

E-Newsletter of NOWPAP CEARAC

Northwest Pacific Action Plan
Special Monitoring & Coastal Environmental Assessment
Regional Activity Centre

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Greetings from CEARAC

Kazuya Kumagai, CEARAC Director

CEARAC (Special Monitoring and Coastal Environmental Assessment Regional Activity Centre) is one of the four Regional Activity Centres established in the four member states (China, Japan, Korea and Russia) of the Northwest Pacific Action Plan (NOWPAP) in the Regional Seas Programme of UNEP. Since its inception in 2002, CEARAC has worked on monitoring and assessing the marine and coastal environment by various means including remote sensing technique.



In environmental study, application of remote sensing technique has advantages over on-site surveys as satellite images can cover wider areas. With this useful technique and conventional on-site surveys, CEARAC has implemented activities such as mapping seagrass/seaweed beds, and developing assessment methods of eutrophication.

In the study of the marine and coastal environment, influences from the terrestrial area have been pointed out, and marine litter is one obvious example. CEARAC has led various activities to address this problem by promoting beach cleanup programs in cooperation with the Northwest Pacific Region Environmental Cooperation Center (NPEC), host organization of CEARAC.

CEARAC Newsletter Vol.11 introduces CEARAC's mission and its past/current activities and I hope it helps its readers get more interested in conserving our precious seas.



Activities in the 2014-2015 biennium

CEARAC plans and implements its activities biennially. In the current 2014-2015 biennium, the following activities are being conducted.

Major Activity	Tasks
Organization of meetings	<ul style="list-style-type: none"> - Focal Points Meeting (FPM) in 2014 and 2015 - Expert Meeting in 2015
Update of Website	<ul style="list-style-type: none"> - Regular update of web contents (e.g. on HABs and RS) - Upload of annual CEARAC newsletter
3 Specific Projects	
1 <Marine biodiversity> Pilot assessment of the impacts of major threats to marine biodiversity in selected sea areas in the NOWPAP region (major threats: eutrophication; non-indigenous species; and habitat alteration)	<ol style="list-style-type: none"> (1) Selection of target sea areas (2) Collection of available data and development of data inventory (3) Implementation of pilot assessment <ol style="list-style-type: none"> 1) Selection of assessment indicators 2) Implementation of pilot assessment 3) Preparation of national reports (4) Organization of Workshop (5) Preparation of regional report
2 <Eutrophication> Trial application of the screening procedure of the NOWPAP Common Procedure for eutrophication assessment	<ol style="list-style-type: none"> (1) Application of the screening procedure to the entire NOWPAP sea area <ol style="list-style-type: none"> 1) Collection and data analysis (COD or TOC) 2) Collection of data and mapping of occurrences of red tides 3) Development of satellite map of chlorophyll-a concentration (2) Mapping of potential eutrophic zones in the NOWPAP region
3 <Seagrass/seaweed mapping> Case studies on seagrass beds mapping in selected sea areas in the NOWPAP region	<ol style="list-style-type: none"> (1) Development of manual for seagrass/seaweed beds mapping with satellite images (2) Mapping of seagrass distribution in selected case study areas
Marine litter (RAP MALI)	<ul style="list-style-type: none"> - Compilation and harmonization of marine litter monitoring data on beaches - Development of case study report on basin-wide collaborative Actions for prevention of marine litter input from land-based sources in Japan

Activities in 2014

1. Organization of Meetings

◆ 12th NOWPAP CEARAC Focal Points Meeting



The Twelfth NOWPAP CEARAC Focal Points Meeting (FPM) was held on 2-3 July 2014 in Toyama, Japan with focal points from the NOWPAP member states, representatives of NOWPAP RCU and RACs as well as representatives of North-East Asian Subregional Programme for Environmental Cooperation (NEASPEC) and the North Pacific Marine Science Organization (PICES).

The meeting reviewed the results of CEARAC activities for the 2012-2013 and the workplan for the 2014-2015 bienniums. In the current biennium, CEARAC has implemented several activities including:

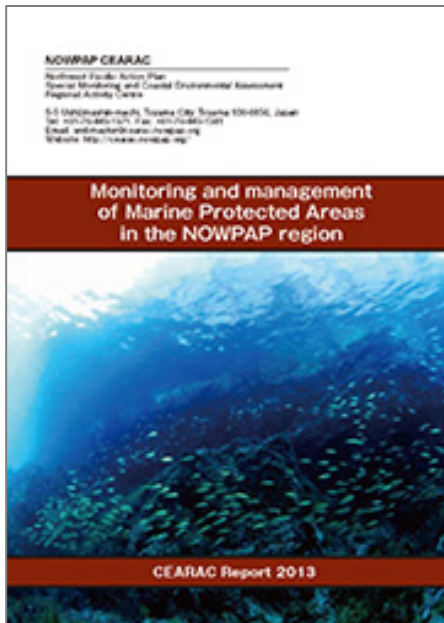
- (1) Pilot assessments on the impacts of major threats (eutrophication, non-indigenous species and habitat alternation) to marine biodiversity;
- (2) Trial application of the screening procedure of the NOWPAP Common Procedure for eutrophication assessment; and
- (3) Case studies on seagrass mapping in selected sea areas

The results of CEARAC activities for the 2014-2015 biennium will be presented at the thirteenth FPM to be held in September 2015. All documents are available on the CEARAC website (<http://cearac.nowpap.org/fpm/fpm12.html>).



2. Publication of Reports

◆ Monitoring and management of Marine Protected Areas in the NOWPAP region



This report compiles basic information on the existing MPAs in the NOWPAP member states, including the laws and regulations stipulating the establishment of MPAs as well as the monitoring programs and management practices employed. In addition, the possibility of applying internationally emerging concepts and ideas for marine and coastal biodiversity conservation to the NOWPAP region is discussed. The information in this report is expected to help policymakers in the NOWPAP member states to increase MPAs in the NOWPAP region and promote implementation of policies for the conservation of marine and coastal biodiversity.

“Monitoring and management of Marine Protected Areas in the NOWPAP region” is available on the CEARAC website (http://www.cearac-project.org/cearac-project/integrated-report/MPA_2013.pdf).

◆ Application of the NOWPAP Common Procedure for eutrophication assessment in selected sea areas in the NOWPAP region



CEARAC has been engaged in assessment of eutrophication status in selected sea areas in the NOWPAP region in recent years. In the 2012-2013 biennium, the NOWPAP Common Procedure for eutrophication assessment was refined and case studies on eutrophication assessment were carried out in Jiazhou Bay, China, north Kyushu sea area and Toyama Bay, Japan, Jinhae Bay, Korea and Peter the Great Bay, Russia. Results of these case studies were compiled as “Application of the NOWPAP Common Procedure for Eutrophication Assessment in Selected Sea Areas in the NOWPAP Region” and it is available on the CEARAC website (http://www.cearac-project.org/cearac-project/integrated-report/eut_2013.pdf).

Cooperation with NOWPAP Partners and Organizations

◆ NOWPAP ICC (NOWPAP International Coastal Cleanup)

Starting in 2006 in Yamagata Prefecture, Japan, NOWPAP International Coastal Cleanup (ICC) has been held annually in a city of the NOWPAP member states. 2014 NOWPAP ICC campaign and workshop were held on 25-26 September in Boryeong, Korea, with representatives of NOWPAP and relevant organizations, government officials as well as the general public including elementary students. Dr. Takafumi Yoshida, senior researcher of CEARAC, attended the event this year. In addition, the Minister of the Oceans and Fisheries of Korea attended the ceremony on the 25th, expressing Korea's commitment to tackle marine litter problems.

Beach cleanup was conducted at Daesan Beach, a bathing beach, and the clean-up participants picked up visible garbage as much as possible, which included many cigarette buds and fireworks even after the leisure season.



Daesan Beach, Boryeong City



An international workshop was held on the 26th, and latest information on marine litter issues in the NOWPAP member states was reported. Dr. Yoshida introduced the Northwest Pacific Regional Node which is co-hosted by NPEC, host organization of CEARAC, and NOWPAP RCU, and he requested the workshop participants input of updated situation and/or data of marine litter. The representative of the Korean government introduced starting of the 2nd phase (2014-) of National Marine Debris Management Plan. The number of monitoring /survey areas has increased from 20 to 40, and it is expected to understand the status of marine debris more precisely.

◆ PICES 2014 Annual Meeting

PICES 2014 Annual Meeting was held on 16-26 October in Yeosu, Korea. Since Dr. Yoshida is an ex-officio member of HAB Section, he attended the meeting, HAB Section and Marine Environmental Quality (MEQ) and discussed collaboration between NOWPAP and PICES with PICES members. In the beginning of 2014, Study Group (SG-SCOOP) was established with some NOWPAP and PICES members, and the first meeting of the group was also organized.



SG-SCOOP members

- **PICES-NOWPAP SG Meeting**

The first PICES-NOWPAP SG Meeting was held with Dr. Alexander Bychikov (Executive Secretary of PICES), Dr. Chuanlin Huo (Chairman of MEQ Committee), Dr. Jennifer Boldt (Chairman of Technical Committee on Monitor), Dr. Toru Suzuki (Chairman of Technical Committee on Data Exchange), Dr. Thomas Therriault (Chairman of Science Board) from PICES and Dr. Alexander Tkalin (Coordinator of NOWPAP), Mr. Xiaodong Zhong (Deputy Coordinator of NOWPAP), Dr. Seong-Gil Kang (Director of MERRAC) and Dr. Yoshida from NOWPAP.

They exchanged information of their current and future working areas and discussed priorities for collaboration. Since harmful algal blooms (HABs) are one of the target studies of CEARAC, it is expected to continue collaborative actions. One PICES Scientific Report on HAB has been published this year, and Dr. Yoshida helped its publication as editor. So, similar but not limited cooperation between NOWPAP and PICES is expected to bear more fruitful outcomes. For eutrophication and marine biodiversity which CEARAC has been working on, PICES has not established working groups yet; therefore, practical cooperation will be discussed later.

The results of the first SG-SCOOP Meeting were submitted to the PICES Science Board (SB) for adoption. Then, they will be proposed at the Governing Council (GC) for approval of PICES-NOWPAP collaboration.

- **HAB Section Meeting**

In the HAB Section Meeting, occurrences of HABs in recent years were reported from the PICES member countries. Also, revision of Terms of References (ToR) of the Section was discussed to prolong its activities for the next three years. New ToR states active contributions to other PICES works such as FUTURE program and PICES Ecosystem Status Report as well as outreach activities and Global HAB Report.

Future collaboration with NOWPAP was also discussed in this meeting and information/data exchange and co-organization of workshops were considered. In 2015 Annual Meeting, workshops on HABs (e.g. its influences on finfish in the eastern and western coasts of the Pacific and projection of HABs) were proposed and active involvement of NOWPAP in them was expected.

- **Study on Marine biodiversity in PICES**

Conservation of marine biodiversity is one of the important themes in PICES, so a new study group was established. After discussion on focuses of the group, it was decided to propose establishing a working group (WG) on biodiversity and deep-water biogenic habitats. After approval at SB and GC, the new WG will be established, and CEARAC will expand its collaborative areas with PICES.

In addition, WG28 (Working Group on Development of Ecosystem Indicators to Characterize Ecosystem Responses to Multiple Stressors) has been requesting to extend its working term for another two years to develop a final report. Besides of the final report, they plan to prepare another report to introduce various case studies implemented in the past, review of indicators and lists of potential indicators, and CEARAC will continue information exchange with PICES to update and expand our knowledge and expertise for conservation of marine and coastal environments.

◆ 8th Nature without Borders International Environmental Forum

The 8th Nature Without Borders International Environmental Forum was held at Far Eastern Federal University campus in Vladivostok from October 23 to 24, 2014. This forum was organized by the Russian Academy of Sciences and Russian Geographical Society to promote discussion of environmental policy in Far Eastern region. Dr. Genki Terauchi, a senior researcher of CEARAC gave a talk on "Preliminary assessment of eutrophication in the Northwest Pacific using remotely sensed chlorophyll-a from 1998 to 2012" at the session on the theme: problems of freshwater and coastal marine waters in East Asia and the role of government, business and science in their decision. He indicated a sign of potential eutrophication in Yellow sea from the detected increasing trend in satellite derived chlorophyll-a concentration.



Presenters of the 8th Nature without Borders International Environmental Forum

◆ 11th International Seagrass Biology Workshop

The 11th International Seagrass Biology Workshop was organized in Sanya, China from Nov 6 to 10, 2014. The workshop was hosted by South China Sea Institute of Oceanology, Chinese Academy of Sciences and sponsored by the World Seagrass Association among others.

Under the main theme "Declining seagrasses in a changing world", experts from all over the world presented their latest research finding and discussed four main questions: 1) Ecosystems vulnerability and resilience, 2) Biodiversity and ecosystems services, 3) Management and restoration and 4) Key ecological processes.



Participants of the 11th International Seagrass Biology Workshop

Dr. Genki Terauchi presented a poster on "Case studies of seagrass mapping in selected sea areas in the NOWPAP region" and had a meeting with Dr. Yang Dingtian of South China Sea Institute of Oceanology and Dr. Wentao Li of Ocean University of

China who will be undertaking CEARAC's case studies of seagrass mapping in China in the 2014-2015. The meeting concluded that both temperate and tropical seagrasses are vulnerable to global changes caused by human activities (i.e. eutrophication), climate change (i.e. temperature increase), and natural processes (i.e. tsunamis). Understanding how seagrasses respond to these changes is critical for future ecosystem management. A press-release statement on global status of seagrass will be distributed from IUCN as an outcome of this workshop.

◆ Northwest Pacific Regional Node of the GPML

In the Northwest Pacific region, besides NOWPAP and central/local governments of each state, many non-governmental organizations (NGOs), such as JEAN and OSEAN, and many general public have implemented activities to resolve marine litter problems. In order to develop a network for efficiently sharing information among stakeholders and promoting actions to prevent of marine litter input, the GPML (Global Partnership on Marine Litter) Northwest Pacific Regional Node (http://www.npec.or.jp/NWPacific_node/) was established in 2014, co-hosted by NOWPAP Regional Coordinating Unit (RCU) and Northwest Pacific Environmental Cooperation Center (NPEC).

This regional node aims to enhance awareness of marine litter prevention actions at national, local and grass-root levels and to strengthen information exchange on best practices and measures for prevention of marine litter input among the NOWPAP member states and stakeholders.

What is marine litter? What kinds of marine litter are found on beaches? What are the sources of marine litter? What impact does marine litter have? These are most basic questions have to be answered for general public to better understand marine litter problems. With illustrations and pictures, this regional node website provides a lot of information on marine litter problems in a visitor-friendly way.

At present, information in the Northwest Pacific Regional Node is available in English and Japanese, and it is planned to provide the same information in Chinese, Korean and Russian in the near future so as to enable more people to understand marine litter problems in this region.

This regional node has been just established. To help reducing levels and impacts of marine litter, more information and involvement of wider variety of people is necessary. We hope that in the future more relevant parties will join our efforts to contribute to this regional node and make it essential information source on marine litter.



Top page of Northwest Pacific Regional Node of GPML



Illustration of the sources of marine litter

20th anniversary of NOWPAP

NOWPAP is 20 years old!

Alexander Tkalin, NOWPAP Coordinator



Dear friends,

This year, NOWPAP is celebrating its 20th anniversary. At the commemorative symposium held in Moscow, Russia, on 20 October 2014, representatives from NOWPAP member states (China, Japan, Korea and Russia) reflected on past achievements of NOWPAP and challenges that NOWPAP is facing in the future. Most of them agreed that NOWPAP has become a mature international organization providing a practical mechanism for regional cooperation in protecting the marine and coastal environment of the Northwest Pacific.

Among positive developments and achievements highlighted by symposium participants, I would like to mention just a few:

- NOWPAP has a sustainable institutional infrastructure consisting of Trust Fund, Intergovernmental Meeting (decision making body), Regional Activity Centres (with their Focal Points and networks of experts), and Regional Coordinating Unit with two offices in Japan and Korea.
- NOWPAP has established close partnership relations with several organizations and projects in the region, avoiding duplication of efforts and trying to achieve mutual benefits: IOC WESTPAC, NEASPEC, PEMSEA, PICES, YSLME and others.
- NOWPAP activities helped to raise awareness of national and local authorities as well as general public of marine environmental issues: marine litter, harmful algal blooms, oil spills, inputs of pollutants with rivers and through atmospheric transport, biodiversity conservation, etc.
- Thanks to NOWPAP, capacity of national experts to deal with marine environmental problems (e.g., using remote sensing data, applying countermeasures against harmful algal blooms, responding to spills of oil and hazardous chemicals) was enhanced.
- NOWPAP has developed several regional agreements (adopted by member states) and guidelines to address marine litter, spills of oil and hazardous substances, eutrophication, algal blooms, etc.

While implementing its Medium-term Strategy 2012-2017 (also approved by member states), NOWPAP will continue regular assessments of the state of the marine and coastal environment, will apply the principles of Integrated Coastal and River basin Management, and will also address such issues of regional and global importance as biodiversity conservation, climate change impacts, pollution prevention and reduction, etc.

10th anniversary of NOWPAP RCU

To celebrate the 10th anniversary of Toyama office of the Regional Coordinating Unit (RCU) of NOWPAP, a symposium was held on 6 December 2014 in Toyama, Japan. Dr. Alexander Tkalin, NOWPAP Coordinator, and Mr. Kazuya Kumagai, Director of CEARAC, participated in the ceremony with the governor of Toyama Prefecture and others.

Following the ceremony, a key note speech by Ms. Misako Konno, UNDP goodwill ambassador, was given and a panel discussion was organized with Mr. Tetsuo Kondo, Director of UNDP Representation Office in Tokyo and others as panelists. The audience of more than 100 including the citizens and high school students learned about mission of the United Nations.

To commemorate this occasion, a booklet was developed to introduce accomplishments and past/current activities of CEARAC and NOWPAP and it was distributed to the symposium participants.



Commemorative Booklet of CEARAC

CEARAC Focal Points

State	Name	Organization
China	Dr. Junlong LI	China National Environmental Monitoring Center
	Ms. Guihua DONG	China National Environmental Monitoring Center
Japan	Ms. Sayo MORITA	The Ministry of the Environment
	Dr. Yasuwo FUKUYO	The University of Tokyo
	Dr. Joji ISHIZAKA	Nagoya University
Korea	Dr. Young-Nam KIM	Korea Marine Environment Management Corporation
	Dr. Jae-Hoon NOH	Korea Institute of Ocean Science & Technology
	Dr. Kyung-Hoon SHIN	Hanyang University
Russia	Dr. Vladimir SHULKIN	Far East Branch of Russian Academy of Sciences
	Dr. Tatiana ORLOVA	Far East Branch of Russian Academy of Sciences

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