Regional report on the impact of major threats to marine biodiversity in the NOWPAP region

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2015 PICES Annual Meeting

Workshop 2

16 October, 2015

NOWPAP CEARAC

CEARAC (Special Monitoring and Coastal Environmental Assessment Regional Activity Centre)

One of four regional activity centres of NOWPAP (The Action Plan for the Protection, Management and Development of the Marine and Coastal Environment of the Northwest Pacific Region)

Assessment of the state of the marine, coastal and associated freshwater environments

Development of tools for environmental planning and management

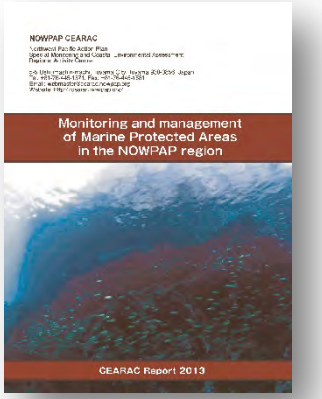
CEARAC Activities on Marine Biodiversity

Toyama Bay Pilot Study
2010-2011

- Gaps on data availability and difficulty of assessment using various parameters

Monitoring and Management Status of MPAs in the NOWPAP region
2012-2013

- Definition of MPA
- Monitoring and management status



Pilot Assessment on the impacts of major threats to marine biodiversity
2014-2015

- Data availability
- Pilot study for new assessment tool

Pilot assessment of major threats to marine biodiversity in the selected sea areas in the NOWPAP region

Objective:

- To clarify available data on major threats to marine biodiversity: eutrophication; non-indigenous species and habitat alteration
- To understand the current situation of threats using the available data
- To clarify the gaps among member states for developing new assessment method

1. Selection of target sea areas and nomination of experts

- **Selected target sea areas**

China: Coastal area of Yantai and Dalian

Japan: North Kyushu sea area and coastal area of Hokuriku region

Korea: Saemanguem

Russia: The Peter the Great Bay

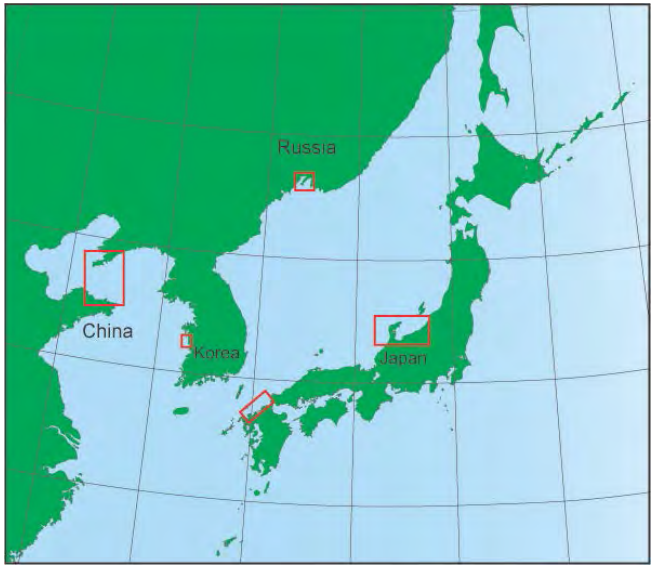
- **Nominated experts**

China: Dr. Bei Huang

Japan: Secretariat

Korea: Dr. Young Nam Kim

Russia: Dr. Tatiana Orlova



2. Implementation of pilot assessment

Assessment parameters	Data availability	Contents of data	Sea area where data is available					Period of data	Monitoring frequency	Monitoring Organization
			Niigata	Toyama	Ishikawa	Fukuoka	Saga			
Total nitrogen/ Total phosphorus	A	Concentration of T-N and T-P (Only sea surface data)	✔	✔	✔ (Kanazawa Bay, Nanao Bay)	✔ (Hakata Bay, Dokai Bay, Suou-Nada Sea, Hibiki-Nada Sea, Chikuzen Sea)	✔ (Karatsu Bay, Imari Bay, Genkai Sea)	-2012	4-12 times/year	Local government MLIT
Dissolved Inorganic nitrogen/ phosphorus	A	Concentration of DIN and DIP (Only sea surface data)	✔ (Ryoutsu bay, DIN)	✔ (DIN)	✔ (DIN, Nanao bay)	✔ (Hakata bay)	✔ (DIN, Katatsu, Imari, Genkai)	-2012	4-12 times/year	Local government MLIT
River input of nutrient	A	River discharge*T-N, T-P	✔	✔	-	-	✔	-2012	2-4 times/year	Local government MLIT
Chlorophyll *a*	A	Concentration of chrolophyll a	-	✔	-	✔ (Hakata bay, Dokai bay, Suo-nada sea, Hibiki-nada sea)	✔ (Karatsu, Imari, Genkai)	-2012	2-4 times/year	Local government MLIT
Use of fertilizer	A	Shipping volume of inorganic fertilizer	✔	✔	✔	✔	✔	-2010	-	
Aquaculture	A	Production	✔	✔	✔	✔	✔	-2013	Once/year	MAFF
Aquaculture	A	Feed dosage	✔	✔	✔	✔	✔	-2012	Once/year	MAFF
Aquaculture	A	GIS information	✔	✔	✔	✔	✔	-	-	JCG
Land use	A	Area of landuse	✔	✔	✔	✔	✔	1976, 1987, 1991, 1997, 2006	-	GSI
Population density	A	Population density	✔	✔	✔	✔	✔	-2010	Once/5 years	MIC
Water quality	A	Transparence	✔	✔	-	✔ (Hakata bay, Dokai bay, Suo-nada sea, Hibiki-nada sea, Chikuzen sea)	✔ (Katatsu, Imari, Genkai)	-2012	4-12 times/year	Local government MLIT

3. Implementation of pilot assessment
Pilot assessment of major pressures

(Example of Japan)

- **Eutrophication**

  Direct indicators: TN/TP, DIN/DIP, River input and Chl-*a*

  Indirect indicators: Fertilizer, Land use, Aquaculture and Population

- **Non-indigenous species**

  Direct indicators: Number of NIS

  Indirect indicators: Num. of foreign ship and Aquaculture

- **Habitat alteration**

  Direct indicators: Reclamation, Natural coast and collection of sand

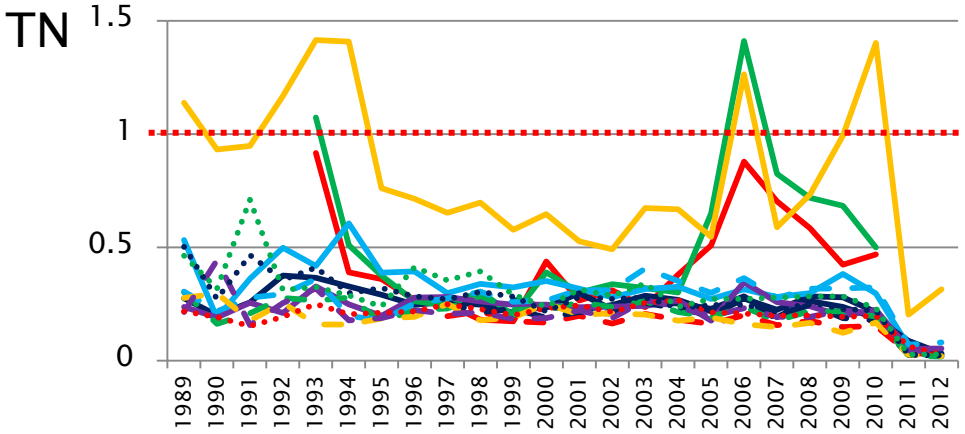
  Indirect indicators: Number of dam

- **Impacts on marine biodiversity**

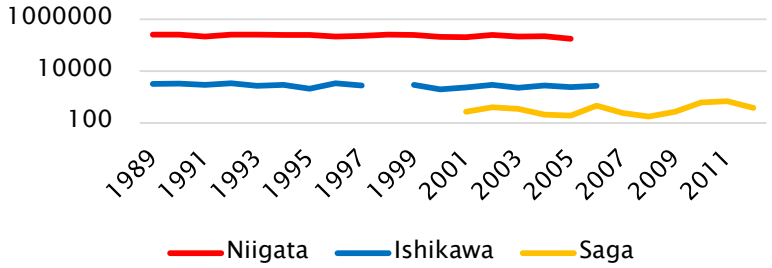
  Indicators: Fish catches, seaweed/seagrass bed

Results of pilot assessment

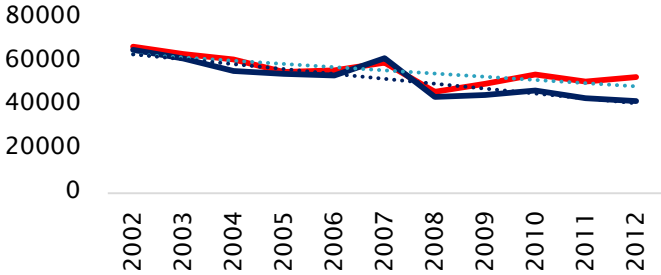
Eutrophication



River input



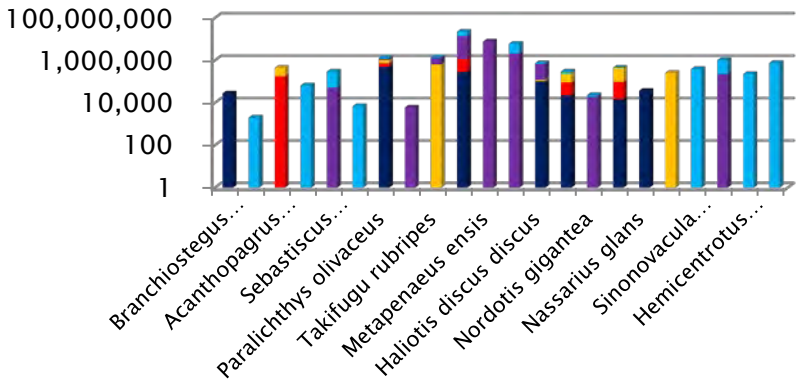
Use of fertilizer



NIS

	North Kyushu sea area		Coastal area of Hokuriku region		
	Fukuoka	Saga	Niigata	Toyama	Ishikawa
Number of founded NIS	11	NI	1	6	5

Seed release(Aquaculture)



4. Preparation of a regional report on major pressures to marine biodiversity in the NOWPAP region

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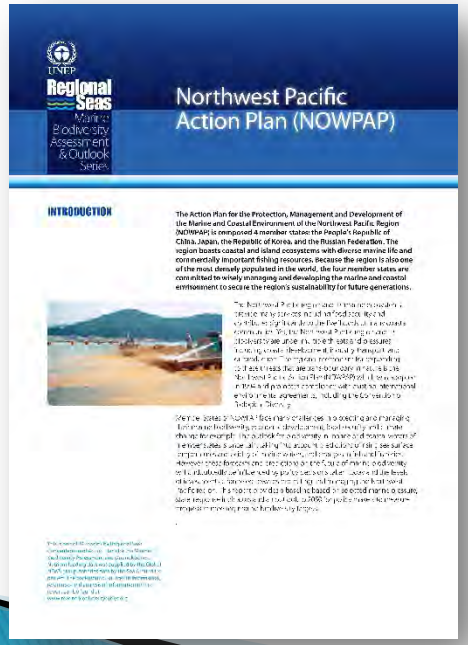
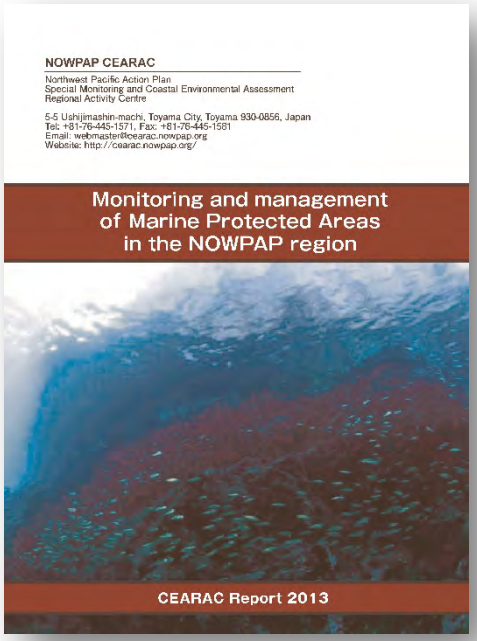
Chapter 1: Introduction

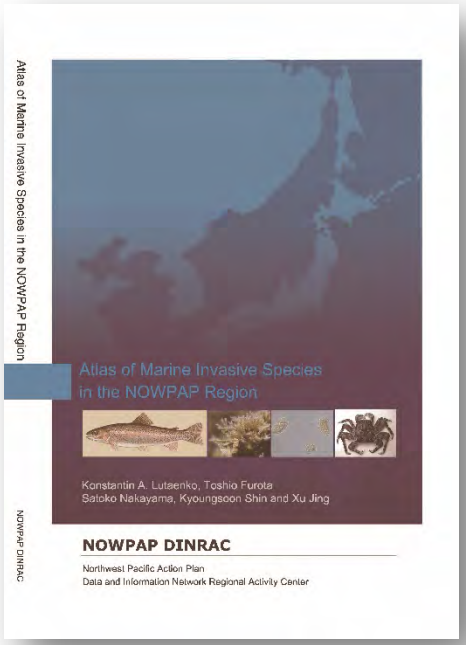
Overview of marine biodiversity

Activities by NOWPAP/CEARAC/other RACs



(NOWPAP 2010)





(NOWPAP DINRAC 2014)

Chapter 2: Pilot assessment of the impact of major pressures to marine biodiversity

- **2.1 Threats to marine biodiversity**

  Potential threats to MB and priorities in the NOWPAP region
- **2.2 Target sea areas and their characteristic**
- **2.3 Eutrophication**

  Available data and results of pilot assessment of member states
- **2.4 Non-indigenous species**

  Available data and results of pilot assessment of member states
- **2.5 Habitat alteration**

  Available data and results of pilot assessment of member states

Chapter 3: Evaluation of pilot assessment

- Differences and difficulties of threats selected for pilot assessment
- Assessment of used indicators of three threats
- Assessment of impact of threats

Chapter 4: Recommendations

- Recommendations to new assessment method

Basic concept of assessment tool

- Objective
- Potential common assessment indicators
- Assessment methodology

Assessment of eutrophication

Assessment of non-indigenous species

Assessment of habitat alteration

(http://cearac.nowpap.org)

Regional report will be published by the end of this year

Thank you very much for your attention.