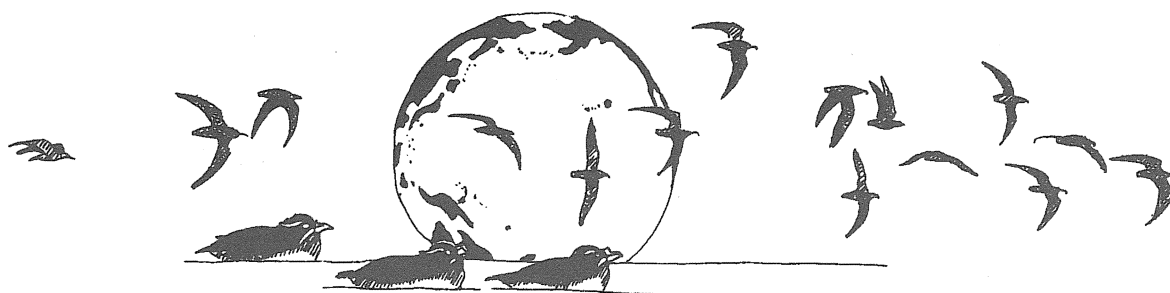


PACIFIC SEABIRDS



A Publication of the Pacific Seabird Group

Volume 31 Number 1

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PACIFIC SEABIRD GROUP

Dedicated to the Study and Conservation of Pacific Seabirds
and Their Environment

The Pacific Seabird Group (PSG) was formed in 1972 due to the need for better communication among Pacific seabird researchers. PSG provides a forum for the research activities of its members, promotes the conservation of seabirds, and informs members and the public of issues relating to Pacific Ocean seabirds and their environment. PSG holds annual meetings at which scientific papers and symposia are presented. The group's publications include *Pacific Seabirds* (formerly the PSG Bulletin), *Marine Ornithology* (published jointly with the African Seabird Group and the Australasian Seabird Group), symposium volumes, and technical reports. Conservation concerns include seabird/fisheries interactions, monitoring of seabird populations, seabird restoration following oil spills, establishment of seabird sanctuaries, and endangered species. Policy statements are issued on conservation issues of critical importance. PSG members include scientists, conservation professionals, and members of the public from both sides of the Pacific Ocean. It is hoped that seabird enthusiasts in other parts of the world also will join and participate in PSG. PSG is a member of the International Union for Conservation of Nature (IUCN), the Ornithological Council, and the American Bird Conservancy. Annual dues for membership are \$25 (individual and family); \$15 (student, undergraduate and graduate); and \$750 (Life Membership, payable in five \$150 installments). Dues are payable to the Treasurer; see Membership/Order Form next to inside back cover for details and application.

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Pacific Seabirds

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PACIFIC SEABIRDS

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ARTICLE

DO THE ALBATROSSES OF MIDWAY ATOLL SELECT CIGARETTE LIGHTERS BY COLOR?

John Cooper, Heidi J. Auman and John Klavitter

Disposable cigarette lighters form a noticeable part of the steadily increasing amounts of plastic debris ingested by North Pacific albatrosses *Phoebastria* spp. and subsequently regurgitated to their chicks (Sileo *et al.* 1990a, Auman 1998, pers. obs., Figure 1). The lighters, like other small floating objects in the North Pacific, are used by flying fish (Exocoetidae) to attach their pelagic egg masses, which are prey items of the Laysan Albatross (*P. immutabilis*) and Black-footed Albatross (*P. nigripes*) breeding on the Northwest Hawaiian Islands, including Midway Atoll (Pettit *et al.* 1981, Harrison *et al.* 1983). Plastic debris, including lighters, may also be mistaken by North Pacific albatrosses for prey items (such as ommastrephid squid), presumably because they match the colors of those prey (Pettit *et al.* 1981; see also Day 1980, Day *et al.* 1985, Ryan 1987a).

Although the ingestion of plastic debris by North Pacific albatrosses may not result in direct mortality, it does reduce fledging mass, and therefore could affect juvenile survival (Sileo *et al.* 1990b, Sievert & Sileo 1993, Auman *et al.* 1998). It is thus a valid conservation concern.

Little is known about the at-sea distribution, abundance or sources of these lighters, although observations among breeding colonies on Midway and other Northwest Hawaiian islands show that many are manufactured by or for Asian countries that surround the North Pacific Ocean, based on inscriptions (Pettit *et al.* 1981, pers. obs.). Surveys of beached debris give an opportunity to obtain information on the sources of at-sea plastic pollution, as well as trends over time (e.g. Ryan 1987b, Ryan & Moloney

1993), but information from Asia seems to be lacking in this regard.

On 20 August 2002 JC surveyed a section of the north-facing shoreline of Shi Jiu Tuo (Happy) Island, Bo Hai Bay, Hebei Province, People's Republic of China, for washed-up disposable cigarette lighters. The seaward end of the surveyed shore was recorded by GPS at 39° 08.548' N, 118° 50.090' E, and its length, also measured by GPS, was 860 m. All but two lighters found were collected for subsequent classification as to color, and where possible, provenance. The lighters were then disposed of on the Chinese mainland, since it seemed unwise to subject them in their mainly corroded state to international travel.

A total of 36 lighters was counted (Figure 2), at an average density of 24/m. Only six lighters carried inscriptions that could be used to help identify their sources. Five had Chinese characters (which were not recorded), suggesting that they had come from the People's Republic of China, confirmed for one lighter by also having the English inscription "Shenzhen Duty Free Shop." A sixth lighter bore the word "Kent" and thus may have been derived from another country.

Of the 34 lighters examined, 29 were made of translucent and five of opaque plastic. In numerical order their colours were blue (11), orange (10), green (6), yellow (3), red + pink (3) and purple (1).

According to Shaw & Day (1994), transparent plastic particles were the most common color collected by neuston nets in the North Pacific Ocean (49.0%), followed by white (25.2%), blue (16.9%) and black/gray (5.2%). Day *et al.* (1990a) reported similar results,

with transparent (44.3%), white (34.4%), blue (7.2%) and black/gray (4.2%) being the most common colors of neuston plastic. Day *et al.* (1990b) recorded colors of visually-observed plastic debris (minimum size 2.5 x 2.5 cm) in the North Pacific; white was the most common. However, in terms of size, cigarette lighters fall between these net and observational surveys, and so there is no available information on the color proportions of lighters floating in the North Pacific to compare with the that of the small collection made on Happy Island.

Analyses of plastic items ingested by seabirds, including North Pacific albatrosses, compared with at-sea information from net hauls suggest that there is selection for certain colors, and that ingestion is not random (Day 1980, Day *et al.* 1985, Ryan 1987, Sileo *et al.* 1990a). However, although thousands of disposable lighters of many different colors have been collected from the breeding grounds of Black-footed and Laysan Albatrosses in the Northwest Hawaiian Islands, where they have been regurgitated by chicks or found in decomposed corpses (Mendenhall 2001, pers. obs. for Midway Atoll), there has

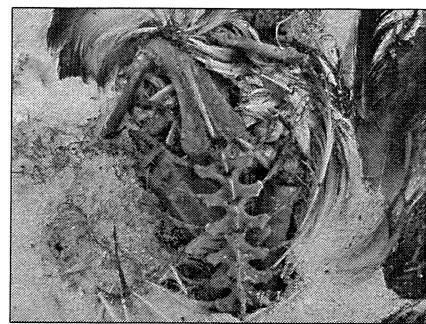


FIGURE 1. Cigarette lighters within the stomach cavity of a dead Laysan Albatross chick, Sand Island, Midway Atoll, July 2003. By Barbara Mayer.



FIGURE 2.. Cigarette lighters collected from the shore of Shi Jiu Tuo Island, People's Republic of China, August 2002. By Dieter Oschadleus.

been no information published that gives the color proportions of non-selective collections that can be specifically allocated to the two albatrosses (which can breed in mixed colonies or in close proximity). Thus, it is not possible currently to state with any certainty which colors of lighters Black-footed and Laysan Albatrosses select. If there are indeed differences in color selectivity between the two species, perhaps it is due to differences in their diets. Such might be expected, given that Black-footed Albatrosses consume more flying fish eggs than do Laysan Albatrosses, which eat more ommastrephid squid (Harrison *et al.* 1983). It could be assumed that Laysan Albatrosses would thus be more selective, ingesting cigarette lighters that more closely resemble in color their natural prey, whereas Black-footed Alba-

trosses should show less of a color bias in this regard, since they may be targeting egg masses rather than the lighters themselves.

At the request of the authors, volunteers working at the Midway Atoll National Wildlife Refuge categorized by color a collection of 1307 lighters they had previously made during 2003 (Mayer 2003, Figure 3). Lighters were collected from the interior of all three islands forming the atoll (Sand, Eastern and Spit Islands), with the majority being obtained on Sand Island. It is thus reasonably certain that all the lighters had been originally ingested by albatrosses and had not washed ashore. It is not possible to assign the lighters to either of the two albatross species. The red + pink color category was the most abundant, followed by orange and then green (Table 1). A non-

statistical comparison with the sample from Shi Jiu Tuo could suggest that the albatrosses were actively ratios of lighters manufactured.

It is hoped that further studies on Midway can assign lighters to the two albatrosses, and can investigate provenance (or at least the manufacturers) of the lighters by studying their inscriptions and manufacturing marks. Ideally, to test for color selectivity, lighters should be collected at sea within the foraging ranges of breeding North Pacific albatrosses. In addition, collections should be made on the tide-lines of islands in the Hawaiian chain that do not support breeding albatrosses (as well as on coastlines elsewhere within the species' ranges), so as to avoid any possible confusion between ingested and washed-up lighters.

The Pacific Seabird Group could take the lead in calling for cooperative research to address this question. If new collections confirm color selectivity by the birds, then manufacturers of lighters in North Pacific rim countries should be approached to refrain from producing lighters of the selected colors, as a posi-



FIGURE 3. Cigarette lighters ingested by albatrosses on Sand, Eastern, and Spit Islands, Midway Atoll. Photograph taken after collection on Sand Island by Daniel Tsukayama, July 2003.

TABLE 1. Color proportions of disposable cigarette lighters ingested by albatrosses on Midway Atoll, 2003.

Color	Blue	Orange	Green	Yellow	Red+Pink	Purple	White	Black	Total
Number	120	249	228	88	274	104	220	24	1307
Percentage	9.2	19.1	17.4	7.3	21.0	8.0	16.8	1.8	

tive contribution towards the conservation of Black-footed and Laysan Albatrosses.

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[This is a peer-reviewed article.]

CONSERVATION REPORT

Craig Harrison

USFWS DECIDES MARBLED MURRELET IN PACIFIC NORTHWEST IS NOT A DISTINCT POPULATION

USFWS decided in September 2004 that the Marbled Murrelet is not a different population from those in British Columbia and Alaska. This prepares the agency to reanalyze whether the bird should be classified as threatened under the Endangered Species Act (ESA).

USFWS recently completed a five-year review that was required by the ESA, but that was initiated by a timber industry lawsuit. USFWS's regional office in Portland concluded in April that the birds are indeed a distinct population segment (DPS) and are suitable for listing under ESA. They concurred with panel of independent scientists convened by USFWS, which also found that the species has declined 10% in California, Oregon and Washington since it was listed as threatened.

However, the USFWS headquarters in Washington, D.C. sent the draft conclusion back to the Portland office, saying murrelets do not qualify as a DPS. They supported this decision by a policy issued in 1996 that defined a DPS: it must be biologically different from other groups of the species, and, if there is an international boundary between the groups, there must be differences in the conservation, management, and habitat of the species across that border. USFWS headquarters decided that birds in the Pacific Northwest and in British Columbia are not different enough to warrant separating them, and that management is similar in the two countries due to Canada's recent passage of protective legislation.

According to environmentalists, delisting the Marbled Murrelet would allow significant increases in old-growth

logging in coastal areas, particularly in Oregon. They point out that continued declines in the Marbled Murrelet, despite ESA protection and the Northwest Forest Plan, show that the species needs more protection, not less. They say that the Bush administration is allowing policy to override scientific data and judgement. The timber industry replies that not enough research has been done into the life cycle of murrelets to determine that logging is primarily responsible for the decline.

CALIFORNIA FISH AND GAME COMMISSION LISTS XANTUS'S MURRELETS AS THREATENED

The California Fish and Game Commission (CDFG) decided on 24 June 2004 to list the Xantus's Murrelet (*Synthliboramphus hypoleucus*) as a threatened species under the California Endangered Species Act. This culminated a long regulatory process that began when PSG submitted a petition to the Commission in April 2002, asking it to list the species as threatened (*Pacific Seabirds* 29:10, 2002). The California Department of Fish and Game (CDFG) conducted a year-long review of the species' status, then recommended that the Commission list it. The CDFG proposed to list the Xantus's Murrelet as a threatened species at a public meeting in February 2004. PSG was represented at the meeting by Gerry McChesney, who read a letter from PSG; others who attended to support the listing included the Ocean Conservancy, the Center for Biological Diversity, Channel Islands National Park, and the Channel Islands National Marine Sanctuary. The CDFG's decision was facilitated by a lack of opposition. A pub-

lic notice of the action was published in the California Regulatory Notice Register before its final adoption.

The murrelet has a limited worldwide distribution, nesting on only six of the California Channel Islands and six islands along the coast of Baja California, México. Approximately 51% of the California population nests on Santa Barbara Island, the smallest of the Channel Islands at only 2.6km².

California currently provides some protection to the Xantus's Murrelet through interim regulations on incidental take, which were adopted in October 2002 after the first public hearing on the petition. The regulations apply within one nautical mile of Santa Barbara and Anacapa islands during the breeding season (primarily 1 Feb through 15 Jul). The CDFG is also developing protective measures for the murrelet and other sensitive seabirds in the Market Squid Fishery Management Plan, which is scheduled for adoption by the Commission later this year.

USFWS DOES NOT RANK LISTING OF MURRELETS AS HIGH PRIORITY

The U.S. Fish and Wildlife Service (USFWS) published its Endangered Species Candidate Notice of Review in the Federal Register in May. Xantus's and Kittlitz's murrelets (*Synthliboramphus hypoleucus* and *Brachyramphus brevirostris*) were both added as candidate species with a listing priority of 5. This is the lowest category and means that, as a practical matter, USFWS will not be devoting resources to listing either species anytime soon.

Essentially USFWS says that Xantus's Murrelets already are actively managed, and that no threats are so imminent that the species is in immediate

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jeopardy, in contrast to other candidate species. The notice points to the successful rodent control efforts on breeding islands (thanks in part to PSG's advocacy) and the shielding of deck lights on squid vessels. USFWS neglected to mention that California has listed the Xantus's Murrelet as threatened, thus tending to support USFWS's view that other species are in more imminent jeopardy. The basis for the listing priority of Kittlitz's Murrelet is unclear.

PSG COMMENTS ON DRAFT REGIONAL SEABIRD PLAN

PSG commented during August on an extensive draft plan for seabirds in the Pacific region. The plan will guide seabird conservation projects during the coming decades and is of interest to every member of PSG. PSG noted that the plan contains excellent and useful background information on the biology and general conservation issues that face seabirds in the North Pacific. However, it lacked clear priorities for action, which we hope can be remedied in the final version. Among the specific priorities that we recommended were to provide short lists of the most important seabird colonies where predators should be removed, and a list of seabird colonies that do not have sufficient protection.

PSG also suggested that some of the conservation classifications of seabirds be reconsidered to insure that they are objective and that agencies and the public focus their attention on the species that face the most severe problems. We noted that USFWS curiously found no problems with Caspian Terns (*Sterna caspia*), despite the fact that the Service simultaneously issued a draft environmental impact statement that would severely reduce the size of the largest colony in the world on East Sand Island in the Columbia River. With respect to oil pollution, fisheries impacts and contaminants, PSG urged that the final report focus on

unresolved problems and include practical projects or actions that would improve the situation for seabirds.

PSG OPPOSES CHEVRON LNG PLANT NEAR CORONADOS ISLANDS, MEXICO

PSG wrote Alberto Cárdenas Jiménez,

Secretario de Medio Ambiente y Recursos Naturales, government of México, to express its concerns regarding the proposal by ChevronTexaco Corporation to build a \$650 million liquid natural gas (LNG) facility 600 m off Islas Los Coronados, Baja California. The terminals will be used to convert imported LNG—super-cooled liquid methane—back into gas for sale to the Mexican and U.S. markets. LNG imports are expected to account for 15% of the total U.S. natural gas supply by 2025, a huge increase from today. The Coronados Islands are 13 km off the Baja California coast and are uninhabited except for a Mexican navy outpost on South Island. According to Chevron, fish are not abundant in the area where the platform would be, because the sea bottom there is flat and sandy. The company has offered to cover its pipeline to shore with riprap to create a fish feeding area.

PSG noted that Islas Los Coronados support at least 4,600 breeding seabirds of 10 species, but that the environmental planning process did not adequately consider the effects of the project on seabirds. Of these, Xantus's Murrelets are listed as endangered in México, and three species of storm-petrels (Leach's, Ashy and Black; *Oceanodroma leucorhoa*, *O. homochroa*, and *O. melania*) and Cassin's Auklets (*Ptychoramphus aleuticus*) are considered threatened there. Los Coronados is an important Mexican nesting site for all of these rare species. These islands support the largest known breeding population of Xantus's Murrelets in the world and the only breeding population of Ashy Storm-

Petrels in México. Los Coronados are particularly important for Xantus's Murrelets, a species that breeds only from Islas San Benito off central Baja California to the Channel Islands of southern California. Because of the significant seabird resources that depend on Islas Los Coronados, a number of major efforts have been made there in recent years to survey and protect the seabirds and other natural resources. These efforts include removing feral cats, goats, and burros, all of which prey upon seabirds or degrade their nesting habitat.

PSG explained that many species of seabirds are extremely sensitive to human disturbance, which can cause failed breeding attempts and abandonment of nesting areas. The construction and operation of the proposed LNG facility at Islas Los Coronados will dramatically increase levels of disturbance to seabirds, including: (1) bright lights at night from the facility and visiting tanker vessels; (2) noise from the facility; (3) noise from helicopters visiting the facility; (4) ingress and egress of tanker vessels; and (5) other vessels transporting personnel and supplies. Taken together, the cumulative disturbance caused by this proposed facility could have disastrous consequences for these colonies.

Many of the threatened and endangered seabirds that use the island are nocturnal species that come and go from their nests only under the cover of darkness. These species are very sensitive even to dim lights at night. Lights affect nocturnal seabirds in two ways. First, lights attract seabirds and cause them to become disoriented, thereby disrupting their normal activities and causing mortality as birds fly into lights or structures around the lights. Second, light can increase seabird susceptibility to predation by illuminating areas at sea and on the colony. Therefore, lights near the colony may prevent adults from visiting their nests, increase mortality of those adults that do attempt to visit the colonies, and dramatically increase their susceptibility to natural predators. Frequent exposure to lights at or near the nesting colonies will likely cause many, if not most, birds

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to either die or abandon the Los Coronados Islands breeding site.

PSG urged the secretary to consider and protect these important resources in evaluating the proposal to build a LNG facility near Islas Los Coronados.

SHORT-TAILED ALBATROSS RECOVERY TEAM MEETS IN JAPAN TO WORK ON RECOVERY PLAN

An international team from the United States, Japan and Australia met during May in Kashiwa, Japan, to continue its work on the development of a recovery plan for endangered Short-tailed Albatrosses (*Phoebastria albatrus*). One of the key issues discussed was re-establishing breeding colonies in safe non-volcanic locations. The primary breeding colony of the Short-tailed Albatross is currently on Torishima Island, an active volcano that has erupted in the past and devastated the Short-tailed Albatross colony there.

PSG ENDORSES PROPOSAL TO ERADICATE SMALL MAMMALS FROM LEHUA ISLAND, HAWAII

PSG wrote to USFWS in support of eradicating introduced rabbits (*Oryctolagus cuniculus*) and rats (*Rattus* spp.) from Lehua Island, Hawaii, to aid in the conservation of seabirds and their habitat. PSG pointed out that the introduction of black rats (*R. rattus*) on Midway Atoll in 1943 decreased seabird populations there and caused the extinction of the Laysan Rail (*Porzana palmeri*). PSG also noted that the eradication of rats from Midway in the 1990s has benefited small nesting seabirds such as Bonin Petrels (*Pterodroma hypoleuca*) and storm-petrels. We suggested that removing introduced rats and rabbits could

provide immediate benefits for small and vulnerable seabird species, such as Blue-gray Noddies (*Procelsterna cerulea*), Harcourt's Storm-Petrels (*Oceanodroma castro*), Sooty Storm-Petrels (*Oceanodroma tristrami*), and Bulwer's Petrels (*Bulweria bulwerii*), which might begin reclaim their former ranges. The elimination of rabbits would benefit all species that need vegetation for nesting, shade, or the stabilization of soil for burrows.

PSG noted that USFWS's Regional Marine Bird Policy (November 15, 1985) states that it will "remove all introduced predators from marine bird colonies on all National Wildlife Refuges and encourage their removal from all other colonies" as well as "utilize all available programs and divisions of the Fish and Wildlife Service" to maintain all marine birds "in their natural diversity and on native habitat throughout their range" on all non-Service lands. The proposed rat- and rabbit-removal project furthers that policy.

PSG recognizes that the elimination of alien predators is sometimes controversial, even though they devastate natural communities of plants and animals and drive some species to extinction. PSG offered to help educate anyone who may be initially opposed to this project. Finally, PSG endorsed a goal of full eradication, because half-measures are inefficient and a waste of funds.

ALBATROSS NESTING INCREASES ON MIDWAY ATOLL

In January 2004, USFWS announced that nests of Laysan Albatrosses (*Phoebastria immutabilis*) had increased 53% on Midway Atoll, and that Black-footed Albatrosses (*P. nigripes*) had increased 7%, compared to the most recent census two years earlier.

Both species are reported as being taken as bycatch in the Alaska and Hawaii longline fisheries, as well as in the swordfish fishery that occurs off California beyond the Exclusive Economic Zone

(now managed by the West Coast Highly Migratory Species Fishery Management Plan). Estimated albatross bycatch in both Hawaiian and Alaskan longline fisheries has dropped dramatically. Albatross population dynamics, like those for many other species, are complex and are affected by a multitude of factors. Factors can be both environmental and human-related, such as oceanographic conditions, prey availability, and nesting habitat. There are concerns that bycatch also contributes to population declines of albatrosses; hence reductions in bycatch may account for some of the observed population increases.

Further details are available at <http://www.fakr.noaa.gov/protectedresources/seabirds/newsitems.htm>

MERGASERS TOP SALMON PREDATOR AT COLUMBIA RIVER DAMS

PSG member Julia Parrish recently announced the preliminary results of her study concerning bird predation on salmon in the mid-Columbia River. Her study will likely be used for management purposes by dam operators such as to the Chelan County Public Utility District. Parrish's study observed birds along 62 miles of river between Rock Island and Wells dams. She collected about 1500 birds to examine stomach contents and fat tissue.

The work was initially expected to focus on California Gulls (*Larus californicus*), Ring-billed Gulls (*L. delawarensis*), Caspian Terns, and Double-crested Cormorants (*Phalacrocorax auritis*). Surprisingly, mergansers (*Mergus* spp.) consume more young salmon (*Oncorhynchus* spp.) and steelhead (*Salmo gairdneri*) than any other bird along the reservoirs of Rock Island and Rocky Reach dams, accounting for more than 60 percent of the salmon consumption by birds. Gulls accounted for another 25 percent of the salmon consumption. Fishery managers had wrongly believed that cormorants and Caspian Terns were eating large

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numbers of endangered young salmon and steelhead, but those birds do not arrive in the mid-Columbia until later in the summer, after the small salmon and steelhead have moved down stream.

Also surprising was that salmon were eaten in the calm reservoirs behind the dams, rather than in the tailraces, where fish often lie dazed after their journey through the turbines or bypass system. Eighty percent of all the fish eaten by birds are consumed in the reservoirs above the dams, not below them. There is currently no management of mergansers in the Columbia, and Parrish advised the utility to use a habitat approach to control mergansers and gulls to push them away from the areas where they traditionally feed on salmon and steelhead.

Tern and cormorant predation on juvenile salmonids near the mouth of the Columbia has also been researched for several years (e.g., *Pacific Seabirds* 29:92, 2002).

DRAFT EIS FOR MANAGEMENT OF CASPIAN TERNS IN THE COLUMBIA RIVER ESTUARY RELEASED

USFWS has released its draft environmental impact statement for Caspian Tern management. Comments are due September 21. The preferred alternative would disperse 60-70% of the tern colony (5000-6500 pairs) from East Sand Island by reducing the amount of nesting habitat there from 2.7 ha to less than 0.6 ha. Between 2500 and 3125 pairs would continue to nest on East Sand Island. USFWS also proposes to enhance and create tern habitat at several other locations on public lands: Summer, Crump and Fern Ridge lakes in Oregon, Dungeness National Wildlife Refuge in Washington, and three sites in California's San Francisco Bay (Brooks Island, Hayward Regional Shoreline, and Don Edwards San Francisco Bay National Wildlife Refuge). Ownership of East Sand Island

remains unresolved pending a final decision (*Pacific Seabirds* 30:12, 2003).

In 2004, only 17% of the identifiable fish delivered to the Caspian Tern colony on East Sand Island were salmonids. This compares to 26% in 2003. The proportion of juvenile salmonids in the diet of East Sand Island terns this year promises to be the lowest since diet studies began in 1997. The numbers of salmonids taken by Caspian Terns had been reduced by at least two-thirds through 2003 and there well may be a further a reduction after 2004 data are analyzed.

REPORT CRITICAL OF NATION'S OCEAN MANAGEMENT FAILS TO MENTION SEABIRDS

A national panel of scientists and experts concluded that the coasts are awash with trash, that fish stocks are depleted, and that few of the federal and state agencies responsible for overseeing such issues are working well together. The U.S. Commission on Ocean Policy made 200 recommendations to improve ocean management, including doubling the amount of money spent on ocean research, beefing up public education efforts, improving water quality, and better managing the nation's fisheries. It called for creating a national oceans council, a presidential oceans council, a national ocean policy, and for sweeping reforms in the way the country manages its coasts and oceans.

The current regulatory scheme consists of piecemeal legislation and administrative decisions. Commission Chairman James Watkins, a former Navy admiral and secretary of the Department of Energy, called on Congress to pass an organic statute that elevates the National Oceanic and Atmospheric Administration (NOAA) to the lead agency for ocean affairs. Ocean functions that currently reside in other agencies would be consolidated to reduce the fragmentation and redundancy that are a perennial problem in setting ocean policy. Some scien-

tists expressed concern about whether NOAA would be the appropriate lead agency on ocean matters. Among their doubts was whether NOAA would recognize the equal importance of its research and education, management, and prediction/assessment tasks. Moreover, concerns were expressed that NOAA—or any agency in its position—would shortchange its research, education, and management activities when faced with funding shortfalls. Some academic scientists testified to Congress that NOAA can play a major role in ocean sciences, but its programmatic and organizational structure are real impediments to effective partnerships with the academic community.

The Commission's report, however, was itself deficient: it did not mention seabirds. PSG, along with a variety of conservation groups, wrote the Commission to urge that seabirds and their conservation be included in its Ocean Policy Report. The letter notes that seabirds rely on, and are critical parts of, the ecosystems that the Commission recommends as the basis for ocean and coastal resource management. Many species of seabirds are threatened with extinction due to issues involving the world's oceans. Specifically mentioned were (1) the serious problems created by oceanic longline fisheries; (2) the availability of cost-effective mitigation techniques in the longline fishery; (3) the failure of most fishing nations to adopt national plans of action as required by the United Nations Food and Agriculture Organization (FAO); and (4) threats from introduced mammalian predators on critical breeding islands.

PSG SUPPORTS AMENDING MIGRATORY BIRD TREATY ACT AND FUNDING FOR NEOTROPICAL BIRD CONSERVATION

PSG has worked closely with the American Bird Conservancy to support

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the Migratory Bird Treaty Act Reform Act in both the Senate and House of Representatives. PSG added its name to letters from organizations such as the American Bird Conservancy, National Audubon Society, National Wildlife Federation, The Nature Conservancy, Ducks Unlimited, The Wildlife Society, and the Wildlife Management Institute urging passage of this legislation.

The proposed reforms of the Migratory Bird Treaty Act (MBTA) would make all non-native, introduced avian species, such as the Mute Swan (*Cygnus olor*), exempt from the protection of the act. The amendments are needed because a federal appeals court ruled in 2001 that the Mute Swan is protected from all management and control by lethal means, under a provision in the United States' migratory bird treaty with Canada that protects the family to which it belongs. In response to suits by animal rights groups, all mute swan control in the U.S. (even adding of eggs) has ceased. During the first 80 years of the Act, USFWS and all state resource agencies operated with the understanding that Act applied only to native birds. Non-native, invasive birds were managed and sometimes eradicated if they interfered with native North American species or ecosystem functions. Without clarification from Congress, the court ruling could extend the act's protection to at least 93 other species of birds, including pigeons and starlings.

The measure to reform the MBTA has been attached to a bill that would reauthorize Neotropical Migratory Bird Conservation Act (NMBCA). The NMBCA program has been highly popular; the current bill would allow it to continue, raise authorized funding from the current \$5 million to \$15 million, lower matching requirements, and add Canada. During the past two years, USFWS has received grant requests for 579 conservation projects totaling more than \$225 million, to protect, restore, and manage habitat for migratory birds and other wildlife. The money that Congress has appropriated has been more than quadrupled by matching funds from other

sources.

PSG also wrote to Senator Boxer of California, who did not support the bill on animal rights grounds. PSG noted that it has for years worked to remove non-native creatures, including rats and birds, from seabird colonies throughout the world where they can cause great destruction to native seabirds. Examples include Common Mynas (*Acridotheres tristis*) on Midway Atoll that eat the eggs of native seabirds such as White Terns (*Gygis alba*) and Black Noddies (*Anous tenuirostri*), and Cattle Egrets (*Bubulcus ibis*) on Oahu, Hawaii, which eat ground-nesting terns on several seabird colonies. We noted that the U.S. Fish and Wildlife Service agrees with us and supports the legislation to reform the MBTA.

NFWF FUNDS A BLACK-FOOTED ALBATROSS PROJECT

The National Fish and Wildlife Foundation recently funded a project by Oikonus-Ecosystem Knowledge called "Conserving North Pacific Albatross Populations." Investigators will identify important foraging habitats by exploring the movements of satellite-tracked birds during the post-breeding season (July to October). The project was to have begun this summer with the tagging of Black-footed Albatrosses around Cordell Banks offshore of California. It should make an important contribution to the conservation of the Black-footed Albatross in the North Pacific.

FISHING VESSEL RUNS AGROUND AT SAN BENITO ISLANDS, MEXICO

In late March 2004, a 95-foot fishing vessel ran aground on Middle San Benito Island, one of the three San Benito islands. These islands support one of the largest and most diverse seabird colonies in the California Current, with 12 breed-

ing species and more than 2 million birds. The Mexican navy responded to the accident and offloaded 55,000 liters of fuel from the wreck. Apparently little fuel spilled during the incident. Because the grounded vessel's crew walked off the boat to the safety of Middle Island, any rodents on board could probably have done so as well. Whether rats were aboard is not known, but this incident emphasizes the importance of quickly responding to accidents that can introduce predators on seabird colonies.

FISHERMEN DISRUPT TOURISM AND RESEARCH IN GALAPAGOS

Fishermen on the island of Isabela took over the Galápagos National Park offices during May, while several fishing boats prevented passengers on tour boats from disembarking on Isabela and Española islands. On Santa Cruz Island, about 50 fishermen took over the park offices and prevented staff from working. Staff of the Charles Darwin Research Station who live in town were also prevented from working. There was been some destruction of property, but no injury to people or animals.

The fishermen are dissatisfied about regulations for the sea cucumber fishery, which was due to open on 31 May 31 for a period of 60 days with a quota of 4 million sea cucumbers. This quota is far in excess of the limit recommended by the scientific and management community. Certain areas were to be closed, and a condition of the opening the fishery was a two-year ban on sea cucumber fishing, which was to commence at the end of the season. The artisanal fishing sector of Galápagos has carried out various protests and blockades throughout the archipelago in past weeks due to their disagreement with the regulations. Their demands include opening the Fernandina and the Bolivar Channel to fishing, the rescission of quotas, and the rejection of the two-year ban on fishing.

UNUSUAL MORTALITY OF BROWN PELICANS IN

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SOUTHERN CALIFORNIA

High mortality of young-of-the-year Brown Pelicans (*Pelecanus occidentalis*) was reported along the southern California coast. Frank Gress and Dan Anderson have confirmed the presence of many more first-year birds along the coast than normal, as well as unusual sightings at the Salton Sea. They also emphasize this was an exceptionally good breeding season. In the Southern California Bight, the earliest initiation of breeding on record was seen on West Anacapa Island (early November 2003) and Santa Barbara Island (early December). Possibly the most nests ever recorded were built literally all over those islands—about 6000 pairs on Anacapa and 1500 on Santa Barbara. The number of chicks fledged and overall productivity appear to be relatively high.

Unusual nesting and roosting patterns also were seen in the Mexican portion of the Southern California Bight. Nesting on Coronado Norte began much earlier than usual (mid-December), although overall productivity was normal. On South Island in the Islas Todos Santos group, a small colony of about 100 nests was present—the first pelican nesting there since 1923. On Isla San Martín, however, nesting began late and the colony was relatively small. Also, few birds were present, in contrast with most years when up to 10,000 birds from other colonies roost on San Martín in July.

Nest numbers and productivity in Gulf of California seabird colonies were as high as Dan Anderson has seen in 33 years of continuous study. Species included Brown Pelicans, Heermann's Gulls (*Larus heermanni*), Elegant Terns (*Sterna elegans*) and Royal Terns (*S. maxima*).

The high mortality of young pelicans appears to be a natural event. Apparently food was plentiful early in the season, attracting large numbers of pelicans to the breeding grounds. Local food resources continued to be abundant during the nesting period, resulting in high productivity and a large number of fledg-

lings. Then the food suddenly disappeared. Fledged chicks, which in any case have a high attrition rate in most years, were unable to find sufficient food and began to starve. Food-stressed young pelicans tend to congregate around wharves, marinas, piers, sports fishing boats, bait barges, and fish processors, where food may be easy to come by. Later they become "pier bums," unable to find food from natural sources, and become a nuisance to humans. Anderson notes that the phenomenon has occurred at least four times previously, always after exceptional productivity rather than seasons of poor reproduction.

COMMAND SPILL TRUSTEES FUND SHEARWATER PROJECT IN NEW ZEALAND

The Command Trustee Council has decided to fund a shearwater restoration project in New Zealand that PSG has supported (*Pacific Seabirds* 30:6, 2003). The Rakiura Titi Restoration Project will attempt to eradicate introduced rats from four nesting islands in the Big South Cape Group, New Zealand.

The Command trust fund derives from the settlement following the tanker's oil spill outside of San Francisco Bay in 1998. The council's Final Restoration Plan allocated \$3.9 of \$5.5 million in the trust fund to restore natural resources injured in the spill, including more than 1,500 seabirds and over 24 km of shore in the Monterey Bay area. Shearwaters (*Puffinus* spp.) were the second most frequent species recovered in beached bird surveys after the spill and were the most numerous species identified in aerial surveys. Among the recovered dead seabirds was a Sooty Shearwater (*P. griseus*) that had been banded in New Zealand. Hannah Nevins, Oikonos Ecosystem Knowledge, is one of the investigators and notes that they plan to initiate pre-eradication rat and shearwater monitoring in late 2004. The eradication will be conducted in 2005. A

project description and project updates can be viewed at <http://www.oikonos.org/projects/titi.htm>

This is the second time that a U.S. trustee council has decided to support a restoration project in another country. The previous decision involved trust funds from the *American Trader* Oil Spill in Southern California, which were used to restore a Brown Pelican colony in Baja California, México (*Pacific Seabirds* 27:65, 2000).

Other projects in the Final Restoration Plan of the Command Trustee Council include: (1) Marbled Murrelet (*Brachyramphus marmoratus*) restoration and corvid management, (2) Marbled Murrelet land acquisition and enhancement, (3) seabird colony protection, (4) Common Murre (*Uria aalge*) nesting ledge creation, (5) Brown Pelican roost site creation and enhancement, (6) seabird entanglement reduction and education, (7) Seal Cove beach access improvement, (8) Half Moon Bay State Park beach access improvement project, and (9) Mirada Surf recreational improvements. The plan can be found at <http://www.darp.noaa.gov/southwest/command/index.html>

AVIAN CHOLERA KILLS CORMORANTS IN SOUTH AFRICA

An outbreak of avian cholera in January killed more than 4,000 seabirds, especially Cape Cormorants (*Phalacrocorax capensis*), on Dyer Island off southern South Africa. This colony, a Cape Nature Conservation reserve, has suffered similar outbreaks three years in a row. 7800 birds died in the 2002 epidemic.

Previous outbreaks of cholera affected adults, but because it struck during the breeding season, this outbreak affected fledglings as well. Avian cholera is spread through the birds' feces and mucus. Wildlife managers attempted to halt the spread of the virus by removing dead birds from the colony as quickly as possible, walking through it several times

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each day to retrieve dead birds and burning them in bonfires. They also wrung the necks of ill or dying birds. Bird colonies are highly susceptible to rapid spread of the disease because the birds nest so close together.

INTRODUCED RABBIT ERADICATION HELPS SHEARWATERS ON SANTA CLARA, CHILE

While it is still too early to claim total victory, biologists on the island of Santa Clara, Chile, have made significant progress in the eradication of rabbits to protect one of the world's three breeding colonies of the Pink-footed Shearwater (*Puffinus creatopus*). Santa Clara is one of three islands that make up the Juan Fernandez Archipelago, 640 km west of Santiago in the Pacific Ocean. The island chain was designated a national park in 1935 and, like the Galápagos Islands north of them, has a remarkable rate of endemism. Indeed, 60% of plants there are found nowhere else.

Unfortunately, the islands suffer from the same threat as many others around the globe: pressure from introduced plants and animals that are out-competing the native species. Rats, goats, and European rabbits are among the species that have prompted the IUCN-World Conservation Union to classify Juan Fernandez as one of the 12 most threatened national parks in the world. Rabbits have been a particular concern for Pink-footed Shearwaters, which breed on only one other island outside the Juan Fernandez group and are considered vulnerable under IUCN criteria. Not only do the rabbits compete for burrows where the shearwaters nest, they also take over burrows in mid-breeding cycle, ejecting the birds' eggs. Furthermore, the damage caused to vegetation by the rabbits leads to soil erosion that destabilizes the shearwater burrows.

The Corporation National Forestal, which administers the Chilean park sys-

tem, has been trying for five years to rid Santa Clara of rabbits by poisoning and shooting, despite limited resources. They have been hampered by the island's rugged terrain, which makes some burrows difficult to access. But the statistics speak for themselves: rabbit numbers quickly decreased from 350/ha in 1998 to 40/ha in 2001. From mid-January to mid-March 2004, researchers failed to find any evidence of rabbits on the island.

Vegetation is already making a remarkable recovery, with formerly denuded areas now covered with grass several feet high. Egg rejection rates at burrows are down significantly, and while this bodes well, it is still too early to determine the effect on the shearwater population. Park officials and visiting researchers from the Juan Fernandez Islands Conservancy will continue to monitor the island in coming years and implement additional eradication measures if necessary.

IMPORTANT BIRD AREAS DESIGNATED IN THE BERING SEA

Alaska's first Important Bird Areas (IBAs) have been designated in the Bering Sea area. Seabird colonies, feeding areas at sea, and places where other bird species concentrate were selected on both the Alaskan and Russian sides of the Bering and Chukchi Seas. The 137 sites include islands and island groups, mainland cliffs and estuaries, and pelagic areas. Eighty of the IBAs are important for seabirds. They include all major colonies and adjacent waters, from Wrangel Island and the Diomed Islands to the Aleutians and Commander Islands, and from Cape Olyutorskii to the Alaska Peninsula. Offshore IBAs also were designated in productive marine areas such as the Bering Strait, several passes in the Aleutian chain, the continental shelf edge, and polynyas.

Although 64% of Bering Sea IBAs were chosen for their importance to sea-

birds, others encompass habitats where shorebirds or waterfowl stage, molt, and winter, and a few coastal areas that are critical for land birds.

Selection of the Bering Sea IBAs ended up being a three-year project. Guidelines were provided by the National Audubon Society and BirdLife International. However, many decisions were still necessary (how many islands should be in a single IBA? how can we document the importance of a site using only vague population data? how should we draw the borders of marine sites?...) The work was a collaboration between Audubon Alaska, the state office of the National Audubon Society, led by Stan Senner; the Russian Bird Conservation Union (Victor Zubakin); and the Asia Council of BirdLife International (Alexander Andreev). Research and compilation were done by Olga Romanenko of Anchorage, assisted by agency biologists and by PSG member Vivian Mendenhall for seabirds.

A booklet summarizing the Bering Sea IBAs has been published by Audubon Alaska (ssenner@audubon.org). The full database for these IBAs is not being published as hard copy, but it will be available in the near future through the National Audubon Society's website (<http://www.audubon.org>). For each IBA, the database contains population estimates for bird species, physical description of the site, map, research and monitoring history, threats and conservation issues, and other information.

Important Bird Areas are designated as a worldwide program overseen by BirdLife International; the National Audubon Society manages the IBA project in the U.S. IBA status does not convey statutory protection. However, it draws public attention to areas that are essential to birds, and some governments have extended protection to their IBAs. Most seabird colonies in Alaska already are in national wildlife refuges, but the marine areas and many Russian colonies are without statutory protection.

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WWF-RUSSIAN PROJECT TO REDUCE LONGLINE BYCATCH IN THE BERING SEA

Seabirds are taken incidentally by fisheries in the Russian Far East—trawl, driftnet, and longline—but little information has been available on the problem, especially for longline bycatch. The World Wildlife Fund (WWF) provided a grant in 2003 to assist Russian researchers in collecting data and consulting with the Russian fishing industry. In 2004, WWF expanded the effort by arranging meetings of Russian and American bycatch experts and encouraging the industry to experiment with deterrent devices.

In 2003, seabird scientist Yuri Artyukhin analyzed past data on Russian longline bycatch (what there was of it), and placed observers (including himself) on longline vessels and fishery research vessels, using an observation protocol based Ed Melvin's. He also organized a seminar on seabird bycatch for Kamchatka fishermen, among other work.

This past May, WWF brought Ed Melvin (Washington SeaGrant) to Petropavlovsk-Kamchatskii, along with Mark Lundsten (a retired longline fisherman who has been active in bycatch reduction) and WWF's Meredith Lopuch. They visited with Dr. Artyukhin, other scientists, fishery managers, indigenous communities, and the fishing industry. The general director of AKROS, the largest longline company, has approved initial experiments with streamers and weighted lines in the fishery. WWF also attended a meeting of the Russian Far East Forum in July 2004 in Vladivostok. At both venues they presented the educational video "Off the Hook," for which a Russian version is near completion. A Russian-language bird identification guide (a laminated card) is also being prepared, in cooperation with the North Pacific Longliners' Association. Dr. Artyukhin previously wrote a seabird identification book for researchers and the interested public.

WWF plans to continue supporting and coordinating Russian bycatch research next year, including evaluation of bycatch deterrents with regard to seabird bycatch and fishing harvest. Farther in

the future, they hope that bycatch deterrents can be expanded to other Russian fishing areas such as the Okhotsk Sea and Barents Sea.

GROSS PLASTIC POLLUTION IN THE NORTH PACIFIC

A carpet of plastic almost as large as central Europe and weighing 3 million tons has accumulated in the North Pacific Gyre, 2000 km northwest of Hawai'i. This was reported in an article in the March 2004 issue of the German magazine *Geo*. Charles Moore of the Algalita Marine Research Foundation describes the "plastic megastrudel" as an almost solid mat. The stuff includes pop bottles, fishing nets, and packing material. Some of the trash is mistaken for food by birds and fish. What's more, persistent toxic compounds such as PCBs are present in floating plastics at a concentration a million times higher than in the surrounding water, according to Hideshige Takada, a geochemist at the University of Tokyo.

PSG NEWS

2004 ANNUAL MEETING IN LA PAZ, BCS

The Pacific Seabird Group's 31st Annual Meeting took place on 21-25 January 2004 in La Paz, Baja California Sur, México.

The scientific program included three plenary lectures by George L. Hunt, Jr., Sarah Wanless, and Exequiel Ezcurra, symposia on the Brown Pelican in western North America and on ornithological studies with radar, a special paper session on cormorants, and many other presentations. (A full list of paper titles and authors is elsewhere in this issue.)

The Hotel Los Arcos was an extremely pleasant venue. The local committee provided excellent arrangements, which included full buffet lunches at the Conservation Committee and Annual General meetings. The banquet on Saturday night featured a Lifetime Achievement Award for George L. Hunt, Jr. (an article on this award will be in the next *Pacific Seabirds*). In addition, Eduardo Palacios was awarded an iron sculpture of a pelican in recognition of his hard work as head of the Local Committee.

It was a treat, as always, to walk around the streets of La Paz, and to tour the nearby countryside, on organized outings or individually. Those who traveled to the meeting on Dan Anderson's bus enjoyed birdwatching and learning local ecology throughout the Baja peninsula. They were especially prepared to appreciate Dr. Ezcurra's talk on conservation problems in northwestern México—its remoteness is combined with fragility.

Many who attended were intrigued to compare their fellow PSG members and La Paz itself with what they saw at PSG's 1986 meeting there. One attendee who was *in utero* then is a now young man. La Paz's waterfront has developed. Most hope that they can return to La Paz in somewhat less than 18 years!

PSG TO MEET WITH THE WATERBIRD SOCIETY IN 2005 IN PORTLAND

PSG's 32nd Annual Meeting will be held 19-23 jointly with the Waterbird Society in Portland, Oregon, on 19-23 January 2005. The Local Committee chair is Katie O'Reilly; the scientific program chairs are Bob Day and Francie Cuthbert. Further information will be in the fall issue of *Pacific Seabirds*.

PSG ELECTIONS

The following people were elected to the Executive Council in fall of 2003. They will serve from the end of 2004's Annual Meeting through the 2005 meeting:

Chair-elect: Bob Day
Secretary: Ron Ydenberg
Student Representative: Shiway Wang
REGIONAL REPRESENTATIVES
Alaska-Russia: Verena Gill
Northern California: Esther Burkett
Pacific Rim and Hawai'i: Beth Flint
Old World: Mark Tasker

A list of all Exco members is on the inside back cover of *Pacific Seabirds*.

More ballots than usual were returned in this election, which is a good sign. But, as always, some people voted for a representative in *every* region. *No-no-no...* How many years of education does it take before we can read a ballot??

UPCOMING ELECTIONS

In fall 2004, PSG members will receive ballots for Chair-elect, Vice-chair for Conservation, Treasurer, and regional representatives for Canada, Southern California, and the non-Pacific U.S.

In many PSG elections, only one candidate runs for each slot. Pat Baird, the Elections Committee chair, spends a lot of time finding these candidates. The Exco urges Regional Representatives whose region will be on the next ballot to find one or two willing candidates. This is especially important if the incumbent will not run again; however, it's always good to have a choice on the ballot.

PSG ABSTRACTS ON WEB, NOT IN *PACIFIC SEABIRDS*

Pacific Seabirds is ending its long tradition of publishing the complete abstracts of papers presented at each annual meeting. The full abstracts are available at PSG's Internet web site, at <http://pacificseabirdgroup.org> *Pacific Seabirds* will continue to publish a list of all paper titles, authors, and contact information for the first author.

The Executive Council decided to discontinue publishing abstracts in *Pacific Seabirds* at their meeting in January 2004. Reasons for the decision are to avoid duplication and reduce costs. Duplication is avoided because the abstracts are already available on the Web site (which is also a PSG publication). PSG has been reviewing publication costs for several years (see *Pacific Seabirds* 3p:92 and 119, 2003), and it has become necessary to save money in some manner. Publishing only titles in *Pacific Seabirds* instead of full abstracts will save about 45 pages each year, which translates to around US\$2,500 in publication and mailing costs (out of an annual total for the journal of \$7,000 or so).

The disadvantage of discontinuing the abstracts is that some members don't have easy access to the Internet, and some who do would still prefer to receive them as "hard copy." We apologize to readers who will find the new system

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inconvenient. The editor hopes that the list of titles will help, and that readers will either download the full abstracts from the Web or will write to senior authors for copies of interesting abstracts.

For those who have not used the PSG web site before, here is a short manual for finding the abstracts. (Libraries and Internet cafes can assist you.)

1. Type the site's URL into the "Address" line on the Internet browser screen: <http://pacificseabirdgroup.org>

2. On the site's home page, find the phrase "Annual Meeting" near the top; click on it.

3. On the "Annual Meeting" page, an announcement of the *future* meeting usually appears near the top; scroll down to links for the *past* meeting.

4. Click on "Abstracts." This will cause the abstracts (about 55 pages) to

download onto your computer, which will take a few moments.

5. To read this PDF file, you will need the program "Adobe Acrobat Reader." If your computer doesn't have this, it can be downloaded free from the Internet.

6. You can read the abstracts on the computer screen, print one or more pages, or print all of them.

PSG NOW HAS ELECTRONIC BULLETIN BOARD

PSG has entered the 21st century by offering its members a list-serve for news on seabird research and conservation. Those who subscribe to the list-serve re-

ceive an automatic e-mail whenever another subscriber posts information or a comment, and every subscriber can post his or her own material.

Verena Gill developed the list-serve during the past year, and it is hosted on the U.S. Fish and Wildlife Service's server. To subscribe, members can e-mail her at Verena_Gill@fws.gov. If you decide not to continue the service, you can un-subscribe instantly by clicking on a link in each message.

A word of caution: the list is getting clogged with messages intended for 1 or 2 people. All posted messages say they come "From" an individual. However, if the line below "From" says "Reply to Pacificseabirds@lists.fws.gov," do not automatically click on the "Reply" button—that sends your message back onto the list-serve. Instead, please start over with a new message.

SEABIRD NEWS

NEW PETREL

A new subspecies of the Tahiti Petrel (*Pterodroma rostrata*) has been designated. The New Caledonian bird has been named *P. t. trouessart*, based on a heavier bill, among other characteristics.

REPORTS ON SOUTH PACIFIC EXPEDITION NOW ACCESSIBLE

The U.S. Exploring Expedition of 1832-1842 was an important chapter in the scientific and geographic annals of the South Pacific. Although little known, this naval expedition discovered Antarctica and Wake Island, among other

places, and specimens obtained by its scientists form the foundation of the Smithsonian collections. The trip is now recounted in a best seller, *Sea of Glory, America's Voyage of Discovery*, by Nathaniel Philbrick. Cognoscenti refer to the expedition as "The US Ex Ex." A new Smithsonian website contains all volumes of the expedition's reports, including Peale's volume on birds and mammals. Its URL is <http://www.sil.si.edu/DigitalCollections/usexex/>

A FISHERIES AGENCY BY ANY OTHER NAME...

Pacific Seabirds asked Kim Rivera, of the National Oceanographic and At-

mospheric Administration (NOAA), whether "NOAA Fisheries" is a new agency, or whether it's the new name for the old National Marine Fisheries Service (NMFS, conveniently pronounced "Nymphs"). Kim replied that neither is true—the same agency now has two names. The head of NOAA would like NOAA agencies to be more identifiable as divisions within NOAA, and therefore NMFS is now using the name NOAA Fisheries. However, the official name is still National Marine Fisheries Service, because it would require an act of Congress to change it in regulatory documents. So either name is correct. Rivera adds, "Sorry, I know it's confusing! Please don't use 'NOAA-F!'"

SECRETARY'S REPORT

SUMMARY OF PROPOSED MINUTES OF THE 2004 PACIFIC SEABIRD GROUP EXECUTIVE COUNCIL MEETING

La Paz, Baja California Sur, México, 21 and 23 January 2004

[The full text of the proposed minutes is available from the Secretary, Ron Ydenberg. The minutes will become official when they are approved the 2005 Executive Council meeting.]

21 January 2004

MINUTES

The minutes from the 2003 meeting were approved with minor corrections.

TREASURER'S REPORT

The Treasurer's Report for 2003 was approved. [*Editor's note:* the Treasurer's Report usually is published in the fall *Pacific Seabirds* before the Annual Meeting, but the report for 2003 appears in this issue.]

MEETINGS

Local committees

Local Committees for each Annual Meeting should wind up their finances soon after the meeting, so that the Treasurer can get PSG's accounts in order. The Exco stressed that the local committee chair must provide the Treasurer with final report and a check for any profit within one month of the meeting. The PSG Handbook will be changed to reflect this.

Student Representative

The Exco approved financial support of up to \$500 per year for the Student Representative to attend the Executive Council meeting (which is always held at PSG's Annual Meeting).

AWARDS

Student Travel Awards

Lisa Ballance, past chair, reported that Student Travel Awards were funded with \$2000 from PSG's meeting budget and Can\$1000 from the Center for Wildlife Ecology at Simon Fraser University. In order to regularize the source of funds for annual Student Travel Awards, the Exco approved a line item of approximately \$2000 to \$4000 for student travel grants, to be placed in each local committee's estimated budget.

COMMITTEE REPORTS

Reports are provided by the Coordinator of each committee. The year's mandate for each committee is proposed by the committee and approved by the Exco.

Elections Committee

The Elections coordinator and the Treasurer will work on implementing e-mail ballots for PSG's annual elections.

Results of the 2003 election are given in "PSG News," this issue.

Xantus's Murrelet Technical Committee

The committee's coordinators were not present. PSG petitioned the State of California and the U.S. Fish and Wildlife Service (USFWS) to list the Xantus's Murrelet. The California Department of Fish and Game has recommended listing of the species as threatened [*Editor's note:* listing is final in California; see "Conservation Report," this issue]. USFWS has not responded to the petition. Bill Everett, who successfully led the committee through the listing process, feels that his job is finished and recommended last year that the committee be abolished. The Exco felt the committee should be continued to work on the

listing process. It approved termination of Bill Everett and Ken Briggs as committee coordinators. The Chair requested that the minutes reflect formal acknowledgement of Bill Everett's and Ken Briggs's great leadership of the Xantus's Murrelet committee for over 10 years.

The mandate of this committee is to monitor the status of federal and state listing petitions, research, and conservation issues, and to provide information to interested parties.

Seabird Monitoring Committee

Scott Hatch reported that the committee met in La Paz. The committee almost met their mandate for the year. Data entry into PSG's monitoring database is complete, and a demonstration should be ready soon.

The mandate of this committee is to work on final implementation of the database, spend the funds set aside for them during the next 12 months, transition into reviewing the data, and look for species of concern.

Japanese Seabird Conservation Committee

Koji Ono provided the report. The committee is working on a Japan seabird colony database. Koji provided the Council with maps of Japanese seabird colonies. The data will be incorporated in the PSG database.

Koji Ono discussed the decline of the Common Murre and restoration efforts. The Japanese hope to attract prospecting murrets that originate from Russian colonies.

SECRETARY'S REPORT

Results of the Japan-US seabird symposium will be available soon. The Japanese government's budget for seabirds is small. The government has acknowledged that there is problem with the incidental bycatch of seabirds in the gillnet fishery.

The Chair expressed gratitude to Koji Ono and the committee for their work on seabird conservation. The mandate for this committee is to provide a link between PSG and Japanese seabird research community.

American Bird Conservancy

Malcolm Coulter reported that a Bird Conservation alliance has been formed. Malcolm discussed possible problems with a short turn-around time on letters of support for conservation issues. The Exco noted that PSG should restrict its formal support to seabird conservation issues.

Marbled Murrelet Technical Committee

Anne Harfenist reported that USFWS is conducting a 5-year review of the status of the Marbled Murrelet. The committee assumes that PSG will be consulted if USFWS recommends a status change for the species.

PSG sent a letter recommending that only qualified tree-climbers be used to look for Marbled Murrelet nests, because untrained climbers don't know what a Marbled Murrelet nest looks like. Now agencies and organizations are requesting that we define "qualified"; a subcommittee is working on criteria. The mandate for this committee is to continue providing technical advice on Marbled Murrelet issues.

Publications Committee

Pat Jodice reviewed activities of the committee. PSG has been considering joining OSNA, partly because that organization would then handle our dues and journal subscriptions. The committee has reviewed this option and decided it is not a good idea at this time.

A Technical Publication series number for the Marbled Murrelet Survey Protocol will be issued soon.

The publications committee is in charge of PSG's journal exchange program (in which we receive other journals in exchange for free copies of ours). The Western Foundation of Vertebrate Zoology receives our "exchange" journals and stores PSG back issues.

The Exco discussed the future of all PSG's periodical publications, especially the best methods to distribute *Pacific Seabirds* and *Marine Ornithology* and ways to improve PSG's web site. Lisa Balance has agreed to continue supporting the PSG web site in her lab; Robert Holland, who works in Lisa's lab, is now PSG's webmaster.

A motion was approved to: Publish Pacific Seabirds in hard copy and on PSG's web site 2 times per year; publish abstracts of the Annual Meeting on the web site, and discontinue publishing them in *Pacific Seabirds*; encourage members to get Pacific Seabirds electronically; subsidize *Marine Ornithology* for up to US\$6050 annually; withdraw up to \$5000 from the Endowment Fund to support publications (including the web site); and consider a proposal to increase membership by \$5 for the 2006 membership year.

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AWARDS

Lifetime Achievement Awards

Lifetime Achievement Awards may benefit from a change in procedure. The selection committee (the Chair, Chair-elect, and Past Chair) changes every year. Also, the Exco does not receive the nomination until a few days before the award is presented. A subcommittee of George Divoky, Bob Day, and Dave Irons will evaluate the procedure and recommend changes. In the meantime, the Exco should receive timely notice of any nominations, and could vote on them earlier via conference call.

The Secretary will look into a permanent archive for PSG's files.

MEETINGS

Registration for non-members

The Exco approved a non-member surcharge of 2 times the current membership dues for registering at an Annual Meeting. This registration fee will give the person a year's membership.

2005 meeting

The next meeting is a joint meeting with the Waterbird Society. Profits will be split 50:50 between the groups. The program chairs of PSG and the Waterbird Society will work together; the local committee should receive advance funds from each society.

Other proposed future meetings

2006—Alaska. The Exco approved this location; Verena Gill and Ian Van Tets will start coordinating it.

2007—Asilomar, California. Jim Harvey will negotiate with the Conference Center.

2008—Hawaii; mid- to late February, in conjunction with the World Seabird Conference. Mark Tasker will coordinate.

2009—Arcata, California

2010—Vera Cruz, México

The North American Ornithological Congress is scheduled for August 2006 in Vera Cruz, México. PSG has the opportunity to organize a seabird symposium there, but no one has volunteered yet. PSG will not hold its meeting at the same time, although some societies will.

ADMINISTRATION

Budget for PSG's 2005 fiscal year

The proposed budget for 2004-2005 was approved.

Bylaws

The Chair directed the Exco to review the Bylaws and suggest updates. Among other changes, the Publications Coordinator and the Webmaster might be added to the Executive Council, and duties of existing members should match what they are actually doing. The secretary should ensure that the Handbook reflects the Bylaws.

Committees

Mexican members want to add a Mexican Seabird Conservation Committee. The Chair can initiate the committee by appointing a coordinator for it.

Institutional memory

The Exco intends to develop a work plan every year and send action items to Exco members periodically. The Secretary will update the handbook regularly. Minutes of Exco meetings will be available in draft form soon after each meeting. The Exco may develop a procedure for reviewing and approving them before the next meeting.

Membership Directory

The Treasurer has prepared a membership directory for the web. It will be password protected. Members will be asked beforehand whether they want to be listed in the web directory.

LIST OF PAPERS AND POSTERS

TITLES AND AUTHORS FOR PAPERS AND POSTERS PRESENTED AT THE 30TH ANNUAL PACIFIC SEABIRD GROUP MEETING Hotel Los Arcos, La Paz, Baja California Sur, México

Pacific Seabirds is no longer able to publish abstracts from the program for each Annual Meeting. Full abstracts are available on PSG's Internet web site. The following list of papers and authors includes the contact information for each senior author. For more information on obtaining copies of abstracts, please see "PSG News," this issue.

INVITED PLENARY TALKS

CLIMATE FORCING, ECOSYSTEM RESPONSE, AND THE CONSEQUENCES FOR MARINE BIRDS IN THE BERING SEA. *George L. Hunt, Jr.* Dept. of Ecology and Evolutionary Biology, Univ. of California, Irvine, CA 92697, USA; glhunt@uci.edu

CLIMATE OR FISHERIES: WHICH MATTERS MOST FOR NORTH SEA SEABIRDS? *Sarah Wanless.* Centre for Ecology and Hydrology, Banchory, Kincardineshire, Scotland AB31 4BY, UK; swanl@ceh.ac.uk

DESAFIOS PARA LA CONSERVACIÓN IN EL GOLFO DE CALIFORNIA. (CHALLENGES TO CONSERVATION IN THE GULF OF CALIFORNIA.) *Exequiel Ezcurra.* Instituto Nacional de Ecología, Secretaría de Medio Ambiente y Recursos Naturales, México.

SYMPOSIA

The Brown Pelican in western North America

BIOGEOGRAPHIC PERSPECTIVE AND POPULATION ESTIMATES OF THE CALIFORNIA BROWN PELICAN: TOWARD A RANGE-WIDE DATA BASE. *Daniel W. Anderson, James O. Keith, Franklin Gress, Eduardo Palacios, Charles J. Henny, and Carlos Godínez.* Dept. of Wildlife, Fish, and Conservation Biology, Univ. of California, Davis, CA 95616, USA; dwanderson@ucdavis.edu

POPULATION RECOVERY OF BROWN PELICANS BREEDING IN THE SOUTHERN CALIFORNIA BIGHT: A HISTORICAL PERSPECTIVE. *Franklin Gress, Daniel W. Anderson, Robert W. Risebrough, and James O.*

Keith. California Inst. of Environmental Studies, 3408 Whaler Avenue, Davis, CA 95616, USA; fgress@pacbell.net

SURVIVAL SELECTION AND SEXUAL SIZE DIMORPHISM IN THE CALIFORNIA BROWN PELICAN. *Eduardo Palacios and Daniel W. Anderson.* CICESE Unidad La Paz, Miraflores 334 e/ Mulegé y La Paz, Fracc. Bella Vista, La Paz, BCS 23050, México; epalacio@cicese.mx

BREEDING BEHAVIOR OF PELECANUS OCCIDENTALIS CALIFORNICUS. *J.O. Keith, K.A. King, C.A. Mitchell, and D.W. Anderson.* 8027 E. Phillips Circle, Centennial, CO 80112, USA; jokeith@comcast.net

AGE-AND SEX-RELATED GROWTH PATTERNS IN NESTLING BROWN PELICANS. *Eduardo Palacios, Daniel W. Anderson, and Franklin Gress.* CICESE Unidad La Paz, Miraflores 334 e/ Mulegé y La Paz, Fracc. Bella Vista, La Paz, BCS 23050, México; epalacio@cicese.mx

NON-BREEDING BROWN PELICAN DISTRIBUTION PATTERNS IN THE CALIFORNIA CURRENT SYSTEM: RESPONSE TO ENSO, LA NIÑA, AND THE PACIFIC DECADAL OSCILLATION. *Deborah Jaques, Daniel W. Anderson, David S. Pitkin, and Roy W. Lowe.* Crescent Coastal Research, 1151 Lakeview Drive, Crescent City, CA 95531, USA; djaques.ccr@earthlink.net

ROOSTING ECOLOGY OF CALIFORNIA BROWN PELICANS ON EAST SAND ISLAND, OREGON: EFFECTS OF HUMAN DISTURBANCE. *Sadie Wright and Daniel D. Roby.* USGS, Oregon Cooperative Fish and Wildlife Research Unit, Oregon State Univ., 104 Nash Hall, Corvallis, OR

97331, USA; sadiwright@hotmail.com

HABITAT OR LOCATION: WHY BROWN PELICANS USE DIFFERENT STRATEGIES IN ROOST SELECTION DURING DIFFERENT PARTS OF THE YEAR. *Dan Robinette and Natalia Collier.* PRBO Conservation Science, Vandenberg Field Station, 205 N. H St., Suite 217, Lompoc, CA 93436, USA; drobinette@prbo.org

SEABIRD CONSERVATION EFFORTS IN THE GULF OF CALIFORNIA ISLANDS, AS A FEDERAL NATURAL PROTECTED AREA. *Carlos Godínez Reyes, Alfredo Zavala González, and Daniel W. Anderson.* Area de Protección de Flora y Fauna Islas del Golfo de California en Baja California, Comisión Nacional de Areas Naturales Protegidas, Av. Del Puerto # 375, Altos 25, Fracc. Playa, Ensenada, BC, México; cgodinez@conanp.gob.mx

PELICANS AND OIL: CHANGING PERCEPTIONS. *Paul R. Kelly, Daniel W. Anderson, Franklin Gress, and Deborah Jaques.* California Dept. of Fish and Game, Office of Spill Prevention and Response, P.O. Box 944209, Sacramento, CA 94244-2090, USA; pkelly@ospr.dfg.ca.gov

Advances and Applications of Ornithological Radar in Seabird Studies

USING ORNITHOLOGICAL RADAR TO ESTIMATE POPULATION SIZES OF NOCTURNAL TUBENOSSES ON KAUAI ISLAND, HAWAII. *Robert H. Day and Brian A. Cooper.* ABR, Inc.—Environmental Research and Services, P.O. Box 80410, Fairbanks, AK 99708-0410, USA; bday@abrinc.com

PAPERS AND POSTERS

A COMPARISON OF FOUR LARGE-SCALE RADAR STUDIES OF MARBLED MURRELETS. *Brian A. Cooper and Martin G. Raphael.* ABR, Inc.—Environmental Research and Services, P.O. Box 249, Forest Grove, OR 97116, USA; bcooper@abrinc.com

EFFECTS OF ENVIRONMENTAL FACTORS ON MIGRATION OF EIDERS AT BARROW, ALASKA. *Robert H. Day, John R. Rose, Alexander K. Prichard, Richard J. Blaha, and Brian A. Cooper.* ABR, Inc. Environmental Research and Services, P.O. Box 80410, Fairbanks, AK 99408-0410, USA; bday@abrinc.com

POST-HOC AND PROSPECTIVE POWER ANALYSES FOR USING RADAR TO DETECT LOCAL BREEDING POPULATION TRENDS IN MARBLED MURRELETS. *David B. Lank and Lynn Lougheed.* Centre for Wildlife Ecology, Simon Fraser Univ., Burnaby, BC, V5A 1S6, Canada; dlank@sfu.ca

RADAR MONITORING OF MARBLED MURRELETS AT INLAND SITES IN MENDOCINO AND SONOMA COUNTIES, CALIFORNIA, 1999–2002. *Thomas Hamer, Sarah Schuster, Douglas Meekins, and Robert Douglas.* Hamer Environmental, 19997 State Route 9, Mount Vernon, WA 98274, USA; hamert@aol.com

DIRECT COMPARISON OF TILTED AND UNTILTED RADAR FOR MONITORING MARBLED MURRELET POPULATIONS ON NORTHERN VANCOUVER ISLAND. *William L. Harper, Bernard K. Schroeder, Irene A. Manley, and John Deal.* Osiris Wildlife Consulting, 4399 Shore Way, Victoria, BC, V8N 3V1, Canada; Bill.Harper@shaw.ca

RADAR MONITORING OF XANTUS'S MURRELETS AT ANACAPA ISLAND, CALIFORNIA, BEFORE AND AFTER ERADICATION OF BLACK RATS. *Thomas Hamer and Sarah Schuster.* Hamer Environmental, 19997 State Route 9, Mount Vernon, WA 98274, USA; hamert@aol.com

WATERBIRD DETERRENCE AT OIL SPILLS: POTENTIAL APPLICATIONS OF A RADAR-ACTIVATED ON-DEMAND DETERRENCE SYSTEM. *Robert A. Ronconi and Colleen*

Cassady St. Clair. Dept. of Biology, Univ. of Victoria, P.O. Box 3020 Stn CSC, Victoria, BC, V8W 3N5, Canada; rronconi@uvic.ca

SPECIAL PAPER SESSION

Pacific Coast Cormorants: Status and Trends

POPULATION TRENDS OF CORMORANT SPECIES IN ALASKA. *Shawn W. Stephensen, David B. Irons, and Donald E. Dragoo.* Migratory Bird Management, USFWS, 1011 E. Tudor Rd., Anchorage, AK 99503, USA; shawn_stephensen@fws.gov

STATUS OF RED-FACED AND PELAGIC CORMORANTS IN THE WESTERN ALEUTIAN ISLANDS, ALASKA. *Jeffrey C. Williams and G. Vernon Byrd.* USFWS, Alaska Maritime National Wildlife Refuge, 95 Sterling Highway, Suite 1, Homer, AK 99603, USA; jeff_williams@fws.gov

A MONITORING RECOMMENDATION FOR RED-FACED AND PELAGIC CORMORANTS IN ALASKA. *Vernon Byrd and Jeff Williams.* USFWS, Alaska Maritime National Wildlife Refuge, 95 Sterling Highway, Suite 1, Homer, AK 99603, USA; vernon_byrd@fws.gov

STATUS OF BREEDING CORMORANTS ALONG THE WEST COAST OF THE CONTERMINOUS UNITED STATES. *Marua Naughton, Phillip Capitulo, David Nysewander, David Pitkin, Gerard McChesney, Daniel D. Roby, William McIver, and Harry Carter.* USFWS, Migratory Birds and Habitat Programs, 911 NE 11th Avenue, Portland, OR 95521, USA; maura_naughton@fws.gov

ARE GOOD OCEAN CONDITIONS FUELING CONTINUED GROWTH OF THE COLUMBIA RIVER ESTUARY DOUBLE-CRESTED CORMORANT POPULATION? *Donald E. Lyons, Daniel D. Roby, Karen N. Fischer, Cynthia D. Anderson, and Ken Collis.* USGS, Oregon Cooperative Fish and Wildlife Research Unit, Oregon State Univ., 104 Nash Hall, Corvallis, OR 97331, USA; lyonsd@onid.orst.edu

HUMBOLDT BAY AREA DOUBLE-CRESTED CORMORANT POPULATION, 1993–2003.

Phillip J. Capitulo, Harry R. Carter, Richard J. Young, Michael W. Parker, Gerard J. McChesney, Julie Yee, and Richard T. Golightly. Humboldt State Univ., Dept. of Wildlife, Arcata, CA 95521, USA; Phil_Capitulo@hotmail.com

POPULATION TRENDS OF BRANDT'S CORMORANTS AND DOUBLE-CRESTED CORMORANTS IN THE GULF OF THE FARALLONES, CALIFORNIA, 1985–2002. *Gerard J. McChesney, Travis B. Poitras, Harry R. Carter, Michael W. Parker, and Phillip J. Capitulo.* USFWS, San Francisco Bay National Wildlife Refuge Complex, P.O. Box 524, Newark, CA 94560, USA; Gerry_Mcchesney@fws.gov

STATUS OF THE DOUBLE-CRESTED CORMORANT BRIDGE COLONIES IN SAN FRANCISCO BAY, CALIFORNIA. *Mark J. Rauzon, Harry R. Carter, Meredith Elliott, William J. Sydeman, and Phillip J. Capitulo.* Marine Endeavors, 4701 Edgewood Ave., Oakland, CA 94602, USA; mjrauz@aol.com

BRANDT'S CORMORANT REPRODUCTIVE SUCCESS IN RELATION TO PREY AVAILABILITY IN SAN FRANCISCO BAY, 1994–2003. *Benjamin L. Saenz, William J. Sydeman, and Julie A. Thayer.* PRBO Conservation Science, 4990 Shoreline Highway, Stinson beach, CA 94970, USA; dgardner@prbo.org

STATUS OF CORMORANTS IN THE MEXICAN PORTION OF THE SOUTHERN CALIFORNIA BIGHT. *Eduardo Palacios, Franklin Gress, Daniel W. Anderson, L. Alfaro, and L. Harvey.* CICESE Unidad La Paz, Miraflores 334 e/ Mulegé y La Paz, Fracc. Bella Vista, La Paz, BCS 23050, México; epalacio@mx

GENERAL PAPER SESSIONS

Nutritional Stress and Food Constraints

BODY CONDITION AND REPRODUCTIVE RESPONSES OF HEERMANN'S GULLS IN RELATION TO FOOD AVAILABILITY AND TIMING. *Enriqueta Velarde and Leticia Vieyra.* Centro de Ecología y Pesquerías, Universidad Veracruzana, Apdo. Postal 663,

PAPERS AND POSTERS

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MARINE BIRD PROSPECTIVES ON THE CALIFORNIA CURRENT: EL NIÑO AND THE 1998-1999 REGIME SHIFT. *Pete Warzybok, Russell Bradley, Peggy Yen, William J. Sydeman, and K. David Hyrenbach.* PRBO Conservation Science, 4990 Shoreline Highway, Stinson Beach, CA 94970, USA; pwarzybok@prbo.org

AN UNUSUAL MORTALITY OF NORTHERN FULMARS (*FULMARUS GLACIALIS*). *James T. Harvey, Hannah M. Nevins, Scott Hatch, Josh Adams, Jim Hill, Jack Ames, Jennifer L. Parkin, Kelly Newton, Jan Roletto, Joe Mortenson, Jamie Hall, and Todd Hass.* COMBERS, Moss Landing Marine Laboratories, 8272 Moss Landing Rd., Moss Landing, CA 94039, USA; harvey@mlml.calstate.edu

THE INFLUENCE OF PREY DENSITY AND BEHAVIOR ON THE FORAGING PATTERNS OF SEABIRDS ON THE NORTHEAST COAST OF NEWFOUNDLAND, CANADA. *Gail K. Davoren, William A. Montevecchi, and John T. Anderson.* Zoology Dept., Univ. of Manitoba, 190 Dysart Rd., Winnipeg, MB, R3T 2N2, Canada; davoreng@cc.umanitoba.ca

WHEN THE ARCTIC BECOMES SUBARCTIC: HOW SEABIRDS RESPONDED TO THE OCEANOGRAPHIC CHANGES IN THE BEAUFORT SEA IN 2003. *George Divoky.* Inst. of Arctic Biology, Univ. of Alaska, AK 99775, USA; fngjd@uaf.edu

ANCHOVY FOR DINNER AGAIN? IMPORTANCE OF MARINE FORAGE FISHES TO THE NESTING SUCCESS OF CASPIAN TERNS IN THE COLUMBIA RIVER ESTUARY. *Scott K. Anderson, Daniel D. Roby, Donald E. Lyons, and Ken Collis.* USGS, Oregon Cooperative Fish and Wildlife Research Unit, Oregon State Univ., Dept. of Fisheries and Wildlife, 104 Nash hall, Corvallis, OR 97331, USA; Scott.Anderson@lifetime.oregonstate.edu

DAYTIME FORAGING LOCATIONS AND NOCTURNAL COLONY ATTENDANCE OF XANTUS'S MURRELETS. *Christine Hamilton, Richard Golightly, and John Takekawa.*

Dept. of Wildlife, Humboldt State Univ., Arcata, CA 95521, USA; chamilton13@hotmail.com

GUESS YOUR WEIGHT: WHAT DO BODY CONDITION INDICES REPRESENT? *Adrian E. Gall, Daniel D. Roby, and David B. Irons.* USGS, Oregon Cooperative Fish and Wildlife Research Unit, Oregon State Univ., Dept. of Fisheries and Wildlife, 104 Nash Hall, Corvallis, OR 97331, USA; galla@onid.orst.edu

NUTRITIONAL STRESS IN ALASKAN SEABIRDS: A REVIEW OF THE EVIDENCE. *Patrick G.R. Jodice and Daniel D. Roby.* USGS, South Carolina Cooperative Fish and Wildlife Research Unit, G27 Lehotsky Hall, Clemson Univ., Clemson, SC 29634, USA; Pjodice@Clemson.edu

Population Biology

CONTRASTING POPULATION DYNAMICS OF NEIGHBORING BLACK-LEGGED KITTIWAKE COLONIES. *Dean Kildaw, David Irons, and Loren Buck.* School of Fisheries and Ocean Sciences, Univ. of Alaska, Fairbanks, AK 99775, USA; ffdsk@uaf.edu

THE CHANGING POPULATION STATUS OF KITTIWAKES AT BLUFF, ALASKA. *Edward C. Murphy and David G. Roseneau.* Inst. of Arctic Biology, Univ. of Alaska, Fairbanks, AK 99775, USA; ffecm@uaf.edu

HEERMANN'S GULL MOVEMENTS AND MORTALITY PATTERS FROM BANDING RECOVERY DATA FOR INDIVIDUALS BANDED IN A 10-YEAR PERIOD. *Enriqueta Velarde, Paola Rodrigues, and Leticia Vieyra.* Centro de Ecología y Pesquerías, Universidad Veracruzana, Apdo. Postal 663, Xalapa, Veracruz, CP 91190, México; evelarde@uv.mx

DISTRIBUTION AND MOVEMENTS OF AMERICAN WHITE PELICANS IN THE SOUTHEASTERN UNITED STATES: PRELIMINARY INSIGHT. *Tommy King.* U.S. Dept. of Agriculture, National Wildlife Research Center, P.O. Drawer 6099, Mississippi State University, MS 39762, USA; Tommy.King@aphis.usda.gov

GROWTH OF THE BLACK-FOOTED ALBATROSS

POPULATION ON TORISHIMA ISLAND, JAPAN. *Paul R. Sievert, Hiroshi Hasegawa, Fumio Sato, Kunikazu Momose, and Kiyooki Ozaki.* USGS, Massachusetts Cooperative Fish and Wildlife Research Unit, Dept. of Natural Resources Conservation, Univ. of Massachusetts, Amherst, MA 01003, USA; psievert@forwild.umass.edu

Foraging Ecology

THE EFFECT OF FOOD RESOURCES AND COMPETITION ON BLACK-LEGGED KITTIWAKE FORAGING PATTERNS IN PRINCE WILLIAM SOUND. *R. Glenn Ford, David G. Ainley, Evelyn D. Brown, Robert M. Suryan, and David B. Irons.* R.G. Ford Consulting Company, 2735 N.E. Weidler St., Portland, OR 97232, USA; eci@teleport.com

THE DIET OF BRANDT'S CORMORANTS BREEDING AND FORAGING IN CENTRAL SAN FRANCISCO BAY, CALIFORNIA. *Jason D. Yakich, Benjamin L. Saenz, and William J. Sydeman.* Dept. of Biology, San Francisco State Univ., 1600 Holloway Avenue, San Francisco, CA 94132, USA; yakich@eudoramail.com

STRUCTURE OF THE FOOD WEB SUPPORTING WATERBIRDS NESTING ON ISLA MONTAGUE AND THE CERRO PRIETO GEOTHERMAL EVAPORATIVE PONDS, DELTA OF THE COLORADO RIVER, MÉXICO. *Eric Mellink, Drew Talley, Sharon Herzka, Gary Huxel, and Paul Dayton.* CICESE, B.C. Apdo. Postal 2732, Ensenada, BC, México; *International mail:* P.O. Box 434844, San Diego, CA 92143, USA; emellink@cicese.mx

FATTY ACID ANALYSIS OF BLOOD SERUM IN BLACK-LEGGED KITTIWAKES: WHAT'S CHROMATOGRAPHY GO TO DO WITH IT? *Naomi A. Bargmann, John M. Kennish, Ian G. van Tets, and Scott A. Hatch.* USGS, Biological Resources Div., Alaska Science Center, 1011 E. Tudor Rd., Anchorage, AK 99503, USA; nbargmann@usgs.gov

DETERMINANTS OF HERRING GULL FORAGING ACTIVITY AND SUCCESS WITHIN AN ARCTIC COMMON EIDER COLONY. *Karel*

PAPERS AND POSTERS

- Allard, H. Grant Gilchrist, and Anthony Diamond.* Atlantic Cooperative Wildlife Ecology Research Network, P.O. Box 45111, Univ. of New Brunswick, Fredericton, NB, E3B 6E1, Canada; karel.allard@unb.ca
- SEABIRD DISTRIBUTION, ABUNDANCE, AND DIETS IN THE CENTRAL AND EASTERN ALEUTIAN ISLANDS. *Jaime Jahncke, Kenneth O. Coyle, and George L. Hunt, Jr.* Ecology and Evolutionary Biology Dept., Univ. of California, Irvine, CA 92697, USA; jjahncke@uci.edu
- TRACKING SEABIRD FORAGING TACTICS THROUGHOUT REPRODUCTION WITH STABLE ISOTOPES. *W. Eric Davies, J. Mark Hipfner, and Keith A. Hobson.* Behavioural Ecology Research Group, Simon Fraser Univ., 8888 University Drive, Burnaby, BC, V5A 1S6, Canada; wedavies@sfu.ca
- PROVISIONING BY RED-THROATED LOONS: A SEABIRD IN DISGUISE? *Jeffrey R. Ball, Daniel Esler, Joel A. Schmutz, and Ronald C. Ydenberg.* Centre for Wildlife Ecology, 8888 University Drive, Simon Fraser Univ., Burnaby, BC, V5A 1S6, Canada; jrball@sfu.ca
- AN EVALUATION OF OBSERVER BIAS AND ACCURACY OF FISH SPECIES AND SIZE IN THE BILL-LOADS OF CASPIAN TERNS. *David Craig, Samantha Lantz, Keith Larson, and Daniel D. Roby.* Dept. of Biology, Willamette Univ., 900 State St., Salem, OR 97301, USA; dpcraig@willamette.edu
- OCEAN HABITAT OF CASSIN'S AUKLET: INTEGRATING LOCATIONS AT SEA WITH ENVIRONMENTAL VARIABLES OFF SOUTHERN CALIFORNIA. *Josh Adams, John Y. Takekawa, and Harry R. Carter.* USGS, Western Ecological Research Center, San Francisco Bay Estuary Field Station, P.O. Box 2012, Vallejo, CA 94592, USA; josh_adams@usgs.gov
- THE DISTRIBUTION OF MARBLED MURRELETS RELATIVE TO THE DISTRIBUTION AND ATTRIBUTES OF PREY SCHOOLS AND MARINE HABITAT IN NORTHERN CALIFORNIA. *Richard Golightly, Percy Hébert, Greta Wengert, William Pinnix, and Brian O'Donnell.* Dept. of Wildlife, Humboldt State Univ., Arcata, CA 95521, USA; rtg1@humboldt.edu
- Breeding Biology**
- ORNAMENTATION OF LEAST AUKLETS (*AETHIA PUSILLA*) IN RELATION TO PERFORMANCE AND QUALITY INDICATORS. *Martin Renner and Ian L. Jones.* Memorial Univ. of Newfoundland, St. John's, NL, A1B 3X9, Canada; h95mr@mun.ca
- VARIATION IN PRE-LAYING NEST-SITE ATTENDANCE IN COMMON MURRES: A SEXUALLY SELECTED QUALITY INDICATOR? *Anne E. Storey, Maureen L. Cameron-MacMillan, Carolyn J. Walsh, and Sabina I. Wilhelm.* Dept. of Psychology, Memorial Univ., St. John's, NL, A1B 3X9, Canada; astorey@play.psych.mun.ca
- DAILY TEMPORAL PATTERNS OF INLAND MARBLED MURRELET FLIGHTS IN NORTHERN CALIFORNIA. *Brian Accord, Richard Golightly, and Percy Hébert.* Dept. of Wildlife, Humboldt State Univ., Arcata, CA 95521, USA; bca4@humboldt.edu
- REPRODUCTIVE SUCCESS OF HEERMANN'S GULLS (*LARUS HEERMANNI*) AND YELLOW-FOOTED GULLS (*LARUS LIVENS*) IN THE SOUTHERN GULF OF CALIFORNIA, MÉXICO. *Enrique Lozano, Roberto Carmona, and Georgina Brabata.* Programa de Aves Acuáticas, Departamento de Biología Marina, Universidad Autónoma de Baja California Sur, A.P. 19-B, La Paz, BCS 23080 México; beauty@uabcs.mx
- THE REPRODUCTIVE ECOLOGY OF SABINE'S GULLS IN THE EASTERN CANADIAN ARCTIC. *Iain J. Stenhouse, H. Grant Gilchrist, and William A. Montevecchi.* Cognitive and Behavioural Ecology, Memorial Univ., St. John's, NL, Canada; iansten@play.psych.mun.ca
- NATAL AND BREEDING PHILOPATRY IN HEERMAN'S GULLS (*LARUS HEERMANNI*) ON ISLA RASA, GULF OF CALIFORNIA. *Enriqueta Velarde, John M. Eadie, and Vania Macias.* Centro de Ecología y Pesquerías, Universidad Veracruzana, Apdo. Postal 663, Xalapa, Veracruz, CP 91190, México; evelarde@uv.mx
- NEST-SITE FIDELITY, EGG LAYING, AND ONSET OF INCUBATION IN MARBLED MURRELETS NESTING IN REDWOOD NATIONAL AND STATE PARKS. *Percy Hébert, Richard Golightly, and Harry Carter.* Dept. of Wildlife, Humboldt State Univ., Arcata, CA 95521, USA; pnh7001@humboldt.edu
- SITE FIDELITY IN RHINOCEROS AUKLETS (*CERORHINCA MONOCERATA*): TEMPORAL AND SPATIAL VARIABILITY IN MATE AND SUCCESS EFFECTS. *David Gardner, Julie Thayer, and William Sydeman.* PRBO Conservation Science, 4990 Shoreline Hwy, Stinson Beach, CA 94970, USA; dgardner@prbo.org
- FACTORS AFFECTING BREEDING OF BLUE-FOOTED BOOBIES ON ISLA EL RANCHO, SINALOA, MÉXICO, 2003. *Jose Alfredo Castillo-Guerrero and Eric Mellink.* CICESE, B.C. Apdo. Postal 2732, Ensenada, BC, México; *International mail:* P.O. Box 434844, San Diego, CA 92143, USA; jacastil@cicese.mx
- EGG CHARACTERISTICS AND THE EVOLUTION OF DEVELOPMENTAL STRATEGIES IN THE ALCIDAE. *Mark Hipfner and Karen Zimmerman.* Centre of Wildlife Ecology, Canadian Wildlife Service and Simon Fraser Univ., 5421 Robertson Rd, Delta, BC, V4K 3N2, Canada; Mark.Hipfner@ec.gc.ca
- Diving Behavior and Physiology**
- WING- AND FOOT-PROPULSION OF SEABIRDS DIVING TO DEEP WATER RECORDED BY HIGH-SPEED SAMPLING OF ACCELERATION: REGULATION OF STROKE AND GLIDE AGAINST BUOYANCY IN ALCIDS AND SHAGS. *Y. Watanuki, A. Takahashi, F. Daunt, S. Wanless, M. Harris, K. Sato, and Y. Naito.* Graduate School of Fisheries Sciences, Hokkaido University, Japan; ywata@fish.hokudai.ac.jp
- REGULATION OF SWIM SPEED AND ENERGY COST IN FREE-RANGING GUILLEMOTS AND CORMORANTS. *James R. Lovvorn, Yutaka Watanuki, Akiko Kato, and Yashuhiko Naito.* Dept. of Zoology, Univ. of Wyoming, Laramie, WY 82071, USA; lovvorn@uwyo.edu

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HOW DOES INTENSE WING MOLT AFFECT DIVING IN ALCIDS? *Eli Bridge*. Dept. of Ecology, Evolution, and Behavior, Univ. of Minnesota, 1984 Upper Buford Circle, St. Paul, MN 55108, USA; brid0030@tc.umn.edu

THE ROLE OF THE SPLEEN IN THE DIVING PHYSIOLOGY OF COMMON MURRES (*URIA AALGE*): CONVERGENT FUNCTION IN MARINE BIRDS AND MAMMALS? *Hannah M. Nevins*. Moss Landing Marine Laboratories, 8272 Moss Landing, Moss Landing, CA 95039, USA; hnevin@mlml.calstate.edu

Conservation Biology: Contaminants

SEABIRDS AS SENTINELS OF EMERGING DISEASES AND MARINE ECOSYSTEM HEALTH. *A. Alonso Aguirre* and *Scott H. Newman*. Wildlife Trust, 61 Route 9W, Palisades, NY 10964, USA; aguirre@wildlifetrust.org

MURRE (*URIA* spp.) EGGS AS ENVIRONMENTAL MONITORS. *Stacy C. Vander Pol*, *David G. Roseneau*, *Paul R. Becker*, *Steven J. Christopher*, *Russell D. Day*, *John R. Kucklick*, *Rebecca S. Pugh*, *Kristin S. Simiac*, and *Geoff W. York*. National Inst. of Standards and Technology, Hollings Marine Lab., 331 Fort Johnson Rd., Charleston, SC 29412, USA; stacy.vanderpol@nist.gov

THE EFFICACY OF OILED WILDLIFE CARE ON COMMON MURRES IN CALIFORNIA: INSIGHTS FROM A POST-RELEASE SURVIVAL STUDY. *Scott H. Newman*, *Richard T. Golightly*, *Emily N. Craig*, *Harry R. Carter*, *Chris Kreuder*, and *Jonna A.K. Mazet*. Wildlife Trust, 61 Route 9W, Palisades, NH 10947, USA; newman@wildlifetrust.org

IMMUNE ALTERATION IN BLACK-FOOTED ALBATROSSES: POTENTIAL TOXIC EFFECTS FROM CONTAMINANT EXPOSURE. *Myra Finkelstein*, *Keith Grasman*, *Don Croll*, *Brad Keitt*, *Wally Jarman*, *Bernie Tershy*, and *Don Smith*. Dept. of Environmental Toxicology, Univ. of California, Santa Cruz, CA 95064, USA; myraf@cats.ucsc.edu

SEABIRDS AND ILLEGAL SHIP-SOURCE OIL POLLUTION ON THE WEST COAST OF CANADA? NEWER SOLUTIONS TO AN OLD PROBLEM.

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Conservation Biology: Nesting Sites

THIRTY YEARS OF PUFFIN RESTORATION ON THE MAINE COAST, USA. *Stephen W. Kress* and *C. Scott Hall*. Seabird Restoration Program, National Audubon Society, 159 Sapsucker Woods Rd., Ithaca, NY 14850, USA; skress@audubon.org

RESTORING COMMON MURRE COLONIES IN CENTRAL CALIFORNIA: AN UPDATE. *Gerard J. McChesney*, *Michael W. Parker*, *Stephen W. Kress*, *Harry R. Carter*, and *Richard T. Golightly*. USFWS, San Francisco Bay National Wildlife Refuge Complex, P.O. Box 524, Newark, CA 94560, USA; Gerry_Mcchesney@fws.gov

RE-ESTABLISHMENT OF A SHORT-TAILED ALBATROSS COLONY: LOGISTICAL AND POPULATION CONSIDERATIONS. *Paul R. Sievert* and *Hiroshi Hasegawa*. USGS, Massachusetts Cooperative Fish and Wildlife Research Unit, Dept. of Natural Resources Conservation, Univ. of Massachusetts, Amherst, MA 01003, USA; psievert@forwild.umass.edu

UNNATURAL SELECTION? PREDATION OF THE LEAST AUKLET BY THE INTRODUCED NORWAY RAT. *Heather Major* and *Ian L. Jones*. Dept. of Biology, Memorial Univ. of Newfoundland, St. John's, NL, A1C 3X9, Canada; x19hlm@mun.ca

THE MASKED BOOBIES OF CLIPPERTON ISLAND: RECOVERY AND STATUS OF THE WORLD'S LARGEST POPULATION. *Robert L. Pitman*, *Lisa T. Ballance*, and *Joshua Fluty*. Ecosystem Studies Program, Southwest Fisheries Science Center, 8604 La Jolla Shores Dr., La Jolla, CA 92037, USA; Robert.pitman@noaa.gov

IVORY GULLS IN CANADA: A DRASTIC DECLINE AND POTENTIAL CAUSES. *Iain J. Stenhouse*, *H. Grant Gilchrist*, *Mark L. Mallory*, and *Gregory J.*

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STATUS AND CONSERVATION OF THE XANTUS'S MURRELET IN MÉXICO. *Bradford Keitt*, *Darrell Whitworth*, *Harry Carter*, *Gerard McChesney*, *R. William Henry III*, *Shaye Wolf*, *Jose Alberto Zepeda Dominguez*, and *Chelsea Phillips*. Island Conservation and Ecology Group, LML, Univ. of California, Santa Cruz, CA 95060, USA; bkeitt@islandconservation.org

THE STATUS OF SEABIRDS IN AMERICAN SAMOA. *Mark J. Rauzon* and *Paul O'Connor*. Marine Endeavors, 4701 Edgewood Ave., Oakland, CA 94602, USA; mjrauza@aol.com

THE STATUS OF SEABIRDS IN THE TUAMOTU ARCHIPELAGO, FRENCH POLYNESIA. *Verena A. Gill*, *Ray Pierce*, *Philippe Raust*, *Graham Wragg*, *Eric VanderWerf*, *Richard Lanctot*, *Lee Tibbitts*, *Ed Saul*, *Jean-Marc Salducci*, and *Johanna Squire*. U.S. Fish and Wildlife Service, Anchorage, AK, USA; verena_gill@fws.gov

USING "PRESENCE ONLY" DATA FOR EFFICIENT PREDICTIVE SPATIAL MODELING OF ARCTIC TERNS FOR THE GREAT SLAVE LAKE AREA: METHODS, PROBLEMS, SOLUTIONS, AND APPLICATIONS. *Jana Fenske* and *Falk Huettman*. Dept. of Geo-Ecology, University of Potsdam, Am Neuen Palais 10, 14469 Potsdam, Germany; janafenske@gov.nl.ca

MONITORING AUKLET POPULATIONS BY COLONY MAPPING. *Heather M. Renner*, *Ann Harding*, *David B. Irons*, *Ian L. Jones*, *Martin Renner*, and *Joel Reynolds*. USFWS, Alaska Maritime National Wildlife Refuge, 95 Sterling Hwy #1, Homer, AK 99603, USA; heather_renner@fws.gov

CASPIAN TERN NESTING ECOLOGY AND DIET IN SAN FRANCISCO BAY AND INTERIOR OREGON. *S. Kim Nelson*, *Daniel D. Roby*, *Ken Collis*, *Keith Larson*, *Chris Couch*, and *P.J. Klavon*. USGS, Oregon Cooperative Fish and Wildlife Research Unit, Oregon State Univ., 104 Nash Hall, Corvallis, OR 97331, USA; kim.nelson@orst.edu

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EVALUATION OF HUMAN-RELATED NOISE DISTURBANCE ON THE BEHAVIOR AND REPRODUCTIVE SUCCESS OF MARBLED MURRELETS IN REDWOOD NATIONAL AND STATE PARKS. *Percy Hébert and Richard Golightly*. Dept. of Wildlife, Humboldt State Univ., Arcata, CA 95521, USA; pnh7001@humboldt.edu

Conservation Biology: At Sea

FOREST INVENTORY CHARACTERISTICS ASSOCIATED WITH MARBLED MURRELET ACTIVITY IN FRAGMENTED SECOND-GROWTH FORESTS IN SOUTHWEST WASHINGTON. *Scott Horton and Danielle Prenzlów Escene*. Washington State Dept. of Natural Resources, 411 Tillicum Lane, Forks, WA 98331, USA; scott.horton@wadnr.gov

IMPLEMENTATION BEFORE REGULATION: COORDINATED EFFORTS TO PROACTIVELY REDUCE FREEZER LONGLINE SEABIRD BYCATCH IN ALASKAN WATERS. *Shannon Fitzgerald, Thorn Smith, and Janet Smoker*. Alaska Fisheries Science Center, 7600 Sand Point Way N.E., Bldg. 4, Seattle, WA 98115, USA; shannon.fitzgerald@noaa.gov

USING A DIRECTIONAL ABUNDANCE VECTOR TO DESCRIBE, ANALYZE, AND PREDICT THE MIGRATION OF PELAGIC SEABIRDS: AN EXAMPLE USING NORTHERN GANNETS IN EASTERN CANADA. *Falk Huettmann*. Biology and Wildlife Dept., Inst. of Arctic Biology, Univ. of Alaska, Fairbanks, AK 99775, USA; falk.huettmann@uaf.edu

ASSESSING SOUTHERN STRAIT OF GEORGIA MARINE BIRD POPULATION CHANGES SINCE 1980. *John Bower, Marc Auten, Brian Cary, Caanan Cowles, Rainy Diehl, Holly Donovan, Cassidy Grattan, Adam Peck-Richardson, Sandlin Preecs, Becky Rowland, Suzanne Sanborn, and Marci Staub*. Fairhaven College, Western Washington Univ., 516 High St., Bellingham, WA 98225, USA; jbower@cc.wvu.edu

TEMPORAL TRENDS IN DISTRIBUTION AND ABSOLUTE ABUNDANCE FOR OCEANIC SEABIRDS IN THE TROPICAL PACIFIC. *Lisa T. Ballance, Larry B. Spear, and Robert L. Pitman*. Ecosystem Studies

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AT-SEA CAPTURE AND TRACKING OF SHORT-TAILED ALBATROSSES DURING THE NON-BREEDING SEASON AND RECOVERY PRIORITIES FOR THIS ENDANGERED SPECIES. *Gregory Balogh and Robert Suryan*. U.S. Fish and Wildlife Service, 605 W. 4th Ave, Rm. G-61, Anchorage, AK 99501, USA; greg_balogh@fws.gov

THE IMPORTANCE OF UNDERSTANDING TROPHIC RELATIONSHIPS FOR CONSERVATION. *Thomas P. Good, Katie Barnas, Doug M. Marsh, Brad A. Ryan, and Edmundo Casillas*. Conservation Biology Div., Northwest Fisheries Science Center, 2725 Montlake Blvd. E., Seattle, WA 98112, USA; tom.good@noaa.gov

POPULATION TRENDS OF KITTLITZ'S MURRELET IN GLACIER BAY, ALASKA. *Gary S. Drew and John F. Piatt*. USGS, Alaska Science Center, 1011 E. Tudor Rd., Anchorage, AK 99503, USA; gary_drew@usgs.gov

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RADIO TRANSMITTER EFFECTS ON BREEDING CASSIN'S AUKLETS AT THE CALIFORNIA CHANNEL ISLANDS. *Joshua T. Ackerman, Josh Adams, and John Y. Takekawa*. USGS, Western Ecological Research Center, San Francisco Bay Estuary Field Station, P.O. Box 2012, Vallejo, CA 94592, USA; jackerman@usgs.gov

THE LEAST TERN ON THE PENINSULA OF BAJA CALIFORNIA: RESULTS FROM 2002 AND 2003 BREEDING SEASONS. *Edgar Amador, Eduardo Palacios, Salvador González-Guzmán, and Renato Mendoza-Salgado*. Centro de Investigaciones Biológicas del Noroeste, S.C. Apdo. Postal 128, La Paz, BC 23000, México; eamador@cibnor.mx

RESTORING BALANCE: REMOVING THE BLACK RAT FROM ANACAPA ISLAND. *Jennifer Boyce, Holly Gellerman, Carol Gorbics, Paul Kelly, Gregg Howald,*

Kate Faulkner, and Darrell Whitworth. NOAA Restoration Center, 501 W. Ocean Blvd., Long Beach, CA 90803, USA; jennifer.boyce@noaa.gov

PREDICTIVE GIS MODELING OF SPECIES OCCURRENCE OF ARCTIC TERNS AND AMERICAN WHITE PELICANS IN THE GREAT SLAVE LAKE REGION, NORTHWEST TERRITORIES, CANADA. *Jana Fenske, Falk Huettmann, and Mike Suitor*. Dept. of Geo-Ecology, University of Potsdam, Am Neuen Palais 10, 14469 Potsdam, Germany; janafenske@gov.nl.ca

NESTING ECOLOGY OF DOUBLE-CRESTED CORMORANTS ON EAST SAND ISLAND IN THE COLUMBIA RIVER ESTUARY: WHAT WILL LIMIT COLONY EXPANSION? *Karen N. Fischer, Daniel D. Roby, Donald E. Lyons, Cynthia D. Anderson, and Ken Collis*. USGS, Oregon Cooperative Fish and Wildlife Research Unit, Oregon State Univ., 104 Nash Hall, Corvallis, OR 97331, USA; fischkar@onid.orst.edu

SUMMARY OF SEABIRD MORTALITY ASSOCIATED WITH THE ALASKA GROUND FISH TRAWL FLEET, 1998 THROUGH 2002. *Shannon Fitzgerald, Michael Perez, and Kim Rivera*. Alaska Fisheries Science Center, 7600 Sand Point Way N.E., Bldg. 4, Seattle, WA 98115, USA; shannon.fitzgerald@noaa.gov

FEEDING HABITS OF THE KELP GULL (*LARUS DOMINICANUS*) ON ISLA LA VIEJA IN CENTRAL PERU. *Esmeralda Flores and Carlos Zavalga*. Dept. of Biological Sciences, Universidad Nacional Agraria La Molina, Lima, Peru; lala_flores@yahoo.com

EFFECTS OF REPRODUCTIVE STATE ON ADRENAL RESPONSIVENESS OF GLAUCOUS-WINGED GULLS. *J. Brook Gamble, Kathleen M. O'Reilly, and C. Loren Buck*. Univ. of Alaska, Dept. of Biology and Wildlife, P.O. Box 756100, Fairbanks, AK 99775, USA; ftjbg@uaf.edu

FOOD HABITS OF BROWN PELICANS BREEDING IN THE SOUTHERN CALIFORNIA BIGHT. *Laurie Harvey, Franklin Gress, Daniel W. Anderson, and Paul R. Kelly*. California Inst. of Environ-

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- mental Studies, 3408 Whaler Ave., Davis, CA 95616, USA; laurieharvey@yahoo.com
- FOOD LIMITATION IN THE TROPICS: STARVATION EVENTS OF WEDGE-TAILED SHEARWATER CHICKS INDICATE VARIABILITY IN SKIPJACK TUNA ABUNDANCE IN HAWAII. *Aaron Hebshi and David Duffy.*
- SPATIAL AND TEMPORAL SEGREGATION OF MARINE BIRDS AND MAMMALS IN NEARSHORE WATERS OF MONTEREY BAY, CALIFORNIA. *Laird A. Henkel.* H.T. Harvey & Assoc., 294 Green Valley Rd., Ste. 320, Watsonville, CA 95076, USA; Lhenkel@harveyecology.com
- TECHNIQUES TO STABILIZE DEGRADED BURROW NESTING SEABIRD HABITAT: INITIAL EFFORTS ON AÑO NUEVO ISLAND, CALIFORNIA. *Michelle Hester, Julie Thayer, David Gardner, David Sands, Gary Strachan, and William Sydeman.* Oikonos, P.O. Box 979, Bolinas, CA 94924, USA; michelle@oikonos.org
- NESTING DOUBLE-CRESTED CORMORANTS: AGENTS OF ISLAND EVOLUTION. *Jan Hodder.* Oregon Inst. of Marine Biology, Univ. of Oregon, Charleston, OR 97420, USA; jhodder@uoregon.edu
- ECOSYSTEM STUDIES OF SUBARCTIC SEAS. *George L. Hunt, Jr., Harold Loeng, and Ken Drinkwater.* Dept. of Ecology and Evolutionary Biology, Univ. of California, Irvine, CA 92697, USA; glhunt@uci.edu
- BERING ECOSYSTEM STUDY PROGRAM (BEST). *George L. Hunt, Jr., Phyllis Stabeno, Jeffery Napp, and Roy Sambrotto.* Dept. of Ecology and Evolutionary Biology, Univ. of California, Irvine, CA 92697, USA; glhunt@uci.edu
- FOOD-WEB STRUCTURE ACROSS A LARGE-SCALE OCEAN PRODUCTIVITY GRADIENT: MARINE BIRD ASSEMBLAGES IN THE SOUTHERN INDIAN OCEAN. *K. David Hyrenbach, Richard R. Veit, Henri Weimerskirch, Nicholas Metzl, and George L. Hunt, Jr.* Duke Univ. Marine Laboratory, Beaufort, NC 28516, USA; khyrenba@duke.edu
- AN ASSESSMENT OF THE FACTORS INFLUENCING THE RECOVERY OF COMMON MURRES AT THE CASTLE/HURRICANE COLONY COMPLEX IN CENTRAL CALIFORNIA. *Josh S. Koepki, Gerard J. McChesney, Michael W. Parker, Harry R. Carter, and Richard T. Golightly.* Humboldt State Univ., Dept. of Wildlife, Arcata, CA 95521, USA; jkmurreproject@earthlink.net
- MONITORING KITTLITZ'S AND MARBLED MURRELETS IN COLLEGE AND HARRIMAN FIORDS, PRINCE WILLIAM SOUND ABOARD A TOUR VESSEL, SUMMER 2003. *Elizabeth A. Labunski, David B. Irons, Katherine J. Kuletz, Shawn W. Stephensen, Alyson E. McKnight, and Kelsey M. Sullivan.* U.S. Fish and Wildlife Service, 1011 E. Tudor Rd., Anchorage, AK 99503, USA; elizabeth_labunski@fws.gov
- THIRTY YEARS OF SEABIRD RESEARCH BY THE WASHINGTON STATE DEPARTMENT OF FISH AND WILDLIFE. *Lora Leschner.* Washington Dept. of Fish and Wildlife, 16018 Mill creek Blvd., Mill Creek, WA 98012, USA; leschl@dfw.wa.gov
- DISTRIBUTION AND ABUNDANCE OF SEABIRDS OFF SOUTHERN CALIFORNIA: A TWENTY-YEAR COMPARISON. *John W. Mason, Gerard J. McChesney, William R. McIver, Harry R. Carter, Richard T. Golightly, Joshua T. Ackerman, Dennis L. Orthmeyer, William M. Perry, Julie L. Yee, Mark O. Pierson, and Michael D. McCrary.* USGS, Western Ecological Research Center, San Francisco Bay Estuary Field Station, P.O. Box 2012, Vallejo, CA 94592, USA; jwmason@usgs.gov
- DO SEA SURFACE TEMPERATURES INFLUENCE BREEDING OF MARBLED MURRELETS IN BRITISH COLUMBIA? *Laura McFarlane Tranquilla, Elizabeth A. Krebs, Nadine R. Parker, Russell W. Bradley, and David B. Lank.* Centre for Wildlife Ecology, Simon Fraser Univ., Burnaby, BC, V5A 1S6, Canada
- WOW: CANADIAN COMPONENT OF WATERSHED CONSERVATION FOR THE AMERICAS. *Robert Milko and James Kushlan.* Migratory Birds Div., Canadian Wildlife Service, 351 St. Joseph Blvd., Gatineau, PQ, K1A 0H3, Canada; Bob.Milco@ec.gc.ca
- CHANGES IN THE ESTIMATED BREEDING POPULATION OF LEACH'S STORM-PETREL ON KENT ISLAND, NEW BRUNSWICK. *Laura Minich, Robert Mauck, and Charles Huntington.* Atlantic Cooperative Wildlife Ecology Research Network and Biology Dept., Univ. of New Brunswick, P.O. Box 45111, Fredericton, NB, E3B 6E1, Canada; laura.minich@unb.ca
- DECLINE IN NUMBERS OF CASPIAN TERNS AT COLONIES IN THE PACIFIC NORTHWEST: INDICATION OF DECREASED SURVIVAL RATES BETWEEN THE 2002 AND 2003 BREEDING SEASONS? *Anne Mary Myers, Daniel D. Roby, Ken Collis, and Donald E. Lyons.* USGS, Oregon Cooperative Fish and Wildlife Research Unit, Oregon State Univ., 104 Nash Hall, Corvallis, OR 97331, USA; myersan@onid.orst.edu
- TRENDS OBSERVED FOR SELECTED MARINE BIRD SPECIES DURING 1993-2002 WINTER AERIAL SURVEYS, CONDUCTED BY THE PSAMP BIRD COMPONENT (WDFW) IN THE INNER MARINE WATERS OF WASHINGTON STATE. *David R. Nysewander, Joseph R. Evenson, Bryan L. Murphie, and Thomas A. Cyra.* Washington Dept. of Fish and Wildlife, 600 Capitol Way N., Olympia, WA 98501, USA; nysewdn@dfw.wa.gov
- CURRENT POPULATION STATUS OF THE VANROSSEMI GULL-BILLED TERN IN MÉXICO. *Eduardo Palacios and Eric Mellink.* CICESE Unidad La Paz, Miraflores 334 e/ Mulegé y La Paz, Fracc. Bella Vista, La Paz, BCS 23050, México; epalacio@cicese.mx
- MOVEMENT PATTERNS AND SURVIVAL OF NATURALLY OCCURRING AND BOTULISM REHABILITATED CALIFORNIA BROWN PELICANS OF THE SALTON SEA: A PRELIMINARY REPORT. *Charles A. Pelizza, Laurie Harvey, Daniel W. Anderson, Franklin Gress, and Paul R. Kelly.* USFWS, Sonny Bono Salton Sea National Wildlife Refuge, 906 W. Sinclair Rd., Calipatria, CA 92233, USA; charlie_pelizza@fws.gov
- THE BREEDING BIOLOGY OF THE XANTUS'S MURRELET AT WEST SAN BENITO ISLAND, BAJA CALIFORNIA, MÉXICO.

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PREDICTING THE ECOLOGICAL NICHE OF PELAGIC SHORT-TAILED ALBATROSSES IN CANADIAN PACIFIC WATERS USING PUBLIC AVAILABLE DATASETS AND ERROR ASSESSMENT METHODS. *Vera Reifenshtein and Falk Huettmann.* University of Potsdam, Am Neuen Palais 10, 14469 Potsdam, Germany; rstein@rz.uni-potsdam.de

USING PLOTS FOR FUTURE MONITORING OF BREEDING SUCCESS OF COMMON MURRES AT DEVIL'S SLIDE ROCK, CALIFORNIA. *April H. Robinson, Richard T. Golightly, Michael W. Parker, Harry R. Carter, Stephen W. Kress, Nathan M. Jones, and Gerard J. McChesney.* Humboldt State Univ., Dept. of Wildlife, Arcata, CA 95521, USA.

SEABIRDS IN AN ESTUARINE ENVIRONMENT: THE STORY ON ALCATRAZ ISLAND, CALI-

FORNIA. *Bernjamin L. Saenz, David A. Gardner, Julie A. Thayer, and William J. Sydeman.* PRBO Conservation Science, Marine Science Div., 4990 Shoreline Hwy, Stinson Beach, CA 94970, USA; blsaenz@prbo.org

INTER-COLONY DIFFERENCES IN LEAST AUKLET CHICK PROVISIONING BEHAVIOR REFLECT DIFFERENCES IN FORAGING RADIUS AND DIET QUALITY. *Lisa Sheffield, Daniel Roby, and David Irons.* Dept. of Fisheries and Wildlife, Oregon State Univ., Corvallis, OR 97331, USA; sheffield@onid.orst.edu.

DIET, MAXIMUM DIVING DEPTH, AND DIVING TIME OF BROWN BOOBIES AT ISLA SAN JORGE, SONORA, MÉXICO. *Edith Suazo-Guillén and Eric Mellink.* CICESE, B.C. Apdo. Postal 2732, Ensenada, BC, México; international mail: P.O. Box 434844, San Diego, CA 92143, USA; esuazo@cicese.mx

PAST, PRESENT, AND FUTURE INVESTMENTS MAY VALIDATE THE AGGRESSIVE DISPLAYS OF LITTLE BLUE PENGUINS. *Joseph R. Waas.* Dept. of Biological Sciences,

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JUST THE FATS: THE SKINNY ON FATTY ACID SIGNATURES OF ADIPOSE TISSUE AND STOMACH OIL OF NORTHERN FULMARS (*FULMARUS GLACIALIS*) IN ALASKA. *Shiway W. Wang, Scott A. Hatch, Sara J. Iverson, and Alan M. Springer.* School of Fisheries and Ocean Sciences, Univ. of Alaska, 245 O'Neill Bldg., Fairbanks, AK 99775, USA; shiway@sfos.uaf.edu

NEST MONITORING AND NOCTURNAL SPOTLIGHT SURVEYS TO ASSESS THE POPULATION STATUS AND TRENDS OF XANTUS'S MURRELETS AT ANACAPA ISLAND, CALIFORNIA, 2002-2003. *Darrell Whitworth, Harry Carter, Richard Young, Sarah Fangman, and Franklin Gress.* California Inst. of Environmental Studies, 3408 Whaler Ave., Davis, CA 95616, USA; dwhitworth@inwind.it

OBITUARY

JACK T. MOYER (1929-2004): FATHER OF CONSERVATION OF THE JAPANESE MURRELET

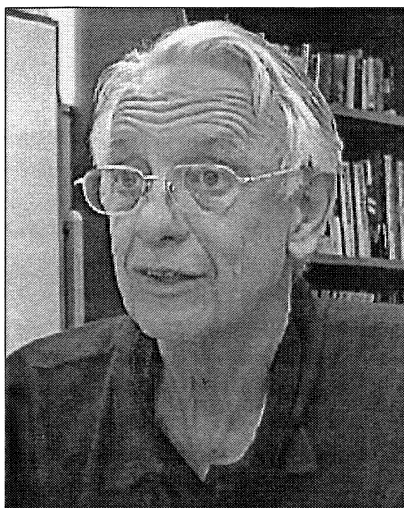
Harry R. Carter and John N. Fries

A Japanese translation by John Fries follows this article.

We report, with sadness, the passing of Jack T. Moyer on 11 January 2004 in Tokyo. Over the past five decades, Moyer has been a leading public voice appealing for the protection of the Japanese Murrelet (*Synthliboramphus wumizusume*), coral reefs, islands, and marine ecosystems in Japan and the world.

Moyer was born in Kansas, USA, in 1929. He received a Master's degree in ichthyology from the University of Michigan and a Ph.D. from the University of Tokyo. During the Korean War in 1951, he came to Japan with the U.S. Army. Enamoured of Japan and its people, he became a life-long resident and was soon fluent in Japanese. He lived for almost 50 years at Miyake Island in the Izu archipelago south of Tokyo, where he headed a marine biology station that focused on the study and conservation of coral reefs and coral reef fish. He also was heavily involved with nature education, ecotourism, and the local community.

In his early years, Moyer was a budding naturalist with a great interest in ornithology. In the 1950s he spent much time collecting birds in the Izu Islands and sending specimens to the University of Michigan Museum of Zoology. Moyer noted that Sanbondake Reef (or Onoharajima) off Miyake Island was being used for practice bombing by the U.S. Air Force. To save the colony of the Japanese Murrelet that was the then largest known, he sent letters to close associates of President Truman and asked for a stop to the bombing. He was success-



ful, as first reported by Austin and Kuroda (1953). Moyer's actions undoubtedly saved the Japanese Murrelet at Sanbondake Reef, although two years of bombing in 1951–1952 had permanently damaged the bird's breeding habitats (Carter et al. 2002). Moyer later published his observations on Japanese Murrelets and on impacts of bombing at Sanbondake Reef in 1953 (Moyer 1957). The attention that developed from this event likely helped the Japanese Murrelet attain "Natural Monument" status (i.e., a protected species) in Japan in 1972.

Moyer also wrote several letters to Robert W. Storer at the University of Michigan's Museum of Zoology regarding Japanese Murrelets and other observations. Gus van Vliet rediscovered these archived letters at the museum in the early 1970s. While we do not have a complete list of all specimens sent to mu-

seums, the letters indicated that Moyer collected widely in the Izu Islands between 1953 and 59. In 1958, he reported the last nesting of the Japanese Murrelet at Shikinejima, whose colony is now extirpated colony, and the first reported breeding on Onbasejima (Carter et al. 2002). He was also first to report several colonies of Black-tailed Gulls (*Larus crassirostris*) and Sooty or Tristram's Storm-petrel (*Oceanodroma tristrami*) in the Izu Islands (Moyer 1994). These observations are being incorporated into a Catalog of Japanese Seabird Colonies that is currently being compiled by the Japan Seabird Group.

In 1994 we had the honor of getting to know Moyer during a survey of Japanese Murrelets at Sanbondake Reef (Carter and de Forest 1994, Moyer 1994, Carter et al. 2002). Moyer arranged for a fishing boat to take us from Kozu Island to Sanbondake Reef and then on to Miyake Island. Along the way we heard Jack's plentiful stories first-hand. After a successful survey of reef habitats, we passed through numbers of murrelets on the water at a regularly-occurring convergence area off the west side of Miyake Island, which Moyer had first seen and described in 1953 (Moyer 1957). Once at Miyake Island, Moyer offered us use of his car for a few days, brought us into his home for dinner with his charming wife Lorna, and kindly showed us the Miyakejima Nature Center, endemic birds of the island, and other natural sights around the island, including the then-dormant volcanic crater. The volcano later erupted and caused evacuation

of the island in 2000, after which Moyer lived in Tokyo, far from the life he loved at Miyake Island. In 2001, Moyer conducted a survey of Miyakejima for the government of Japan to determine the effects of the eruption and lava flows.

Jack is survived by his wife Lorna, son Jackie (age 9) and daughter L.L. (age 6). He will be remembered as a kind, gentle, and widely knowledgeable scientist with a driving need to help protect the ocean he loved and inform the world of the negative changes to the marine environment in Japan he witnessed. We are extremely fortunate for his efforts, for sharing his exceptional

life with us, and for having the opportunity to thank him for all he had done for the conservation of the Japanese Murrelet.

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カンムリウミスズメの父、ジャック・モイヤー(1929-2004)を偲んで

Harry Carter
John N. Fries

2004年1月11日、避難先の東京にて、ジャック・T・モイヤー氏が亡くなられた。心から深く哀悼の意を表したい。

過去50年間にわたり、カンムリウミスズメ(学名Synthliboramphus wumizusume)をはじめとし、珊瑚礁や様々な島々、日本や世界中の海洋エコシステムの保護活動のリーダー的役割を果たしてきたのが、モイヤー氏であった。

1929年アメリカ、カンザス州生まれ。魚類学の修士号をミシガン大学で取得、東京大学では博士号を取得している。日本の地を初めて踏んだのは、朝鮮戦争中の1951年、アメリカ陸軍と共に来日したときであった。日本と日本人を愛したモイヤー氏が選んだ永住の地は日本であった。程なく日本語も流暢となり、その後、約50年の年月を東京の南方、伊豆諸島の三宅島で過ごした。三宅島では、珊瑚礁とそこに住む魚介類の保護および研究のための海洋生物学研究室を設立した。また、自然教育やエコ・ツーリズム、現地のコミュニティにも深くかかわった。

元々、モイヤー氏は、鳥類学の分野における新進のナチュラリストであった。1950年代は、数多くの鳥類を伊豆諸島で収集、標本をミシガン大学動物学博物館に送ることに多くの時間を注いだ。そのときに、三宅島沖にある三本岳(大野原島)がアメリカ海軍の爆撃演習場として使われていることを知る。三本岳は、カンムリウミスズメの当時知られていた中では最大のコロニーであった。そのコロニーを保護するため、トルーマン大統領の側近に、爆撃訓練をやめるよう嘆願書を送った。彼の努力は見事に効を奏した。このことは1953年にAustinとKurodaにより初めて報告がなされている。モイヤー氏の尽力が三本岳のカンムリウミスズメを救ったことは確かであったが、1951年から1952年にかけての2年間にわたる爆撃訓練は、カンムリウミスズメの繁殖地に取り返しのつかないダメージを与えてしまったのである。(Carter など 2002年)その後1953年、モイヤー氏は、爆撃訓練が三本岳に与えた影響とカンムリウミスズメについての観察、記述を残している。(Moyer 1957年)この出来事を発端に、カンムリウミスズメは1972年、日本の天然記念物に指定された。

モイヤー氏は、また、ミシガン大学のRobert W. Storer氏にカンムリウミスズメなどの観察内容を書いた手紙を数通宛てていたことがわかっている。この知られざる手紙は1970年はじめGus van Vliet氏が博物館で発見したものである。モイヤー氏が博物館に送った標本の完全なリストは現存しないが、その手紙の内容から、モイヤー氏が1953年から1959年にかけて伊豆諸島で広く収集活動をしていたことが窺える。1958年には、式根島におけるカンムリウミスズメの最後に残された巣(現在は根絶)および、恩馳島での繁殖が初めて確認されたことを報告している。(Carter など 2002年) また、伊豆諸島におけるウミネコ(学名Larus crassirostris)とオーストンウミツバメ(学名Oceanodroma tristrami)のコロニーを最初に報告。(Moyer 1994年) 彼の数々の報告は、日本海鳥グループが現在編集中の、日本の海鳥のコロニーデータベースに掲載されているところである。

光栄にも我々がモイヤー氏と初めて出会ったのは、1994年、三本岳におけるカンムリウミスズメの調査を行ったときであった。(Carter と de Forest 1994年、Moyer 1994年、Carter など 2002年) モイヤー氏は、神津島から三本岳、三宅島までの我々の漁船の手配をしてくれた。調査中は、彼から数多くの話を聞くことができた。三宅島沖の西側は、モイヤー氏が1953年に初めて目にし、報告をした場所であるが(Moyer 1957年)、珊瑚礁の生態調査を無事終えた後、暖流と寒流が毎年流れ込むその一帯を何羽ものカンムリウミスズメが海面を漂う中、我々は船を進めていった。三宅島では車を貸してもらったり、家に招待され、チャーミングなLorna夫人と共に夕食を一緒にしたこともあった。三宅島自然ふれあいセンターや島固有種の鳥を見せてもらったり、島をとりまく自然の様子、当時は休火山であった三宅島火口などを丁寧に案内してもらった。三宅島は後に噴火し、2000年には島民の避難生活が始まった。このときには、既にモイヤー氏は三宅島を離れ、彼が愛した三宅島から遠く離れた東京に住まいを移していた。2001年には日本政府の依頼により、三宅島噴火と溶岩流による影響についての調査を行っている。

Lorna夫人、Jackie(長男9歳)、L.L.(長女6歳)を残してモイヤー氏は旅立った。親切で心優しい知識豊富な科学者としていつまでも人々の心に残ることだろう。モイヤー氏は、その目で見つめてきた日本の海洋環境の悪化を世界に知らせ、愛してやまなかった海を守るためにいかなる努力も惜しまなかった。彼が力を注いだことや、偉大なる彼の人生の一部を共に分かち合えたこと、そして、彼がカンムリウミスズメの保護のためにしてくれたことに対して今ここで感謝できること、どれもが我々にとって格別にありがたく恵まれていることだと思う。

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TREASURER'S REPORT

For the Fiscal Year Ending 30 September 2003

Ron LeValley

This Treasurer's Report could not be completed in time for *Pacific Seabirds* 30(2) and therefore is published here. The Treasurer's Report for the fiscal year ending 30 September 2004 will appear in the next issue.

MEMBERSHIP

As of December 31, 2003 PSG has:

Life Members	67
Regular	270
Student	37
Family	20
<u>Corresponding</u>	<u>2</u>
Total	396

FINANCIAL ACCOUNTS

Three accounts were used for regular transactions in Fiscal Year 2002; they have been consolidated into one account.

October 1, 2002

Regular Checking	\$3,652.52
Savings Account #1	\$17,039.63
Savings Account #2	<u>\$305.98</u>

Total \$20,998.13

September 30, 2003

Regular Checking (consolidating above accounts)	\$23,752.06
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A Morgan Stanley money market account is kept as an interest-gathering account.

October 1, 2002	\$21,225.58
September 30, 2003	\$21,393.08

The Endowment Fund is kept in a mutual fund managed by Neuberger and Berman.

October 1, 2002	\$63,343.49
September 30, 2003	\$90,534.88

OTHER ACCOUNTS:

Pacific Seabirds: Vivian Mendenhall maintains an account to facilitate printing and mailing.

Balance as of October 1, 2002	\$1,340.48
Balance as of September 30, 2003	\$2,197.31

Canada: Ken Morgan maintains an account so that members can pay dues in Canadian dollars.

Balance as of October 1, 2002	US\$ 156.90
Balance as of September 30, 2003	US\$ 48.52

United Kingdom: Mark Tasker maintains an account in the UK so that members can pay dues in pounds sterling.

Balance as of October 1, 2002	US\$ 746.62
Balance as of September 30, 2003	US\$ 906.63

Total Assets as of October 1, 2002 \$107,654.30

Total Assets as of September 30, 2003 \$138,992.08

TREASURER'S REPORT FOR 2003

Profit and Loss, Cash Basis—1 October 2002 through 30 September 2003

ORDINARY INCOME/EXPENSE

Income

Books/Publications	278.50
Card Sales	249.65
<u>Membership Dues</u>	<u>8,730.87</u>

Total Income 9,259.02

Expenses

<i>Pacific Seabirds</i>	4,500.00
Bank Service Charges	13.00
Dues and Subscriptions	1,672.20
Elections	454.31
<i>Marine Ornithology</i>	-58.00
Office Supplies	36.66
Postage and Delivery	584.57
Printing and Reproduction	78.11
Professional Fees	
Accounting	550.00
Professional Fees—other	10.00
Total Professional Fees	560.00
Travel & Entertainment	1,125.00
<u>Website Hosting</u>	<u>214.92</u>

Total Expenses 9,180.77

Net Ordinary Income 78.25

OTHER INCOME/EXPENSE

Other Income

Dividends	367.47
<u>Other Income</u>	<u>856.00</u>

Total Other Income 1,223.47

Other Expenses

<u>Other Expenses</u>	<u>183.88</u>
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Total other expenses 183.88

Net Other Income 1,039.59

NET INCOME 1,117.84

2003 REGIONAL REPORT

For Washington and Oregon (continued)

The 2003 Regional Reports were published in *Pacific Seabirds* 30(2). However, some of the information for Washington and Oregon was missing, for unknown reasons. Those sections appear below. Please note that the information is almost a year old; updates for some projects will be in *Pacific Seabirds* 31(2).

Marbled Murrelets

The Marbled Murrelet Effectiveness Monitoring Program (MEMEP) produced its third annual report assessing status and trends of Marbled Murrelet (*Brachyramphus marmoratus*) populations and nesting habitat in the area of the Northwest Forest Plan (NFP). The population monitoring team consisted of **Patrick Jodice**, former module leader (U.S. Fish and Wildlife Service [USFWS]; now at Clemson University), **Jim Baldwin** (U.S. Forest Service, Pacific Southwest Research Station [USFS-PSW]), **Sherri Miller** (USFS-PSW), **Rich Young**, **Ken Ostrom** (both of USFWS), **C.J. Ralph** (USFS-PSW), **Martin Raphael** (U.S. Forest Service, Pacific Northwest Research Station [USFS-PNW]), **Craig Strong** (Crescent Coastal Research), **Chris Thompson** (Washington Department of Fish and Wildlife [WDFW]), and **Gary Falxa** (USFWS). The objectives of the murrelet population monitoring are to estimate (1) population trends and (2) population size during the breeding season within and across five murrelet conservation zones in coastal waters adjacent to the NFP area. In 2002, murrelets were surveyed in all five conservation zones. The total population of Marbled Murrelets in 2002 for this area was approximately $23,700 \pm 5300$ birds at the 95% confidence interval. The 2002 population estimate broadly overlaps estimates from 2000 and 2001 at this confidence level. Marbled Murrelet density per km² was highest in Zones 3 and 4 (the coast from the north Oregon border to just south of Cape Mendocino, California), and lowest in Zone 5 (the California coast from just

south of Cape Mendocino to just north of San Francisco Bay). Three years of surveys are insufficient to detect biologically significant trends in density or population estimates.

The habitat monitoring team was comprised of **Patrick Jodice** (former module leader), **Jim Baldwin**, Diane Evans Mack (USFS-PNW), **Sherri Miller**, **Kim Nelson** (Oregon Cooperative Fish and Wildlife Research Unit, Oregon State University [OCFWRU]), **Rich Young**, and **Ken Ostrom**. The purpose of the habitat monitoring component of the program is to develop predictive map and non-map models. Field data for the non-map model were collected from 198 sites, both occupied and unoccupied by Marbled Murrelets, across the species' range in the NWFP area. Fourteen site-level attributes were measured and assessed within more than 1600 plots. The map models of murrelet habitat will be developed from spatial attributes of occupied sites based on variables that best predict known murrelet occupancy patterns. Results from the map and non-map models will be published in the 2003 annual report and in the 10-year interpretive report of the effectiveness monitoring program.

Martin Raphael and **Tom Bloxton** (USFS-PNW) continued several collaborative studies on Marbled Murrelets in Puget Sound and Hood Canal during 2003. Along with researchers elsewhere in Washington, Oregon, and northern California, we completed the fourth year of long-term population monitoring of Marbled Murrelets under the Northwest Forest Plan (NFP). We surveyed Recovery Zone

1, including the San Juan Islands to Olympia in Puget Sound and the Strait of Juan de Fuca. We also continued to collect baseline data on within-season and annual changes in distributions, densities, and productivity indices of murrelets in the San Juan Island archipelago and Hood Canal.

In collaboration with **Brian Cooper** of ABR Inc., we conducted a sixth year of radar sampling at 10 large drainages around the Olympic Peninsula. The goal is to correlate murrelet numbers with the distribution and landscape configuration of nesting habitat defined at a broad scale. Efforts this year will focus on integrating murrelet abundance from radar with models being developed by **John Marzluff**, University of Washington, that relate predicted murrelet nesting probability and risk of predation to habitat features at the stand and landscape scales.

We conducted a pilot study in spring 2003 to assess the feasibility of conducting a radio-tagging project on murrelets captured at sea. After a successful effort of capturing murrelets at night using dipnets from a boat, we have decided to expand the project beginning spring 2004. We plan to capture up to 40 murrelets each year and track nesting birds to their inland breeding sites. Our objectives for this project include: locating nests to describe nesting habitat at multiple spatial scales, estimating survival and fecundity rates, documenting patterns of offshore movements, and evaluating genetic similarity between the Washington population and those of neighboring states and provinces. The genetic work

REGIONAL REPORT FOR 2003 – Washington and Oregon

will be led by **Vicki Friesen** (Queen's University, Kingston, Ontario), **Steven Beissinger**, and **Zach Peery**.

Work continues on developing a map of potential murrelet nesting habitat for the Olympic Peninsula, Western Washington Cascades, and Western Washington Lowlands as part of the collaborative mapping effort under the NFP. This habitat map will be derived from a region-wide vegetation map being developed by the Forest Service and Bureau of Land Management in support of monitoring efforts throughout the Pacific Northwest. Work continued on a parallel modeling effort centered on ground-based vegetation sampling in occupied and unoccupied sites. The sites were identified from previous surveys using the PSG Inland Survey Protocol on land under various owners in western Washington. This regional effort is in collaboration with **Mark Huff** of the Northwest Forest Plan Interagency Monitoring Program, **Sherri Miller**, **Jim Baldwin**, **Kim Nelson**, and **Tim Max** (USFS-PNW) with the cooperation of Washington Department of Natural Resources (WDNR), National Park Service (NPS), Rayonier Timber Lands, and WDFW.

Brian Cooper and **Rich Blaha** of ABR, Inc. conducted radar studies of Marbled Murrelets at 10 locations in the northern portion of Conservation Zone 4, in northern California. The study was funded by the Regional Conservation Research program for Pacific Lumber Company's Habitat Conservation Plan (PALCO HCP). The purpose of the study was to begin collecting data that will allow us to compare any trends we observe with trends in the PALCO HCP area. We also hope to determine the relationship between oceanographic conditions and inland abundance of murrelets. This type of information will be essential for interpreting the trends in murrelet populations observed within the HCP area. Brian Cooper also conducted the fourth year of radar monitoring of Marbled Murrelets in Mt. Rainier National Park, in collaboration with **Jim Schaberl** (NPS).

William Ritchie (WDFW) and **Shelley Hall** (NPS) completed the 4th consecutive year of inland Marbled Murrelet monitoring surveys on state lands in southwestern Washington and in Olympic National Park. Data have yet to be analyzed, but maximum detection levels for 2003 survey visits and the season appear to be lower than expected. The number of "occupied" behaviors was also lower than expected. Subcanopy behaviors by some birds seemed to imply they were not breeding. The timing of breeding activity appeared to be normal early in the season, but it ended earlier this year.

Janet Anthony (WDFW) coordinated a Marbled Murrelet survey project at 11 previously surveyed inland sites on state lands on the northwestern Olympic Peninsula. The status of several sites changed: from no detections to occupied at 1 site, presence to occupancy at 2 sites, and no detection to presence at 3 sites. The status of 4 additional sites remained unchanged, and murrelets were not detected at 1 site where they had been previously. This information will be useful in development of a long-term conservation strategy for the Washington Department of Natural Resources's (DNR) Habitat Conservation Plan.

Olympic National Park rangers located a live fledgling Marbled Murrelet on 19 Sep 2003 along the Skokomish River. The bird was examined by Shelley Hall and William Ritchie and was transferred to **Mary Carlson** at the Seattle Aquarium. The bird was uninjured, appeared to be healthy and of normal size, but was less than half the mass of normal fledglings. It was observed diving and feeding early Sunday morning, but it died later that day. A necropsy determined the likely cause of death as enteritis. Discovery of this bird is notable since it represents the latest known fledging in Washington and the second latest fledging date for this species.

Eric Cummins, **Steve Desimone**, **William Ritchie**, **David Whipple** and others at WDFW convened an interagency and stakeholder working

group to negotiate revisions to the state Forest Practices Rule for Marbled Murrelets. A significant achievement in the negotiations was acceptance of the 2003 PSG Marbled Murrelet inland survey protocol. A process also was developed to allow landowners the option of conducting additional surveys to verify occupancy when circling behaviors are observed at sites without subcanopy detections. Current rules classify low circling above a site as an "occupied" behavior. The Forest Practices Board will propose the new rule at its November 2003 meeting, after which a public comment period and public hearings will follow. It is expected that the new rule language will be adopted prior to the 2004 breeding season.

Craig Strong (Crescent Coastal Research) continued monitoring the population of Marbled Murrelets in Oregon and northern California as part of the three-state NFP-MMEMP. In southern Oregon and northern California the effort was cooperative with the Redwood Sciences Laboratories and USFWS Arcata field office. While it is too soon to assess this year's results, the population appears to have been relatively stable since the program began in 2000, but lower than during the 1990's. Annual reports are available from the Oregon Department of Fish & Wildlife, Wildlife Division, and the USFWS Oregon State Office.

Kim Nelson continued her research associated with the NFP-MMEMP. She and the other MMEMP Inland Team members continued to work on details for developing a baseline map of murrelet habitat, using GIS and a region-wide satellite vegetation map. The team also continued work on developing a predictive habitat model using ground-based data collected in 2000 and 2001.

Kim completed her research with **Bill Ripple** and **Betsy Glenn** on the forest landscape patterns around Marbled Murrelet nest sites in the Oregon Coast Range using aerial photo interpretation

REGIONAL REPORT FOR 2003 – Washington and Oregon

and GIS. The paper was recently published in the journal *Northwestern Naturalist*.

Jeff Reams and Tom Williamson of Turnstone Environmental Consultants Inc. completed a Marbled Murrelet inventory of 199 sites for the Oregon Department of Forestry. Of 1438 protocol surveys completed at 837 stations, 129 surveys in five districts yielded detections. Significant (“occupied”) behavior was observed in 28 surveys.

The Bureau of Land Management of the Roseburg District contracted with Hamer Environmental to document the presence of Marbled Murrelets in three areas of concern (Camas Valley, Ben Irvin Reservoir and Berry Creek area) within the South River Resource Area, Roseburg, Oregon, and to quantify the numbers of birds in these areas. These sites were strategically chosen to enable the radar to scan across sections of the watersheds where potential murrelet habitat existed or in areas that were predicted or known flight corridors. All three sites were successfully monitored on 12 mornings from 16 Jun to 4 Aug 2003. The information collected will be used by resource managers to assess the importance of potential breeding habitat being used by murrelets and to ascertain which sections of potential habitat are being utilized most frequently.

Hamer Environmental completed the last year of a Marbled Murrelet inventory contracted by WDNR for the Strait Planning Unit. This inventory took place on WDNR-owned land in Clallam, Jefferson and Mason Counties. It included second-year surveys of 19 sites and resulted in a total of 137 surveys being successfully completed according to the PSG’s 2003 protocol requirements. No sites were occupied by Marbled Murrelets during the 2003 season; however, murrelets were present at 10 sites (52.6%), 4 of them during the 2003 season.

MONITORING OF INNER MARINE AREAS

David Nysewander, Joe Evenson, Bryan Murphie, and Tom Cyra (WDFW) continued several monitoring

studies associated with the marine bird component of WDFW’s Puget Sound Ambient Monitoring Program (PSAMP), along with collaboration on other breeding colony surveys. They also started new research using satellite telemetry focused on declining species of sea ducks that are a major component of wintering bird populations in the inner marine waters of Washington State.

The winter aerial surveys of marine birds and waterfowl that started in 1992 were conducted again Dec 2002–Jan 2003. Maps of densities for selected species and other data products are available for 1992–2003 winter surveys and 1992–1999 summer surveys. They are mainly available through the Wildlife Resources Data Section of WDFW in Olympia (Shelly Snyder, 360-902-2483). Concern continues about the decline of many marine bird species monitored in this region over the last 20 years. The largest declines are in species such as Western Grebes (*Aechmophorus occidentalis*) that feed on forage fish, and in species like scaups (*Aythya* spp.) and scoters (*Melanitta* spp.) that feed on forage fish eggs at crucial times in spring.

The last year of a five-year boat-based survey of Pigeon Guillemots (*Cephus columba*) at breeding sites throughout inner marine waters of the state was completed. Standardized surveys were done each year during May. The project was a collaboration of the PSAMP program, USFWS, and volunteer groups. This was the first time that Pigeon Guillemots have been surveyed in Washington State using standardized methods and over such a wide area. Almost 16,000 Pigeon Guillemots were documented breeding in over 430 colonies throughout the inner marine waters of Washington. Breeding territories and nesting efforts also were documented for Black Oystercatchers (*Haematopus bachmani*) in most of the same waters. More information is available from Joe Evenson (360-902-8137).

A multi-year radio- and satellite-tracking project began in Feb-Mar 2003 to examine scoters, loons (*Gavia* spp.),

and grebes whose wintering populations are declining in Washington’s inner marine waters. White-winged Scoters (*Melanitta fusca*) were the focus of the first winter’s field work; we followed individuals that nested in Canada’s Northwest Territories and northern Alberta. Males returned to northwestern marine waters within two months for molting; females returned to Washington waters by the end of September. Future work will look at this species again and will expand to Surf Scoters (*Melanitta perspicillata*).

COLUMBIA RIVER, TERNS

In February 2003, USFWS released “A Review of Caspian Tern (*Sterna caspia*) Nesting Habitat: A Feasibility Assessment of Management Opportunities in the U.S. Fish and Wildlife Service Pacific Region.” Authors were **Nanette Seto, Jeff Dillon, and Tara Zimmerman** (USFWS) and **Dave Shuford** (PRBO Conservation Science). A total of 77 sites were evaluated in Washington, Oregon, Idaho, California, and Nevada for their potential to support large colonies of nesting Caspian Terns. Twenty-four sites in Washington, Oregon, and California were identified in the report as having management potential for Caspian Terns. This report was the third of three technical reports that USFWS, U.S. Army Corps of Engineers (Corps), and the National Oceanographic and Atmospheric Administration–Fisheries (NOAA Fisheries) has prepared in association with Caspian Tern management issues in the Columbia River estuary.

In April 2003, USFWS, in cooperation with the Corps and NOAA Fisheries, published a Notice of Intent in the Federal Register to prepare an environmental impact statement (EIS) for Caspian Tern management in the Columbia River estuary. [Editor’s note: the EIS has been released; see the Conservation Report in this issue.] USFWS funded studies to monitor nesting Caspian Tern colonies in Interior Oregon and Humboldt and San Francisco

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Bays, data from which will be useful for the EIS. Copies of technical reports and information on the EIS can be found on the USFWS Migratory Bird website (<http://migratorybirds.pacific.fws.gov/CATE.htm>).

CORMORANTS, PELICANS

Deborah Jaques, Crescent Coastal Research, is monitoring Brown Pelican use of two large estuaries in southwest Washington, Grays Harbor and Willapa Bay. The primary goal of the project is to evaluate night roosting behavior and habitat. Data will be used to help direct proposed habitat enhancement projects. Roosting and nesting habitats in the estuaries have been reduced over the past decade by erosion of sand islands. Research is supported by USFWS (Ecological Services) and the Washington State Department of Transportation. **Craig Strong** and **Darell Warnock** assisted with field work in 2003.

USFWS coordinated a survey of nesting cormorants in California, Oregon, and Washington during the 2003 breeding season. All Brandt's (*Phalacrocorax penicillatus*) and Double-crested Cormorant (*P. auritus*) colonies along the outer coasts of the three states were surveyed via aerial photography and boat/ground counts. In addition, all Pelagic Cormorant (*P. pelagicus*) colonies in Washington and Oregon and a few selected colonies in California were surveyed. These surveys, in conjunction with coordinated surveys in Mexico, Canada, and Alaska, will provide important information on population trends and distribution. Surveys were conducted by Service biologists and contractors (**David Pitkin**, **Matt Wells**, **Ulrich Wilson**, **Pam Sanguinetti**, **Gerry McChesney**, **Harry Carter**, **Phil Capitolo**), and biologists of WDFW (**Dave Nysewander**, **Greg Schirato**, **Tom Cuira**), and U.S. Geological Survey (USGS) scientists **Dan Roby** and **Karen Fischer**.

A Final EIS for Double-crested Cormorant Management in the United States was published in August 2003. Six alternatives were evaluated. The proposed action includes the establishment of a depredation order to address public resource conflicts in the 24 states where cormorant populations have increased most significantly over the past 30 years. None of the Pacific coast populations of *P.a. albociliatus* or *P.a. cinnatus* would be included in this depredation order.

WEST COAST

USFWS will be working with USGS scientists at OCFWRU to develop monitoring manuals for seabirds nesting on national wildlife refuges in the California Current System. The manuals will identify focal species and locations and will give detailed protocols for monitoring population trends and other demographic parameters.

PUBLISHED PROCEEDINGS OF SYMPOSIA OF THE PACIFIC SEABIRD GROUP

The Pacific Seabird Group holds occasional symposia at its annual meetings. Published symposia are listed below. They are available for purchase (unless out of print). To order, see the membership application/publication order form.

SHOREBIRDS IN MARINE ENVIRONMENTS. Frank A. Pitelka (Editor). Proceedings of an International Symposium of the Pacific Seabird Group, Asilomar, California, January 1977. Published June 1979 in *Studies in Avian Biology*, Number 2. Out of print.

TROPICAL SEABIRD BIOLOGY. Ralph W. Schreiber (Editor). Proceedings of an International Symposium of the Pacific Seabird Group, Honolulu, Hawaii, December 1982. Published February 1984 in *Studies in Avian Biology*, Number 8. Out of print.

MARINE BIRDS: THEIR FEEDING ECOLOGY AND COMMERCIAL FISHERIES RELATIONSHIPS. David N. Nettleship, Gerald A. Sanger, and Paul F. Springer (Editors). Proceedings of an International Symposium of the Pacific Seabird Group, Seattle, Washington, January 1982. Published 1984 as Canadian Wildlife Service, Special Publication. Out of print.

THE USE OF NATURAL VS. MAN-MODIFIED WETLANDS BY SHOREBIRDS AND WATERBIRDS. R. Michael Erwin, Malcolm C. Coulter, and Howard L. Cogswell (Editors). Proceedings of an International Symposium at the first joint meeting of the Colonial Waterbird Society and the Pacific Seabird Group, San Francisco, California, December 1985. *Colonial Waterbirds* 9(2), 1986. \$12.00 from Ornithological Societies of North America, PO Box 1897, Lawrence, Kansas 66044; phone (800) 627-0629.

ECOLOGY AND BEHAVIOR OF GULLS. Judith L. Hand, William E. Southern, and Kees Vermeer (Editors). Proceedings of an International Symposium of the Colonial Waterbird Society and the Pacific Seabird Group, San Francisco, California, December 1985. Published June 1987 in *Studies in Avian Biology*, Number 10. \$18.50.

AUKS AT SEA. Spencer G. Sealy (Editor). Proceedings of an International Symposium of the Pacific Seabird Group, Pacific Grove, California, December 1987. Published December 1990 in *Studies in Avian Biology*, Number 14. \$16.00.

STATUS AND CONSERVATION OF THE MARBLED MURRELET IN NORTH AMERICA. Harry C. Carter, and Michael L. Morrison (Editors). Proceedings of a Symposium of the Pacific Seabird Group, Pacific Grove, California, December 1987. Published October 1992 in *Proceedings of the Western Foundation of Vertebrate Zoology*, Volume 5, Number 1. \$20.00.

THE STATUS, ECOLOGY, AND CONSERVATION OF MARINE BIRDS OF THE NORTH PACIFIC. Kees Vermeer, Kenneth T. Briggs, Ken H. Morgan, and Douglas Siegel-Causey (editors). Proceedings of a Symposium of the Pacific Seabird Group, Canadian Wildlife Service, and the British Columbia Ministry of Environment, Lands and Parks, Victoria, British Columbia, February 1990. Published 1993 as a Canadian Wildlife Service Special Publication, Catalog Number CW66-124-1993E. *Free of charge from:* Publications Division, Canadian Wildlife Service, Ottawa, Ontario, K1A 0H3, Canada.

BIOLOGY OF MARBLED MURRELETS—INLAND AND AT SEA. S. Kim Nelson and Spencer G. Sealy (Editors). Proceedings of a Symposium of the Pacific Seabird Group, Seattle, Washington, February 1993. Published 1995 in *Northwestern Naturalist*, Volume 76, Number 1. \$12.00.

BEHAVIOUR AND ECOLOGY OF THE SEA DUCKS. Ian Goudie, Margaret R. Peterseen and Gregory J. Robertson (editors). Proceedings of the Pacific Seabird Group Symposium, Victoria, British Columbia, 8-12 November 1995. A special publication compiled by the Canadian Wildlife Service for the Pacific Seabird Group. Published 1999 as Canadian Wildlife Service Occasional Paper number 100, catalog number CW69-1/100E. *Free of charge from:* Publications Division, Canadian Wildlife Service, Ottawa, Ontario, K1A 0H3, Canada.

SEABIRD BYCATCH: TRENDS, ROADBLOCKS AND SOLUTIONS. Edward F. Melvin and Julia K. Parrish (editors). Proceedings of an International Symposium of the Pacific Seabird Group, Blaine, Washington, 26-27 February 1999. Published 2001 by University of Alaska Sea Grant, Fairbanks, Alaska. Publication no. AK-SG-01-01. \$40.00 from the publisher.

BIOLOGY, STATUS, AND CONSERVATION OF JAPANESE SEABIRDS. Nariko Oka (editor). Proceedings of an International Symposium of the Japanese Seabird Group and Pacific Seabird Group, Lihue, Hawaii, February 2001. *Journal of the Yamashina Institute of Ornithology* 33(2); Symposium (5 papers), pp 57-147, other papers pp. 148-213. In English with Japanese abstracts. \$75.00.

Information on presenting symposia: Pacific Seabird Group Symposia are initiated by any PSG member with interest in a particular topic. The goal is to present a collection of papers that explore and review this topic, usually at an annual meeting of the Pacific Seabird Group. In some cases the papers are then edited and published as a PSG Symposium. Anyone interested in organizing a symposium must first contact

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