

The Advisory Panel on *Continuous Plankton Recorder in the North Pacific*

The Advisory Panel on *Continuous Plankton Recorder in the North Pacific* (AP-CPR) met from 18:00–19:30 h on October 13, 2012, in Hiroshima, Japan. The meeting was chaired by Dr. Phillip R. Mundy and attended by the Chair of MONITOR, Dr. Hiroya Sugisaki. The list of participants and agenda are found in *AP-CPR Endnotes 1 and 2*.

AGENDA ITEM 3

Overview of CPR activities in 2011–2012

Dr. Sonia Batten reported that the vessel of opportunity, *Morning Cedar*, which successfully completed two east to west (E–W) transects along the Vancouver to Japan (VJ) route earlier in the year, was transferred to the east coast of North America in September 2012. A new ship, the *Madame Butterfly* was recruited and outfitted with CPR before it departed for Japan on October 4, 2012. Data from the north to south (N–S) transect in August 2012 was lost along with the CPR due to a severed towing cable. A flaw was discovered in the replacement CPR but it was repaired and the mid-September transect was successful. Difficulties notwithstanding, normal sampling effort was maintained in 2012, except for the gap in August for the 2/3 N–S transect. The 2012 sampling includes three E–W transects, April, June, October and six N–S transects, April through October.

Dr. Batten also introduced the Advisory Panel to the concept and possibilities of a new sampling device that can be deployed in tandem to the CPR, the Water and Microplankton Sampler (WaMS). The device is aimed at sampling the smaller size-fraction (nano and pico) plankton community. Collections are held in plastic bags and may or may not be preserved. Samples are then amenable to analysis by a number of techniques including flow cytometry, molecular probes and barcoding, and Harmful Algal Bloom microarrays.

Status of funding commitments

Dr. Batten presented the chart below to illustrate the availability and timing of funding from Canada (Fisheries and Oceans Canada, DFO), Japan, the United States (North Pacific Research Board, NPRB, and Exxon Valdez Oil Spill Trustee Council, EVOS) and the Sir Alister Hardy Foundation for Ocean Science (SAHFOS). Details on funding outlooks are presented in national section reports.

Source	2011	2012	2013	2014	2015	2016
NPRB	█	█	█	█		
DFO	█	█	█	█		
Japan	█	█	█	█	█	█
EVOS	█	█	█	█	█	█
SAHFOS	█	█	█	█	█	█

AGENDA ITEM 4

Report from the Second Workshop of Global Alliance of Continuous Plankton Recorder Surveys (GACS)

Advisory Panel members, Dr. Sanae Chiba and Dr. Batten, attended the second meeting of GACS at the UNESCO Intergovernmental Oceanographic Commission, Paris, on September 19–20, 2012. The report of the meeting was presented by Dr. Batten. The meeting at UNESCO allowed GACS to be initiated as a formal organization with a governing body, on which Dr. Batten and Dr. Chiba sit. GACS aims to provide a powerful set of tools for understanding biological consequences of climate change. GACS can do so because it has access to information products on status of plankton collected and processed using standard methods from much of the world's oceans. Information products include maps comparing four standard measures, Phytoplankton Colour Index (PCI), Total Diatoms, Total Dinoflagellates, and Mean Copepod Community Size. (See web link in *AP-CPR Endnote 3.*) The information will be published annually as the Global Ecosystem Status Report, GESR. GESR 2010–2011 is now in draft.

AGENDA ITEM 5

Reports and comments of national representatives

Canada

Dr. Batten reported on behalf of Dr. David Mackas who was unable to attend. Canadian funding is expected to continue at the same level through March 2014, when it will be evaluated for renewal.

Japan

Dr. Chiba presented a report, *Japanese Contribution to the North Pacific CPR Projects, FY2011-2012 Activities*. The samples from 2010 have been processed, the 2011 sample processing is underway, and stable isotope analysis has been completed on selected samples. The project is currently making a Japanese language version of the CPR promotional and educational video originally produced in English by the Sir Alister Hardy Foundation for Ocean Science (SAHFOS). Dr. Chiba presented highlights from the recently published paper in *Geophysical Research Letters* (Chiba *et al.* 2012, full citation below). The paper presented finding of a good correlation between bloom timing and the PDO-derived SST anomaly. Further, in years of warm spring, the bloom occurred earlier than in years with cool springs. The phytoplankton community changed in response to the extent of seasonal warming and mixed layer shoaling, rather than responding to SST values at a time. Findings on interannual variation of the phytoplankton community were that diatom abundance was high in the years of rapid SST increase during March through April, and dinoflagellates dominated in the years of rapid SST increase in May through June. The pattern is similar to the PDO, although the correlation was not significant.

Current funding is provided by grants that conclude at the end of 2013. Two additional grants have been proposed for funding since FY2012 to secure the current level of contributions up to FY2017. The bulk of the anticipated funding is to be devoted to the personnel who do the analyses, rather than to collecting new observations.

USA

The North Pacific Research Board funding is secure through mid-2014, and a Request for Proposals specific to monitoring, including CPR, has been scheduled for June 2013, although it is not yet released. The timing of the monitoring RFP makes possible continuation of support in 2014 without interruption.

The Exxon Valdez Oil Spill Trustee Council (Anchorage, USA) has implemented its long-term commitment to support through 2016 with the possibility of renewal for an additional five years, dependent on performance, as part of the larger Gulf Watch Alaska project.

Recent budgetary conditions are not conducive to developing direct support from NOAA's National Marine Fisheries Service. Although NMFS' Alaska Fisheries Science Center's Auke Bay Laboratories continues to

support North Pacific CPR through networking with funding sources in Alaska, the ability to establish a CPR sorting facility in Juneau, as had been hoped, is unlikely in the present budget cycle.

Recommendation: MONITOR recommends Science Board to request the PICES Secretariat to send a cover letter with information on CPR to key U.S. supporters and allied agencies to heighten awareness of CPR and PICES' continued involvement and support in March, 2013. (Draft language and names and addresses of contacts to be provided to the Secretariat through the MONITOR Chair.)

AGENDA ITEM 6

Publications

- Chiba S, S. Batten, K. Sasaoka, H. Sugisaki (2012). Influence of the Pacific Decadal Oscillation on phytoplankton phenology and community structure in the western North Pacific based on satellite observation and the Continuous Plankton Recorder survey for 2001–2009. *Geophysical Research Letters*. Vol. 39, L15603, doi:10.1029/2012GL052912.
- Chiba S, T. Yoshiki, K. Sasaoka, H. Sugisaki, T. Ono, S. Batten (2012). Lower trophic level linkage and cool-warm cycle based on the North Pacific CPR survey 2001–2009: An implication for the future warming ocean. Second International Symposium on “*Effects of climate change on the world’s oceans*”, May 13–20, 2012, Yeosu, Korea.
- Rooper, C.N., J.L. Boldt, S.D. Batten, C. Gburski. (2012). Growth and production of Pacific ocean perch (*Sebastes alutus*) in nursery habitats of the Gulf of Alaska. *Fishery Oceanography* 21, 415–429.
- Yoshiki, T. *et al.* Developmental timing of mesozooplankton in the western North Pacific Ocean during 2001-2009 based on the Continuous Plankton Recorder. (JPR? MS in preparation)

Other contributions

- DFO “State of the Ocean” Report. State of physical, biological, and selected fishery resources of Pacific Canadian marine ecosystems in 2011, edited by W.R. Crawford and J.R. Irvine. <http://www.pac.dfo-mpo.gc.ca/science/oceans/reports-rapports/state-ocean-etat/index-eng.htm> DFO Can. Sci. Advis. Sec. Res. Doc. 2012.
- NOAA’s Ecosystem Considerations report (in August 2012): Batten, S.D. Continuous Plankton Recorder data from the Northeast Pacific. <http://access.afsc.noaa.gov/reem/ecoweb/Index.cfm>.

Presentations at PICES-2012

- Sanae Chiba (Invited Speaker) on “*Contrast of the lower trophic level responses to climate forcing over the eastern and western North Pacific*” at the MEQ Workshop (W6) on “*The contrasting cases of HABs in the eastern and western Pacific in 2007 and 2001*”.
- Sonia Batten (co-authored by Anthony Walne) on “*Ship of opportunity sampling of lower trophic levels*” at the FIS/MONITOR/POC Topic Session (S4) on “*Monitoring on a small budget: Cooperative research and the use of commercial and recreational vessels as sampling platforms for biological and oceanographic monitoring*”.

Further details can be found in the Session Summaries section of the [2012 Annual Report](#).

AGENDA ITEM 7

New business

None presented.

AP-CPR Endnote 1

AP-CPR participation list

Members

Sonia D. Batten (Canada, SAHFOS)
Sanae Chiba (Japan)
Hyung-Ku Kang (Korea)
Phillip R. Mundy (USA, Chairman)

Observers

Tsuneo Ono (Japan)
Hiroya Sugisaki (Japan, MONITOR Chairman)

AP-CPR Endnote 2

AP-CPR meeting agenda

1. Welcome (Mundy)
2. Additions and modifications to agenda
3. Overview of CPR activities in 2011 – 2012 (Batten)
4. Report from Second (Sept 2012) Workshop of Global Alliance of Continuous Plankton Recorder (CPR) Surveys (Chiba and Batten)
5. Reports and comments of national representatives
6. Receive suggestions for 2011 – 2012 AP-CPR Annual Report (Mundy)
7. New business
8. Adjourn

AP-CPR Endnote 2

Web links relevant to AP-CPR AP meeting

SAHFOS

<http://www.sahfos.ac.uk/sister-survey/pacific-cpr-survey/background.aspx>

PICES AP-CPR

http://www.pices.int/members/advisory_panels/CPR.aspx

PICES CPR

<http://www.pices.int/projects/tcprsoatnp/default.aspx/#data>

Data: North Pacific Survey and CTD

www.pices.int/projects/tcprsoatnp/default.aspx

Global Alliance of CPR Surveys

<http://www.globalcpr.org/>

North Pacific CPR Survey

<http://www.globalcpr.org/about-gacs/north-pacific-cpr-survey.aspx>