

PACIFIC SEABIRDS



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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 journals are *Pacific Seabirds* (formerly the *PSG Bulletin*), and *Marine Ornithology* (published jointly with the African Seabird Group, Australasian Seabird Group, Dutch Seabird Group, and The Seabird Group [United Kingdom]; www.marineornithology.org). Other publications include 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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Article

- Beach Watch: Sanctuary Ecosystem Assessment Surveys. By Shannon Lyday, Jan Roletto, Joe Mortenson, and Jamie Hall 2

Forum

- A more focused analysis of economic growth and environmental degradation. By Steve Hampton..... 7

Lifetime Achievement Award

- Michael P. Harris. By Scott A. Hatch..... 9

Obituary

- James O. Keith. By Daniel W. Anderson 13

Conservation Reports

- Conservation Report for Spring 2007 17
Correction 23
Conservation Report for Fall 2006 24

PSG News

- 27

PSG Meeting News

- 29

Committee Reports

- Loon and Grebe Technical Committee..... 32
Marbled Murrelet Technical Committee 32
PSG Website 33
PSG 2020 Strategic Planning Committee 34

General Information

- Information on the Pacific Seabird Group Inside Front Cover
Publications of the Pacific Seabird Group..... 36
PSG Committee Coordinators 38
PSG Life Members and Recipients of Awards 39
Membership Application and Order Form 40

PSG Executive Council for 2007

Inside Back Cover

ARTICLE

BEACH WATCH: SANCTUARY ECOSYSTEM ASSESSMENT SURVEYS

Shannon Lyday, Jan Roletto, Joe Mortenson, and Jamie Hall

SUMMARY

Beach Watch is a program of beach surveys for dead and live vertebrates established by the Gulf of the Farallones National Marine Sanctuary in 1993. This pioneering federal marine program is now being integrated with the sanctuary Ecosystem Assessment Surveys (SEAS), which provide valuable ecosystem data on the marine environment to assist sanctuary management in resource protection. Shoreline surveys create a baseline data set that can be used to detect species mortality events and the effects of environmental factors such as oil spills. Dead and live bird and marine mammal counts can establish spatial and temporal trends and the interrelationships between beached and live species abundance. The use of volunteers in long-term monitoring is financially beneficial and, more importantly, allows the public to take an active role in environmental protection, thereby increasing awareness and the capacity for stewardship.

INTRODUCTION

Beach Watch is a long-term monitoring program of the Gulf of the Farallones National Marine Sanctuary (GFNMS), implemented by the Farallones Marine Sanctuary Association. The program was initiated in 1993 as a response to the threat of oil spills in the sanctuary. The goals of the Beach Watch program are to provide a baseline data set on the presence of live and beach-cast marine organisms; assist sanctuary management in the early detection of natural and human-caused environmental events; develop a network of volunteer expert surveyors who can respond during an oil spill; and educate the public about the coastal environment and how they can make a difference in protecting their beaches.

Beach Watch is now part of the Sanctuary Ecosystem Assessment Surveys (SEAS), a suite of monitoring programs in the GFNMS. Other efforts in SEAS include monitoring of the shoreline, intertidal, and pelagic habitats, and collecting environmental data on physical oceanography as correlated with marine vertebrate and invertebrate abundance. Together, these assessments are designed to provide an overview of ecosystem health and status to sanctuary management to assist in resource protection. The goal of SEAS is to link all of the monitoring data collected by the sanctuary and provide biological observational data and habitat charac-

terization for the Gulf of the Farallones and Bodega regions.

METHODS

Currently, Beach Watch volunteers survey 42 beach segments every two to four weeks on the central California coast. The Beach Watch area includes the Gulf of the Farallones and Monterey Bay National Marine Sanctuaries, between Bodega Head in Sonoma County and Año Nuevo State Reserve on the San Mateo/Santa Cruz County line (Figure 1). From September 1993 through September 2004, 6419 surveys were completed, monitoring 14,405 km of coastline. In 2004, ninety-two volunteers conducted 771 surveys of 1,657 km of shoreline. To compare data among different parts of the coastline, numbers of dead and live vertebrates are quantified as encounter rates (i.e. number of birds per kilometer surveyed).

The Beach Watch volunteers attend 80 hours of classroom and fieldwork training. Surveys are conducted by teams of one to four surveyors. Along each beach segment, live birds and marine mammals are censused, dead vertebrates are documented, human and dog activity is recorded, and data are collected on oil and tarball presence, wrack, invertebrates, and stream and lagoon status (Roletto *et al.* 2005). Surveyors search the beach in a zigzag pattern, combing through wrack for beached specimens. Data collected on each beached specimen

are: species identification, condition (rate of decomposition), sex, age, evidence of scavenging, probable cause of death (when possible), occurrence, extent and location of oil, and (if the specimen is tagged), tag number, color and location. Each dead specimen is photographed for later verification by an ornithologist or a marine mammal expert to confirm species identification, age, and sex.

Surveyors use 7–10 power binoculars to identify and count live birds and marine mammals which pass within 90 m landward and seaward of the beach, as well as marine mammals that can be identified beyond 90 m. Animals that cannot be identified to species are recorded to the nearest positively identifiable taxonomic grouping.

BENEFITS

Coastal surveys of live and dead birds and marine mammals are beneficial to sanctuary management. Consistently gathered beached vertebrate data from the shoreline of the sanctuary provide baseline species mortality rates for a large geographical area. Standardized beach surveys can detect oil and tarball events. Unusual mortality events can be detected, pinpointed, and their magnitude evaluated. Live bird and mammal counts reveal changes in beach usage over time. Live and dead vertebrate data can be compared to reveal trends and patterns.

Beach Watch surveys have been used

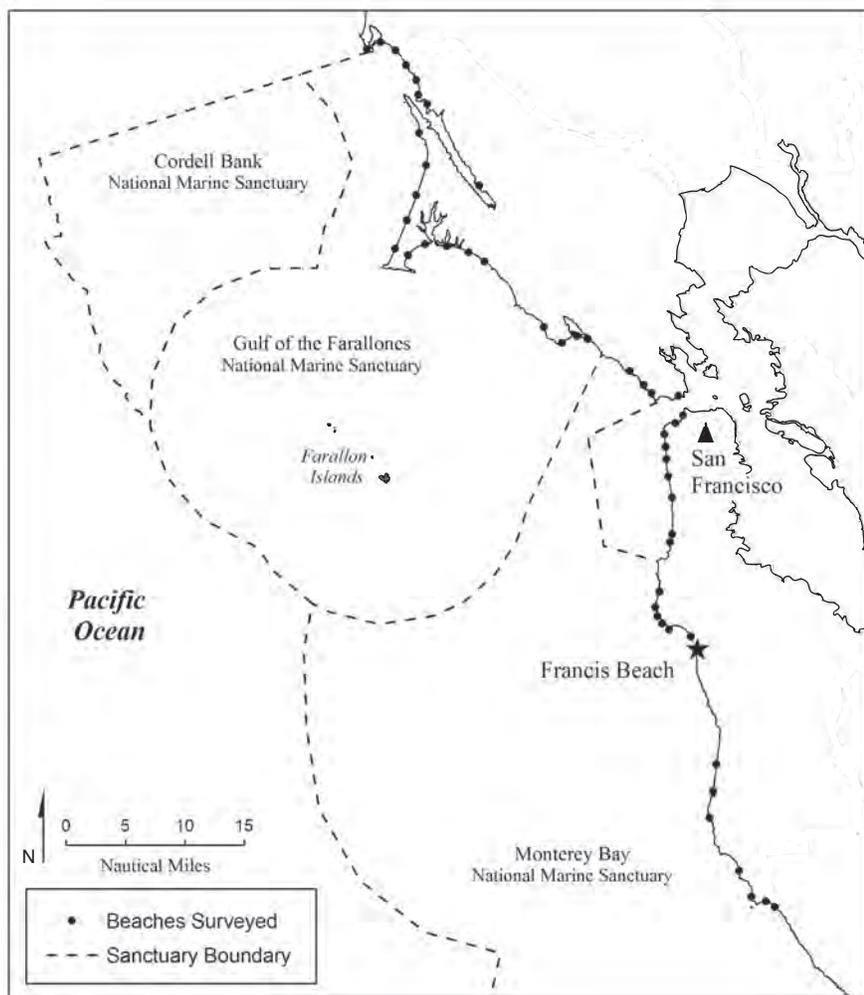


FIGURE 1. Map of locations of beach segments monitored by Beach Watch.

to discover oil and tarball events, assess their damage, and contribute data for the selection and scaling of restoration projects. Regular baseline data of beached birds can provide historic mortality rates and known species composition which can be compared to the species beached during oil spills. Oil spills and tarball events can be clearly demarcated because of the low background level of beached oiled birds in the sanctuary (Roletto *et al.* 2003). Surveyors are trained in oil and tarball documentation, which allows them to respond quickly during an oil spill event.

Standardized beached bird surveys reveal patterns of bird mortality in coastal areas (Page *et al.* 1982). For example, in the winter of 2003–2004,

an unusual number of Northern Fulmars (*Fulmarus glacialis*) were found beached from Oregon down to Southern California (Harvey *et al.* 2004). This pattern of deposition rates reflected a winter irruption of fulmars through the central and northern California region (Harvey *et al.* 2004, NOAA 2003). Annually, Beach Watch data show a slight to moderate increase in mortality from November through March as Northern Fulmars migrate to the Gulf of the Farallones to feed. In November 2003, the dead fulmar encounter rate peaked at 5.04 fulmars encountered per km (Figure 2), a fourfold increase over any previous year. The sudden die-off in Northern Fulmars, as seen in higher numbers of beached fulmars, occurred at the same time as high counts

of live fulmars at sea (Harvey *et al.* 2004, R. Stallcup pers. comm. 2004), perhaps indicating lack of food in the Gulf of Alaska and a displacement of the population to offshore California waters.

A similar link between rates of beached bird deposition and encounter rates of live birds was observed at Francis Beach, designated Beach 4–05, a survey segment in Half Moon Bay State Park in San Mateo County (Figure 1). Beginning in January 2003, surveyors documented higher than normal numbers of dead gulls. This elevated mortality rate lasted through April 2003 and occurred again in the winter and spring months of 2004. The mean monthly encounter rate of dead gulls during the mortality event peaked during the month of March at 0.34 gulls encountered per km, compared to previous years (1996–2002), in which the monthly mean encounter rate in March was 0.01 gulls per km (Figure 3).

During the 2003–2004 mortality events on Francis Beach, the majority of the beached gulls found in the peak die-off months of January–April were Glaucous-winged Gulls (*Larus glaucescens*) (Figure 4). The average March encounter rate of dead Glaucous-winged Gulls for the two years was 0.21 birds per km (65.5% of all dead gulls encountered), compared with Western Gulls (*Larus occidentalis*) at 0.08 birds per km (24.5% of all dead gulls encountered) (Figure 4). The species composition of dead gulls changed seasonally (Figure 4). Glaucous-winged Gulls migrate out of the Gulf of the Farallones during the upwelling season (NOAA 2003), and in September and October there is an annual die-off of recently fledged Western Gulls in central California (Page *et al.* 1982).

The peak in counts of all dead gull species on Francis Beach mirrors live counts seasonally and annually. This beach has historically been a roosting site for large numbers of gulls in the winter, with a maximum mean encounter rate of 26.3 live gulls per km during January in 1996–2004. The presence of the convergence of two fresh water streams and a nearby landfill may attract gulls to this beach. Similar to the numbers

ARTICLE - Beach Watch surveys

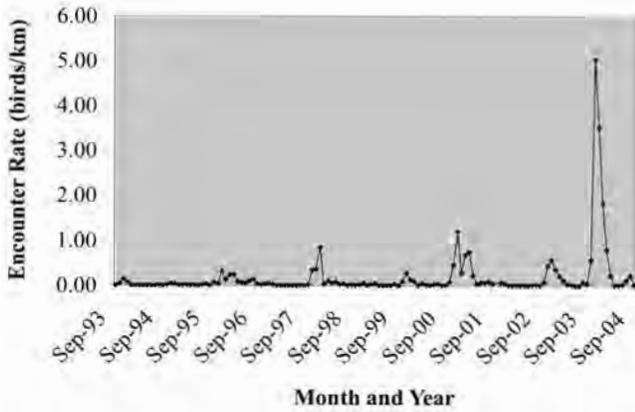


FIGURE 2. Mean encounter rate of dead Northern Fulmars for all beaches for the sequential months of Beach Watch, Sep 1993–Sep 2004.

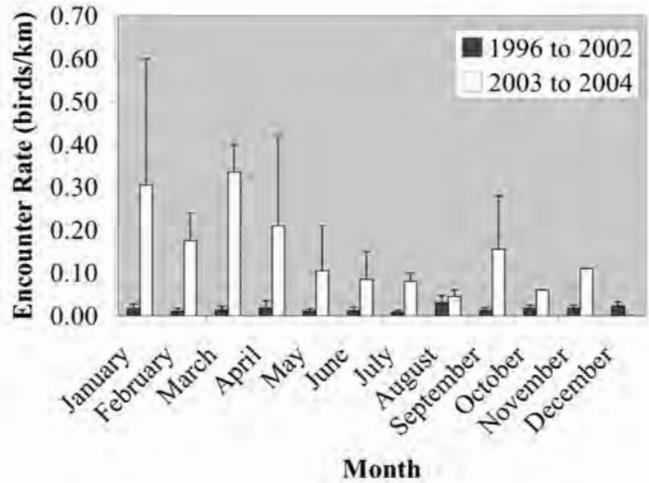


FIGURE 3. Mean monthly encounter rate of dead gulls on Francis Beach (Beach 4–05, Half Moon Bay), Jun 1996–Sep 2004. Data were not collected Apr–Nov 2000, Nov 2001–Aug 2002, and Dec 2003.

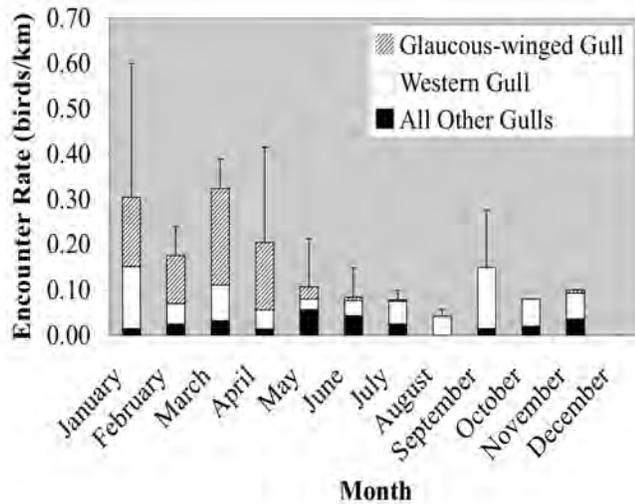


FIGURE 4. Mean monthly encounter rate for dead gulls on Francis Beach (Beach 4–05, Half Moon Bay), Jan 2003–Sep 2004. Data were not collected in Dec 2003.

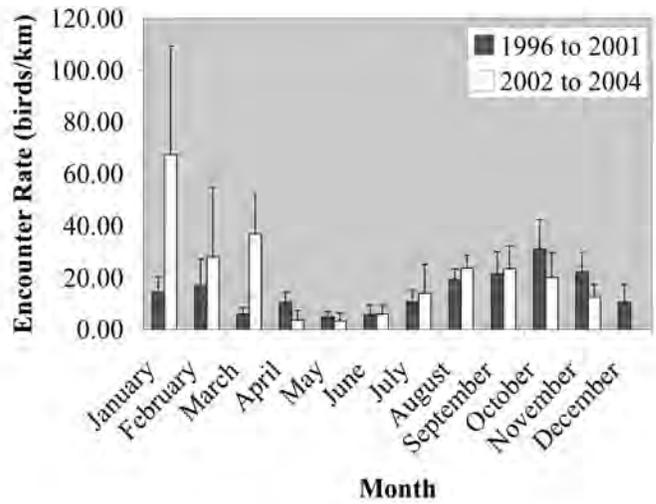


FIGURE 5. Mean monthly encounter rate of live gulls on Francis Beach (Beach 4–05, Half Moon Bay), Jun 1996–Sep 2004. Data were not collected Apr–Nov 2000, Nov 2001–Aug 2002, and Dec 2003.

of dead gulls encountered, the numbers of live gulls increased during January–March 2003–2004 (Figure 5). Numbers of live gulls encountered were highest in January, with a mean monthly encounter rate of 67.4 gulls per km (Figure 5). The pattern of gull deaths mirrors the seasonality of live sightings, which can be seen in Beach Watch data. Again, as with the Northern Fulmars, the number of beached birds is correlated with the abundance of live birds.

After the die-off was detected, fresh and unscavenged specimens were collected by surveyors on Francis Beach in 2004 and 2005 so that California Department of Fish and Game wildlife veterinarians could determine the cause of death. The sample is presented in Table 1. Necropsy revealed that eight out of nine gulls died because of emaciation and secondary respiratory disease caused by the fungus *Aspergillus fumigatus*. An analysis of the Beach Watch data for the

different age classes showed that the majority of beached gulls were first year (hatch year) birds. In 2004, 54.2% of the dead Western Gulls were first year birds and 31.3% were adults. A larger percentage of the beached Glaucous-winged Gulls were first-year birds, 79.6%, while 9.1% were adults. In 2003, the age and species breakdowns were similar. It is suspected that immature, inexperienced gulls found it more difficult to find enough food to sustain health and thus

ARTICLE - Beach Watch surveys

were attracted to the nearby landfill. A debilitated state can cause a higher susceptibility to the respiratory fungal disease aspergillosis, the spores of which occur in decaying vegetation (D. Jessup, pers. comm. 2005). Alternatively, the age ratio detected on beach surveys simply reflects that found in offshore waters.

While volunteers are surveying a beach, it is valuable for them to count live birds and marine mammals. Although not a population assessment, this live count is useful as a species index. Live bird and mammal data can provide known locations of threatened and endangered species to better direct resource protection efforts during oil spills. Documentation of visitor and dog activity can provide insight into human and bird interactions, such as analyzing the effect of high visitor use on the number of live shorebirds.

The majority of beached bird programs collect only dead vertebrate data. The Beach Watch program and the Seabird Ecological Assessment Network (SEANET) on the east coast, which was established in 2002, also include live bird counts (Harris *et al.* 2005). Given the relationship between beached and live counts, and the increasing numbers of coastal residents and recreationalists (Heim 1998), future research should examine the relationship between these three classes of variables.

Using paid staff to regularly survey

the coastline is financially prohibitive. Volunteers are able to provide governmental and non-profit organizations the data needed to effectively manage natural resources. Beach Watch volunteers contribute over \$150,000 worth of volunteer hours annually. Volunteer monitoring programs are a cost-effective method to collect data sets (Goffredo *et al.* 2004).

The majority of Beach Watch surveys are conducted by highly trained volunteers from the general public. Volunteers do more than collect and provide data. Volunteers get to know their stretch of coastline, which allows them to detect unusual sightings or events. Although the main goal of Beach Watch is to collect data, a secondary goal is to connect with the public by providing an opportunity to become sanctuary stewards. Sanctuary citizen-scientists help protect beaches and their transitory and resident vertebrate populations through direct outreach to the public and through the provision of local expertise to managers. Beach Watch thereby develops sanctuary stewards by allowing the public to take an active role in environmental protection.

INTO THE FUTURE

Beach Watch will continue long-term monitoring with increased frequency as part of the overall Sanctuary Ecosystem Assessment Surveys (SEAS). SEAS will incorporate data sets from a suite of surveys in the coastal, pelagic,

and intertidal habitats throughout the sanctuary. SEAS monitoring programs assess abundance and distribution patterns and link habitat quality parameters. The sanctuary is developing an offshore monitoring program to assess occurrence patterns of vertebrates using standardized at-sea methodology. This will enable Beach Watch to determine how beach deposition rates of each species, as well as age classes within species, compare to those found offshore. We can, in turn, infer whether a perceived mortality event simply reflects higher abundance offshore, or has an environmental or epidemiological component.

Beach Watch data will be disseminated in a variety of ways to increase the accessibility of the database. All SEAS data sets will be available to regional marine research and integrated ocean observing systems, such as the Central and Northern California Integrated Ocean Observing System (CeNCOOS) from Point Conception, California to Oregon. CeNCOOS is a marine research consortium consisting of public and private institutions in the central and northern regions of the California coast. The Beach Watch database now allows for easy access to the live and dead vertebrate data through a suite of standardized queries. This database is available to the public on a computer workstation at the GFNMS headquarters, and will be available online by the end of 2008.

TABLE 1. Results for dead gulls collected on Francis Beach (Beach 4–05, Half Moon Bay), necropsied by California Department of Fish and Game.

Date of Necropsy	Species	Age	Sex	Cause of death
10 Feb 2004	Western Gull	Hatch year	Female	Aspergillosis/Emaciation
10 Feb 2004	Western Gull	Hatch year	Female	Aspergillosis/Emaciation
10 Feb 2004	Western Gull	Hatch year	Female	Aspergillosis/Emaciation
10 Feb 2004	Western Gull	Hatch year	Male	Aspergillosis/Pneumonia
10 Feb 2004	Western Gull	Hatch year	Female	Aspergillosis
14 Jan 2005	Glaucous-winged Gull	Immature	Female	Emaciation/Aspergillosis
1 Feb 2005	Western Gull	Adult	Female	Emaciation/Aspergillosis
1 Feb 2005	Glaucous-winged Gull	Adult	Female	Gastrointestinal problem
1 Feb 2005	Western Gull	Adult	Male	Aspergillosis/Emaciation

ARTICLE - Beach Watch surveys

ACKNOWLEDGEMENTS

We thank all of the dedicated Beach Watch volunteers, past and present, who have tirelessly walked their beaches to provide this data. Thank you to Rich Stallcup for identifying and aging every dead bird slide for the past 12 years. Thank you to the office volunteers who have helped catalog slides and check data, especially Emma Moore and Marguerite Finney. Thank you to Jim Ferlin for making the data readily available through his Access interfaces. We are appreciative of the editors and their helpful comments, especially Jennifer Saltzman and Peter Pyle.

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[This is a peer-reviewed paper]

FORUM

The Forum section gives PSG members a place to express their opinions on topics of concern to the group. Viewpoints published here belong to the individual writers and do not represent PSG policy. Another viewpoint on the issue discussed below appeared in *Pacific Seabirds* for Fall 2006.

A MORE FOCUSED ANALYSIS OF ECONOMIC GROWTH AND ENVIRONMENTAL DEGRADATION

Steve Hampton

The views expressed here are solely those of the author.

Several organizations of professional biologists, from The Wildlife Society to the Pacific Seabird Group (PSG), have recently found themselves confronted by calls to address global economic issues associated with environmental degradation. Specifically, it has been suggested that these organizations adopt a policy statement that “economic growth” is fundamentally at odds with environmental protection. The statements go on to suggest that governments should adopt macroeconomic policies that promote a “steady state economy” without growth. This paper addresses this debate. Part I challenges this premise as overly vague and general by providing a more detailed examination of the components of economic growth. Part II focuses the discussion on specific economic problems that result in environmental harm in wealthy nations, and identifies specific policies that address these problems. Part III does the same for poor nations. Part IV concludes and suggests that PSG adopt an environmental code of ethics consistent with these concerns.

I. ECONOMIC GROWTH

Economic growth may be measured in many ways, but is typically an increase in “gross domestic product” (GDP). It has two multiplicative components as seen in the equation below:

$$\text{Economic Growth} = \text{Per Capita Consumption} \times \text{Population.}$$

Consumption refers to both goods and services. Economic growth, as a public policy, is not a well-defined program; it is simply a goal. Like capitalism, it may occur without any government policy or promotion (or in spite of it) whenever two individuals make a trade and each believes they are better off. Economic growth enables people to rise out of poverty and to consume more goods and services. Such growth is a goal of every nation, ideally achieved with population steady and per capita consumption rising. Achieving this goal is not always easy and regularly eludes policy-makers (e.g. in times of recession; throughout many of the world’s poor nations). Moreover, environmental degradation occurs just as often, perhaps more often, in poor nations without economic growth as well as in wealthy nations during times of recession.

Focusing on the equation for economic growth, it is easy to imagine how either booming populations or consumption can lead to environmental harm. In today’s divided world of rich and poor societies, the different components of the growth equation are displayed in stark relief. Populations are relatively steady in wealthy nations, but per capita consumption is high and increasing. The situation is reversed in poor nations, where per capita consumption is much lower and often not increasing, while populations are rising quickly. Environmental harm occurs in both contexts, but for very different reasons, and thus

with different solutions and policy prescriptions. Simply calling for an end to economic growth will not address the specific problems. Arguably, a cessation of growth could lead to greater poverty and environmental harm.

II. MARKET FAILURES IN THE WEALTHY NATIONS

In wealthy nations, population is relatively stable but consumption is increasing. This has resulted in exploitation and pollution of natural resources. These are market failures. Two of the most common market failures that occur in growing economies are: 1) pillage of the commons; and 2) negative externalities.

Pillage of the commons occurs when an individual or company seeks to over-exploit an open-access resource for personal gain, often as quickly as possible before competitors arrive to share in the plunder. A classic example of this is the historical eggging industry on the Farallon Islands in the 1800s, which devastated the colonies of Common Murres (*Uria aalge*) there.

Negative externalities are side effects of an economic activity that result in harm to others. Environmental examples would include oil spills and accidental rat introductions as a result of modern oil extraction and shipping, seabird bycatch as a result of long-line fishing, global warming as a result of fossil fuel use, the destruction of grebe nests as a result of recreational watercraft, or the loss of

FORUM

a seabird colony as a result of human development, whether it be a hotel or a fishing camp. In these examples, the producers and consumers are interested in other goods and services and may care little about the birds, even though others in society may care a great deal. Unless they are constrained or made to pay for these injuries, they have no incentive to alter their behavior.

The standard solution to these market failures is government intervention, either by direct regulation or by taxes or subsidies that alter the incentives of producers and/or consumers. Examples include hunting regulations, pollution control measures, and restrictions on public access to seabird nesting islands. Truly functioning markets that protect the interests of society require such intervention to constrain or to alter the incentives of private individuals, who may seek to over-exploit or pollute for personal gain. Economic growth can and does occur when these market failures are corrected. Moreover, in such contexts, economic activities that might rely on the otherwise injured or depleted resources become sustainable, while the larger interests of society are protected. The Farallones are now protected and eggs come from chicken farms. In New Zealand, Maoris regulate themselves regarding the sustainable harvest of Sooty Shearwater chicks. All new oil tankers are now double-hulled. Commercial anglers in Alaska are required to alter their fishing methods. These measures may involve extra expense or cost short-term economic gains, but they reflect the overall desires of society and incorporate society's wishes to protect these resources from unsustainable exploitation or degradation. While the price of oil or fish may rise as a result of such new regulations, the higher cost more closely reflects the true social cost of producing the product.

III. UNSUSTAINABLE RE-SOURCE USE IN THE POOR NATIONS

In poor nations, consumption is often relatively flat (or even declining) but population is increasing. The market failures described above may exist. Indeed, pillage of the commons and negative externalities are often worse than in wealthy nations, as impoverished governments are hard-pressed to restrict exploitation, either because they cannot enforce laws or are unwilling to increase costs for an industry. The primary problem in poor nations, however, is that impoverished individuals may be making rational decisions to exploit their own privately-held resources.

One out of every six people on the earth lives in extreme poverty. Faced with a daily struggle to meet basic food needs, they are essentially cashing in the earth now in order to stay alive. The result is degradation on an equally or more massive scale than what a First World company could do. The most common example is the massive deforestation and habitat destruction that arises from the need for wood for cooking fuel and land to plant crops. The denuded landscape of Haiti, whose border with the more forested Dominican Republic is easily seen from space, provides the most dramatic example of the close relationship between poverty and environmental destruction. In this context, seabird colonies are viewed as opportunities for a protein windfall, not resources to be sustainably managed. Seabird colonies around the world are threatened by exploitation by the desperate poor; many are already extirpated. In a discouraging positive feedback loop, such poverty leads to larger family size, which further fuels the cycle.

The obvious solution here is, ironically, economic growth and the elimination of extreme poverty. Measures such as Third World debt relief, which would

free up hundreds of billions of dollars annually for education and other services, or fairer trade, may simultaneously contribute to seabird colony protection in impoverished nations.

IV. OUR NEXT STEP

Whether it be against unrestrained consumption in the United States, or exploitation in Africa, PSG and other associations of professional biologists are well positioned to address these problems. We come largely from the wealthy nations. That is where greater government regulation is needed, and that is where debt relief and improved terms of trade with poor nations must come from. Rather than focusing on economic growth in general, I suggest our efforts be targeted at specific market failures, urging our governments to force private individuals and companies to respect the larger interests of society. To address the exploitation associated with poverty, I suggest we also join the calls for Third World debt relief, an end to extreme poverty, and support for the United Nation's Millennium Development Goals.

Finally, PSG could set an example by simultaneously restricting our own consumption. We can pledge to avoid fish species associated with bycatch and perhaps even build in a budget for carbon offsets into every research proposal, making travel to distant seabird islands carbon-neutral. In this way, we would be applying the true social cost of our fuel use as we seek to study and protect seabirds. We can start making a difference while waiting for government to act.

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LIFETIME ACHIEVEMENT AWARD

The Pacific Seabird Group occasionally honors outstanding contributors to seabird science and conservation with Lifetime Achievement or Special Achievement Awards. At the 34th Annual Meeting on 10 February 2007, PSG honored two outstanding people: Michael P. Harris for Lifetime Achievement and Edward F. Melvin for Special Achievement. Our tribute to Mike Harris follows; that to Ed Melvin will be printed in a following issue.

MICHAEL P. HARRIS

Scott A. Hatch

In the sciences, the measure of one's career is based in large part on the legacy of published research products one leaves in the wake of a life spent in pursuit of original knowledge. But there is another dimension, less tangible or quantifiable—namely, the influence exerted on the lives and works of others in the same discipline—which has the potential to multiply one's impact many-fold. Perhaps the best way I can describe this latter effect in the case of M.P. Harris is by way of a personal anecdote.

When I was just getting started in seabird research in the mid 1970s, working as a new and inexperienced graduate student on the Semidi Islands in Alaska, I spent a fair amount of time in camp during slow or rainy periods reading papers on seabirds—just about



Mike Harris reaching down a seabird burrow around 1964...

...and in 2004



anything and everything I could get my hands on. I was a *tabula rasa* when it came to seabird science, and certainly I had not yet contributed anything to the field myself. So I was actively in search of role models.

At that time, my reading included multiple papers and/or books by a number of authors who came to constitute in my mind a sort of pantheon of sages and luminaries in the world of seabird biology. Even now, a few names come readily to mind: L.E. Richdale, D.L. Serventy, M.P. Harris, J.C. Coulson, N.P. Ashmole, C.M. Perrins, R.M. Lockley, V.C. Wynne-Edwards, W.R.P. Bourne, J.B. Nelson, among others.

LIFETIME ACHIEVEMENT AWARD - M.P. Harris

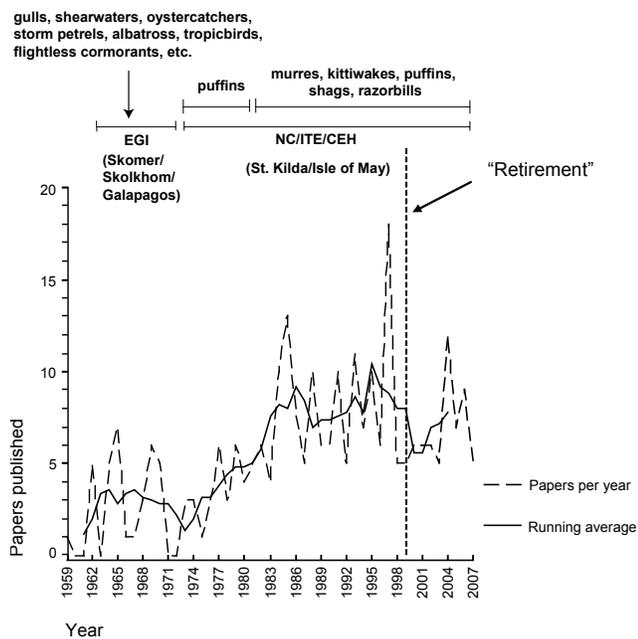


FIGURE 1. A lifetime of sustained output—the publishing history of M.P. Harris. (Acronyms are defined in the text.)

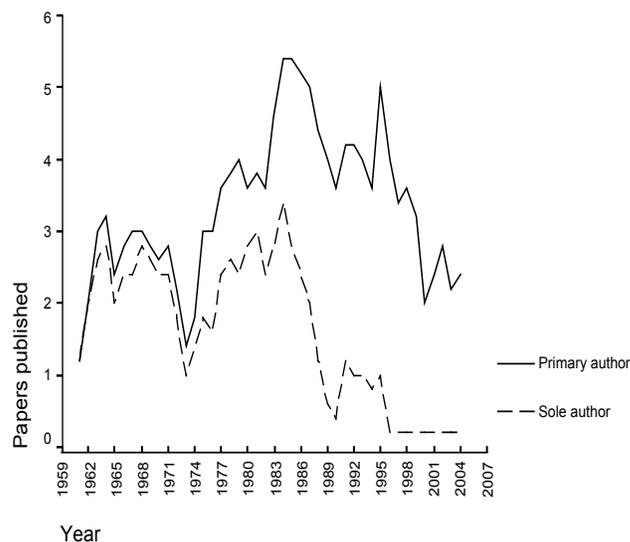


FIGURE 2. M.P. Harris demonstrates consistent leadership in the publication of research findings.

There were a couple of things that impressed me about this cadre of seabird gurus. First, they all seemed to be subjects of the British Crown. Second, they seemed not to have any given names, only initials. That oddity, of course, only tended to enhance the aura these people assumed in the minds of those of us who read all the papers and books and, naturally, wondered what their authors might be like in person. For me, one name on the list stood out in relief—M.P. Harris.

I kept a little 3-by-5 card file at the time to index all the papers I had accumulated—sorted alphabetically, and usually carrying little notes on content once I had read them. Regrettably, this was not a discipline I maintained for many years, and today the mere existence of a 3 by 5 card file seems quaint. Nevertheless I still have the thing in my office, and when I consulted it recently I found that I had already in those years—the mid 1970s—no fewer than 18 papers by M.P. Harris—more I think than any other single author. Of course I learned subsequently that the 18 papers at issue were in fact just a fraction of what M.P. Harris had produced already by that point in his career. Like Butch Cassidy and the Sundance Kid, I found myself repeatedly

muttering to myself the question, “Who is this guy?”

As time went on and I was privileged to travel to meetings, at which some of the people on my A-list of personal heroes happened to be present, I was able gradually to decode some of the mysterious initials, putting not only faces, but also *first names* together with the surnames. This always felt like a sort of mini career achievement of my own when I was able to do it. I felt more and more like I was part of the “in-crowd” perhaps, because I knew that J.B. Nelson was Bryan Nelson, J.C. Coulson was actually John Coulson, W.R.P. Bourne was Bill Bourne, C.M. Perrins was Christopher Perrins (probably “Chris” to most who knew him—still Christopher to me—but this, nevertheless, was progress). And so it went, although I must admit there are still some on that early list of heroes whose initials I have not yet decoded.

I do not recall exactly when I was able to decode the “M” in M.P. Harris to Michael—and then, better still, to just “Mike” (as in “Hey, Mike, good to see you again, how’s it going?”)—but surely that was a wondrous thing. I know the first time I met Mike in person was in

1985, when he and Sarah Wanless visited Alaska on a sightseeing excursion, and my boss at the time, Cal Lensink, was kind enough to introduce us. My recollection is that we all went for a day trip by car on the Kenai Peninsula south of Anchorage, and it was a great thrill for me to make the personal acquaintance. All these years later, myself having somehow survived in the seabird business, it is personally gratifying to record, on behalf of the Pacific Seabird Group, a few notes pertinent to the Group’s Lifetime Achievement Award, so richly deserved by a colleague whose *initials*, of all things—but more importantly, whose life’s work—made such a lasting impression on me during my early, most formative years as a professional.

Mike Harris spent his own formative years in Wales, completing both his undergraduate and graduate work at the University College of Wales in Swansea. His external examiner for the PhD degree, conferred in 1962, was none other than David Lack—so we see at once that Mike has a solid academic pedigree. Lack apparently was impressed enough with the scientific aptitude of the young M.P. Harris that he brought him to the Edward Grey Institute at Oxford

LIFETIME ACHIEVEMENT AWARD - M.P. Harris

University (EGI), where Mike stayed, or at least remained affiliated, for the next ten years. He worked under two post-doctoral research fellowships while at the Edward Grey Institute. The first was an assignment to study the seabirds on the Pembrokeshire islands of Skomer and Skokholm, and in particular to revitalize the work on Manx Shearwaters (*Puffinus puffinus*) that had been started there by R.M. Lockley in the 1930s. The second post-doctoral position took him to the Galapagos Islands, where he was charged with investigating the ecology of storm petrels, of which three species bred in the islands, including the uniquely diurnal Wedge-rumped Storm-Petrel, *Oceanodroma tethys*. In addition to doing a characteristically thorough job on the storm-petrel project, Mike also studied and published extensively on a number of other seabirds in the Galapagos, including Waved Albatross (*Phoebastria irrorata*), tropicbirds (*Phaethon* spp.), flightless cormorants (*Phalacrocorax harrisi*), and others, and in 1975 he published the first complete field guide to all the birds of the Galapagos Islands.

There was a lot of shuttling between the Galapagos and Britain during those years, 1963 to 1972, but finally in 1972 Mike moved back to Britain to stay,

residing in Edinburgh for a brief time, then landing a position with what was then the Nature Conservancy (NC; later to be called the Institute of Terrestrial Ecology [ITE], and later still the Centre for Ecology and Hydrology [CEH]). In particular, he moved into that agency's Banchory field station, a few kilometers from Aberdeen.

At the outset, Mike's marching orders in his new job were to investigate the pattern and causes of a steep decline in numbers of Atlantic Puffins (*Fratercula arctica*) on the west coast of Scotland. He chose to do this through a comparative study of the species at St. Kilda, representing the west coast, and the population on the Isle of May on Scotland's southeast coast, where puffins were increasing in number. Mike conducted his characteristically ground-breaking work on puffins with great thoroughness and skill, publishing many papers in a series that continues up to the present time, and resulting in the definitive monographic treatment of Atlantic Puffins, a book published in 1984, titled simply and appropriately, "The Puffin."

The decision to go to the Isle of May in the early 1970s proved in retrospect to be a momentous one, because it gave



Katie O'Reilly gives Lifetime Achievement Award to Mike Harris.

Mike a foothold on that wonderful little island in the Firth of Forth, close to his home, easy of access, and rich in seabird life. The work on the Isle of May has continued uninterrupted to the present day. Over the years, Mike progressively added more species to the core program of monitoring and research on the Isle of May, including Kittiwakes (*Rissa tridactyla*), Common Murres (*Uria aalge*), Shags (*Phalacrocorax aristotelis*), and Razorbills (*Alca torda*).

A defining characteristic of Mike's career has been his exceptional productivity of high-quality published products from his research. He lives by a credo which, in his own words, states that the publication of one's research findings is an obligation, not an option. It is not feasible to review here in even a cursory manner all of Mike's published findings, but a few metadata may convey a sense of how Mike has conducted his career according to his convictions.

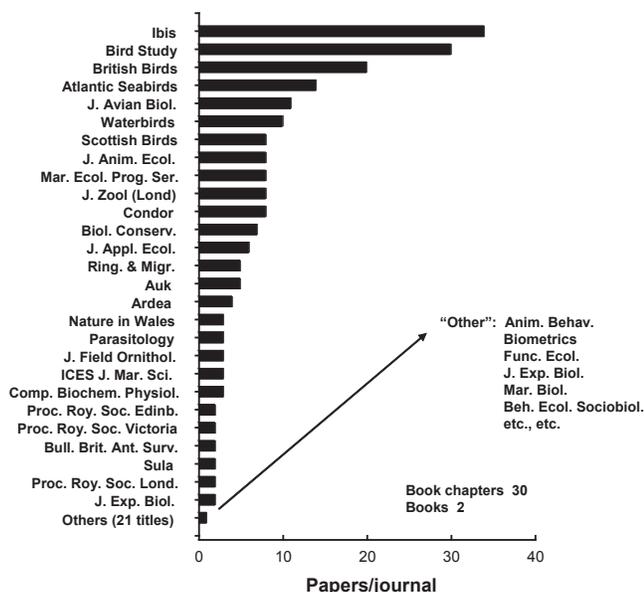


FIGURE 3. Many of the world's leading biological journals have published the work of M.P. Harris since 1959.

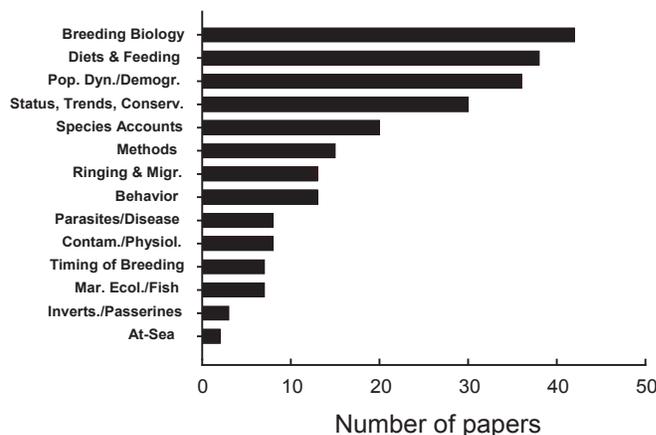


FIGURE 4. The research interests of M.P. Harris run the gamut of potential topics in the population ecology of seabirds.

LIFETIME ACHIEVEMENT AWARD - M.P. Harris

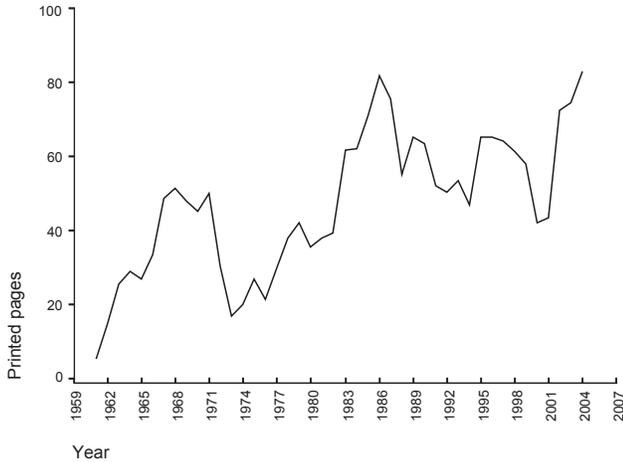


FIGURE 5. The formidable output of M.P. Harris—a seabird scientist who “hates to write.”

For starters, I plotted the number of papers published by M.P. Harris in each year from 1959 to the present time, and smoothed the plot a little by computing the 5-year running average (Figure 1). We see that Mike’s productivity has basically increased steadily over his career, starting at a “mere” 3 papers or so per year and climbing to anywhere from 5 to 10 contributions a year, with notable spikes, such as the 18 papers that appeared with Mike’s name on them in 1997. But, alas, notice how dramatically Mike’s influence has declined since his retirement in 1999, with only 5 to 10 papers published annually since then—but including, admittedly, 5 papers already published or in press in the first half of 2007.

All kidding aside, the total of Mike’s publications—counting journal articles, book chapters and so on—now exceeds 260. And there have been a couple of books thrown in for good measure. Most impressive, to say the least.

Lest one imagine that all this productivity has somehow resulted from riding on the coattails of others, note that, on the contrary, Mike has been the senior or sole author of a very large percentage of all the works that bear his name (Figure 2). The plots are both running averages, and we see that while the number of sole authorships has declined over the latter half of Mike’s career—consistent with the tendency toward collaboration and teamwork in field research in

our profession—the rate at which senior-authored papers have appeared has remained high, at 3 to 5 papers per year, sustained over a period of about 45 years.

Mike publishes mainly in high-quality, high-impact journals (Figure 3). Over the years, he has favored with his work the pages of *The Ibis* more consistently than any other journal, but there is scarcely a notable journal that might conceivably publish the results of seabird research that has not accepted and published one or more of Mike’s papers—many of them 5, 10, or more of his contributions.

As to the breadth of Mike’s interests in seabirds and his contributions to our understanding of them, he has been solidly grounded in what I would characterize as the “Big 3” of colony-based seabird research—breeding biology (with more than 40 papers), diets and feeding ecology (with close to 40 papers), and population dynamics and demography, also with nearly 40 papers (Figure 4).

A final bit of quantitative work on Mike’s publication record shows the number of printed pages (again, as a 5-year running average) that have appeared under M.P. Harris’s byline annually since 1959 (Figure 5). Again, we find a distinctly increasing trend over the course of the career, with the running average generally falling in the range of 20 to 80 or 90 printed pages a year.

The total of all that comes to something over 2300 printed pages in journal articles, book chapters, and so on, plus two books, which brings the overall total to nearly 2700 printed pages. In the publishing business, about one printed page is planned for every four pages of manuscript. So the 2700 printed pages represents something on the order of 11,000 manuscript pages.

In a recent biographical sketch that John Croxall and Sarah Wanless prepared on the occasion of Mike’s receiving the Godman-Salvin medal of the British Ornithologists’ Union (*Ibis* 148:591-592, 2006), the authors expound his extraordinary productivity, of course. But they also reveal the surprising fact that Mike (quoting here) “hates to write.” Thus, I might summarize all this by noting that, for someone who hates to write, 11,000 pages of manuscript is an astonishing display of self-discipline.

These days, Mike freely expresses his personal debt to Sarah Wanless, who is not only the wise choice he made as a life partner, but who has also been an invaluable partner in research—particularly on the Isle of May, where Sarah’s work, in conjunction with Mike and others, is continuing the long tradition of a steady stream of high-quality publications on seabird biology. Upon his retirement in 1999, Mike officially passed the baton for leadership of this group and their continuing efforts on the Isle of May to Sarah. I think Mike would agree readily that the scope of his lifetime achievement includes not only his large personal contribution of research findings, but also his vision and realization of a unique research station that no doubt will foment seminal research on oceanic birds and their environment for many, many years—truly the kind of gift that keeps on giving.

It is interesting to juxtapose two pictures, taken about 40 years apart, showing the young Mike Harris, and the young-at-heart Mike Harris, with his arm down a seabird hole on a Scottish isle. One has to wonder how many seabirds saw those same terrible fingers approaching them at one time or another in the interim. And the peril has not passed—in winter 2007 Mike could be found preparing, eagerly and impatiently, for yet another season amidst the heather, the ocean, and the birds on the Isle of May.

It is with great admiration and pride that the members of the Pacific Seabird Group confer the society’s Lifetime Achievement Award on Michael P. Harris, a founding member of PSG, and a continuing inspiration to seabird researchers, young and old, worldwide.

OBITUARY

JAMES O. KEITH

Daniel W. Anderson

James O. Keith, longtime PSG member, died on 30 May 2006 at his home in Centennial, Colorado after a long bout with pulmonary fibrosis.

Jim was born on 20 March 1932 in Pasadena, California. He married Berniece Schultz in Tulare, California in 1949, and stayed married until his death. Berniece and Jim had five children: Edward, Paul, Joan, Ellen, and Ann. Sadly, Paul and Joan predeceased him.

Jim graduated from Cathedral High School in Indianapolis, Indiana in 1949. He received a BA in Zoology from the University of California, Berkeley in 1953; an MS from the University of Arizona in Tucson, working on the ecology of Abert's squirrels, *Sciurus aberti*; and a PhD in 1978 from the Ohio State University in Columbus, where he studied contaminant/food interactions in California Brown Pelicans (*Pelecanus occidentalis californicus*) and Ringed Turtle Doves (*Streptopelia risoria*). Jim was employed by the U.S. Forest Service from 1956 to 1961 and by the U.S. Fish and Wildlife Service (USFWS) from 1961 to 1989, when he retired. He was an expert natural historian, ecologist, ecotoxicologist, and wildlife management specialist. Jim produced over 50 publications during his career, some of them becoming "classics." But this doesn't say anything about Jim Keith as a person and a friend.

A long time ago in Tulare, Jim Keith told me more than once about how his younger charms had wooed away one of this little town's best-looking and most talented young ladies. But in fact, as Berniece tells the story, it was she who first called him "Bad Jimmy." This was because, as a sixth-grader and new arrival in town, Jimmy Keith pestered her and tricked her into giving him bike rides while he held onto her waist, probably with this "Jim Keith grin" on his face.

Was it this life-long mischievous nature of Jim's that nearly always endeared him to people he met for the first time—except perhaps for Berniece right at the beginning? Not always, because those whom Bad Jimmy did not like—such as blustery, know-it-all bureaucrats, "sell-out" scientists, or lying politicians from his adult life—got the message from his wonderful sense of humor, but also his dead-serious attitude about things that really mattered in life, that one had better always strive to be on his good side. And with Berniece, "Bad Jimmy" soon wore off anyway, and a marriage that endured Bad Jimmy's antics lasted over fifty years.

In fact, I only now call him "Bad Jim" because we teased him about it all the time (as he teased back). He was proud of the "handle," and everybody knew it was used only as an oxymoron among his friends and colleagues. Shucks, he called me "Tidy Two Shoes" because I had to have the boat clean and orderly all the time; I couldn't help myself. But how many times did Bad Jimmy come along behind me as I diligently scrubbed the decks of the boat? He would drop some food or kick some dirt onto my clean surfaces and look up at me with this same grin of his, as if to say: *Lighten up and enjoy the journey, not just the destination.* Anybody and everybody who came with us into the Sea of Cortez (or any of our other study sites) got a nickname (and still gets one). Various places on the islands also received our personal touches: *Jim's Beach, Anderson's Uplands, Dez's Uplands, Zig-Zag Canyon, Kirke's Beach, Rod's Rocks, Covelett, Cobblestone Beach, Lost Basin, Cholla Basin, Big Cactus Basin, Lost Basin, Downtown, Suburbia*, and many others. And *Fishing Rocks*—this was Jim's favorite place, until we foolishly told some local fishermen about the many



Jim on Brown Pelican survey, Isla San Francisco, Gulf of California. (Others on cruise were Dan Anderson, Ken Briggs, and Ron Cole.) 26 April 1982

large cabrilla that were there, and next day, they promptly came over and fished it out. Radio-tagged pelicans also each got an individual name; *Sunday's Gal* was Jim's favorite. He started it all.

Importantly, it was Jim and Berniece who helped make me want a family. For example, when I first went to Mexico with Jim in 1971, on one occasion we somehow ended up in Bahía de Kino, Sonora, with most of his family. (All were there but Ed, including giggly little Annie, serious/contemplative Ellen, and easy-going Paul—they were all different.) We were camped in the trailer park near the Kino Motel, a favorite hangout of the gringo campers. Jim and Berniece welcomed me in like a family member. Drinking beer, soon I found myself facing a group of four or five mean-looking rednecks from Oklahoma, and drunker and rowdier than us. We had all been attracted to the noise when we saw these big mean guys harassing a skinny, hippy-looking kid of about 14, whose

OBITUARY - Jim Keith



Dinner on stern of *Pelícano Uno*, anchored off Punta Chivato, Baja California Sur, in a wind storm. 14 March 1973.

parents were a couple tents down the line but were apparently afraid to come out to defend their son. Well, these redneck cowards were acting tough and ganging up on this kid. The kid was scared as hell and didn't have a chance against them. I looked at Paul, Jim's youngest son; Paul looked at me as I decided to walk over and defend that kid. Jim said, "Be careful, I am not coming over to pick you up when they knock you on your ass." But stupidly, I walked over there anyway and told them to quit. They stood up and all faced me directly, scowling; it looked like I was in for a beating perhaps or at least a little kick in the ass like Jim had warned. I know I was thinking "Oh-oh, I am in for it; I'm alone." But I looked right behind me and there stood big old Paul, all of 16 years old, but ready to help me take them on, no fear whatsoever. The rednecks backed down, the kid was left alone to scurry away back to his parents, and soon I was back with Jim drinking the beer he handed me as I returned.

I knew then, however, that anybody who had a brave son like Paul had to be a good parent. Yes, Berniece always had a lot to do with it, too. Those lucky kids had great folks! The rednecks stayed quiet and sheepish for the rest of the

night, too. It was getting to know Jim's family, I think, that made me realize this was the only way to live a life. Many of my scientific colleagues were so intense in their scientific pursuits that it dominated every moment of their lives. That could have been me, too, but for Jim and Berniece. Since then, we've shared experiences with each other's families; and that was Jim's most important role to me as a lifelong mentor: making me realize that *family always comes first*.

Then Berniece also reminded me recently that it had worked both ways. Just a couple of years ago, Jim was anticipating attending an important scientific meeting; but to do it, he would have to postpone his 50th wedding anniversary. Turning Jim's own philosophy around this time, I told him: "Get your butt home for that anniversary." He went home for the anniversary.

Then there was Jim's professional scientific mentoring, no less important to me. After working with Jim in the field for many years, I came to regard him as one of (if not THE) very best of our scientists and field biologists in ecotoxicology. Jim was a genuine original thinker. As a new, green scientist in the USFWS, and as I got to know the agency,

I came to consider Jim as one of the "heirs-apparent" for future USFWS directorship or other high-level leadership. There was good reason for this; Jim was a rising star in the USFWS when I first met him. In that regard, I had also frequently admired Jim's fearlessness and frank honesty in speaking out at meetings with his superiors (always truthfully, as there was never any "BS" in anything he did professionally; Jim Keith was the "real item"). Of course, some of his superiors didn't like it, but I hoped that eventually a lot of this truth and bravado would rub off on me. To heck with the superiors!

I remember one instance when Jim had turned down an opportunity to move up in the bureaucracy. (I think it was to go to Washington, D.C. to head up some big program). Using his type of outspokenness myself, I scolded Jim when he turned down this opportunity (as I saw it). But Jim scolded me right back:

"Listen Dan, dammit, I could go on to become a bureaucrat, and when I eventually retire, they will give me a nice watch with a nice engraving on the back; I will put it into my pocket, tell everybody thank you, and then walk out. Everybody will soon forget who I was. But if I continue on as a scientist, I will publish my work. If it is good, it will be there for all time."

How many stories could I tell? Well, many. But most important, we've come safely through a lot of really bad weather in the Sea of Cortez together, too. Lots of that weather was of the kind that people do not come home from (and a lot of kayakers, fishermen, and even some scientists didn't come home from it). But we always made it. I especially remember one instance early on, when Jim got antsy while we waited for a windstorm to subside in Bahía de los Angeles. This was late 1972, and a combination south plus east wind was blowing hard. (When the south winds get really bad, the locals call them the *Chubascos*; and Jim's advice for any bad wind was always *duck into some safe cove and wait it out*.) This time, wind was whipping up "white horses" (large, wild whitecaps) on top of six- to eight-foot rollers. But also this time, Jim

OBITUARY - Jim Keith

had forgotten his own advice and gotten impatient when we had to wait around so long. This day he just couldn't take it any more, because he had recently arrived on a long trip from Denver, and he wanted to get to the islands. But Rod DeWeese and I had been in the Gulf of California for about four weeks already and had been fighting those damned winds (from one direction or another) most of the time—we wanted no more of them. The *Oestes* were really the worst winds, and even Antero Diaz (the “king” of the Cortez) feared them. Jim and I, and others, had had our share of *Oestes* as well.

But back to that day. At that stage of my own career, I was still in awe of Jim and not wanting to challenge his authority. So I relented, we packed the boat, and we headed south for San Lorenzo, right into the winds. Antero was leaving, too, in his 90-foot *San Augustine*, and the waves were rocking him around as well. The three of us in *Pelicano* (all of 20 feet long) were following Antero and trying to get some relief in his wake—it wasn't working. *Pelicano* was rolling up, down, and sideways in the waves, an occasional wave almost breaking over the bow and spraying us all until we were soaked. We were wet, cold, and miserable, and we got about as far as the channel between Isla Cabeza de Caballo and Islas los Hermanitos, taking a beating all the way. We were about to enter the “open water country” of the Canal de los Ballenas, with thousands of “white horses” coming up from the south.

About that time, and quite uncomfortable with the situation, I recalled something Jim had told me before: *The captain of the boat always makes the final decisions*. I looked him straight in the eye and said: “I don't want to risk this any more and I am the captain; we're going back.” Bad Jim (I was thinking “You got me into this”) nodded his head “yes” without an argument, and we turned around. It was an easy journey back with following waves, but nobody spoke until we had the boat safely anchored out in front of Casa Diaz. As usual (and to our last days together), we sat around and drank a few beers, safe back in Bahía de

los Angeles or someplace else, planning and scheming our next moves. Jim leaned over and quietly encouraged me: “Dammit, I am glad you turned her around, I didn't like it out there at all.”

And the only time I recall where Jim and I might have come to some disagreement were the kinds of times, right up to our last trip to the Sea of Cortez in 2002, where we debated who was going to be the “boss” this time. But we always worked it out, and once it was decided, there was never any more argument. It was: “Okay, Jim, you are in charge today,” or “Okay, Dan, you are in charge today.” No more problems: “Let's get out and get some science done.”

I would sum up Jim's mentoring with an old term that has been tossed around a lot amongst biologists (I don't know the originator, but what the heck, it might have been Jim himself—he sure practiced it): *Be firm, but gentle*. It's applicable to the handling of animals, people, and equipment (maybe spouses, too). Bad Jim always had fun doing research, always; just like me. That was something about each of us that we shared. He loved ten-foot waves with “white horses” and he loved dead-calm waters, wandering the desert identifying plants and animals, talking about his work and the work of others, as well as the ramifications of it all in the bigger view, always in a personable way. I saw Bad Jimmy angry, but I never saw him unfair.

I remember the first PSG meeting that was held in La Paz, Baja California, México, the 1986 Annual Meeting. Our then 6-year-old daughter, Katie, nervously engaged in a little rock and roll with Jim at one of the local bars one night, while we were dining and partying after the meetings. On one of the spins, Jim's finger accidentally caught Katie's brand new Mexican necklace, ripped it off her neck, and scattered beads all over the floor. Other people dancing around the two were tripping on the beads and Katie was devastated and cried loudly for a few minutes. Next thing you know, Jim disappears and we go on with our eating and drinking, still listening to that crazy Mexican rock and roll music that

was playing. Soon he returns with a new, nicer necklace. He presents it to Katie with a smile. Now how could you think he was Bad Jimmy? Katie talks about this incident to this day at twenty-six.

Yes, “Bad Jim” lived up to his endearing nature. Five or six years ago, my teenage daughters Helen and Katie spent some time with Jim and me, Eduardo Palacios, and others in Bahía de los Angeles at Tony Resendiz's Campo Archeon. It was one of our favorite places, and Tony was (and still is) one of our best mutual friends. Jorge Mendoza might have been there, too, but I don't remember any more (I hate getting old!). Jim was in camp relaxing with the girls one afternoon, walking around in his sandals. The girls looked at his feet and said, “Jim, those feet look awful, let's fix 'em up.” For the next hour or so, there the three sat, Jim leaning back, drinking the beers I carried to him, with his feet up on the table, and Katie and Helen each giving one of Jim's feet a pedicure. The rest of the week, Jim walked around camp with pretty red-polished nails.

El Niño was also a big part of our research. But during such an event, the marine ecosystem in the Gulf of California just “shuts down,” so there isn't much work to do regarding Brown Pelican nesting and productivity—few birds, few nests, few young—a 3-day survey turns into a half-day survey or less. Thus we did a lot of sitting around at camp during the 1998 El Niño, so much, in fact, that Tony Resendiz temporarily changed the name of our research project from “Pelican Research Project” to “Beerlican



Jim setting a time-lapse camera to record brown pelican behavior, Isla Animas, 20 May 1980. By Dan Anderson.

OBITUARY - Jim Keith

Project.”

I could tell many more “Bad Jimmy” stories, but I’ll stop here. In fact, I only retain that nickname because Jim liked it so much himself. Last spring, when Jim was getting sicker (more than I could imagine), he advised me once again. He told me that he had decided to only drink the very best of his favorite liquors: “No more of that cheap stuff for me.” At the second PSG meeting in La Paz, in 2004, we had shared a \$100-dollar bottle of Scotch whiskey that was a gift to me from Mike Harris; and it had been fun. This

time, I intended to return from Mexico with an expensive and exotic bottle of Cuban rum (“Havana Club, *siete años añejo*”), smuggle it into the U.S., and make a visit to Denver in August to sip this fine rum with Jim, perhaps for one last time.

But even that was not to be. In fact, one day in late May at Bahía de los Angeles, I returned from the islands with a first-time-in-my-life disaster—a compound dislocation of my middle left finger. That was the same finger I had raised to the sky from a small offshore rock, no more

than 20 minutes before I broke it, in defiance of the still-blowing strong *Oeste*. A 60-mph gust of wind at Smith Island had ripped my boat off its two anchors in pitch darkness and blown it onto these rocks. Ultimately the boat was saved; but when a very unseasonable *Oeste* had blown like this all the night before, and so strongly, it just felt as if something was terribly wrong, somewhere. And it was. Jim died on 30 May 2006. I will raise my glass of Cuban rum to you, Bad Jim, because you certainly made my life much richer.



Jim Keith with colleagues on Isla Animas (San Lorenzo Norte), Gulf of California, Mexico: celebrating Jorge Mendoza’s birthday after a day-long pelican and peregrine census. From left to right: Jorge, Dan Anderson, Ed Keith (Jim’s son), Jim, and Renato Mendoza. 21 May 1980. By Dan Anderson.

CONSERVATION REPORT

Compiled by Craig Harrison

A SEABIRD HERO: MAUI MAN SAVES A SEABIRD COLONY

For most of his 74 years, Isao Nakagawa considered Hawea Point, Maui, as simply a good place to catch bait fish. About seven years ago, he discovered 22 dead Wedge-tailed Shearwaters (*Puffinus pacificus*) that had been killed by feral cats or dogs. He was inspired to launch a one-man campaign to remove predators from the area to protect shearwaters that come ashore in late March and April to nest in burrows. In 2005, 127 fledglings were banded, and his efforts have inspired volunteers to adopt Wedge-tailed Shearwater colonies elsewhere on Maui. While most of Hawaii's Wedge-tailed Shearwaters nest in the Northwestern Islands, several colonies can still be found in the main islands, where they are vulnerable to attack by dogs, cats, mongooses (*Herpestes javanicus*) and rats (*Rattus* sp.). The 275 burrows at Hawea Point represent the largest of seven known colonies on Maui. Shearwaters were scarce on the island before Nakagawa began his work, due largely to predation by cats, both feral and domestic. In addition, fishermen, campers, and hikers brought their vehicles into the area and let their dogs run loose. Eventually the owners of the land where the colony is located deeded an easement to the Maui Open Space Trust, and the area is now managed by the Maui Coastal Land Trust. Nakagawa arranged for barriers to keep vehicles out and for signs advising people to keep their dogs on leashes during the nesting season. He still checks the traps daily, turning over captured felines to the Maui Humane Society, and spreads rat poison.

U.S. FISHERIES ACT NOW EMPHASIZES SEABIRD CONSERVATION

The US Congress reauthorized the Magnuson-Stevens Fishery Conservation and Management Act, the US's key legislation for conservation and management of its fisheries, in December 2006. Thanks to the American Bird Conservancy's intensive lobbying for the past several years, the statute for the first time directly references seabird interactions with fisheries. Congressional staff have stated that no other organization worked on the addition of seabird language to the act. The amended statute includes provisions for incentive programs that may be established by regional fishery management councils in their Fishery Management Plans (FMPs). The goal of incentives would be to reduce fishery-seabird interactions, bycatch rates, total bycatch, and post-release mortality in fisheries. The revisions also emphasize coordination to provide information to fishery participants, including outreach to industry on new technologies and methods; projects that would mitigate for seabird mortality; and actions at appropriate international fishery organizations to reduce seabird interactions in those fisheries. Finally, the statute now requires annual reports to Congress that must describe funding, gear technology developments, and improvements in bycatch reduction, as well as proposals to address remaining bycatch or seabird interaction problems. One option for NOAA Fisheries to consider when implementing this program is further development of the regional bycatch teams through which its National Bycatch Strategy is being implemented.

IMPROVED PROSPECTS FOR HAWAIIAN PETREL?

It was recently discovered that a previously little-known population of a federally endangered Hawaiian Petrel (*Pterodroma sandwichensis*) is actually abundant on the forested slopes of the island of Lanai, Hawaii. A team of researchers, headed by Jay Penniman of the State of Hawaii Department of Natural Resources and the University of Hawaii Pacific Cooperative Studies Unit, reports that the population is larger than anyone had previously expected. Some estimate that the Lanai population may contain as many as 5000 birds, which would far exceed the 1200 petrels estimated to nest at the other major site in Haleakala Crater on Maui. The Lanai population could be more accurately assessed in the future using radar techniques.

The history of the Lanai population is a puzzle. Around 1900, the eminent ornithologist George Munro could not find any petrels there, but tapes of vocalizations made in 1968 suggest a population level that may have been similar to the present one. The population has benefited from the eradication of feral goats in 1982, which preserved and restored their habitat on Lanai. After the goats were removed, the uluhe fern (false staghorn; *Dicranopteris linearis*) association in which the petrels nest began recovering.

Lanai has little urbanization and no light pollution. There also are no introduced mongooses (*Herpestes javanicus*) or pigs on Lanai, but feral Axis (*Cervus axis*) deer have begun to range on the steep cloud-forest slopes of Lanaihale where the nesting Hawaiian Petrels were found. For the past 40 years, much of the colony seems to have persisted without human assistance, and it has not been hurt by cats. However, the extremely

Conservation Report

invasive plant strawberry guava (*Psidium cattleianum*) is making inroads, and parts of the colony have been lost, although slopes of healthy uluhe remain. Strawberry guava could eventually destroy the nesting habitat if appropriate actions such as biocontrol are not taken. The owner of the property, Castle & Cooke, has begun to fence the watershed to keep ungulates out, and the team led by Penniman is trapping cats and eliminating introduced barn owls (*Tyto alba*).

Satellite tracking by a multi-agency and university group has yielded another major discovery: Hawaiian Petrels feed thousands of miles from Hawaii. The birds are flying to the Aleutian Islands during the chick-rearing period—9000 to 13,000 km on a round-trip feeding run.

NEW CARISSA OIL SPILL FUNDS PROTECT MARBLED MURRELET

The *New Carissa* sank near Coos Bay, Oregon, in 1999. It spilled about 100,000 gallons of fuel, killing 262 threatened Marbled Murrelets (*Brachyramphus marmoratus*) and over 2000 other seabirds. In 2004 the owner of the ship paid \$10.5 million for cleanup and restoration, about \$4 million of which was earmarked to create Marbled Murrelet habitat (*Pacific Seabirds* 32:16, 2005). In July 2007, the natural resources trustees announced the acquisition of a conservation easement over 1569 ha of forested land for the Marbled Murrelets and other forest species. The \$15 million purchase price was supplemented by about \$10 million of federal oil-spill trust funds.

The land was transferred from private timber companies to the Confederated Tribe of Siletz Indians to be managed as a habitat for murrelets. While the tribe will be allowed to continue commercial logging on about one-third of the property, the intent is to secure nesting grounds for the threatened birds in perpetuity. The

tribe must devise a management plan in coordination with state and federal agencies. Initially, 514 ha will be devoted to murrelet habitat, as restoration for those killed by the oil spill. The management goal is that two-thirds of the property will contain suitable nesting habitat and be protected. A core area of about 970 ha will be managed specifically as habitat, while the rest of the land will serve as buffer property that may be logged as long as disturbances of the birds are minimized.

PSG objected to several aspects of the draft conservation easement, including the plan for no long-term protection of occupied habitat (murrelet habitat would be logged when “new” habitat became available, although there was no provision for a guarantee of murrelet use). In response, the trustees stated that the draft conservation easement was strengthened to require comprehensive short- and long-term monitoring designed to quantify Marbled Murrelet use. In addition, the trustees responded that any tree cutting in the highest protection areas must occur outside the breeding season, and the land cannot be sold to a third party without approval by the trustees. Within the buffer protection areas, any tree cutting occurring must minimize or avoid disturbance to murrelets. The conservation easement now also contains an extensive list of activities that are prohibited on the property to minimize disturbance to murrelets. PSG will monitor management of this property to ensure the management plan truly provides for long-term protection of murrelets and their habitat.

USFWS PROPOSES TO SHRINK CRITICAL HABITAT FOR MARBLED MURRELETS

The U.S. Fish and Wildlife Service (USFWS) proposed in September 2006 to remove 95% of the area that has been

considered since 1996 to be critical habitat for Marbled Murrelets, a threatened species under the Endangered Species Act (ESA). No marine areas are currently designated or being proposed for designation, because USFWS is unable to define specific areas that are essential for conservation of the species. Of the 3.6 million acres (1.45 million ha) in California, Oregon and Washington that are currently critical habitat, 3.37 million acres (1.36 million ha) would be excluded because those areas are already protected under the existing Northwest Forest Plan, state and tribal management plans, or habitat conservation plans. An additional 1.6 million acres (650,000 ha) were considered but not included in the proposal because USFWS believes the areas are being managed to meet the needs of Marbled Murrelets. These include federal wilderness areas, tribal conservation easements, and state and national parks. Of the 222,000 acres (89,000 ha) still listed as critical habitat under the proposal, 54,000 acres (22,000 ha) would be newly designated. If the proposed exclusions are finalized, the final critical habitat designation will include about 112,000 acres (45,300 ha) in California; 83,000 acres (33,600 ha) in Oregon; and 27,000 acres (10,900 ha) in Washington. Most of the critical habitat would be land owned by cities, counties or states (80%), with the remainder owned by the private sector (19%) or the federal government (1%). The proposed critical habitat is comprised of lands not covered by a management plan that provides protection to Marbled Murrelets and their habitat.

USFWS believes that the various management plans in the Pacific Northwest already provide protection for murrelet habitat, and that these plans make the designation of critical habitat redundant. (However, the federal Bureau of Land Management is now proposing to remove all habitat protections in western Oregon under the Northwest Forest Plan). USFWS says the current proposal recognizes the value of conservation efforts, and that it encourages landowners and organizations to continue these endeavors for long-term environmental benefits.

Conservation Report

The USFWS proposal designates only those areas of suitable habitat known to be occupied by Marbled Murrelets and to contain features essential to the species' survival. Under the ESA, areas designated as "critical habitat" contain resources essential for the conservation of a species that is listed as threatened or endangered, and the areas may require special management considerations. A designation does not set up a preserve or refuge and has no specific regulatory impact on landowner actions on non-federal land, unless the actions involve federal funds, authorization, or permits. However, landowners must avoid actions on their property that could harm or kill protected species or destroy their habitat, unless they first obtain a permit, regardless of whether critical habitat has been designated. USFWS believes that the designation of critical habitat provides little additional protection to most listed species, while preventing the Service from using its scarce funds and personnel for activities that would have greater conservation benefits. The agency says that in almost all cases, recovery of listed species has come through voluntary cooperative partnerships, not regulatory measures such as critical habitat.

In November 2006, PSG filed comments with USFWS objecting to the agency's proposal. PSG addressed the current status of murrelet populations and their suitable habitat, in addition to the importance of critical habitat. PSG also urged USFWS to reconsider the inclusion of critical marine foraging habitats that are necessary for the species survival. PSG noted that the murrelet population of Washington, Oregon, and California is estimated to be 22,000 birds. Population modeling indicates that this population will be extinct in Oregon and California within 100 years, unless there are changes in the amount and quality of nesting habitat and in demographic trends. Low fecundity levels imply that this population cannot currently maintain itself. A high rate of nest failure is caused primarily by nest predation, which in turn is affected by forest fragmentation and proximity to human development. Thus, in order to diminish the threat of nest predation and

increase murrelet reproduction, the forest landscape and its surroundings must be protected to provide large, contiguous blocks of suitable nesting habitat.

PSG emphasized that the Marbled Murrelet was listed in 1992 primarily because of significant losses of nesting habitat through logging and development in coastal forests of Washington, Oregon, and California. An objective of the Marbled Murrelet recovery plan is to stabilize the population at or near current levels by maintaining and/or increasing productivity and removing and/or minimizing threats to survivorship. PSG noted that the amount of murrelet nesting habitat has continued to decline since 1992 and about 10% of suitable nesting habitat was lost between 1992 and 2003. PSG concluded that reducing the amount of critical habitat is inadvisable at this time, considering the current status of the population and threats posed to the population.

SURVEY FINDS CAUSE FOR CONCERN IN MARBLED MURRELET'S DECLINE

A population status review by the U.S. Geological Survey has revealed a 70% decline in Marbled Murrelets in Alaska and British Columbia during the last 25 years. USFWS decided in 2006 to request the review of the murrelet's status under the ESA, in response to a lawsuit from the timber industry. The proposal to remove the bird from the list of threatened species hinged on grouping the smaller Pacific Northwest population with the supposedly more robust populations in Canada and Alaska (*Pacific Seabirds* 32:57-58, 2005).

The status review took a comprehensive look at population surveys in Alaska and British Columbia. It found that murrelet populations in Alaska have dropped from an estimated one million birds less than two decades ago to about 270,000 birds today. The review estimated there are about 54,000 to 92,000 birds in British Columbia, and that they have experienced similar declines.

The report said that the declines were estimated for various sites over essentially the entire northern range of the species, and it raised concerns about the species' status. It found that part, but not all, of the declines were accounted for by human causes such as logging, habitat fragmentation, oil spills, and bycatch in gillnets. It is likely that a combination of these factors, together with changes in the prey base, has led to the continued decline of murrelets in Alaska and British Columbia.

The report also tied part of the Alaska population to birds in California, which has been a key argument for American Forest Resources Council and other groups arguing for its delisting. The study placed the birds in three groups genetically: central California; the western and central Aleutian Islands of Alaska; and the rest of the Aleutians combined with south and southeast Alaska, British Columbia, Washington, Oregon, and northern California.

The American Forest Resources Council responded that the report contains a lot of good news, including that timber harvesting is not the main source of population fluctuations. It asked how a population that still has hundreds of thousands of the birds along the Pacific Coast be listed as threatened.

The full report, "Status Review of the Marbled Murrelet (*Brachyramphus marmoratus*) in Alaska and British Columbia," can be seen at <http://pubs.usgs.gov/of/2006/1387/>

ARE IVORY GULLS ENDANGERED?

Ivory Gulls (*Pagophila eburnea*) may be endangered due to global warming. Apparently the wholesale retreat of ocean pack ice from shore is a threat to a species that depends entirely on edges of sea ice to find food. Moreover, the disappearance of natural barriers that keep Ivory Gulls safe at their inland breeding sites seems to be a problem. Their isolated inland nesting havens—usually outcroppings of barren rock surrounded

Conservation Report

by ice and snow—can no longer keep such predators as arctic foxes (*Alopex lagopus*) away. Ivory Gulls breed on remote islands and in coastal zones of Canada, Greenland, Norway and Russia. In the early 1970s, aerial surveys of wintering habitats in Canada and Greenland indicated as many as 35,000 birds. Recent surveys suggest that the population has dropped dramatically. Eastern Canadian populations may have dropped by 75 percent from 1993, and by 85 percent since the 1980s, when the Canadian population was thought to be about 2400 birds. The latest Canadian Wildlife Service survey found only 200 Ivory Gulls. In 2006, the World Conservation Union designated the Ivory Gull as near-threatened, and Canada listed the bird as a species of special concern under its Species at Risk Act.

U.S. MAY LIST 10 PENGUIN SPECIES AS ENDANGERED

In July 2007, the USFWS determined that listing “may be warranted” for ten penguin species in South America, southern Africa and Antarctica. The agency initiated a formal status review, the first step in the process of listing. The Center for Biological Diversity had petitioned to list 12 penguin species, arguing that their polar habitat is shrinking due to global climate change. In its petition, the center said industrial fishing and climate change have led to declines in penguin species across the Southern Hemisphere. Krill (Euphausiidae), one of the penguins’ main sources of food, has declined severely.

USFWS stated that the petition included substantial scientific or commercial information indicating listing may be warranted for 10 penguins: Emperor (*Aptenodytes forsteri*), Southern Rockhopper (*Eudyptes chrysocome chrysocome*), Northern Rockhopper (*E. c. moseleyi*), Fiordland Crested (*E. pachyrhynchus*), Erect-crested (*E. sclateri*), Macaroni (*E. chrysolophus*), African (*Spheniscus demersus*), Hum-

boldt (*S. humboldti*), White-flipped (*Eudyptula albosignata albosignata*), and Yellow-eyed (*Megadyptes antipodes*) Penguins. The agency said that the petition did not contain substantial information to indicate that listing may be warranted for the Snares Crested Penguin (*Eudyptes robustus*) or the Royal Penguin (*E. schlegeli*).

USFWS will take public comment on the penguins and should decide within a year whether or not to formally propose a threatened or endangered listing. The agency is asking for information on the penguins, the effects of climate change on the species, and information on other threats, such as commercial fishing.

PROGRESS IN LONGLINE FISHERIES DETERRENCE IN THE PACIFIC

In December 2006 the Western and Central Pacific Fisheries Commission, a regional fisheries management organization that controls fishing in international waters, adopted new measures to prevent the incidental take of seabirds by longline fishing vessels in the Pacific. This is the first tuna commission to make use of at least two deterrent measures to prevent seabird bycatch. The new rules will apply to all vessels fishing in “albatross waters”—those above 23° north or below 30° south latitude. The introduction of the new rules will be staggered. Small vessels in the South Pacific, where Taiwan operates about 1000 small vessels, do not have to comply with the new rules until December 2009.

CRIMINAL CHARGES FILED IN DEATH OF 400 TERNS

In June 2006, a colony of Caspian and Elegant Terns (*Sterna caspia* and *Thalasseus elegans*) on two barges

anchored in Long Beach harbor, California, was destroyed when one of the barges was towed to another location. The colony, which numbered up to 1,000 pairs, was unusual in this area. One of the barges was towed to Santa Barbara for a Fourth of July fireworks show, but was forced by the U.S. Coast Guard to return to port because its permits were not in order. After the barge was towed away, over 400 dead tern chicks were found washed ashore along with 23 live birds. Upon the barge’s return the International Bird Rescue Research Center says that it was “absolutely clean” of bird droppings while the barge that remained was cleared of birds.

The California Department of Fish and Game and USFWS investigated to determine if there were any violations of law. In January 2007 the agencies forwarded the results of a seven-month investigation to the Long Beach City attorney’s office for criminal prosecution. In late May 2007, three tugboat operators were accused of intentionally destroying the young terns and were charged with seven misdemeanor counts, including animal cruelty. If the men are convicted, they will face up to a year in jail for each count. The attorney for the defendants stated that his clients “had no ill will” and inadvertently scared the birds off a barge they had intended to tow to Santa Barbara. He stated that the men did not use high-pressure hoses to spray the nesting birds from the barge. The trial has not yet taken place.

During summer 2007, about 250 Caspian Terns nested and raised chicks on the deck of the Arctic Challenger, a 300-foot icebreaker barge anchored off the shores of Long Beach. This is a different barge than where the incident occurred in 2006, and the owner promised not to disturb the boat until the birds migrate later this summer. This was the third time in three years that Caspian Terns have established a nesting presence in San Pedro Bay, apparently drawn to the bay by schools of anchovies. Barges offer relative isolation from predators and human populations and the harbor is near long-established nesting sites at Bolsa Chica State Beach.

Conservation Report

CHEVRON ABANDONS CORONADO LNG PROJECT

In March 2007, the Chevron Corporation abandoned plans to build a \$650 million liquefied natural gas (LNG) receiving terminal near the Coronado Islands in northern Baja California, México. PSG and other conservation groups had objected to the facility because of probable impacts on Xantus's Murrelet (*Synthliboramphus hypoleucus*) and five other seabirds listed as threatened or endangered in México and/or the US (*Pacific Seabirds* 31:6-7, 2004). The company withdrew the three key Mexican permits that were required to develop the project.

Despite ongoing opposition to the terminal since it was proposed in 2003, Chevron said the decision was based on its business needs. Chevron decided to ship the natural gas from its Greater Gorgon gas fields off northwest Australia to Japan instead of to the Coronado Islands. Initially, Chevron designed its facility for the offshore islands because residents and environmentalists objected to plans by other companies to build LNG terminals on the coast. The southernmost of the islands was to have served as a breakwater for a 980-foot-long concrete island with two regasification plants, storage tanks, a heliport, and a dock. About four LNG tankers would have berthed at the plant each week.

Opponents of the facility petitioned the Commission for Environmental Cooperation, an agency created by the North American Free Trade Agreement to study environmental issues (*Pacific Seabirds* 32:15-16, 2005). In February, the Secretariat of the Commission for Environmental Cooperation recommended an investigation into whether the Mexican government followed its own environmental laws in issuing permits to Chevron for the Coronado project. Specifically, they called for examination of whether the government correctly analyzed alternatives to the project, the impacts of the terminal on endangered species, or the cumulative effects on the Coronados ecosystem. It is unclear whether this recommendation lead to Chevron's announcement that it was

abandoning the project. There is speculation that the plan was no longer feasible for business reasons, because Semptra Energy LNG and Shell International Gas Ltd. were cooperating to build a competing LNG terminal at Costa Azul, 22 km north of Ensenada, México.

BLACK-FOOTED ALBATROSS IN CANADA

Canada's Committee on the Status of Endangered Wildlife has assessed the Black-footed Albatross (*Phoebastria nigripes*) as a species of "Special Concern in Canada." This committee is the independent scientific body that determines species status in Canada. After the initial assessment, any species that has been identified as "at risk" is reviewed by government for formal listing under the Species at Risk Act. A decision whether to list the Black-footed Albatross will likely be made by 2008. Although Canadian waters represent only a small proportion of the species' range, listing would be a formal recognition of the fact that Canada is one of the countries with responsibility for it.

USFWS TO CONSIDER PROTECTION STATUS OF YELLOW-BILLED LOON

In June 2007, the USFWS announced that it is considering giving Yellow-Billed Loons (*Gavia adamsii*) protected status under the Endangered Species Act. The agency made the decision to seek public comment on the status of the bird following a petition submitted to it three years ago by several environmental groups. The groups argue that the species' breeding habitat in the National Petroleum Reserve-Alaska is under threat from increased oil and natural gas drilling. Following a 90-day public comment period, USFWS may issue a proposed rule to protect the loons.

USFWS estimates there are 16,500 Yellow-Billed Loons in the world, including 3700 to 4900 that breed in Alaska. More than 75% of Alaskan breeders nest in the petroleum reserve. Smaller numbers breed on the Seward Peninsula and St. Lawrence Island. [See also "Committee Reports," page 32]

CASPIAN TERN UPDATE

In November 2006 the USFWS published its Record of Decision on management of Caspian Terns (*Sterna caspia*) in the Columbia River estuary. PSG filed comments with federal agencies concerning the issues to be addressed in the environmental impact statement (EIS) (*Pacific Seabirds* 30:11-12, 2003) and on the draft environmental impact statement (*Pacific Seabirds* 31:51-52, 2004). Under the terms of the settlement in a law suit brought by conservation groups, the Final EIS and Record of Decision were to be completed by February 2005. While the federal government did not meet the schedule, the terns were not harmed by the delay. Caspian Terns on East Sand Island continue to do well, with 9201 breeding pairs in 2006, near the peak count of 2003. The sharp growth in the colony that was projected in the EIS has not occurred.

The major change in the final EIS is that new habitat for tern nesting at Dungeness National Wildlife Refuge has been eliminated from the document, due to objections by the National Marine Fisheries Service. To compensate for loss of this proposed new colony site, tern numbers and habitat area have been adjusted upward for East Sand Island. USFWS originally wanted to reduce the numbers of Caspian Terns at East Sand Island to 2500 to 3125 pairs. The Army Corps of Engineers (COE) prepares habitat for the terns on East Sand Island each spring, currently treating 2.4 ha. Tern numbers on the island will be reduced by preparation of a smaller habitat area. USFWS originally proposed to reduce the prepared habitat to 0.4-1 ha. However,

Conservation Report

the agency has now boosted the number of terns to 3125–4375, and 0.6–0.8 ha of habitat will be prepared. During recent years the terns have been using about 1.8 ha of the 2.4 ha prepared for them. No lethal control will be authorized to achieve the desired numbers.

Caspian Tern nesting sites that will be established or expanded include two in San Francisco Bay, about 960 km from East Sand Island: the Don Edwards National Wildlife Refuge (0.2 to 0.4 ha; about 3000 terns), and Hayward Regional Shoreline (0.2 ha; about 3000 terns). If these sites attract terns within three years, a third San Francisco Bay site (0.4 ha on Brooks Island) would not be enhanced. Other sites where the agencies hope to attract nesting terns include three in central Oregon: Fern Ridge (0.4 ha), Summer Lake (0.6 ha) and Crump Lake (0.4 ha). No sites are chosen in Washington State. There is supposed to be a 2:1 ratio for replacement habitat—2 ha are to be established for each hectare lost on East Sand Island. If more habitat is established later, the habitat and number of terns at the East Sand Island could decrease further.

While the redistribution of the terns is expected to be completed between 2010 and 2015, it is uncertain when the project will be begin. The COE is responsible for the estimated \$2.4 million in first-year construction and habitat enhancement costs. Congress did not appropriate funds for alternative nesting habitat in 2007, so the COE prepared 2.4 ha of habitat on East Sand Island again, as it has done for many years. Until Congress appropriates funds, 2.4 ha of habitat will be prepared each year, because new habitat must be established before the habitat on East Sand Island decreases. In addition, USFWS is responsible for population monitoring, which is estimated to cost from \$100,000 to \$269,000 a year. USFWS already has a network in place reporting on tern numbers on East Sand and Crescent Islands.

The COE still owns East Sand Island, despite PSG's advocating for at least seven years that it be placed in a National Wildlife Refuge (*Pacific*

Seabirds 27:65, 2000; *Pacific Seabirds* 30:12, 2003).

The full EIS can be seen at www.fws.gov/pacific/migratorybirds/CATE.htm

SUCCESSFUL RAT PROJECT IN THE BONIN ISLANDS

Tatsuo Yabe, a rodent ecologist with Rat Control Consulting in Japan, has eradicated roof rats (*Rattus rattus*) on a 49-ha island, Nishijima, in the Ogasawara (Bonin) Islands. His group distributed diphacinone rodenticides on the island in March 2007, and then checked the results in April and early September by setting live traps and observing rat sign. They could not find any signs of living rats. They will check again in October and hope then to be able to declare their success publicly.

The group set about 800 bait boxes, which were made from plastic T-joints of pipes to prevent hermit crabs (*Paguroidea*) from entering. The bait boxes were set all over the island at 25 m intervals. Once the rats are eradicated, ecosystem recovery will be monitored by ornithologists, entomologists and plant ecologists. Yabe found that the food for the rats was in short supply in February and March, which made that season the best time to conduct the eradication campaign.

CALIFORNIA'S MARINE LIFE PROTECTION ACT LAUNCHED

In September 2007, California's Marine Life Protection Act went into effect in the law's Central Coast Region, from Santa Barbara County to San Mateo County. The central region will be composed of 29 marine protected areas, representing approximately 530 km²

(about 18% of state waters in that area). The designation significantly increases the protection that marine life in each area receives, including long-term safe havens for various species of fish and other marine life. The program was designed to improve conservation of marine resources for their long-term sustainable use, while also enhancing outdoor recreation and ocean research opportunities along the coast.

The network of marine protected areas includes: (1) 15 State Marine Conservation Areas, which limit recreational and commercial fishing; (2) 13 State Marine Reserves, where no take is allowed; and (3) one State Marine Recreational Managed Area, where recreational fishing is limited or restricted. Ninety percent of the central coast remains open to fishing. A main goal of the Marine Life Protection Act is to utilize the protected areas as research sites where scientists can gain a greater understanding of California's marine and coastal environment, including interactions by animals and plants where human disturbance is low or absent. The second phase of the initiative, covering the North Central Coast region from San Mateo County to Mendocino County, is underway.

For more information see www.dfg.ca.gov/mlpa.

MARINE RESERVES IN OREGON

PSG wrote to Oregon's Ocean Policy Advisory Council in April 2007 to support the establishment of a system of marine reserves in Oregon's coastal waters, and urged that the council recognize the importance of certain areas of the ocean for marine birds. PSG noted that marine birds are top predators and require healthy stocks of forage fish and invertebrates for their continued success, but that these resources are patchily distributed and are strongly influenced by oceanographic features. In particular, PSG pointed to three at-sea areas in Oregon that are outstanding in

Conservation Report

their importance for foraging sea birds: Astoria Canyon, Heceta/Stonewall Banks, and Cape Blanco/Port Orford Reef. PSG emphasized the limited information on use of at-sea areas by marine birds, noting the inability of scientists to adequately explain the current die-off of puffins and auklets off Oregon's coast. PSG also noted that Oregon's three federal wildlife refuges (Oregon Islands, Cape Meares, and Three Arch Rocks) protect the nesting sites of birds but have no jurisdiction over the surrounding ocean habitat. Marine reserves near those refuges seem to be opportunities that the council should explore. Finally, PSG suggested that the federal government should follow Oregon's lead in state waters and establish similar reserve areas in federal waters off the Oregon coast.

Scott McMullen, Chairman of the Oregon Ocean Policy Advisory Council,

thanked PSG for our views on the importance of seabirds in planning marine reserves. He pledged to give thoughtful consideration to areas around major seabird areas as potential candidate sites for the state's limited system of reserves. He noted that the governor's office had already indicated a desire that the council work closely with USFWS in planning marine reserves in Oregon.

VISITS TO MIDWAY ATOLL MAY RESUME

Midway Atoll National Wildlife Refuge may reopen to visitors on a limited basis. Access was largely cut off in 2002 when USFWS's sole tourist operator pulled out, saying it was difficult

to make a profit on trips to the remote atoll (*Pacific Seabirds* 29:10-11, 2002). USFWS is working on a draft plan and may start a regularly scheduled visitor program that would probably accommodate about 30 visitors at a time. The public can currently only get to the island by boarding a cruise from Asia, hitching a ride with resident government workers, or volunteering for three months of environmental duty. Midway, located 2000 km northwest of Honolulu, is at the tip of the new Northwestern Hawaiian Islands Marine National Monument (*Pacific Seabirds* 33:19, 2006). The atoll provides nesting habitat for hundreds of thousands of seabirds, including Laysan (*Phoebastria immutabilis*) and Black-footed Albatrosses, Bonin Petrels (*Pterodroma hypoleuca*), and Red-tailed Tropicbirds (*Phaethon rubricauda*).

CORRECTION

Due to an editorial error, the wrong Conservation Report was published in the Fall 2006 *Pacific Seabirds* (volume 33, number 2). Most of that Conservation Report had appeared already in a previous issue. The correct Conservation Report for Fall 2006 is printed in this issue, starting on the next page. The editor apologizes to the readers for this mistake. I especially apologize to Craig Harrison, the Associate Editor for Conservation, who works very hard to assemble each Conservation Report.

CONSERVATION REPORT FOR FALL 2006

Compiled by Craig Harrison

The following Conservation Report was omitted by mistake from the previous issue of Pacific Seabirds (Volume 33, Number 2). Some items that are updated in the Spring 2007 Report (above) are not included below.

PSG SUPPORTS DELISTING THE CALIFORNIA BROWN PELICAN

In December 2005, the Endangered Species Recovery Council filed petitions to remove the California Brown Pelican (*Pelecanus occidentalis californicus*) from the state and federal lists of endangered species (*Pacific Seabirds* 33:20, 2006). Following the Executive Council's conference-call meeting in summer 2006, PSG sent letters to the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) in support of these petitions. PSG noted its strong interest in the conservation of the California Brown Pelican, including its support of proposals by federal and state trustees to spend money from several pollution settlement funds to benefit California Brown Pelicans, including the *American Trader* and *Jacob Luckenbach* oil spill trust funds and from the Montrose DDT settlements. PSG also noted that it had petitioned USFWS and the State of California to list the Xantus's Murrelet (*Synthliboramphus hypoleucus*), which resulted in California listing that species as threatened. PSG emphasized that it has approached this issue from an even-handed scientific perspective and has concluded from all available information that the California Brown Pelican has fully recovered. Thus, it no longer warrants being listed as "endangered" because it is not currently in danger of extinction. Nor should it be merely down-listed to "threatened" because it is not likely to become endangered within the foreseeable future.

A CDFG memorandum in early October 2006 found that "the petitioned action may be warranted, and that the petition should be accepted and

considered." The California Fish and Game Commission is expected to accept the finding of "warranted" before the end of this year, which would begin the formal notice-and-comment process to remove the subspecies from the state list. USFWS is expected to make its decision on whether to propose delisting by late 2006 or early 2007.

PSG ASKS USFWS TO REMOVE LEAD PAINT FROM MIDWAY ALBATROSS COLONY

Acting in concert with the American Bird Conservancy and other conservation organizations, PSG requested that the U.S. Department of the Interior make the remediation of lead paint from 95 buildings on Midway Atoll National Wildlife Refuge a high priority, and to provide funds to prevent the continued poisoning of thousands of Laysan Albatross chicks. The cost of completing this work is estimated to be about \$6 million.

Midway Atoll supports the world's largest breeding population of Laysan Albatross (*Phoebastria immutabilis*). Aging US Navy structures and other buildings on Sand Island have been shedding chips of lead-based paint for decades. Many historic buildings were constructed during World War II and have been painted repeatedly with this paint. Deterioration of the buildings in the warm salt air has peeled off the paint, depositing lead-laced paint chips near the buildings and throughout Sand Island. Laysan Albatross chicks ingest these chips and suffer lead poisoning, which may be killing thousands of chicks per year. An obvious symptom of poisoning in the

albatross chicks is a crippling condition known as "droopwing," and damage to various internal organs is likely. Lead levels in the blood of chicks with droopwing are ten times the concentration that would be considered lead poisoning in humans. With the recent designation of the Northwest Hawaiian Islands as a National Monument, PSG believes that the time is ripe to resolve this conservation problem. Efforts in 2003 to fence areas to protect Laysan albatross chicks were generally a failure, as were efforts in 2004 and 2005 to place tarps around some of the buildings.

USFWS PROPOSES TO AMEND LIST OF MIGRATORY BIRDS

USFWS has proposed to amend the list of migratory birds protected by the Migratory Bird Treaty Act (MBTA), the first such amendments in more than 20 years. It proposes adding 152 species and removing 12 from the list of protected migratory birds, which will bring the total number of species protected by the MBTA to 972. The Migratory Bird Treaty Act is one of the nation's earliest conservation laws, enacted in 1918 to implement a series of treaties for the protection of shared migratory bird resources signed by the United States with Canada, Mexico, and eventually also with Japan and Russia. The MBTA prohibits take of protected species, their nests, and eggs, except as authorized and permitted by USFWS. Some of the treaties list groups of birds that are to be protected, rather than individual species.

One hundred forty-nine species are proposed for addition: 2 that are covered

CONSERVATION REPORT for FALL 2006

by Japanese and Russian treaties, but that were mistakenly omitted from the 1985 list; 26 species that were documented accidentally or occasionally in the United States prior to April 1985, but that were not included in that list; 60 species whose occurrence in the United States was confirmed only since April 1985; 27 species that occur naturally in the US-associated Pacific Islands, although not in the 50 states; and 37 that were formerly considered subspecies of protected species and were recently elevated to full species status.

The 12 species proposed for removal from the list include 11 that are no longer recognized as occurring within the boundaries of the United States, and one that is now treated as a subspecies of a still-protected species.

Among the added species are four albatrosses, eight petrels, three storm-petrels, and the Long-billed Murrelet (*Brachyramphus perdix*). The complete list can be found at <http://migratorybirds.fws.gov>

RULE EXEMPTING DOD FROM MIGRATORY BIRD TREATY NEARS FINALIZATION

A long-awaited Interior Department rule is expected effectively to exempt the Department of Defense (DOD) from the MBTA. The military is said to be happy with the final rule, which is undergoing final review before going into effect. The defense authorization bill for Fiscal Year 2003 provided DOD with a blanket exemption from MBTA restrictions for military readiness activities, until the Interior Department developed regulations that would allow DOD to incidentally “take” migratory birds under MBTA during its training exercises. The new rule is Interior’s response to the requirement.

The MBTA prohibits any harm or killing of designated migratory birds (termed “take” in the law). Environmental groups disagree with the rule that was proposed in 2004, saying it limits

oversight; this problem may not have changed substantially in the final rule. A 2000 ruling by the US Court of Appeals for the District of Columbia Circuit in *Humane Society v. Glickman* found that federal facilities are subject to the MBTA. The Navy’s conduct of training activities in the Northern Mariana Islands violated the MBTA, according to the outcome of a 2002 lawsuit, although the judge ultimately decided not to issue an injunction.

KAUAI DIMS LIGHTS TO SAVE CRASHING SHEARWATERS AND PETRELS

In a novel use of the Endangered Species Act (ESA), USFWS is insisting that businesses and the county of Kauai turn down their lights at night. The agency is concerned about three seabirds that breed on Kauai: the endangered Hawaiian Petrel (*Pterodroma sandwichensis*), the threatened Newell’s Shearwater (*Puffinus newelli*), and the Band-rumped Storm-Petrel (*Oceanodroma castro*; this species may soon be listed pursuant to a May 1989 petition by Craig Harrison). Artificial lights can confuse nocturnal-nesting seabirds and cause them to crash into telephone lines and other objects, especially on moonless nights. Easily confused juveniles make up the bulk of downed birds on Kauai. Injured and dead birds have been found along the island’s roadsides for decades. People who find downed birds can deposit them in overnight boxes at fire stations all over the island. Specialists pick up the birds in the morning and take them to a veterinarian, where about 95% recover.

USFWS has asked that all nonessential lights at malls, resorts, parking lots and restaurants be turned off between September 15 and December 15, when juvenile birds leave their nests for the open sea. The Kauai Island Utility Cooperative has darkened all of its 3000 streetlights, turning some off completely and shielding others. The utility has also

installed large balls on its power lines to help flying birds avoid the cables. The electric utility runs the program as part of its downed-bird mitigation plan with USFWS. The County of Kauai, which oversees the airport and many parks, has also been put on notice. Businesses likewise are being asked to cooperate. USFWS has told Norwegian Cruise Line that passenger boats must turn off or shield nonessential lights. In addition, the Kauai Seabird Habitat Conservation Plan’s coordinator contacts businesses near where dead or injured birds have been found and urges the establishments to voluntarily dim their lights.

While a bird-rescue operation has been in place on Kauai for 25 years, some seabird populations have declined, although it is difficult to undertake an accurate census of nocturnal burrow-nesting species. It appears that lights and obstructions are contributing greatly to the declines. Under the ESA, it is illegal to “take” a listed species. “Take” under this law means to kill, hunt, harm, or harass the animal or to harm its environment; “take” need not be intentional. USFWS contends that lights and obstructions on Kauai are causing take.

SEABIRD WRECK ON UNALASKA ISLAND

In September 2006, thousands of seabirds died over a two-day period near Unalaska, in the Aleutian Islands of Alaska. Several hundred Sooty Shearwaters (*Puffinus griseus*) died after flying into a crabbing boat in Unalaska Bay, a phenomenon that lasted half an hour. The crew threw the dead and dying birds overboard. Biologists found more than 1600 bird carcasses on shores near homes in Unalaska and along beaches outside the community. Most birds did not appear to be thin and were not oiled, although some had twisted necks as if they had smashed into something. Among contributing factors in these “wrecks” may be the process of molting, when the birds’ ability to fly can be compromised, or starvation.

MANAGING RAT INVASIONS IN ALASKA

PSG commented in August 2006 on the Alaska Department of Fish and Game's draft, "Wildlife and Humans at Risk: A Plan for Returning Alaska to its Rat-Free State." The plan contains a needs assessment and a strategic action plan aimed at preventing rats (*Rattus* spp.) from being introduced into areas that would harm wildlife in Alaska. Rats are especially likely to colonize an island when an infested vessel anchors nearby or is wrecked there. The plan also focuses on eradicating rats where they occur, and on restoring rat-damaged habitats, especially in seabird-rich areas such as the Aleutian Islands.

PSG strongly supported the preparation of the rat plan. PSG urged that the final report make major strides toward a concrete action plan. The needs assessment (existing conditions, rat biology, the Alaskan infrastructure) is important for persuading some that rats are a real problem. However, a strategic action plan is the part that will ultimately pay off. PSG urged more focus on the immediate actions that would be needed to stop rats during a crisis.

PSG asked for more details on how an inter-agency team would respond to a "rat spill" from a wrecked vessel, including which agency would actually lead, which others would follow, and a description of the responsibilities of each. It is proposed that an Alaska Invasive Rodent Advisory Committee be established; this might develop many of the action plan's details and address federal and state jurisdictional issues. PSG noted the key role of the U.S. Coast Guard. As first responders, the Coast Guard is critical for preventing rodent colonization from shipwrecks, and is also the port inspector with the authority to quarantine cargo to avoid rodent infestations. Clarifying responsibilities would be a major contribution to preventing rat invasions and hopefully would result in an approach that would allow inter-agency teams to respond if a catastrophe were to occur this winter.

PSG emphasized that the report

should address rodent control versus eradication issues. Eradication may be impossible or very costly in many situations (it depends on remoteness, size of island, non-target species, landscape challenges, etc.), so the ongoing costs of control and the risk of bait resistance should be examined in more detail.

PSG COMMENTS ON NATIONAL SCIENCE REPORT ON OCEAN SCIENCE AND TECHNOLOGY

PSG commented on a draft plan by a National Science committee entitled "Charting the Course for Ocean Science in the United States: Research Priorities for the Next Decade" in October 2006. The draft plan is a needs assessment and a strategic action plan that contains national ocean research priorities for the coming decade. PSG applauded the effort by the Joint Subcommittee on Ocean Science and Technology to provide US institutions and agencies a template that will guide ocean research for the next decade, and urged that the final report provide a concrete plan of action plan.

PSG highlighted a failure of the plan to acknowledge the increasingly important role of seabirds and other apex predators as indicators of ecosystem function and health. Seabirds are secondary and tertiary consumers, the same trophic level as commercially exploited fish. Moreover, seabird prey includes the juveniles of many commercial species. In some cases, seabirds may compete with fish for the same prey. For all these reasons, seabirds can be excellent samplers of fisheries stocks. PSG noted that because seabirds are conspicuous, accessible, and sensitive to physical and biological fluctuations in the marine environment, they can provide an early warning of toxins and contaminant accumulation, and can signal natural or human-caused changes in the ocean environment. Upper-trophic-level predators are more sensitive indicators of en-

vironmental shifts than are most physical measures. In the Pacific Ocean, changes in seabird productivity and survival rates were among the first reported indications of large-scale impacts associated with El Niño and La Niña.

PSG also observed that the document's overriding emphasis is on human use of ocean resources or ocean-related impacts on humans. Even if a human-centered approach is necessary, it will not be possible to understand the marine ecosystem and the issues without attention to the middle and upper trophic levels. Furthermore, there is little attention to the government's role as a trustee for natural resources or its responsibility to regulate contaminants, fishery harvests, or the maintenance of healthy populations of seabirds and marine mammals.

The draft report leaps from physical oceanography to humans, with minimal attention to productivity, coral reef systems, pathogens, invasive species, etc. The intermediate and upper ecosystem components (fishes, birds, mammals) only appear to be implied. This approach could lead to flawed programs. For example, the research plan ignores the potential for "top-down" impacts on ecosystems and ocean regimes, and appears to assume "bottom-up" control, which has not always been supported. One example is the potential "top-down" force on the recruitment and abundance of commercially important fish species by larger fish, seabirds, and marine mammals. Higher trophic levels are mentioned within the context of large-scale ecosystem models, but fully understanding interactions among trophic levels will require additional approaches.

PSG supported the acquisition and management of up-to-date data, and enhanced communication, availability of databases, GIS applications, and modeling. PSG added that the plan should recognize the existence of many valuable data sets that, for lack of support, are not currently fully integrated into accessible databases. These data sources could prove valuable in evaluating long-term changes, as well as the validation of new models.

Finally, PSG strongly supported the

CONSERVATION REPORT for FALL 2006

suggestion to share research platforms among different aspects of ocean science research, as well as emphasizing long-term observation systems. To be successful, a program must approach both of these goals by fully incorporating the middle and upper trophic levels in its conception and operation. Because seabirds are long-lived and are among the most conspicuous and easily studied of marine organisms, they can play an important role as monitors, sensors, and indicators of marine ecosystem health and dynamics.

THIRD NORTHWESTERN HAWAIIAN ISLAND SCIENTIFIC SYMPOSIUM PROCEEDINGS

The proceedings from the Third Northwestern Hawaiian Island Scientific Symposium are available online. In addition, historical issues of the Atoll Research Bulletin are also available, several of which focus on the Northwestern

Hawaiian Islands. The Smithsonian Institution, Pacific Cooperative Studies Unit, and Hawaii-Pacific Islands Cooperative Studies Unit made these resources widely available. See <http://www.botany.hawaii.edu/faculty/duffy/atoll.htm>

PSG NEWS

JOIN PSG ONLINE

PSG's web site (<http://www.pacificseabirdgroup.org>) has a Membership page where you can join PSG or renew your membership. Online payments are processed through "PayPal," a system for secure credit-card transactions.

The Membership page recently experienced a few problems, but it has now been updated and the PayPal buttons are working again. Once you are on the Membership page, select the type of membership you want, then the buttons that route you to PayPal. If you already have a PayPal account, you can skip some steps and transfer money directly to PSG.

We have also added buttons that allow you to donate directly to the PSG

General fund, PSG Conservation Fund, or PSG Student Travel Fund. Try these out!

If you encounter any problems with the Membership/Donation page or PayPal, please contact the Treasurer, Ron LeValley, at membership@pacificseabirdgroup.org or ron@madriverbio.com

NON-US MEMBERS ARE RENEWING ONLINE

For the convenience of many members who reside outside the United States, PSG maintained bank accounts

for several years in two other countries, Canada and the United Kingdom. Most non-US members have now switched to joining or renewing online (see preceding article). This is especially convenient because your credit-card company will automatically convert the payment to US dollars. Activity in PSG's non-US bank accounts has been very low recently, and therefore they have been closed.

If you live outside the US, but it is not convenient for you to join or renew via the web site, you may download a membership form from the site. Or you may contact the Treasurer, Ron LeValley, at membership@pacificseabirdgroup.org or ron@madriverbio.com. Other contact information for Ron is on the inside covers of this issue.

PSG NEWS

MOVING? UPDATE YOUR ADDRESS WITH PSG!

Have you moved recently? Filed your change of address with the U.S. Postal Service, but forgotten to let PSG know? If that's true, and if you're reading this, it's probably the last *Pacific Seabirds* you'll get for awhile.

The U.S. Postal Service (USPS) will forward *Pacific Seabirds* to you if they have your change of address. They also let us know your new address, and we update our records. But there are some problems with this:

- The Postal Service will forward the journal for only 12 months. At that point you will stop getting it; your copy is returned to PSG.
- After 18 months PSG will not be notified of your new address, because the USPS computer deletes it. Your *Pacific Seabirds* is returned with "Not Known" stamped on it. Then we have to enter a blank in our mailing list after your name, and you won't get any mail from PSG until you send us a new address.
- All forwarded or returned mail costs us money. PSG has to pay extra for each such item (because we pay a low "bulk" rate for the initial mailing). For a recent issue, 26 journals were forwarded or returned, for which we paid \$69.50 above the original mailing cost.

PSG cannot re-forward your mail when is returned to us, and we cannot track you down if we don't have your mailing address. We are happy to update your address if we know it. However, our nonexistent staff does not have the time (or money) to pursue your problem further.

Mail sent outside the U.S. is subject to different rules, but some of those *Pacific Seabirds* also are returned each year (and also cost us money).

Please let PSG know when you move! The Keeper of the Mailing List is the PSG treasurer, Ron LeValley. Contact him at membership@pacifitseabird-group.org or ron@madriverbio.com. Additional contact information for Ron is on the inside covers of this issue.

PACIFIC SEABIRDS WILL GO MOSTLY ELECTRONIC

Starting in 2009, *Pacific Seabirds* will be mailed *only* to those members who *specifically request* it. All members who do not request a hard copy of *Pacific Seabirds* via mail will be able to download every issue from the PSG website, www.pacifitseabirds.org. The paper and electronic versions of the journal will still look the same.

Volume 34 (2007) and Volume 35 (2008) will continue to arrive in the mail as usual, in addition to being posted on the website. *You are welcome to continue receiving Pacific Seabirds in the mail as long as you wish.* However, *any member who wants to continue receiving copies by mail after 2008 must contact the Treasurer, Ron LeValley.* His e-mail is ron@madriverbio.com; phone (707) 326-0300; address Mad River Biologists, 920 Samoa Blvd., Suite 210, Arcata, CA 95521, USA.

The PSG Executive Council decided in favor of distributing *Pacific Seabirds* electronically because many journals already are electronic (including our other journal, *Marine Ornithology*), and because the change will save printing and mailing costs. Some people prefer to receive their journals online. However, we will continue to send *Pacific Seabirds* through the mail to anyone who requests it, because some members cannot get it over the Internet conveniently or may just prefer a paper copy.

Libraries will automatically continue to receive *Pacific Seabirds* through the mail, since this can be important for reliable archiving.

(This notice will be repeated in the next 3 issues of *Pacific Seabirds*.)

NOMINATE SOMEONE FOR A PSG AWARD

PSG gives two awards for contributions to seabird research, conservation, or education. Any member may nominate a person for PSG's Lifetime Achievement Award (LAA) or Special Achievement Award (SAA). The LAA is given in honor of highly significant, long-term contributions in the field of seabird work, in the Pacific or worldwide; the SAA is given for outstanding service to PSG or for exemplary accomplishment for seabirds.

To nominate someone, submit a one-page summary of the person's accomplishments and contributions to the Past Chair, who is coordinator of the Awards Committee, by 30 June of any year.

If your candidate is approved by the Executive Council, you will participate in the awards ceremony at PSG's Annual Meeting. You will give a short talk (15-30 minutes) about the individual's career and accomplishments. The tribute will be based information from the person, and possibly from his or her colleagues; it often includes photographs of past activities.

Pacific Seabirds publishes a written report on each award in the next issue. You should submit a short article (1-5 pages), based on your presentation at the awards ceremony, in time for that issue's deadline.

PSG welcomes nominations from any member. In some years we may give no awards, if suitable candidates are not approved.

PSG MEETING NEWS

2007 PSG MEETING AT ASILOMAR



PSG members in sun, Asilomar's Hearst Hall

PSG's 34th Annual Meeting was held on 7-11 February 2007 at Asilomar, Pacific Grove, California. PSG held most of its early meetings at Asilomar, including 4 of the first 5 (starting in 1975). In 2007, we returned to this venue for the first time in 20 years. To some longtime PSG members, our meeting at this century-old conference center in its forest by the sea was a bit like coming home.

Verena Gill, PSG's Chair-elect, organized a stimulating scientific program. The schedule included 119 oral presentations and 48 poster presentations, including 29 talks and 19 posters from students. Presenters traveled to the meeting from across the globe: North America, Japan, Poland, Peru, New Zealand, China, Germany, Scotland, England, Eritrea, France, and Norway.

There were two plenary lectures. Henri Weimerskirch presented "Foraging strategies of seabirds in relation to environmental conditions." Weimerskirch is a research director at the Centre d'études biologiques de Chizé, France. He specializes in albatross life-history strategies in the Southern Ocean and on the foraging ecology of tropical seabirds, especially boobies and frigatebirds. Michael P. Harris spoke on "The Isle of May long-term murre study: from mundane monitoring to scintillating science." Harris is an Emeritus Fellow at the Centre for Ecology and Hydrology at Banchory, Scotland. He focused on the

results of a 25-year study of individually marked Common Murres.

Instead of a third plenary lecture, Dan Anderson and Craig Harrison presented a debate panel. Dan spoke on "Point-counterpoint?—Some myths and points surrounding a relisting proposal for the California Brown Pelican," and Craig countered with "Recognizing the recovery of the 'endangered' California Brown Pelican." (The debaters agreed on many issues and were 100% professional. Some in the audience may have been hoping for fireworks, but what they saw was scientific disagreement at its best.)

Special paper sessions included Seabird Tracking and Remote-sensing Applications (organized by Rob Suryan, Scott Schaffer, and David Hyrenbach), and Surveying Seabirds at Sea: Applications, Transect Methodology and Statistical Treatment (organized by John Piatt and Martine Renner). Other sessions focused on foraging ecology, diving strategies, habitat selection, and the role



PSG 2007 banquet audience: Bob Pitman, Ken Morgan, Pat Baird (face hidden), Lisa Ballance, Hanna Herron, Doug Forsell, Aravis Herron, Lora Leschman, Joe Herron, and Bill Hebner.



Bob Day gives Best Student Paper Award to Samantha Richmond (top) and Best Student Poster Award to Chris Thaxter (bottom).

PSG Meeting News



Student travel awardees from the US and Canada



Student travel awardees from countries outside the US and Canada.

of genetics in species identification, as well as the usual topics of population dynamics, breeding biology, physiology, diet, and conservation. As usual, a few things defied categorization, so one Saturday afternoon session was entitled “A seabird smorgasbord.”

Evening events included mixers in Merrill Hall and at the Monterey Bay Aquarium, a lecture by Carl Safina, and a Mexican-themed banquet. The weather was calm and bright for the Sunday field trips: seal viewing at Año Nuevo State Park, pelagic trips on Monterey Bay, and kayaking in Elkhorn Slough. The local committee, chaired by Jim Harvey and Hannah Nevins, did an outstanding job with complex arrangements.

AWARDS

PSG’s Lifetime Achievement Award was given to Mike Harris, and the Special Achievement Award was bestowed on Ed Melvin. Ed is at Washington Sea Grant at the University of Washington. For the past 11 years he has done research and outreach to solve conservation-related problems, including seabird bycatch, in the US and international fishing industries.



Scientist travel awardees: Nele Markones, Dariusz Jakubas, Andy Webb

Students who won awards for their presentations were Samantha Richman (University of Wyoming) for best paper, and Chris Thaxter (University of Leeds, United Kingdom) for best poster.

Travel grants were awarded for the first time under PSG’s new tripartite system. Students in the US or Canada who received awards were Louise Blight (University of British Columbia), Jill Bluso (Humboldt State University), Brie Drummond (Dalhousie University), Kyle Elliott and Britt Harter (University of Manitoba), Nathalie Hamel and Stephani Zador (University of Washington), Christopher Latty (University of Alaska Fairbanks), Jamie Morris-Pocock and Scott Taylor (Queen’s University), Samantha Richman (University of Wyoming), Rachel Sprague (University of Montana), and Yasuko Suzuki (Oregon State University).

Students from countries other than the US or Canada who received travel grants were Nils Guse and Nicole Sonntag (University of Kiel, Germany), Motohiro Ito (Hokkaido University, Japan), Nina Seifert and Jorg Welcker (Norsk Polarinstitut, Norway), and Chris

Thaxter (University of Leeds, United Kingdom).

Scientists from outside North America who received travel awards were Liliana Ayala (Peru), Lei Cao (China), Dariusz Jakubas (Poland), Nele Markones (Germany), and Andy Webb (United Kingdom).

—Vivian Mendenhall and Verena Gill

PSG’S 2008 MEETING WILL BE AT SEMIAHMOO, BLAINE, WASHINGTON

The 35th Annual Meeting of the Pacific Seabird Group will be held on 27 February–2 March 2008 at the Semiahmoo Resort in Blaine, Washington. Semiahmoo is located at the tip of a mile-long natural spit, which juts into Puget Sound and is framed by Semiahmoo (“half-moon”) Bay. Built on the site of an historic salmon-packing cannery, the Resort is within view of Peace Arch Park at the U.S./Canadian border. Windows of the restaurant and some other rooms are directly over the water.

Blaine is less than an hour by road from Vancouver, BC, and two hours from Seattle. Drive the world-famous Chuckanut Drive and be rewarded with one of the most scenic stretches of highway in the Pacific Northwest, or visit the Mt. Baker ski area at the edge of the wilderness in the heart of the Northern Cascades. Our last meeting



PSG Meeting News

at Semiahmoo was in 1999, and we are looking forward to viewing rafts of loons during mealtimes.

The theme of the meeting is “Seabirds in Marine Ecosystems.” Plenary speakers will include John Piatt and John Croxall; there will also be a debate on

“Compensatory Mitigation.” A symposium will be held on “The Salish Sea Ecosystem: Status and Impacts of Changes on Marine Birds.” Special sessions will be on Forage Populations (organized by Mayumi Arimitsu), Marine Wind and Tidal Power (Dan Esler), Economic Im-

pacts on Seabird Ocean Habitats (Falk Huettmann), and Marine Protected Areas (Doug Bertram). A workshop is planned on “R,” a language and environment for statistical computing and graphics. More information is on the PSG website, www.pacificseabirds.org

—Tom Good



Yellow-billed Loon in Elkhorn Slough



Great Egret on Asilomar Beach. Meeting photos by Vivian Mendenhall.

COMMITTEE REPORTS

PSG's committees report each year to the Executive Council. These reports for 2006 were submitted in February 2007. A full list of PSG committees appears at the back of this issue.

LOON AND GREBE TECHNICAL COMMITTEE

Compiled by Joel Schmutz

BACKGROUND

This committee formed a year ago. Its primary impetus was to discuss issues about particular species of conservation concern, and to do so under the recognized umbrella of a large and taxonomically germane professional organization such as PSG. Joel Schmutz is currently chair (jschmutz@usgs.gov).

ACTIVITIES DURING PAST YEAR

(1) A pair of workshops was held to discuss status of Western Grebes (*Aechmophorus occidentalis*). Declines in numbers of Western Grebes in some breeding areas, as well as in some coastal wintering areas, have prompted significant conservation concerns for this species. Two workshops were held in October 2006 to discuss the state of knowledge of the species, concerns about their conservation status, and information needs. One was held in Edmonton, Alberta, and the other in Delta, British Columbia. The two locations maximized attendance by people with pertinent information, and reflected a breeding and a wintering area. Contact Sean Boyd (Sean.Boyd@ec.gc.ca) for more details.

(2) A Conservation Agreement was finalized regarding management of Yellow-billed Loons (*Gavia adamsii*). An approximate 1.5-year process concluded when the U.S. Secretary of Interior's office signed a Conservation Agreement specifying information needs, management objectives, and plans for this species. The U.S. Fish and Wildlife Service (USFWS) was petitioned in 2004 to list Yellow-billed Loons as threatened or endangered under the Endangered Spe-

cies Act. There is much conservation concern because the US population primarily breeds in the National Petroleum Reserve-Alaska, where development activities are substantively increasing. Several members of the Loon and Grebe Technical Committee served on the expert panel convened by USFWS and the US Bureau of Land Management to discuss management and conservation of the species. Members of the committee also made written contributions to the Conservation Agreement. Contact Joel Schmutz (jschmutz@usgs.gov).

(3) Membership and melding of information: The Loon and Grebe Technical Committee is really an amalgamation of two entities, people who coalesced around concern for the Western Grebe, and the Alaska Loon and Grebe Working Group, which has focused on the 6 species of loons and grebes that are common nesters in Alaska. The combination of these 2 groups constituted the initial e-mail distribution list for the new PSG committee. The Alaska subgroup was already developing species-specific conservation plans for the species that breed there. These plans are being finalized in fall 2007 and will be distributed to the entire committee membership. We will include queries about how much more broadly we should pursue a similar strategy for other species in other areas. Contact Joel Schmutz (jschmutz@usgs.gov) for more information.

MARBLED MURRELET TECHNICAL COMMITTEE

Danielle Prenzlów Escene

The Marbled Murrelet Technical Committee met on February 7, 2007 at

the Asilomar Conference Center as part of PSG's 2007 Annual Meeting. The following report closely follows the notes from that meeting.

The Washington Department of Natural Resources (WDNR) is developing a Marbled Murrelet Long-Term Conservation Strategy. WDNR completed the report of strategy recommendations in July 2007. They are currently looking for outside reviewers. Completion of the strategy is still more than a year away; the environmental impact statement, Habitat Conservation Plan (HCP) amendment, Biological Opinion, and Record of Decision are still on the horizon. For more information, contact Peter Harrison at harrison.peter@wadnr.gov.

Bill Ritchie of Washington Department of Fish and Wildlife is investigating the effects and implications of ecosystem changes on Marbled Murrelet breeding success and recruitment. For more information, or to join a discussion group, contact Bill at ritchwpr@dfw.wa.gov.

Ritchie also reconvened the Inland Survey Protocol working group. The working group is discussing several issues related to Marbled Murrelet survey training, including the frequency of recertification for experienced surveyors, as well as the flexibility of the timing of survey training, depending on the level of bird activity. Contact Bill at ritchwpr@dfw.wa.gov if you would like to participate on the working group or would like more information.

Washington Department of Natural Resources has been conducting high-elevation surveys in northwest Washington. High elevation areas are logistically very difficult and expensive to survey. DNR is working with U.S. Fish and Wildlife Service (USFWS) and others to develop a protocol that clusters the surveys on consecutive days

COMMITTEE REPORTS

in order to compensate. Contact Peter at peter.mcbride@dnr.wa.gov for more information.

Falk Huettmann of University of Alaska-Fairbanks and Carolyn Burks Meyer of the University of Wyoming have been leading the Global Marbled Murrelet Modeling Team. The team is working to gather and organize inland survey data, nest data, marine survey data, terrestrial habitat data, and marine habitat data. The team is hoping to finish compiling and merging the data by the end of this year, in order to begin building the models by next year. If you would have data or data management skills to contribute, or if you would like more information, contact Falk at fffh@uaf.edu.

John Piatt of the U.S. Geological Survey led the work to publish the report "Status Review of the Marbled Murrelet (*Brachyramphus marmoratus*) in Alaska and British Columbia," available at <http://pubs.usgs.gov/of/2006/1387/> Murrelet numbers declined at five of eight trend sites since the early 1990s, at annual rates of -5.4% to -12.75%. Piatt et al. applied these rates of decline to the historical population estimate of 1 million birds to project the current murrelet population in Alaska to be approximately 270,000 birds, or a 70 percent decline over the past 25 years. They updated the population estimate for British Columbia to between 54,000 and 92,000 birds, a decline from the 2002 estimate. For more information, contact John at jpiatt@usgs.gov.

The Canadian Marbled Murrelet Recovery Team recently held two workshops on habitat identification and marine distribution and radar monitoring. Also, the Nesting Habitat Recovery Implementation Group submitted an action plan in March 2006. Contact Doug Bertram at bertramd@pac.dfo-mpo.gc.ca for more information.

USFWS is continuing the Northwest Forest Plan, Population and Habitat Monitoring. The 2006 population estimate for Zones 1-4 is 15,680 to 21,560. The seven-year mean is 20,600. Nesting habitat analyses will be conducted again in 2008. Contact Gary Falxa at [\[Falxa@fws.gov\]\(mailto:Falxa@fws.gov\) for more information.](mailto:Gary_</p></div><div data-bbox=)

USFWS published its "Proposal to Revise Designation of Critical Habitat" in September 2006. Most of the reduction in critical habitat, in comparison with the 1996 designation, is attributed to exclusions under the 4(b)(2) balancing process, primarily lands of the Northwest Forest Plan, as well as several large HCPs. USFWS must now revise the proposal based on thousands of public comments, complete an economic analysis, and publish the final designation in September 2007. Contact Deanna Lynch at deanna_lynch@fws.gov for more information.

PSG WEBSITE REPORT

Lisa T. Ballance, PSG Webmaster

WEBSITE ADDITIONS IN 2006

The "Gallery" page of seabird photos has been restored to the website. This is a work in progress; I welcome comments and new photos.

A password-protected membership directory for 2006 was posted. I would like to update this each year, at whatever time the Exco or Treasurer deems most appropriate.

PSG's Handbook was posted. It will be updated when I receive revisions.

Other material posted on the site includes letters on conservation issues from the Vice-Chair for Conservation, PSG Chair, and Chair-Elect; job advertisements; official minutes of Exco meetings; and PSG Publications (*Pacific Seabirds*, PSG Symposia, PSG Technical Publications, and abstracts from past Annual Meetings).

WEBSITE ADDITIONS PLANNED FOR 2007

I plan to post a complete list of all Lifetime Achievement and Special Achievement Award recipients, together with a short summary of each person's contribution.

WEBSITE ACTIVITY DURING 2006

The program AWStats gave statistics on our website's activity.

The site was visited by about 21,000 different individuals (technically, by different IP addresses for individual computers). There were 30,650 visits to the site (some individuals visited the site more than once). About 75% of these visits were for less than 30 seconds, but almost 20% lasted between 30 seconds and 15 minutes.

About 25% of visits to a page were directed to the site by a search engine, primarily Google, but also others such as Yahoo, Netscape, and Dogpile [*sic*]. More than 5000 keywords were used during these searches; common ones included Pacific, seabirds, group, jobs, murrelet, albatross, conference, Alaska, California, and marine. Another 6.6% of visits came via links to other websites such as Birdnet and *Marine Ornithology*.

Visitors averaged 2.66 pages per visit. Statistics for the top 25 pages are interesting—our publications page is getting a fair bit of air time.

Computers from 23 different countries visited our website. The vast majority were of United States origin, followed by Canada, the European Union, Australia/New Zealand, and Japan. There were also visits from countries in Latin America, south and east Asia, eastern Europe and Russia.

WEBSITE CONCERNS

My main issue is a request for updates from Exco and the PSG membership. When you see something on the web site that is outdated, or when a new publication, letter, etc. is produced, please bring it to my attention and I will address it as soon as possible.

Please continue to send requests and questions regarding the website to me at Lisa.Ballance@noaa.gov

ACKNOWLEDGMENTS AND NEW TECHNICIAN

2006 saw a number of changes in technical support for the webmaster. Anna Klimaszewski passed the baton to Annette Henry, who maintained the site during the Annual Meeting rush, with great assistance from Janet Lowther.

COMMITTEE REPORTS

Effective as of the PSG 2007 Annual Meeting, I have a new Data Manager working for me who will be receiving most of my queries regarding website issues. He is Thomas J. Moore and I hope he will be with us for awhile.

PSG 2020 STRATEGIC PLANNING COMMITTEE

Lisa T. Ballance

BACKGROUND

The PSG 2020 Strategic Planning Committee was established by the Exco at the 2006 Annual Meeting in Girdwood. Its purpose is to engage in long-range planning for PSG. The committee's mandate is to review PSG's current operating structure and activities, and to evaluate how well they are matched to PSG's goals of studying and conserving Pacific seabirds and their environment over the next decade and a half.

Committee members are Lisa T. Ballance (Chair), Jaime Jahnke, Ron LeValley, Ken Morgan, Kim Nelson, Iain Stenhouse, and Shiway Wang. The committee's review will include:

- PSG's membership and infrastructure
- Annual meetings
- Membership and structure of Exco and other PSG committees
- PSG publications (including *Marine Ornithology*) and website
- Conservation issues and PSG's role
- Other issues as determined by the committee

COMMITTEE ACTIVITIES DURING 2006

As of January 2007, all discussion between committee members has occurred via e-mail. The first official meeting of the committee will be in February 2007, at PSG's Annual Meeting in Asilomar. The committee expects this meeting to produce a draft list of issues requiring input from PSG 2020. They will get input on the draft list at the Past Chairs Meeting (also at Asilo-

mar) and then will seek input from the PSG membership via the PSG listserve. [*Editor's note:* Posting on the listserve is now expected for November 2007.] In the future the committee will revise the list and discuss their recommendations to the Exco.

The committee views this as an iterative process. Close communication with the Exco, the Past Chairs, and the membership of PSG at large will be an annual part of committee. Mechanisms are already in place for this communication via the Exco's two yearly meetings (at PSG's Annual Meeting and the summer conference call), the Past Chairs meetings, and the PSG listserve.

DRAFT LIST OF ISSUES IDENTIFIED BY PSG 2020

The draft list (as of January 2007), which may be modified at the Exco and Past Chairs meetings, will be distributed to all members via the listserve. On the listserve, we will solicit input from the members in the form of a questionnaire. It will ask for yes/no answers and will provide space for comments on how to achieve the objectives.

I. PSG membership

- Whether PSG should strive to keep retiring seabird biologists involved in the society
- Whether PSG more actively encourage participation from persons outside of the US and Canada. (*Rationale:* If PSG is truly dedicated to the conservation and study of "Pacific" seabirds, we should strive to actively involve those from the entire Pacific, including and specifically, those working in the Southern Hemisphere)
- Whether PSG should more actively encourage participation from students in all aspects of the running of the PSG, including the Exco
- Whether there are other groups or people PSG should actively encourage to join/participate in the society
- Other ideas about increasing membership and participation

II. Annual Meetings

- Whether PSG should hold its meetings internationally every few years, so as to support seabird research and conservation in developing nations. (If so, how would we finance such meetings, what would be the composition of the local committee, how often?)
- Whether PSG should provide financial support for student travel awards
- Whether there should be different student travel award categories depending upon proximity to meeting site
- Whether PSG should provide financial support (travel and/or lodging and/or registration and/or per diem) for Special Achievement Award and Lifetime Achievement Award Recipients. (If so, which categories, and how would PSG finance this?)
- Whether PSG should strive to address the issue of the carbon footprint of its annual meetings. (*Rationale:* Annual meetings require long flights by many participants and other impacts on our carbon footprint. Our interest in conservation of seabirds and their habitats suggests we consider this issue.)

III. PSG publications (*Pacific Seabirds*, *Marine Ornithology* [MO], website, others)

- Whether PSG should provide financial support for MO. (The Exco currently provides support for MO up to \$6,000 per year from the Endowment Fund.)

IV. PSG and conservation

- Whether PSG should be more proactive as an advocate of seabird conservation worldwide. (*Rationale:* Currently PSG is mostly reactive—we respond to petitions, lawsuits, etc. Being proactive could mean we would correspond with governments in countries in the Pacific basin and elsewhere about emerging and ongoing conservation issues, make recommendations for actions or

COMMITTEE REPORTS

studies, and promote involvement in multinational agreements.)

- How PSG should use funds we have received from individual philanthropists for “Conservation,” and what oversight should be arranged for their use

V. PSG’s goals and objectives for 2020 and beyond

- Whether PSG should strive to increase the multidisciplinary nature of the society. (*Rationale*: Seabirds

face problems both on land and in the marine environment, such as bycatch, oiling and other contaminants, competition with fisheries, and climate change). Many PSG members work with other agencies and other disciplines, including fisheries and oceanography. If we hope to conserve seabirds, PSG should work to become more embedded in these communities. We need to raise awareness among agencies and other disciplines that changes in the

marine environment have impacts on seabirds just as much as fish and zooplankton. We also need to raise our own understanding of these impacts. We should invite oceanographers and fisheries scientists to talk at our annual meetings and we do the same at their meetings

- Other ideas for taking PSG to 2020 and beyond; other goals and objectives we should be striving for; other changes we should make

PUBLICATIONS OF THE PACIFIC SEABIRD GROUP

The Pacific Seabird Group publishes symposia and other works. **PSG Symposia** are occasionally held at Annual Meetings; those, which have been published, are listed below. **Technical Reports** prepared by PSG working groups also are listed. *To order one of these PSG publications, please see instructions after each item.*

Abstracts of papers and posters given at PSG meetings are published annually. Abstracts for meetings of 1974 through 1993 appeared in the PSG Bulletin (Volumes 2–20); for meetings of 1994 through 2003, in Pacific Seabirds (Volumes 21–30); and for meetings of 1997 and later, at www.pacificseabirdgroup.org

PSG publishes the journals *Pacific Seabirds* (www.pacificseabirdgroup.org) and *Marine Ornithology* (www.marineornithology.org). Current and past issues of both journals are available online or by subscription. Back issues may be obtained online; those of Pacific Seabirds also are available from the PSG Treasurer (order form on last page).

SYMPOSIA

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. *Available free of charge at* <http://elibrary.unm.edu/sora/Condor/cooper/sab.php>

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. *Available free of charge at* <http://elibrary.unm.edu/sora/Condor/cooper/sab.php>

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; available free of charge at* www.pacificseabirdgroup.org

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. *Order from:* Ornithological Societies of North America, PO Box 1897, Lawrence, Kansas 66044; phone (800) 627-0629; no online orders.

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. *Available free of charge at* <http://elibrary.unm.edu/sora/Condor/cooper/sab.php>

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. *Available free of charge at* <http://elibrary.unm.edu/sora/Condor/cooper/sab.php>

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. *Order from PSG Treasurer* (order form on last page), *or available free of charge at* www.pacificseabirdgroup.org

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

PSG PUBLICATIONS

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. **Order 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. **Order from PSG Treasurer** (order form on last page), **or available free of charge at** www.pacificseabirdgroup.org

BEHAVIOUR AND ECOLOGY OF THE SEA DUCKS. Ian Goudie, Margaret R. Petersen 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. **Order free of charge from:** Publications Division, Canadian Wildlife Service, Ottawa, Ontario, K1A 0H3, Canada, **or available free of charge at** www.pacificseabirdgroup.org

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. **Order from 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. **Order from PSG Treasurer** (order form on last page).

OIL AND CALIFORNIA'S SEABIRDS. Harry R. Carter (convener) and Anthony J. Gaston (editor). Proceedings of a Symposium of the Pacific Seabird Group, Santa Barbara, California, February 2002. Published 2003 in *Marine Ornithology* 31(1). **Available free of charge at** www.marineornithology.org

NEW! THE BIOLOGY AND CONSERVATION OF THE AMERICAN WHITE PELICAN. Daniel W. Anderson, D. Tommy King, and John Coulson (editors). Proceedings of a Symposium of the Pacific Seabird Group. *Waterbirds*, Volume 28. Special Publication 1, 2005. Published by the Waterbird Society. \$15.00. **Order from PSG Treasurer** (order form on last page).

Information on presenting symposia: Pacific Seabird Group Symposia or Paper Sessions may be arranged by any member who is interested in a particular topic. Before planning a special session, refer to Meetings/Symposia Guidelines at www.pacificseabirdgroup.org; also contact the Coordinator of the Publications Committee and the Scientific Chair for the meeting.

TECHNICAL PUBLICATIONS

EXXON VALDEZ OIL SPILL SEABIRD RESTORATION WORKSHOP. Kenneth I. Warheit, Craig S. Harrison, and George J. Divoky (editors). Exxon Valdez Restoration Project Final Report, Restoration Project 95038. PSG Technical Publication Number 1. 1997. Available free of charge at www.pacificseabirdgroup.org

METHODS FOR SURVEYING MARBLED MURRELETS IN FORESTS: A REVISED PROTOCOL FOR LAND MANAGEMENT AND RESEARCH. Pacific Seabird Group, Marbled Murrelet Technical Committee. PSG Technical Publication Number 2. 2003. Available free of charge at www.pacificseabirdgroup.org

PACIFIC SEABIRD GROUP COMMITTEE COORDINATORS

Committees do much of PSG's business, as well as the conservation work for which PSG is respected. The committees welcome (and need) participants; contact the coordinators for information.

AWARDS COMMITTEE

The Awards Committee consists of the Past Chair, Chair, and Chair-elect. Committee members for 2006 are **Katie O'Reilly** (chair), **Verena Gill**, and **Doug Bertram**; contact information is on inside back cover.

CONSERVATION COMMITTEE

Craig S. Harrison, 4953 Sonoma Mountain Road, Santa Rosa, CA 95404, USA. Telephone: (202) 778-2240, e-mail: charrison@hunton.com

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To the Endowment Fund¹ \$ _____
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A full list of PSG publications appears on the preceding pages. If the publication you want is not listed on this page, please order according to information in the publications list.

Back issues of Pacific Seabirds (can also be downloaded from www.pacificseabirds.org)

Vols. 1-8 (1974-1981) _____ x \$2.50 \$ _____
 Vols. 9 (1982 to present) _____ x \$5.00

PSG Symposia

Status and Conservation of the Marbled Murrelet in North America _____ x \$20.00 \$ _____
 Biology of Marbled Murrelets: Inland and at Sea _____ x \$12.00 \$ _____
 Biology, Status, and Conservation of Japanese Seabirds _____ x \$75.00 \$ _____
 The Biology and Conservation of the American White Pelican _____ x \$15.00 \$ _____

TOTAL ENCLOSED

Prices include postage (surface rate) and handling.

SEND CHECK OR MONEY ORDER (payable in **US dollars** to the **Pacific Seabird Group**) to: PSG Treasurer, Ron LeValley, 920 Samoa Blvd., Suite 210, Arcata, CA 95521, USA.

MEMBERSHIPS (new and renewing) and **DONATIONS** may also be paid online at www.pacificseabirdgroup.org

¹ Proceeds from Life Memberships go to the Endowment Fund, which supports the publications of the Pacific Seabird Group. Contributions may be given for a specified purpose; otherwise they also go to the Endowment Fund.

² Contributions may be tax-deductible; see inside front cover for more information.

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