

# Newsletter from NOWPAP CEARAC

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

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## Greetings from CEARAC

Yuichi NAGASAKA, 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 the Northwest Pacific Region Environmental Cooperation Center (NPEC) in Toyama, Japan in 2002, CEARAC has worked on monitoring and assessing the marine and coastal environment by various means including remote sensing technique.

In recent years, CEARAC has expanded its working areas to marine litter, eutrophication, and conservation of marine biodiversity. In 2016, two new activities were launched: Assessment of major pressures on marine biodiversity in the NOWPAP region and Feasibility study towards assessment of seagrass distribution in the NOWPAP region along with continuation of other activities including WebGIS on potential eutrophic zones in the NOWPAP region.

2016 is a milestone year for Toyama Prefecture as G7 Environment Ministers' Meeting was held in Toyama City. NOWPAP and CEARAC joined this international event with some panels displayed to introduce our past and current activities during the meeting period and at a following local event, 2016 Northeast Asia Environmental Prefectural Forum.

This newsletter is another channel for its readers to understand CEARAC and get interested in the marine environment of Toyama Bay and the northwest Pacific. I hope this newsletter also helps people start thinking of how to live a more environmentally-friendly lifestyle to save the earth.



Amaharashi Coast in Takaoka City, Toyama. Tateyama Mountain Range as high as 3,000m over Toyama Bay. This breathtaking panoramic view of the land-sea combination can be seen for all seasons.

## Activities for the 2016-2017 biennium

CEARAC plans and implements its activities biennially. In the 2016-2017 biennium, the following activities are being conducted.

Major Activities	Tasks
Organization of Meetings	<ul style="list-style-type: none"> <li>- Focal Points Meeting (FPM) in 7-8 April 2016 and 2017</li> <li>- Expert Meeting in 2017</li> </ul>
Maintenance of Website	<ul style="list-style-type: none"> <li>- Reconstruction of CEARAC website with more user-friendly functions and updated information/data</li> <li>- Upgrade of Marine Environmental Watch System</li> <li>- Regular update of web contents</li> <li>- Upload of annual CEARAC newsletters</li> </ul>
<p style="text-align: center;"><b>2 Specific Projects</b></p> <p>1 Assessment of major pressures on marine biodiversity in the NOWPAP region</p>	<ul style="list-style-type: none"> <li>- Publication of a regional report on pilot assessment of impacts of major threats on marine biodiversity</li> <li>- Assessment of major pressures on marine biodiversity in the NOWPAP region</li> <li>- Collection of information on scientific papers on the impacts of major pressures on marine biodiversity</li> <li>- Collection of information on strategies on marine biodiversity conservation</li> <li>- Organization of an expert meeting</li> </ul>
2 Feasibility study towards assessment of seagrass distribution in the NOWPAP region	<ul style="list-style-type: none"> <li>- Collection and review of literature on seagrass distribution and threats to seagrass</li> <li>- Development of in-situ database of seagrass distribution in the NOWPAP region</li> <li>- Estimation of image analysis cost</li> <li>- Organization of an international workshop</li> <li>- Publication of a feasibility study report</li> </ul>
Marine litter (RAP MALI)	<ul style="list-style-type: none"> <li>- Compilation/harmonization of monitoring data</li> <li>- Update of the website contents of the Northwest Pacific Regional Node</li> </ul>

## Activities in 2016

### 1. Organization of Meeting

#### The 14th NOWPAP CEARAC Focal Points Meeting

The 14th NOWPAP CEARAC Focal Points Meeting (FPM) was held on 7-8 April 2016 in Toyama, Japan with the participation of CEARAC Focal Points, representatives of NOWPAP RCU, and all other Regional Activity Centres (DINRAC, MERRAC and POMRAC).

CEARAC FPM is a NOWPAP arrangement consisting of representatives of the NOWPAP members in order to promote smooth and effective implementation of special monitoring and assessment of the marine and coastal environment, which are major responsibilities of CEARAC.

The meeting reviewed the results of CEARAC activities for the 2014-2015 biennium and also discussed the progress of new activities for the 2016-2017 biennium.

Taking the experiences and obtained knowledge from the past CEARAC activities into account, the meeting suggested the Secretariat to consider assessment indicators and methodologies and to conduct literature review on specific impacts of the pressures on marine biodiversity at the same time. The meeting also advised the Secretariat to accumulate information from satellite imageries for accurate analysis and to investigate scientific knowledge on seagrass distribution in each NOWPAP member state.

Based on the revised workplan adopted by the meeting, the activities for the 2016-2017 biennium will be implemented.



Discussion at the meeting



The 14th NOWPAP CEARAC Focal Points Meeting

The workplan for the 2016-2017 biennium includes two specific projects:

- (1) Assessment of the impacts of major pressures on marine biodiversity in the NOWPAP region; and
- (2) Feasibility study towards assessment of seagrass distribution in the NOWPAP region

The expected results of CEARAC activities for the 2016-2017 biennium will be presented and reviewed by the Focal Points at the 15th FPM to be held in September 2017.

Report and Documents of CEARAC FPM14: <http://cearac.nowpap.org/fpm/fpm14.html>

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## 2. Specific projects

### **Assessment of major pressures on marine biodiversity in the NOWPAP region**

In recent years, CEARAC has been expanding its target working areas to marine biodiversity and initiated relevant activities along with other activities.

During the 2014-2015 biennium, CEARAC implemented pilot assessments on the impacts of major threats to marine biodiversity in the NOWPAP region. Among obvious and potential threats to marine biodiversity globally such as habitat alteration, climate change, excessive nutrient loads, overexploitation, unsustainable use of marine environment and non-indigenous species (NIS), CEARAC focused on three problematic pressures in the NOWPAP region for the assessments: eutrophication, habitat alteration and NIS. The results of the pilot assessments implemented in the member states were summarized as a regional report to be published soon.

In the 2016-2017 biennium, based on the collected available data in the past biennium, CEARAC plans to assess the status of major pressures (eutrophication, non-indigenous species and habitat alteration) on marine biodiversity in the NOWPAP region. In addition, information on national strategies and actions for marine biodiversity conservation as well as relevant scientific papers and reports are being collected by the nominated experts in the NOWPAP member states.

The assessment results and collected information will be important input for a CEARAC's future project on marine biodiversity, development of a common procedure to assess major pressures on marine biodiversity.

### **Feasibility study towards assessment of seagrass distribution in the NOWPAP region**

Seagrass beds provide key ecological services in coastal ecosystem, especially in terms of their functions to maintain nutrients cycling, enhance marine biodiversity and mitigate climate change by absorbing carbon dioxide. Nevertheless, information on their distribution in the NOWPAP region is very limited.

CEARAC has been carrying out activities on mapping seagrass beds in the NOWPAP region since 2014. With the development of a manual for seagrass and seaweed beds mapping with satellite images in 2015, case studies to evaluate usefulness of the developed manual were conducted in the selected sea areas in the member states; Swan Lake in China, Nanao Bay and Toyama Bay in Japan, Jangheung Bay in Korea and Eastern section of the Far Eastern Marine Reserve in Russia.

Now, CEARAC tries to apply the developed manual to the entire NOWPAP coastal zones to map seagrass beds distribution in the NOWPAP region. To achieve this goal, a feasibility study towards assessment of seagrass distribution in the NOWPAP region is in progress with the experts who conducted the case studies in the selected sea areas. Literature review of seagrass distribution and threats to seagrass in each NOWPAP member country is being carried out. CEARAC plans to organize an international workshop on mapping seagrass in the NOWPAP region in summer of 2017. Details of the workshop will be announced on CEARAC website soon.

### **WebGIS on potential eutrophic zones in the NOWPAP region**

NOWPAP CEARAC has been working for eutrophication assessment of the Northwest Pacific region for a long time. Since the development of a common procedure to assess eutrophication (the NOWPAP Common Procedure) in 2009, CEARAC has been assessing the eutrophication status in the NOWPAP member states.

Since 2014, CEARAC has been trying to identify potential eutrophic zones in the NOWPAP region with data and information of COD, frequencies of red tide and hypoxia events, and satellite derived chlorophyll-a (Chl-a) concentration. A prototype of WebGIS on potential eutrophic zones in the NOWPAP region was presented by Dr. Genki Terauchi at the 4<sup>th</sup> ASIAN and 13<sup>th</sup> KOREA-JAPAN Workshop on Ocean Color (13-16 December 2016 at Burapha University, Bangkok, Thailand).

A WebGIS on potential eutrophic zones in the NOWPAP region is built in the Marine Environmental Watch Project website and soon to be open to the public. (<http://ocean.nowpap3.go.jp/WebGIS/>)

### 3. Cooperation with NOWPAP Partners and relevant Organizations

#### 🌐 NOWPAP International Coastal Cleanup

NOWPAP International Coastal Cleanup (ICC) started in 2006 in Yamagata, Japan. Since then, it has been held every year, rotating among the four NOWPAP member states. NOWPAP ICC 2016 was held on 23-24 September in Slavyanka, Russian Far East.

On the first day, TEMM\*-NOWPAP “Joint Workshop on marine litter management” was held with the participation of NOWPAP marine litter focal points (MLFPs), representatives of the member states, and NGOs and relevant organizations from the member states. Latest information and data on marine litter, especially related to microplastic, were presented as well as on-going actions and survey results on marine litter monitoring including coastal cleanup and educational events, and so on.

On the following day, beach cleanup was organized at the beach of Baclan Bay as long as 120 meters with the ICC participants and local students. Washed-up litter was collected and the total weight was measured. The litter was sorted by type and the number of each type was counted. There were different types of litter – from fishing gear to plastic bottles, rubber gloves, balloons and fragments of polystyrene foam.



Beach cleanup activity

\*TEMM = Tripartite Environment Ministers Meeting of China, Japan and Korea

#### 🌐 The 26th Training Course of International Hydrological Programme (IHP) of UNESCO

The 26th Training Course of International Hydrological Programme (IHP) of UNESCO “Coastal Vulnerability and Freshwater Discharge” was organized on 27 November - 10 December 2016 at Nagoya University, Japan. There were 23 Japanese and foreign students and young researchers attended the course: Japan (4), Bulgaria (1), China (5), Indonesia (3), Korea (2), Mozambique (1), Russia (2), Singapore (1), Taiwan (1), Thailand (1), U.S.A. (1) and Viet Nam (1).



The 26th Training Course of International Hydrological Programme (IHP) of UNESCO

Dr. Genki Terauchi, a senior researcher of CEARAC attended the training course and gave a half-day lecture on hands on satellite data analysis. He showed use of satellite derived Chl-a for monitoring and assessment of the eutrophication status in coastal areas, taking a case study at Toyama Bay as an example. He also demonstrated how to validate satellite derived Chl-a against *in-situ* measured Chl-a.

## **Sustainable Ocean Initiative (SOI) Global Dialogue with Regional Seas Organizations and Regional Fisheries Bodies on Accelerating Progress Towards the Aichi Biodiversity Targets**

The Sustainable Ocean Initiative Global Dialogue with Regional Seas Organizations and Regional Fisheries Bodies on Accelerating Progress towards the Aichi Biodiversity Targets was held by the Secretariat of the Convention on Biological Diversity in Seoul on 26 - 28 September 2016.

The aims of this meeting are to exchange experiences of respective organizations and to discuss specific tools and guidelines in order to enhance science-based, cross-sectoral and ecosystem-based approaches for addressing biodiversity and fisheries issues, and to identify options and opportunities to enhance cross-sectoral collaboration among regional seas organizations and regional fishery bodies, with a view to further strengthening their complementary roles in supporting national implementation of the Strategic Plan for Biodiversity 2011-2020 towards achieving the Aichi Biodiversity Targets and the relevant Sustainable Development Goals.

Several good practices on collaboration with regional sea programmes and fishery bodies in the North-East Atlantic, the Mediterranean, the Black Sea, the Western Indian Ocean, the Western South Pacific, West and Central Africa were introduced. For example, in the Western Indian Ocean, illegal and unreported fisheries are assessed and managed under cooperation of two sectors.

During the meeting, group discussions were held and the needs of future scientific collaboration and cooperation as well as the use of tools, approaches and indicators in support of the application of the ecosystem approach and the precautionary approach were highlighted.

In addition, participants of the meeting stressed that cross-sectoral cooperation and coordination at the regional level is underpinned by national-level coordination, and that effective regional coordination on scientific as well as managerial aspects can also facilitate national-level coordination.

By now, collaboration between a regional sea programme and a regional fishery organization was not done in the NOWPAP region. It is because NOWPAP didn't deal with fishery issues in our region and actually there is no fishery organization established in the Northwest Pacific region. However, in the future, following the trend in other regions around the world, such collaboration will be required in the NOWPAP region as well.



Sustainable Ocean Initiative (SOI) Global Dialogue with Regional Seas Organizations and Regional Fisheries Bodies on Accelerating Progress Towards the Aichi Biodiversity Targets

## G7 Toyama Environment Ministers' Meeting

G7 Toyama Environment Ministers' Meeting was held on 15-16 May 2016 in Toyama, Japan, prior to the G7 Ise-Shima Summit, with the participation of environment ministers from G7 countries (Japan, Italy, Canada, France, USA, UK, and Germany) and the EU. This meeting focused on promoting dialogues on global environment issues facing the international community including climate change.

Taking the opportunity of the morning session held on 16 May where "Marine Litter" and "The Role of Cities" were mainly discussed, Dr. Alexander TKALIN, then-NOWPAP coordinator, made a brief introduction of marine litter-related activities by NOWPAP.

In order to introduce CEARAC itself and its activities to the meeting participants and the people in Toyama, CEARAC joined "Toyama Environmental Exhibition" (13-16 May) and introduced Marine Environmental Watch System. The panel entitled "Promotion of NOWPAP" was also set to introduce its activities on conservation of marine biodiversity, marine litter and so on. In addition, the booklet, "History of CEARAC," featuring its history and achievements, was distributed at the exhibition.



Dr. Terauchi explaining about Marine Environmental Watch System



2016 Northeast Asia Environmental Prefectural Forum

Following the G7 Toyama Environment Ministers' Meeting, 2016 Northeast Asia Environmental Prefectural Forum was held on 25 May. This Forum was intended that the panelists and the audience think together about environmental cooperation in the North East Asia Region for the coming future. Dr. TKALIN had



Panel display in the forum

another opportunity to give a presentation about the purpose and activities of NOWPAP, and the activities of the Regional Activity Centres (RACs) located in each NOWPAP member country. CEARAC activities were also introduced with panels at the venue.

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