

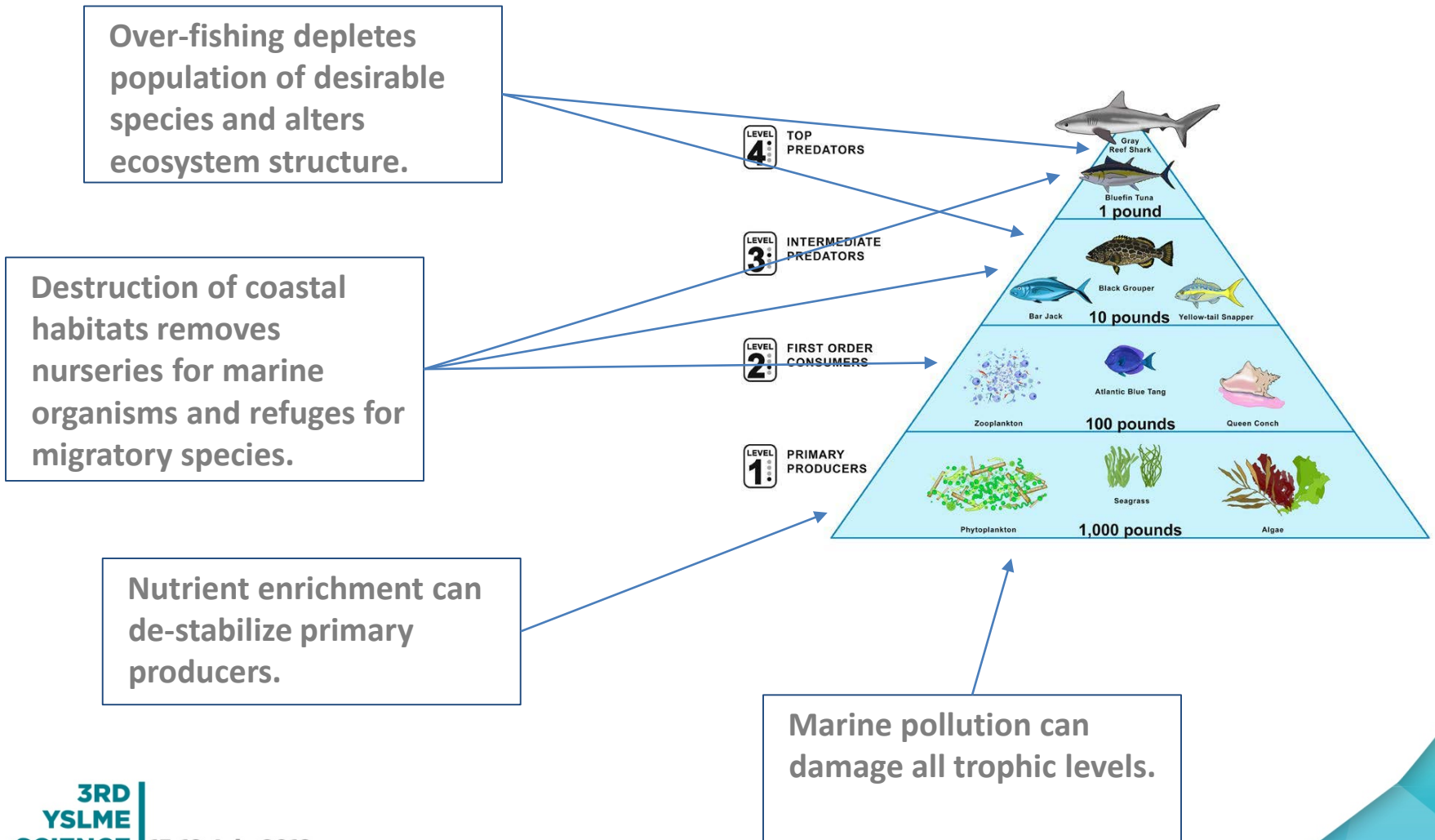
State of the YSLME after 10 years of implementation of the YSLME Strategic Action Programme

Paul Gremillion, Ph.D.

International Consultant, UNOPS



What affects the state of the ecosystem?



Strategic Action Programme (SAP) ecosystem service approach

11 management targets implemented by 33 management actions

Provisioning Services

fisheries and mariculture management

Regulating Services

pollution monitoring and control

Cultural Services

reduction in marine litter and contaminants

Supporting Services

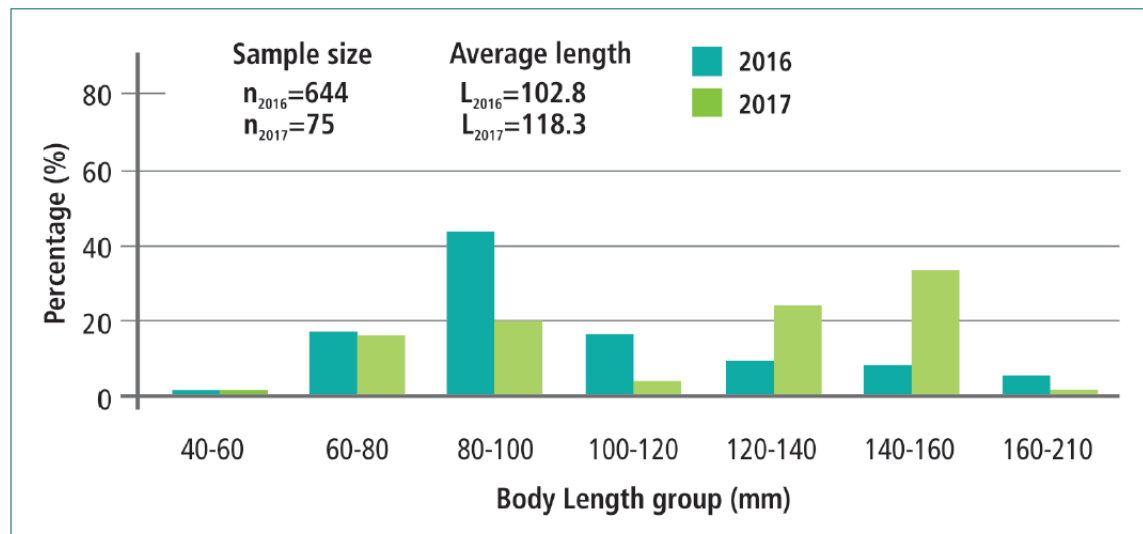
ecosystem and biodiversity protection and conservation

Protecting ecosystem services assures sustainably functioning ecosystems and enables sustainable livelihoods for humans.

Placing limits on commercial fisheries

- Vessel buy-back program
- Limits on locations and seasons for fishing
- Limits on equipment
- Enhance fish stocks

Body length distribution of small yellow croaker in YS.

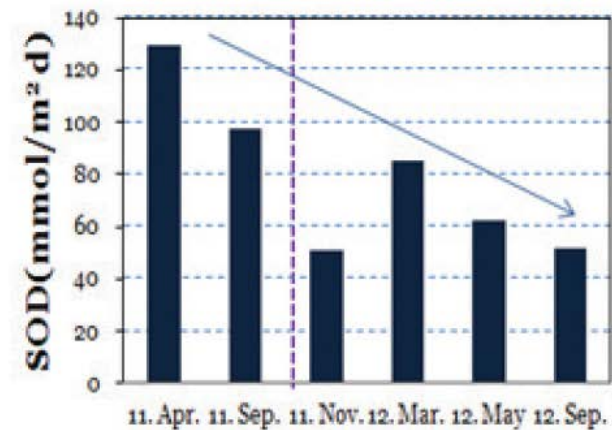
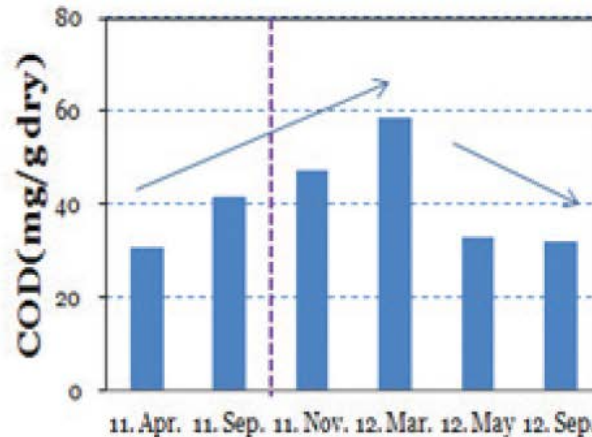


Promoting sustainable mariculture

- Promote Integrated Multi-Trophic Aquaculture (IMTA)
- Reduce nutrient discharge
- Control diseases



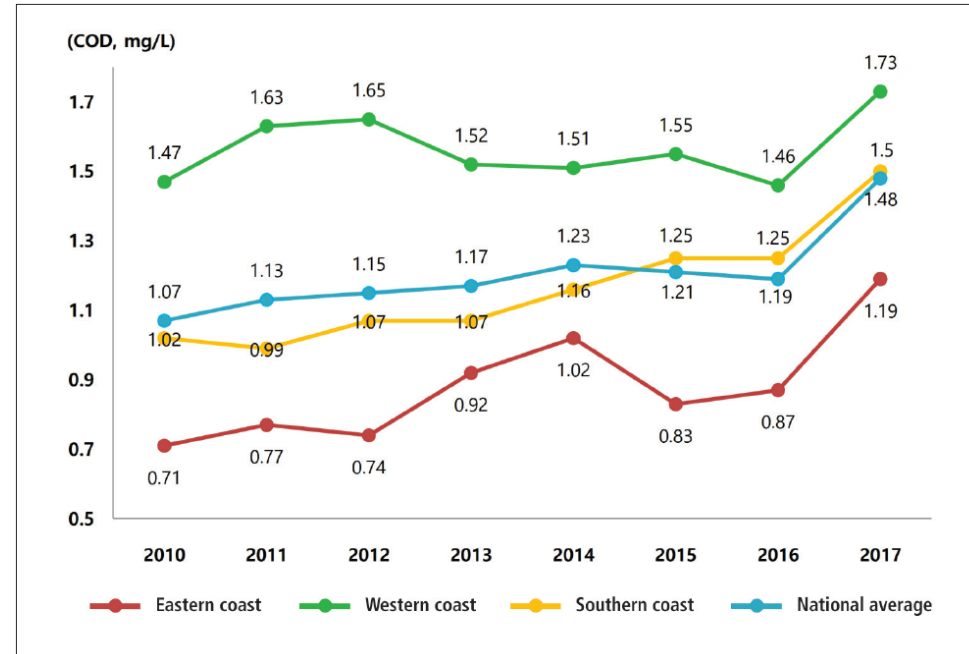
Changes in organic matter and sediment oxygen demand after installation of IMTA facilities.



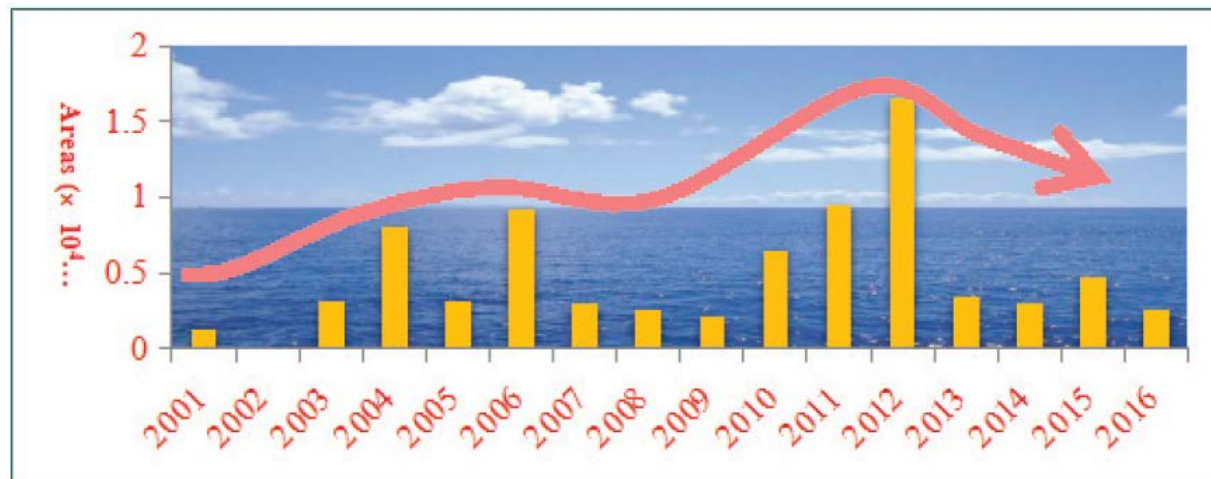
Managing Pollution

- Improved monitoring programmes
- Point and non-point source control
- Marine litter control
- Implementation of international conventions

Recent trends in COD in the coastal waters of RO Korea.



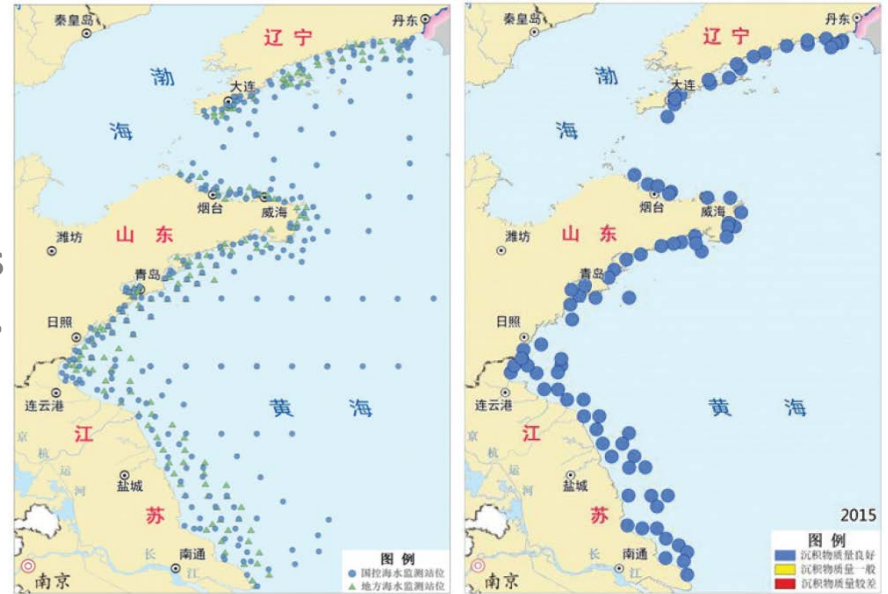
Areas of worse than Grade IV seawater quality (summer), PR China.



Managing Pollution

Improved monitoring programmes

Water and sediment monitoring stations managed by PR China.



Marine Environment Information System managed by RO Korea.



MEIS

해양환경자료 지역정보 지식정보 알림대응 사이트소개

연속시스템

국립수질조사정보시스템(국정)

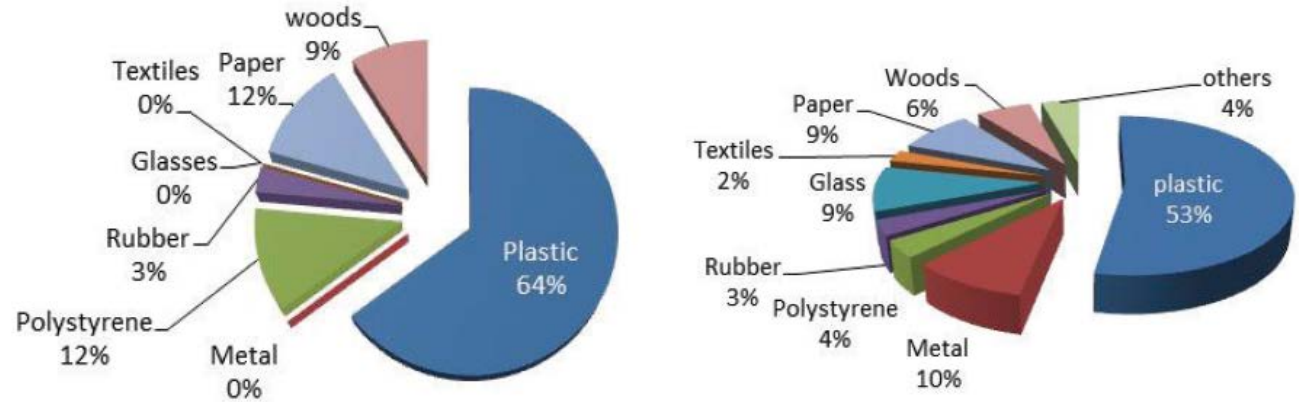
연월일

항목명	연도	월	일	시간	중금속총량 (mg/L)	중금속농도 (mg/L)	중금속농도 (mg/L)	중금속 (mg/L)	중금속 (mg/L)
중금속총량	2018	04	30	22:55	8.17	7.80	8.20	8.87	8.0
중금속농도	2018	04	30	22:50	8.01	7.80	8.20	8.87	8.0
중금속농도	2018	04	30	22:45	7.98	7.79	8.20	8.87	8.0
중금속농도	2018	04	30	22:40	7.90	7.79	8.20	8.87	8.0
중금속농도	2018	04	30	22:35	8.05	7.80	8.20	8.87	8.0
중금속농도	2018	04	30	22:30	8.06	7.80	8.20	8.87	8.0
중금속농도	2018	04	30	22:25	8.09	7.80	8.20	8.87	8.0
중금속농도	2018	04	30	22:20	8.13	7.80	8.20	8.87	8.0
중금속농도	2018	04	30	22:15	8.18	7.80	8.20	8.87	8.0
중금속농도	2018	04	30	22:10	8.14	7.80	8.20	8.87	8.0

Managing Pollution

- Point and non-point source control
- Marine litter control

Types of marine litter. Left: floating, Right: beach



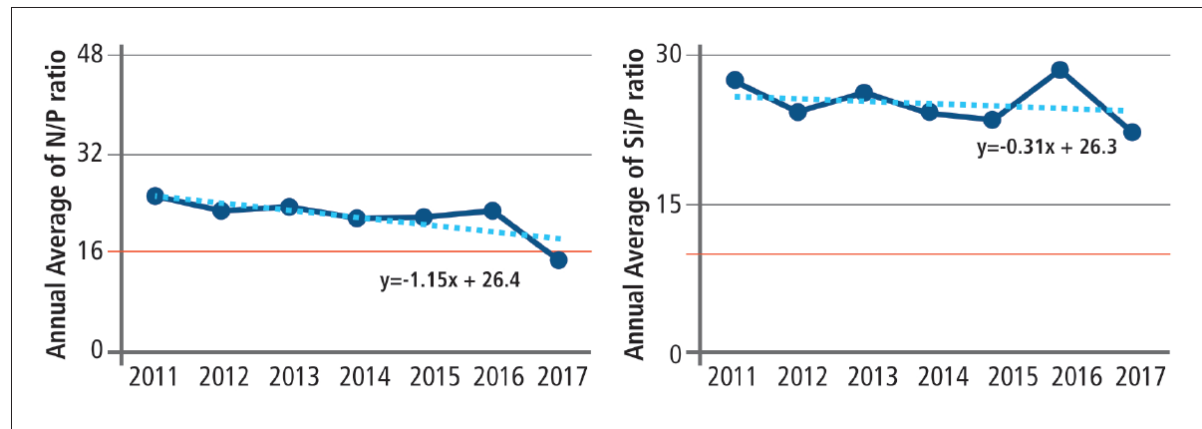
Eco-friendly buoys.



Understanding Ecosystem Changes

- Nutrient ratio changes
- Nuisance and harmful aquatic species
- Climate change

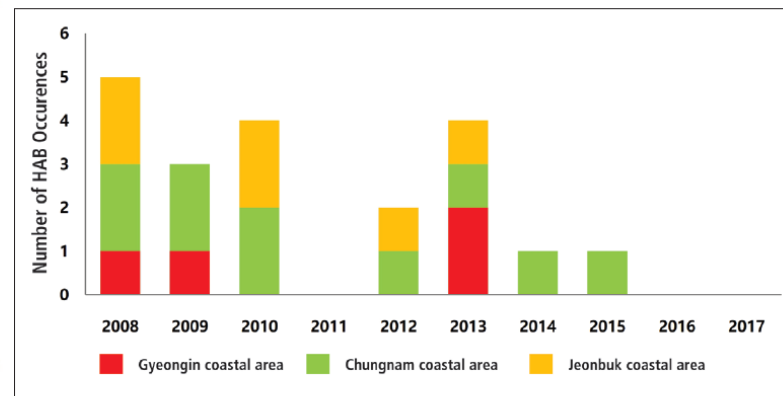
Nutrient ratios, West Sea, RO Korea.



HAB survey stations and data, West Sea, RO Korea.



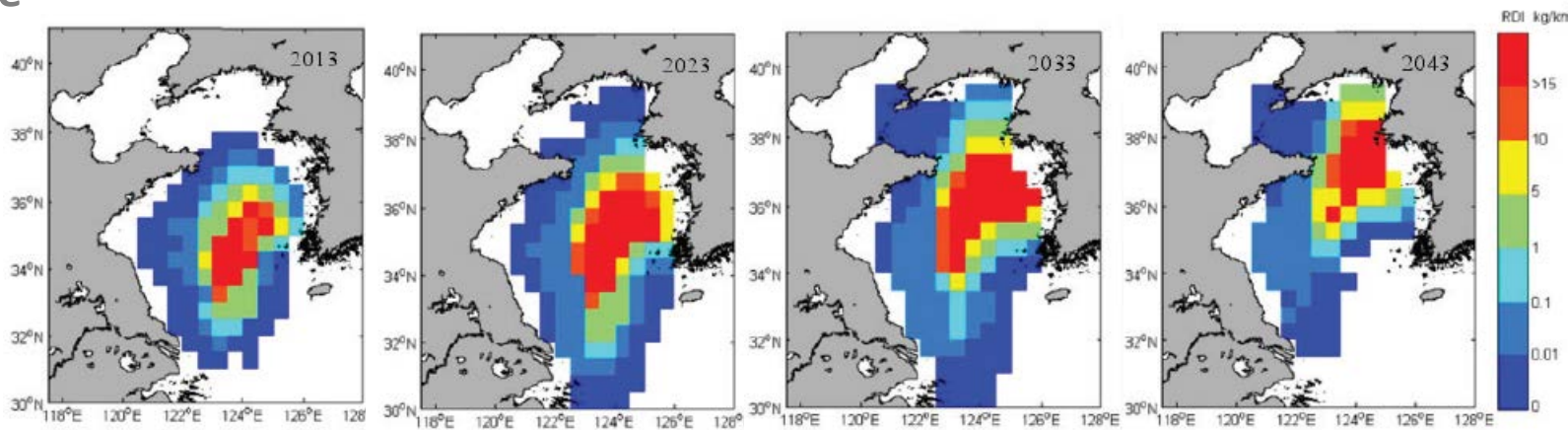
Map of HAB Survey Locations in Korea's West Sea



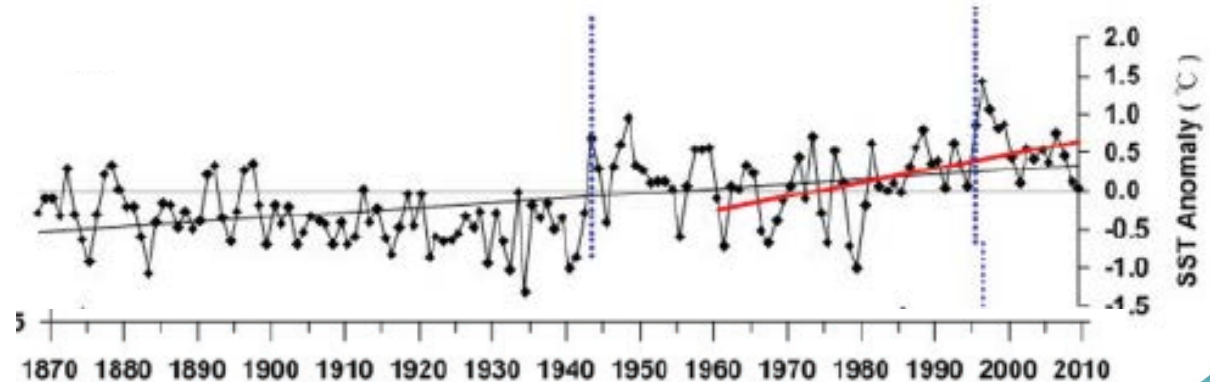
Understanding Ecosystem Changes

Climate change

Modeling to predict anchovy distributions.



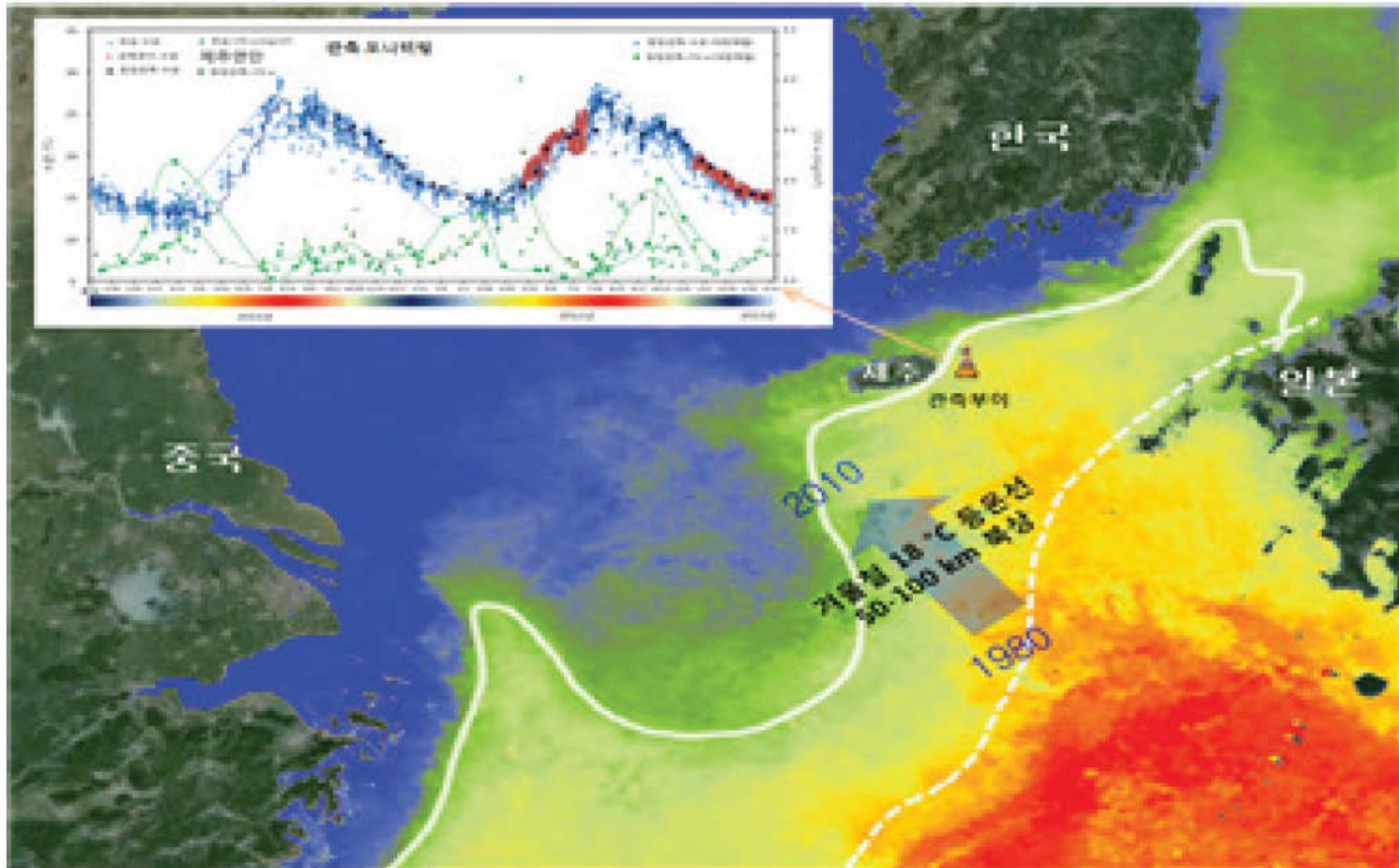
Sea-surface temperature anomaly for the Bohai and Yellow Seas.



Understanding Ecosystem Changes

Climate change

Sea-surface temperature changes. The 18° isothermal line for 1980 and 2010 are shown.



Protecting Biodiversity

- Coastal wetlands and reclamation
- Marine protected areas
- Priority threatened and endangered species
- Invasive alien species

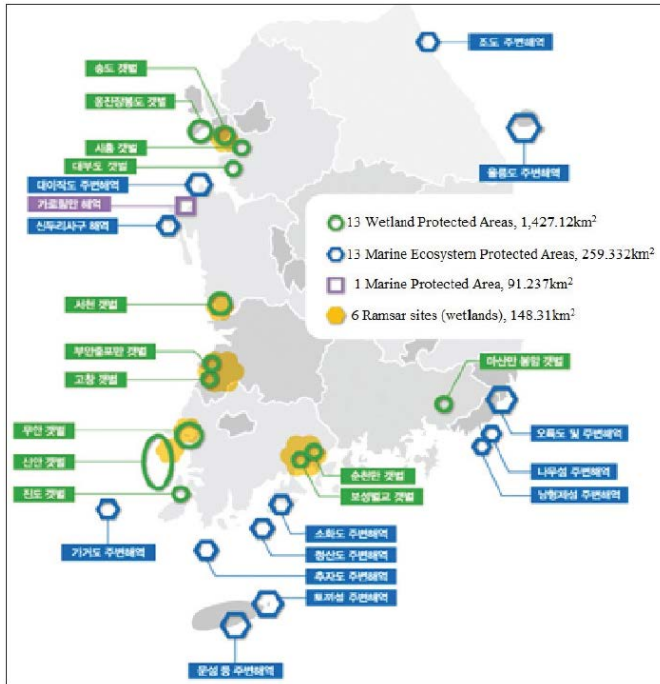
Wetlands, mudflats, and other critical coastal environments are better protected through Integrated Coastal Management interventions.

A Spoon-billed Sandpiper, Lime05, banded in Chukotka, Russia, was recorded at Rudong, PR China.

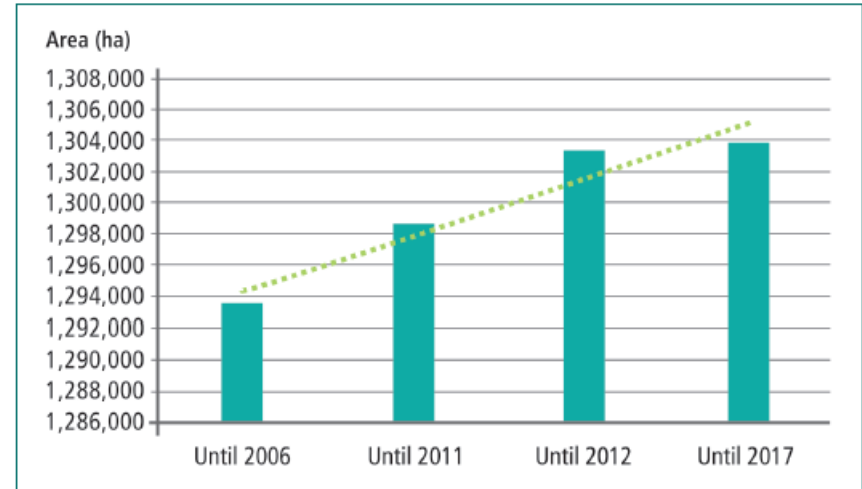
The screenshot shows the YSLME website header with navigation links: ABOUT US, YSLME COMMISSION, OUR WORK, RESOURCES, NEWS & EVENTS, GET INVOLVED. The main article title is "Xiaoyangkou wetland considered a national marine protected area" by admin, dated March 31, 2018. The featured image is a Spoon-billed Sandpiper standing in shallow water, with a green leg band labeled "05".

Protecting Biodiversity

- Coastal wetlands and reclamation
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- Invasive alien species



Areas of MPAs in PR China.



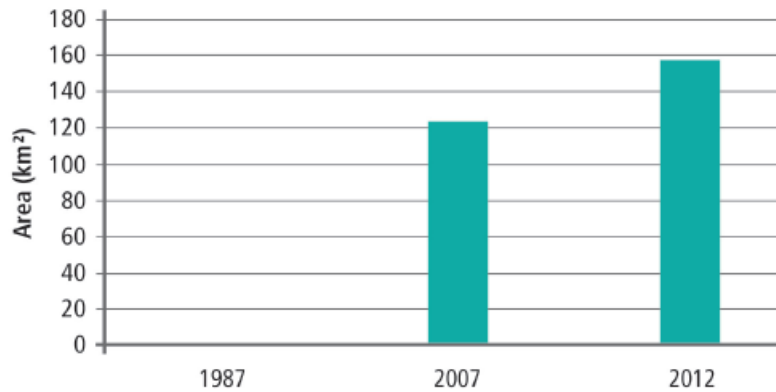
MPAs in RO Korea.



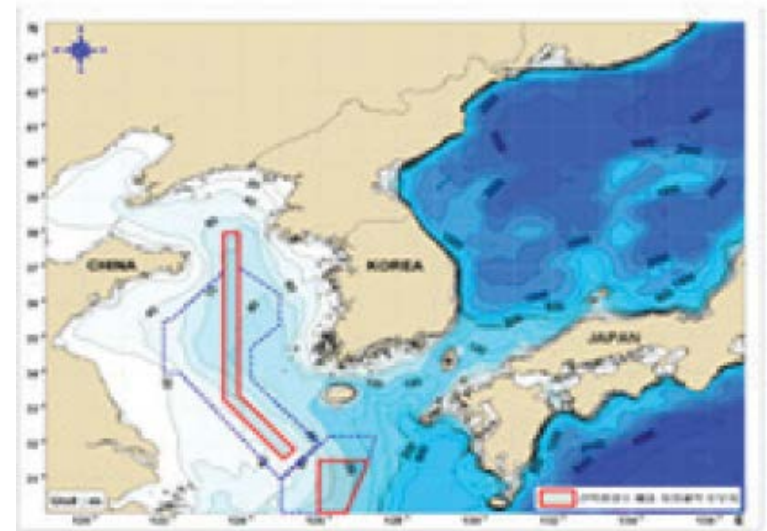
Real-time video of spotted seal on Baengneyong Island.

Protecting Biodiversity

- Coastal wetlands and reclamation
- Marine protected areas
- Priority threatened and endangered species
- Invasive alien species



Candidate sites for ballast water exchange.



Area of *Spartina alterniflora* in Yancheng, Jiangsu.

The state of the YSLME

Some of the highest-impact achievements in the past ten years:

- Reduced fishing pressure and better management of commercial fisheries.
- Promising technologies for sustainable mariculture and aquaculture.
- More comprehensive monitoring programmes and bilateral coordination.
- Nutrient control practices are being put into place to control eutrophication.
- Protection of coastal ecosystems can lead to better protection of threatened and endangered species and nursery habitats.
- Control measures for invasive species are being implemented.
- Impacts of climate change are being evaluated.

Protecting ecosystem services assures sustainably functioning ecosystems and enables sustainable livelihoods.

Thank you

