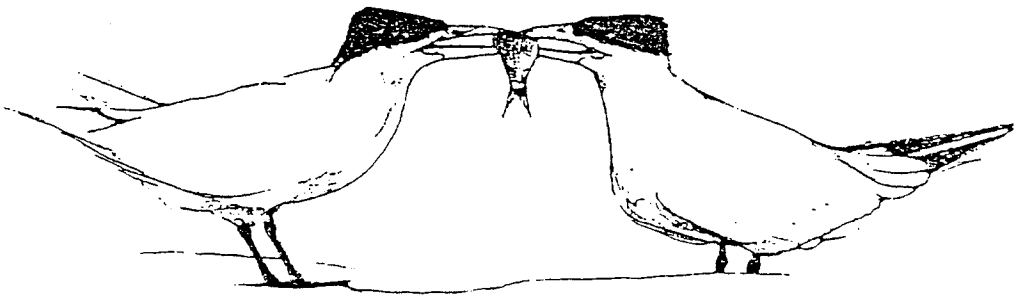
plans will need to be developed during the research period. Research will have to be conducted in controlled field and laboratory settings, requiring money not now allocated. This should be emphasized.

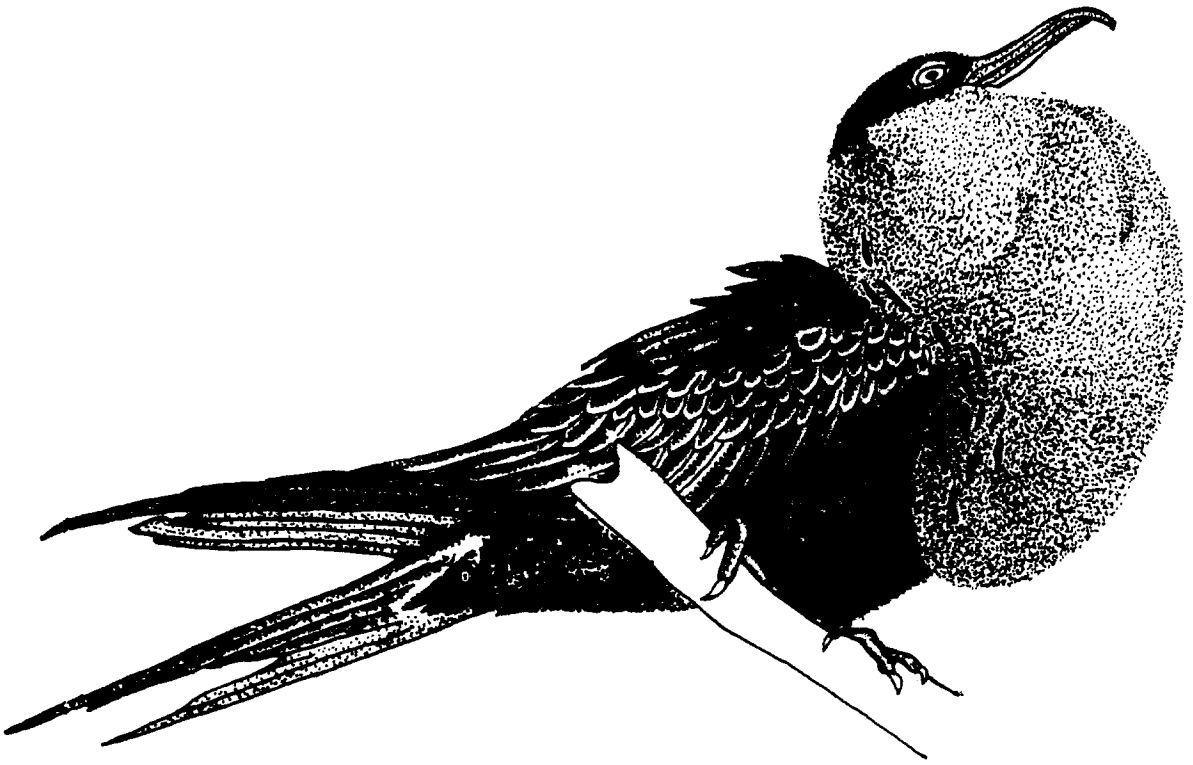
Strategy 3. Much of the document is single-species oriented. Preservation of habitat is extremely important. Many of the conservation problems of nongame birds have been due to loss of appropriate habitat affecting more than just a single species.

There has been a large amount of research on nongame birds that is community, super-organism oriented. These approaches should be further developed and incorporated.

How will the Service approach be related to the Nature Conservancy and Natural Heritage programs?

Objective 4/Strategy 1. Encouraging scientific study is laudable, but developing an adequate funding mechanism to assist in the study of nongame birds will be critical to a successful program. Service administered funds should be sought specifically to assist in these activities. As a part of this, we suggest that the USFWS initiate a competitive grants program to attract and recruit the help from the large body of expertise outside the service as other government agencies do. This will also increase the interaction and communication between the USFWS and outside organizations and individuals.





SECOND INTERNATIONAL CONFERENCE ON MARINE DEBRIS

During the week of April 2, 1989, approximately 250 people convened in Honolulu, Hawaii to hear papers and participate in working groups dealing with the mounting problem of marine debris. Organized by the National Marine Fisheries Service and Chaired by Richard Shomura, the conference presented 91 papers on a variety of topics. The eight topic areas (included overviews, distribution, abundance and sources, entanglement and ghost fishing, ingestion, economic impacts, solutions through technology, law and education.

Underlying the conference were the facts that 1. marine debris is an increasing problem primarily due to the recent proliferation of persistent non-organic debris, especially plastics and other synthetics, 2. marine debris is *not* inert in the marine environment and impacts the surface feeding guilds especially seabirds, turtles and cetaceans, and 3. marine debris is an international problem whose solution will require efforts on a variety of fronts.

DISTRIBUTION AND ABUNDANCE OF DEBRIS

Approximately 60% of the papers dealt with the topics of distribution and abundance, entaglement, and ingestion. The 22 papers dealing with amounts, types, distribution and sources presented a variety of data from all the major oceans. Of interest is the fact that floating plastics are accumulating pelagically as well as in-shore and not surprisingly are concentrating along frontal zones where mixing of different water bodies occur. These zones of mixing also attract a diversity of marine life leading to an unfortunate concentration of hazardous materials in areas with high biological activity.

Several papers presented data on the accumulation of plastic along shorelines. Data from the Gulf of Maine reported non-random patterns of deposition along shores. rocky shores and fringing marshes entrap plastic whereas bold or sandy shores appear to export plastic. Data from Alaska showed that deposition of plastic along shores does not mean that risks to wildlife diminishes . In fact, shoreline accumulation can lead directly to entanglement of, and ingestion by, seals, sealions and birds. Also, tagging of debris showed that storms and high tides can re-suspend persistent materials over and over again and transport them considerable distances. This, of course, means that individual objects can impact many locations over long periods of time.

It was also reported during this session that the majority of plastics put into the sea may actually be denser than water and thus sink and accumulate on the sea floor. This would mean that what we see floating at the surface or stranded on shores may only be the tip-of-the-iceberg. The quantity and possible significance of this sunken debris was only just touched upon.

ENTANGLEMENT

Aside from the obvious aesthetic implications of debris on shores and at sea, the papers dealing with entanglement and ingestion were the most compelling. Thirteen of the 16 papers in this session dealt with entanglement of pinnipeds. Plastic strapping material and lost fish nets

appear to be the most threatening objects to these populations. Recent entanglements of the rare Hawaiian monk seal were reported. the increase in mortality due to entanglement of this highly endangered species will certainly slow and perhaps hamper its recovery. Several papers presented data on the a devastating impact of lost gill and drift nets in both the Atlantic and Pacific. In addition to continuing to ghost-fish these nets cause significant mortality due to drowning of diving sea birds, sea turtles and cetaceans.

INGESTION

Equally insidious to entaglement is the ingestion of floating plastic by various marine organisms especially seabirds and turtles. Six of 14 paper4s in this session dealt with ingestion by seabirds, four by turtles, two by fish and two by cetaceans. Among seabirds the major threats are small fragments of plastic and foamed polystyrene (styrofoam) as well as pelatized plastic. for sea turtles sheet plastic, balloons and plastic fragments are the major culprits.

The surface feeding seabirds, especially the Procellariiformes, appear to be the most at risk. Up until this century these ancient birds encountered only organic materials at sea. However, the recent proliferation of non-organic debris at sea, much of which is brightly colored, is resulting in ingestion, presumably by mistaking plastic for food items.

One result of ingestion appears to be accumulation of plastic in the gut tract, especially in the proventriculus, of seabird. A paper presented by Paul Sievert, Louis Sileo and Stewart Fefer on the prevalence and characteristics of plastic ingested by Hawaiian seabirds included several photographs of the plastic *load* regurgitated by individual Laysan albatross. The quantity and diversity of plastic objects found entrapped in the gut of both adult and fledgling albatrosses was to me astounding. The long term implications of pseudo-satiation on the viability of this and other seabird populations would reward further study.

THE SOLUTION

The solution to the marine debris problem requires controlling debris, especially the most noxious materials, at their source. A three-pronged effort focused on technology, law and education was presented at the conference. Regarding technology, papers on degradability of plastic were presented. Degradability of plastic that can cause entaglement such as strapping and fish nests was encouraged. However, it was the consensus that the broad application of biodegradability should be approached cautiously and preceded by a thorough understand of the ecology fate of the products of degradation. The technological challenges and economic incentives to recovering and recycling plastic was covered and various alternatives to jettisoning plastic at sea, including shipboard compaction and burning were discussed.

On the legal front the discussion centered on a variety of international conventions, most notably Annex V of MARPOL 73/78 which among other things requires shore-side facilities for disposal of waste. The legal conventions coupled with education programs focused on the key polluters hold the most promise for decreasing the rate of input of marine debris.

DISCUSSION

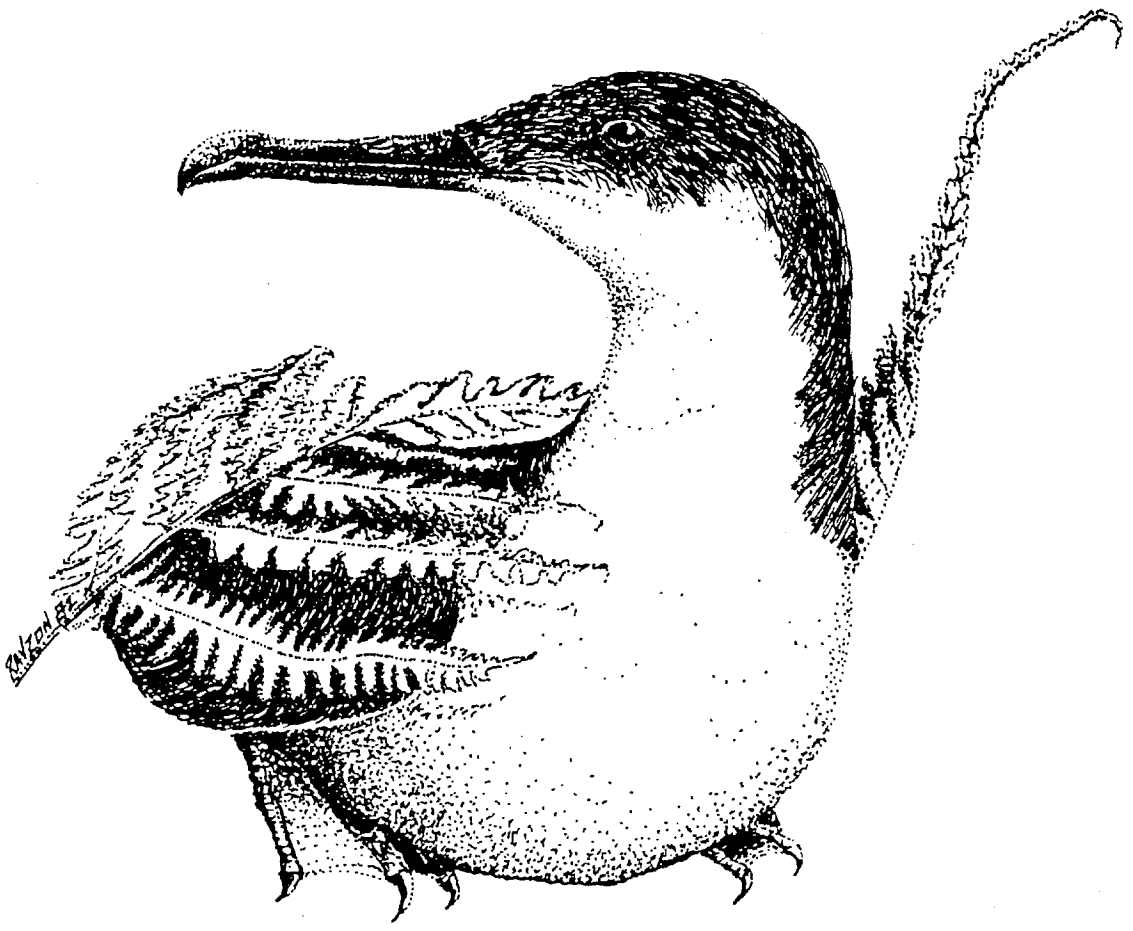
The fishing industry is responsible for some of the most hazardous debris from the standpoint of birds, mammals and fish. Yet there are no laws holding fishermen responsible for accounting or their nets and other potentially hazardous gear the way hunters and trappers must account for guns and traps. It is illegal for hunters to leave loaded weapons and live ammunition in the woods and for trappers to abandon set traps, yet we allow the fishing industry to deploy and apparently lose large volumes of lethal gear without consequence. Perhaps if gill and drift nets were licensed and had to be accounted for like the weapons they truly are the fishing industry would be encouraged to remove them from the sea. Perhaps rigging fishing nets with signals generating beacons would facilitate location and subsequent removal of lost gear before the carnage can begin. The point is, some fishing gear must be treated as weapons and the fishing industry must reduce the impact of this gear on non-target species or be faced with regulations and enforcement sanctions imposed upon them.

For the roughly 30 species already threatened or endangered seabirds what will be the long-term life history implications of yet another source of mortality and failed reproduction? Highly endangered pelagic seabird species such as the New Amsterdam albatross, the short-tailed albatross, the Bermuda petrel and the Hawaiian petrel (to name a few) will all be lucky to make it to the next millennium in the absence of any new sources of mortality.

We may never know how many seabirds die due to ingesting foreign objects or by being caught and drowned in derelict fishing gear, or the thousands of tons of fish lost to ghost fishing. but even in the absence of these data we would be wise to stay informed on this topic and to share any pertinent observations.

For further information on this conference and to receive the proceedings contact Dr. Richard Shomura, c/o National Marine Fisheries Service, 2570 Dole Street, Honolulu, Hawaii, 96822-2396

- Richard H. Podolsky, The Island Institute



THE EXXON VALDEZ SPILL

Early on the morning of Good Friday, March 24, 1989, exactly 25 years after the town of Valdez had been destroyed by the 1964 earthquake, a moderately huge oil tanker named for the town sailed from the Alaska Pipeline Terminal, missed a turn, and spilled 11,000,000 gallons of crude oil into Prince William Sound. Some of the equipment to clean up the spill was broken, some was never purchased, and the dispersants the oil industry wanted to use were not stockpiled. As a result, in perfectly calm weather the oil was allowed to spread for several days while the cleanup effort floundered amid name-calling and finger-pointing. The wind took the initiative and blew the oil all over the western part of the Sound, then out of the Sound into the Gulf of Alaska, oiling rocky capes below colonies of hundreds of thousands of seabirds along the Kenai Penninsula, then eventually oil moved through the Barren Islands, past Kodiak Island, and onto the Alaska Penninsula.

The North Slope Crude started out as a free-flowing, black liquid, somewhat less viscous than motor oil, which spread 4-12 inches deep into the fijords and bays of major islands in the Sound. The tides in Prince William Sound average about 15 feet, and as the tide went out, the oil penetrated deeply into the cobblestone beaches. The surface was black and oily, but many beaches were saturated to depths of several feet. Exxon crews, numbering several thousand people, washed beaches, wiped individual stones, and skimmed floating oil from the surface, but the magnitude of the spill was almost unfathomable. At each high tide cycle, the incomming water would float much of the oil up through the rocks to re-oil the beach and produce streamers of oily sheen which drifted back into the bays and passages between islands. The amount of coastline fouled was equal to the entire length of California coastline.

The birds, sea otters, and seals in the path of the oil were trapped in the fijords. Many thousands were coated and asphyxiated. Most of the birds in Prince William Sound were wintering waterfowl and loons, along with resident cormorants, Pigeon Gulillemots, Marbled Murrelets, and gulls. The number of birds which were present is very difficult to estimate. What proportion were recovered on beaches is but one of the tasks of assessing the damage.

The spill occurred in late March, and the bulk of the oil was out of the Sound into the Gulf of Alaska during early April. Luckily, the Puffins and Kittiwakes had not returned to their colonies when the oil initially floated past. As weeks passed, the weathering process changed the physical consistency of the oil into a sticky brown emulsion through evaporative loss of the gasoline components and the mixing of water droplets into the goo. By the time the oil hit the Barren Islands, Murres were present in large numbers, as were auklets, guillemots, and cormorants. The amount of oil still floating on the ocean was immense, and at the Barrens and Kodiak there was siginificant bird loss. The oil "mousse" continued into Cook Inlet and down Shelikoff Straight oiling both Kodiak island and the Alaska Penninsula.

With thousands of square miles of sea having streaks of floating oil, and with almost none but a borrowed Russian seagoing oil skimmer to clean it up, most of the oil eventually mixed with sediments in the water and sank. I have seen estimates that as much as 13% of the oil has been recovered, leaving just 87% on (and in) the beaches, and on the sea floor.

The Federal government decided to become involved in the logistics of the clean-up effort several weeks after the spill, when it became apparent that the task was too large for the oil industry to manage. C-5A aircraft were enlisted to fly cargo to Anchorage. The Coast Guard, NOAA, the US Fish and Wildlfe Service, EPA, and the US Forest Service all became involved, both in the environmental response and in the continuing damage assessment.

Never have I seen such acrimony between volunteers, industry, and the government. Hearings were held by Congressmen in Valdez and in Washington in which oil industry managers attempted to explain away their unpreparedness and lack of environmental sympathy. Damage containment experts, both for oil damage, and media damage, arrived in Valdez from Houston. The little town of Valdez mushroomed from 2,500 to 12,000 population overnight and thousands upon thousands of phone lines and fax machines were installed in control centers. More than $250,000 worth of phone equipment was installed in town from April to June. Thousands of cleanup personnel worked on beaches, most small fishing boats were contracted to help with the spill, and large incinerators were taken up from the lower 48 to burn the mountains of waste rags and cleanup generated trash.

The buzzword for this spill is "bioremediation" which is EPA's medium tech. solution to oiled beaches: fertilize the beaches so that bacteria will proliferate and degrade the oil. Exxon adopted this approach, and by September nearly 1000 miles of beaches were "treated" by "cleanup" crews.

With the situation under control, and the beaches under cleaned, Exxon evacuated Valdez by September 15 (right on schedule), and left the little boom town bust for the fourth time this century (first gold and copper, then earthquake, then pipeline construction, then the spill).

Environmental damage is still being assessed. Many sea otters (probably more than 1000) were killed. The spill occurred just prior to sea otter and seal pupping, and the loss of near term fetuses and pups can only be estimated through careful evaluation of surviving populations. Similarly, loss of waterfowl, seabirds, shorebirds, and scavenging Bald Eagles and Peregrines must be documented this year and next. Thirty five thousand dead birds have been saved in freezers as evidence, how many more were killed has not yet been estimated. The loss to fishing, both economic loss and the loss of Herring and Pink Salmon spawn, also requires careful data collection and extrapolation.

The aftermath of this spill will continue for years, and will include major changes in environmental law, changes in cleanup contengency plans, altered regulations on oil platforms and tanker transport, and emense public skeptacism of the oil industry's environmental ethic. Perhaps there will be a silver lining to this disaster, but only if Washington and the oil industry take seriously their environmental responsibilities.

APPLICATION REQUIREMENTS FOR RESEARCH AND/OR SCIENTIFIC COLLECTION IN MEXICO

The Mexican government has revised its permitting procedures foreign scientists. The present requirements are described below:

Every applicant shall remit, with no exception, all application materials to his/her country's embassy in Mexico, which in turn shall process the documentation for diplomatic certification and send the materials to:

Dra. Graciela Garcia de la Garza
Direccion General de Conservacion Ecologica
de los Recursos Naturales
Rio Elba # 20 - 8o. Piso
Colonia Cuauhtemoc.
06500 Mexico, D. F.

The applicant shall send the following documents to his/her embassy in Mexico City:

1. A letter of support for your project from the university or agency which currently employs you.

2. A letter of agreement stating the intention to cover the expenses of a Mexican technician during the field work period.

3. A letter of support from a Mexican institution or investigator.

4. Curriculum vitae of investigator and two passport-size photographs.

5. A copy of the proposed project, justifying and defining the purpose(s) for collection.

6. A copy of the project proposal including:
   - common and scientific names of each species, as well as the number of specimens to be collected
   - specify methods of collection and transportation if any organisms are to be banded or marked, including a listing with number or serials
   - locations where the research and/or collection will take place
   - Period or duration of research and/or collection
   - Port and dates of exportation of collected materials
   - Calendar of activities

7. International money order made to **Tesoreria de la Federacion** for the sum of 931,000.00 pesos payable at any of the banking institutions in Mexico City.

The fulfillment of these requirements does not necessarily imply the approval of your application.

If the permit for research and/or collection of wildlife for scientific purposes is granted, the investigator will be committed to:

1. Depositing the collected specimens in any of the institutions dictated by the Direccion General de Conservacion Ecologica de Los Recursos Naturales.

2. After all materials have been catalogued, the Direccion General de Conservacion Ecologica de Los Recursos Naturales will issue the corresponding exportation permit(s).

3. When the study of the specimens has been complete, the investigator will return the **temporarily** exported specimens to the Direccion General de Conservacion Ecologica de Los Recursos Naturales.

4. The investigator shall submit, within 30 days after completion of the research, a copy of the results according to the proposed project. Copies of any publications derived from this work should be sent in time.

Important

All the requirements, including diplomatic certification, should be received by the Direccion General de Conservacion Ecologica de Los Recursos Naturales at least 30 days in advance of the proposed research and/or collection. Otherwise a delay in the issuance of the permit(s) should be expected.

Applicants for permits are advised to start the application process at least six months in advance of their field work. Long delays may occur at the applicants' embassies in Mexico.

NEW PUBLICATIONS

Halpert, M. S., and C. F. Ropelewski. 1989. Atlas of Tropical Sea Surface Temperature and Surface Winds. NOAA Atlas No. 8.

This atlas contains a nice compilation of data on sea surface temperatures and surface winds over the global tropical oceans from 30°N to 30°S during the years 1950 through 1979. It also includes composite analyses for the El Niño/Southern Oscillation (ENSO) episodes occurring during this time. It is unfortunate that it does not include the strong 1983/83 ENSO, but that may come out in a future volume. This will be useful for researchers of tropical seabirds. The volume is available from the Climate Analysis Center, W/NMC52, 5200 Auth Road, Washington, D. C. 20233.

- Malcolm C. Coulter

Jennings, M.C., ed. 1988. **The Phoenix**, Volume 5.

This volume contains 20 pages of data and reports related to the Atlas of Breeding Birds of Arabia including seabird species. The Phoenix contains a wealth of bird data and book reports concerning the Saudi Arabian peninsula. Available at ABBA, Moonraker Cottage, 1 Eastcourt, Burbage, Wiltshire SN8 3AG, England

- News from Medmarvis

Montague, K., and B. Bruun, eds. 1987. *Biological Diversity in North Africa, the Middle East and SW Asia: a Directory of Organizations and Institutions.* Holy Land Conservation Fund. 134 pp. (free of charge).

This publication lists, according to country, the addresses of various governmental (e.g. Ministry of Environment; Directorate of Fisheries), universities, research centers, and non-governmental organizations dealing with natural history and environmental conservation.

The HLCF also published the **Sinai Newsletter** covering all the regions of the Middle East. This includes such information as the declaration of Lake Manzala (NE Egypt) as a protected area, and the availability for tourism development of several islands with seabird breeding populations off Hurghada in the Red Sea Hurghada. These two publications are available at the HLCF, 969 Park Avenue, New York, New York 10028.

- News from Medmarvis

Vermeer, K., and R. W. Butler. 1989. The ecology and status of marine and shoreline birds in the Strait of Georgia, British Columbia. Spec. Publ. Can. Wildl. Serv. Ottawa.

This is the proceedings of a symposium of the same title held in Sidney, British Columbia, on 11 December, 1987. This is a nice compilation of studies in the Strait of Georgia. It should be combined with the proceedings of a previous symposium (Parsons, T. R. 1983. Symposium on the Fisheries and Oceanography of the Strait of Georgia. Can J. Fish. Aquat. Sci. 40:1025) for a larger overview of this marine system. The volume is divided into six sections: Physical and biological environment and prey organisms , Feeding

ecology of marine and shoreline birds, Populations and breeding ecology of marine birds, Populations and breeding ecology of shoreline birds, Populations and ecology of wintering birds, and history and conservation of birds. twenty-six researchers contributed to the 24 papers. Many of the articles are short. They concentrate on how the birds are using the Strait of Georgia rather than dealing with their general biology. The volume may be obtained from Kees Vermeer, Canadian Wildlife Service, c/o Institute of Ocean Sciences, P.O. Box 6000, Sidney, British Columbia V8L 4B2, Canada.

- Malcolm C. Coulter

BIBLIOGRAPHIES

The French seabird group *G.I.S. Oiseaux Marins* edits and regularly updates a bibliography including any published paper and academic work devoted to the seabirds of France, including overseas territories, or related to studies undertaken by French seabird biologists abroad. These are produced yearly. The first three issues, covering the years 1986-1988 may be obtained by writing to Pierre Yesou, Vice Secretary, G.I.S. Oiseaux Marins, 101, rue du 8 Mai, 85340 Olonne-sur-Mer, France.