

REPORT OF ADISORY PANEL ON MARINE BIRDS AND MAMMALS

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The fourth meeting of the Advisory Panel on *Marine birds and mammals* (MBM-AP) was held from 15:15 – 18:00 hours on October 14, 2004. The Panel Co-Chairman, Dr. Hidehiro Kato, called the meeting to order and welcomed the participants (*MBM-AP Endnote 1*). The Panel reviewed the terms of reference (*MBM-AP Endnote 2*), and the draft agenda that was adopted (*MBM-AP Endnote 3*). The Panel Co-Chairman, Dr. William J. Sydeman agreed to moderate discussion.

MBM-AP membership (Agenda Item 3)

Dr. Kato introduced Dr. Rolf Ream (U.S.A), a marine mammal expert, who became a new member of the Panel to replace Dr. Thomas Loughlin. MBM-AP members welcomed Dr. Ream and noted that Dr. Loughlin served the Panel well and will be missed.

It was pointed out that work of MBM-AP has been hindered by the lack of national participation. In fact, only Japanese and US members attended all meetings of the Panel. To complete the strategic goals of the Panel the following has been recommended:

- Canada has active marine bird and mammal research programs, yet Dr. Douglas Bertram's position on the Panel (marine birds) has not been replaced, and Dr. Peter Ross (marine mammals) have not attended any MBM-AP meetings since 2001. Canada has to be requested to consider nominating new MBM-AP members;
- Dr. Vyacheslav Shuntov does not travel abroad and is unable to attend meetings outside Russia, and thus Russia has to be requested to consider nominating additional members to the Panel;
- China and Korea have to be requested to nominate experts to the Panel.

Review of MBM-AP workshop at PICES XIII (Agenda Item 4)

The MBM-AP workshop entitled "Combining datasets on distribution and diets of marine birds and mammals II" was held October 14, 2004, and attended by 16 scientists. Five oral presentations were made, including two talks on marine birds and three talks on marine mammals. The summary of the workshop is included elsewhere in this Annual Report.

Presentations and associated discussions revealed the following:

- Diet composition of seabirds and marine mammals varies between the west and east regions of the North Pacific. Myctophids are an important prey for many species in the open ocean, whereas a series of coastal prey are important in marginal seas. Euphausiids and copepods are important for planktivorous seabirds, but diet compositions have changed through time.
- Diet composition has switched dramatically at the decadal level, probably related to regime shifts, El Niños and other climatic factors.
- Marine mammals and seabirds, including, at least, Cassin's Auklet and northern fur seal, and species discussed last year, may be useful as ecosystem indicators of climate fluctuations, though there are some limitations with this approach. For example, understanding the dynamics of prey switching and geographic variability is essential to interpreting spatio-temporal variations in diet composition. MBM-AP, while highlighting this issue, recommends continued efforts to develop dietary and demographic indices of short-term and low-frequency climate-ecosystem fluctuations.

Review of FIS/BIO Topic Session at PICES XIII (Agenda Item 5)

The FIS/BIO Topic Session on “Hot spots and their use by migratory species and top predators in the North Pacific” was scheduled for October 19, 2004. This session was co-organized by MBM-AP, with Drs. Kato and Sydeman serving as co-convenors. The session was well subscribed, with 21 oral presentations and 7 poster presentations. A possible publication of the papers in a special volume of a peer-reviewed journal was discussed and strongly supported by the participants. The summary of the session is included elsewhere in this Annual Report.

Proposals for publications, workshops and topic sessions for PICES XIV and PICES XV (Agenda Item 6)

- Building on the Working Group 11 (Consumption of marine resources by marine birds and mammals in the PICES region) report, and after a thorough review of the presentations and discussions at the MBM-AP workshops on combining dietary datasets of marine birds and mammals in 2003 and 2004, the Panel recommends that the papers presented at the 2003 and 2004 workshops be considered as a special PICES publication. A total of 10 papers are available for publication, preferably in a peer-reviewed journal such as *Progress in Oceanography*. Drs. Sydeman and Kato volunteered to serve as editors. Dr. Sydeman will discuss this opportunity with the PICES Secretariat. This publication represents an important duty that remains incomplete for MBM-AP.
- To promote cooperation with marine bird and mammal experts from Russia, the Panel recommends that a 1-day workshop, entitled “Factors affecting distribution and foraging ecology of top predators in the Okhotsk Sea” be convened at PICES XIV (*MBM-AP Endnote 4*). It is hoped that experts on lower trophic levels can be recruited for the workshop to put the top predator data in

context. To provide the greatest potential for participation, MBM-AP requests that the workshop be held on one of the primary meeting days and travel support be provided to at least one keynote speaker.

- The Panel proposes a 1-day Topic Session to be convened jointly by BIO, POC and FIS, in collaboration with MONITOR and TCODE, tentatively entitled “Use of top predators as temporal indicators of changes in oceanographic conditions and prey populations” (*MBM-AP Endnote 5*). This Topic Session will complement the 2004 Topic Session on “Hot spots and their use by migratory species and top predators in the North Pacific”. It is envisioned that the 2005 Topic Session could take advantage of long-term (10+ year) marine bird, mammal, and predatory fish (particularly salmonids) monitoring datasets from around the North Pacific, and would provide novel insight into synchrony in responses of top predators to climate variability in the North Pacific as well as serve to highlight which species and parameters could serve as “rapid-response ecosystem indicators”. The session would also provide initial understandings of top predator responses to secular climate change.

PICES website: MBM-AP contribution (Agenda Item 7)

It is recognized by MBM-AP that attention should be paid to updating the PICES website with new material. Dr. Ream agreed to act as the point person between the Panel and the PICES webmaster, and update the MBM-AP web page.

Cooperation with international organizations (Agenda Item 8)

At last year’s MBM-AP meeting, cooperation with the International Whaling Commission (IWC) was discussed. Dr. Kato is the IWC representative to PICES and the PICES observer to IWC. The Panel thanked Dr. Kato for his significant efforts to date, and recommended that he continue to represent PICES at IWC.

Other business

Future of MBM-AP

The Science Board Chairman, Dr. Ian Perry, provided an overview of the history of MBM-AP and pointed out the need for an evaluation of the Panel's progress to date. Dr. Perry reiterated that MBM-AP was established to provide the upper trophic level perspective to the PICES community, and has been successful in this regard. BIO is the parent committee for the Panel.

MBM-AP members and observers had a lively discussion on the need for continuation of the MBM-AP as a specialist group to support BIO and the PICES community in general. Participants felt that MBM-AP has been a productive group, hosting numerous workshops and Topic Sessions over the past 4 years. MBM-AP has been working to collect and investigate new information of top predator diets and abundance, with which to eventually update the report of WG 11 on *Consumption of marine resources by marine birds and mammals in the PICES region* (PICES Scientific Report No. 14, 2000). To meet this objective, MBM-AP has hosted workshops on combining dietary datasets for the past 2 years.

Information on distribution and abundance of North Pacific predators has been advanced with new studies from member nations, as well as the contribution of MBM-AP to the PICES CPR program, whereby observations of seabirds and marine mammals have been added to the North Pacific CPR survey lines. PIs for this project are Drs. Sydeman and David Hyrenbach. They have been collaborating with CPR PIs, Drs. Sonia Batten and David Welch to provide a more comprehensive analysis on North Pacific marine

ecosystems and how they change in relation to climate. The North Pacific Research Board (NPRB) has funded the MBM portion of the Pacific CPR project, and the Panel gratefully acknowledged this support.

In short, there is need for MBM-AP to continue to develop update estimates of prey consumption for top predators of the North Pacific. Other strategic issues for MBM-AP in the future include:

- development of indicators for climate and ecosystem variability;
- development of an oceanographic understanding of the biogeography of top predators in the North Pacific; and
- enhancing the technology for operational oceanography using top predators as sampling devices.

MBM-AP members and observers voiced unanimous interest and support for continuation of the Panel beyond the initial 5-year term as a subcommittee of BIO. It was indicated that the Panel serves to generate general interest in PICES from the marine bird and mammal research communities, and functions to coordinate multi-disciplinary investigations and symposia within the PICES community. The Panel would develop a strategic plan and vision for the future should that be desired by Science Board and BIO.

North Pacific Ecosystem Status Report

It was recommended that MBM-AP members and observers with expertise in particular regions of the North Pacific Ocean review the draft NPESR and provide comments to the Panel. The MBM-AP Co-Chairmen will then provide comments to the lead authors of NPESR.

MBM-AP Endnote 1

Participation List

Members

Hidehiro Kato (Japan, Co-Chairman)
Rolf Ream (U.S.A.)
William Sydeman (U.S.A., Co-Chairman)
Yutaka Watanuki (Japan)

Observers

Christine Abraham (U.S.A.)
Russ Bradley (U.S.A.)
Yoshihiro Fujise (Japan)
Alexander Kitaysky (U.S.A.)
Tomio Miyashita (Japan)
R. Ian Perry (Science Board Chairman)
Andrew Trites (Canada)

MBM-AP Endnote 2

Terms of reference for Advisory Panel on *Marine birds and mammals*

1. Provide information and scientific expertise to BIO, CCCC Program, and when necessary, to other scientific and technical committees with regard to the biology and ecological roles of marine mammals and seabirds.
2. Identify important problems, scientific questions, and knowledge gaps in assessing the roles of marine mammals and seabirds in marine ecosystems.
3. Assemble relevant information on the biology of marine mammals and seabirds and disseminate it to the PICES community through scientific reports and symposia.
4. Develop strategies to improve collaborative, interdisciplinary research with marine mammal and seabird researchers and PICES.

MBM-AP Endnote 3

MBM-AP Meeting Agenda

1. Welcome address
2. Adoption of agenda
3. MBM-AP membership
4. Review of MBM-AP workshop at PICES XIII on “Combining data sets on diets of marine birds and mammals II”
5. Review of FIS/BIO Topic Session at PICES XIII on “Hot spots and their use by migratory species and top predators in the North Pacific”
6. Proposals for publications, workshops and sessions for PICES XIV and PICES XV
7. PICES website: MBM-AP contribution
8. Cooperation with international organizations
9. Other business

MBM-AP Endnote 4

Proposal for a 1-day MBM-AP Workshop at PICES XIV on “Factors affecting distribution and foraging ecology of top predators in the Okhotsk Sea”

This workshop will emphasize multi-trophic level understanding of the distribution and foraging ecology of top predators in the Sea of Okhotsk, including marine birds and mammals as well as predatory fishes. One goal is to promote communication with Russian marine

bird and mammal experts that do not often come to PICES meetings. The workshop will have a regional focus (Okhotsk Sea), but it is hoped that experts on lower trophic levels can be recruited to put the top predator data in context. A product would be a better understanding of

potential species and parameters to be used as ecosystem indicators for this critical region of the North Pacific.

Recommended invited speakers: Vyacheslav Shuntov (marine birds), Alexander Boltnev (marine mammals), and A. Pinchuk (lower trophic levels).

Recommended conveners: Alexander Kitaysky (U.S.A.) and Hidehiro Kato (Japan).

Travel support is requested for at least one keynote speaker.

MBM-AP Endnote 5

Proposal for a 1-day Topic Session at PICES XIV on “Use of top predators as temporal indicators of changes in oceanographic conditions and prey populations”

This Topic Session will complement the 2004 Topic Session on “Hot spots and their use by migratory species and top predators in the North Pacific”.

It has been suggested that top predators integrate fluctuations in lower trophic level ecosystem constituents and may therefore serve as reliable, rapid-response indicators to ocean climate change. Previous MBM-AP workshops and topic sessions have revealed synchronous variations in distribution and abundance, life history and demography, and food habits for a variety of predators in the North Pacific. But, how ubiquitous are these patterns, spatially and temporally? What time lags are involved in signals to responses? What species and parameters would be best suited to serve as ecosystem “monitors”? These questions are critical to future efforts to monitor the North Pacific (GOOS, *etc.*), as well as important for many aspects of fishery oceanography. It is

envisioned that this session could take advantage of long-term (10+ year) marine bird, mammal, and predatory fish (particularly salmonids) monitoring datasets from around the North Pacific using information from all possible sources (*e.g.*, ships, rookeries/colonies, and telemetric). The session would provide novel insight into synchrony in responses of top predators to climate variability in the North Pacific as well as serve to highlight which species and parameters could serve as “rapid-response” ecosystem indicators. Publication of the papers in a peer-reviewed journal will be investigated.

Recommended conveners: William J. Sydeman (U.S.A.), Andrew Trites (Canada) and Hidehiro Kato (Japan).

Travel support is requested for two invited speakers (Dr. Ian Boyd (U.K.; British Antarctic Survey) and TBD).