Ministry of Oceans and Fisheries

KOEM Korea Marine Environment Management Corporation

Management of Marine Protected Areas and Migratory bird Monitoring in Korea

2025 Shinan International Migratory Birds Symposium

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MPA
MARINE PROTECTED AREA

Ministry of Oceans and Fisheries

KOEM Korea Marine Environment Management Corporation

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1 . Marine Protected Area(MPA) management

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1 . MPA management





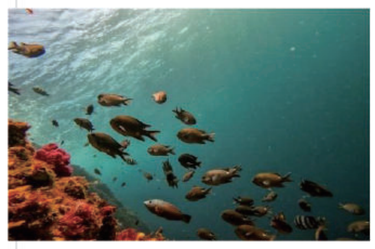
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MARINE PROTECTED AREA

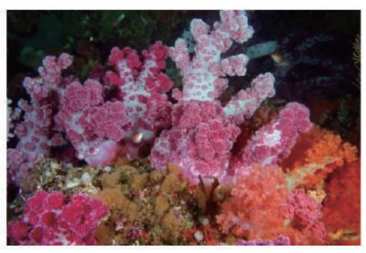
MPA status

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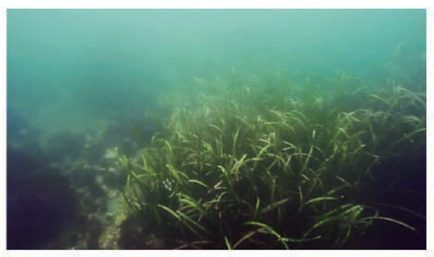
Korea : diversity, uniqueness and pristineness of Habitats

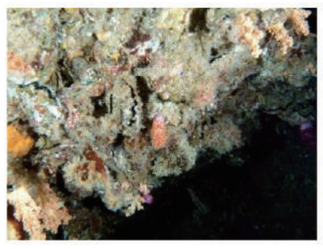
Subtidal,Rocky Marine Ecosystem





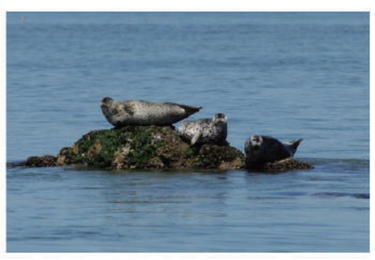






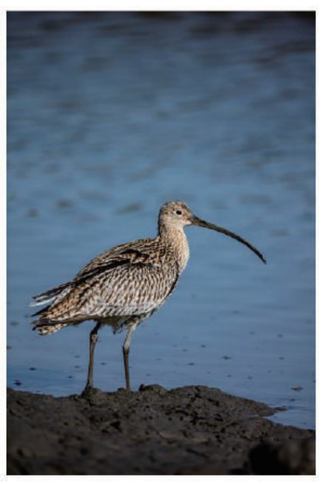


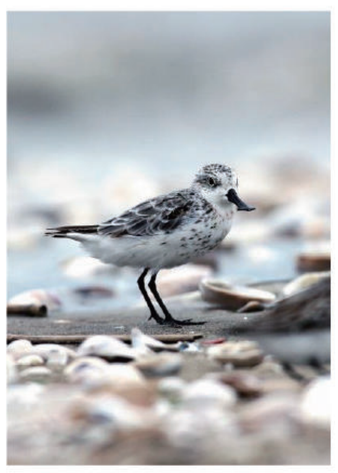
Marine mammals,Reptiles,
Coastal birds, etc.

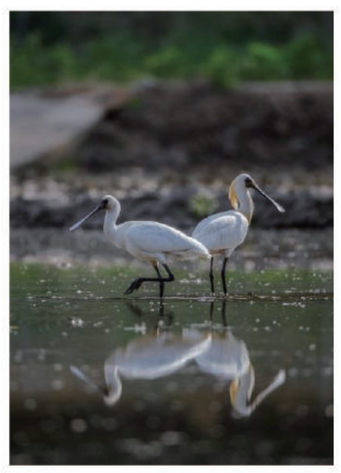


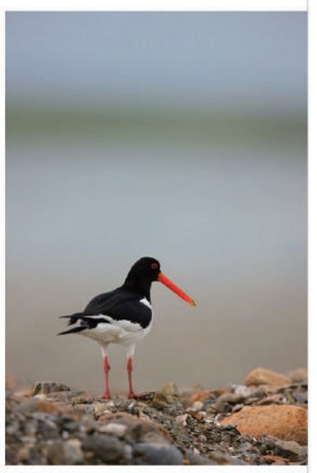












MPA status

MPA

MPA MARINE PROTECTED AREA

Marine protected areas (MPA): Definition

- **A marine area** that is **worthy of special conservation efforts** due to **its rich biodiversity** and **ecological importance** and/or **exceptional landscape, topographical,** and/or **geological value**

Legal grounds for designation of MPAs

Article 8, Wetlands Conservation Act (WCA)

☐ Wetland Protection Areas



〈Coastal Wetlands and Surrounding Areas〉

Article 25,Conservation and Management of Marine Ecosystems Act (CMMEA)

- ■ Protected Marine Ecology Areas
- ☐ Protected Marine Biology Areas
- ☐ Protected Marine Landscape Areas



〈 Marine Area 〉

MPA status

MPA legal frame

MPA MARINE PROTECTED AREA

Article 8(1), WETLANDS CONSERVATION ACT

1. An area that has native continuity or rich biodiversity;
2. An area inhabited or visited by a rare or endangered wild animal or plant;
3. An area that has extraordinary scenic, topographic, or geologic value.

Article 8(1), CONSERVATION AND MANAGEMENT OF MARINE ECOSYSTEMS ACT

1. Sea areas where marine ecosystems maintain primitiveness or sea areas worthy of conservation and academic research for their diverse marine organisms;
2. Areas which need academic research or conservation, due to unusual topography, geological features or ecology of the sea;
3. Sea areas which are worthy of being conserved for their high primary production capacity or for their function as the habitats or spawning areas of marine organisms under protection;
4. Sea areas which may represent diverse marine ecosystems or are equivalent to examples thereof;
5. Sea areas which are worthy of special conservation, for their beautiful submarine landscape, including coral reefs and seaweeds, or marine landscape;
6. Areas needed to be conserved, in order to maintain or improve their function as carbon sinks of marine ecosystems;

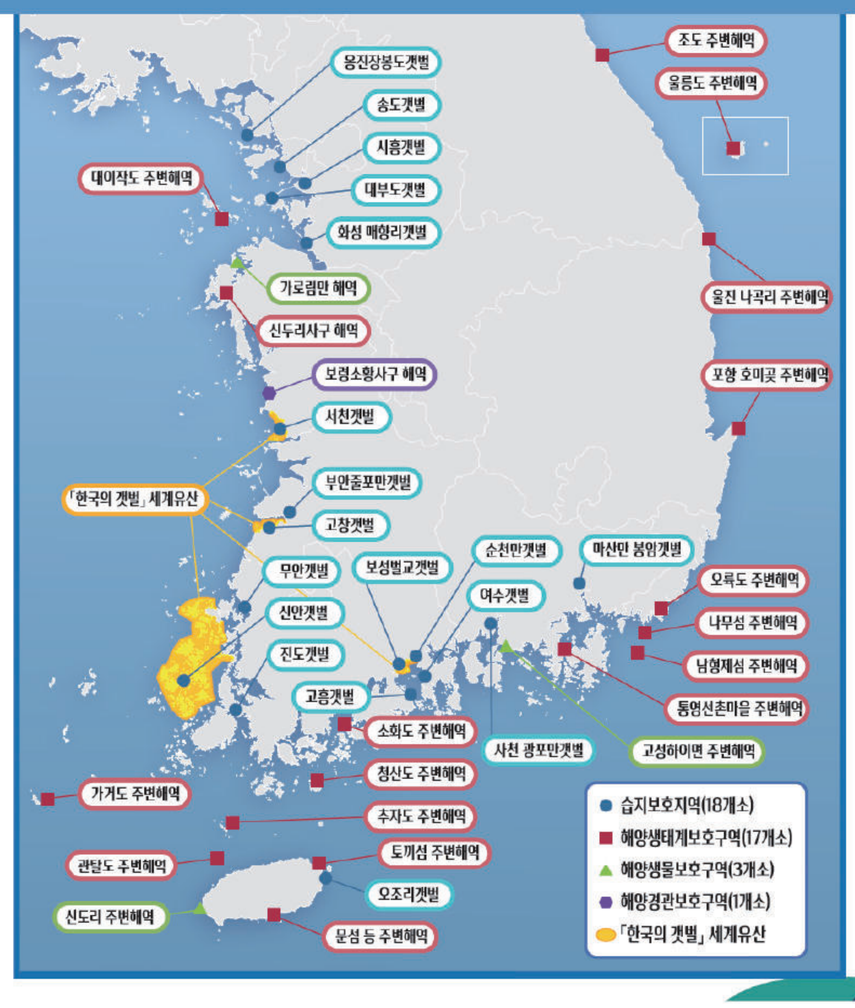
MPA
MARINE PROTECTED AREA

MPA In Korea

39 MPAs(2,047.292 km²) as of March 2025
- Wetland protected area (18)
- Marine ecosystem protected area (17)
- Marine life protected area (3)
- Marine scenery protected area (1)

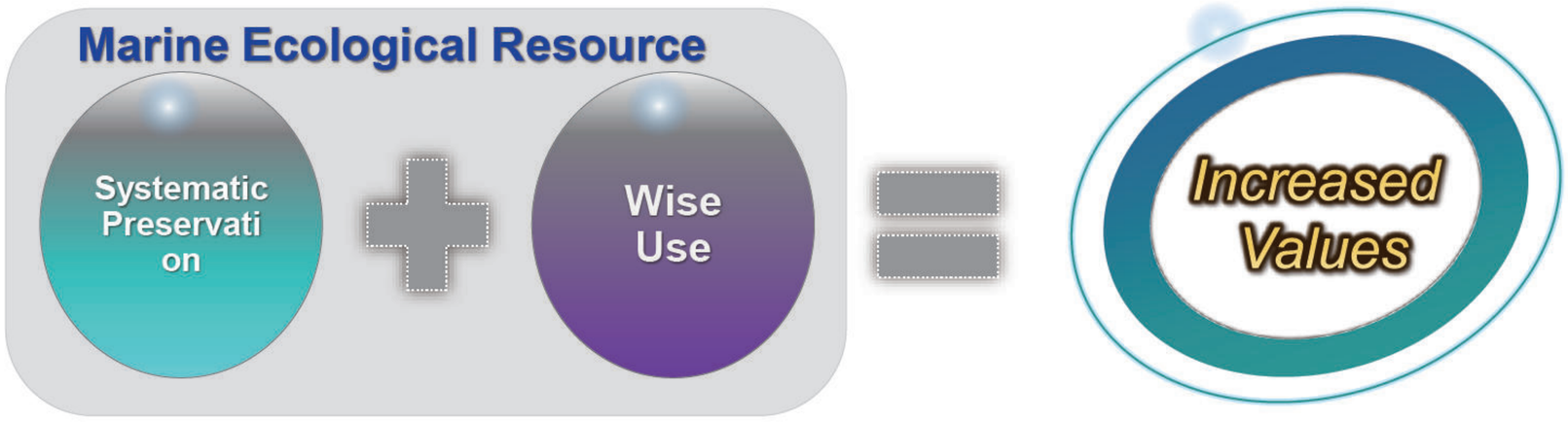
World natural heritage sites	Measures (㎢)		
	heritage	Buffer	Total
Seochoen	68.09	36.57	104.66
Gochan	55.31	18.80	74.11
Shinan	1,00.86	672.54	1,773.4
Boseong-Suncheon	59.85	18.01	77.86
Total	**1,284.11**	**745.92**	**2,030.03**

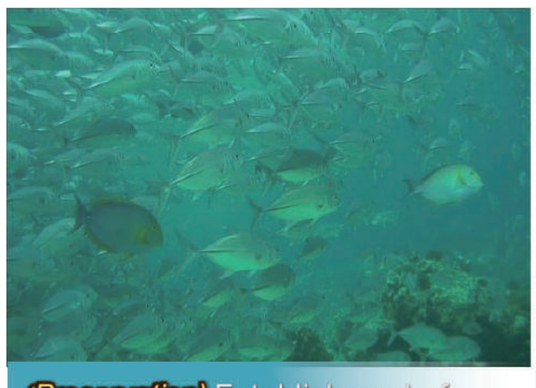
MPAs in South Korea designated by the MOF



MPA
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MPA management

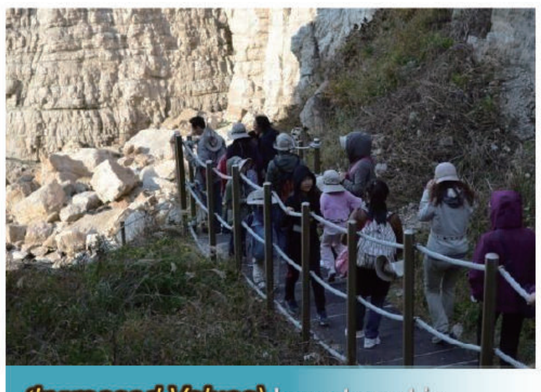




(Preservation) Establishment of preservation plan and detailed project plan, management committee operation



(Use) *Ecological experience learning center,* application of bio-resource, continued use of fishery resources



(Increased Values) Investment in management projects, revitalization of eco-tourism, increased values of local products

MPA status

MPA MARINE PROTECTED AREA

MPA designation process

Preliminary Stage	•Recommendation of MPA candidate sites	•Incorporation of marine ecosystem investigation results •Designation request from local government
	•Detailed investigation of target area	•Evaluation of grounds for designation
Designation Preparation Stage	•Preparation of designation plan (Draft)	•Grounds for designation/plan
	•Briefing session for local residents	•Explanation of the plan/feedback collection
	•Discussion with related organizations •(MPA: Review stage by Committee for Maritime Affairs and Fisheries Development)	•Applicable local governments and related central agencies
Designation	•MPA designation notice	•Posting on official gazette
	•Announcement on official gazette/ posting in the information system	•Posting in Ministry of Oceans and Fisheries and MPA websites

MPA status

MPA MARINE PROTECTED AREA

MPA Management system

Local Participation Management System

- Local-led management in which regional stakeholders (public officials, NGO, residents, businesses, academia) have a conservative awareness and establish governance, participating in MPA management



MPA
MARINE PROTECTED AREA

Types of MPA Management

- ✓**Conservation Planning**: Establishment and Implementation of five-year management plans for Marine Protected Areas (Regional of Oceans and Fisheries)
- ✓**Research & Monitoring**: Ongoing surveys and monitoring of biological habitats and resources are conducted within Marine Protected Areas.(KOEM)
- ✓**Environmental Improvement**: Cleanup activities such as monitoring illegal activities and collecting marine debris.(Local Governments)
- ✓**Resident Support**: promote awareness through education and public relations, release fish fingerlings, and install community facilities. (Local Governments)
- ✓**Ecotourism**: Local governments promote marine ecotourism by operating visitor centers, creating fishing village experience programs, and developing local ecological tour programs. (Local Governments)
- ✓**Job Creation**: Local governments appoint honorary marine ecosystem stewards and other conservation roles. (Local Governments)

MPA
MARINE PROTECTED AREA

Threat management

Restrictions on Acts (WHS and WPA)



Installation of Structures

Construction, extension, or alteration of buildings or artificial structures



Reclamation or Dumping

Resulting in an increase or decrease in the level or volume of water in the wetlands



Extraction of Natural Resources

Gathering earth, sand, pebbles, stones
Extraction of minerals



Destruction of Ecosystems

· Cultivation, capturing, or gathering of an animal or plant

(Excluding acts that have been carried out as a means of living or leisure activity for a period of no less than one year prior to the date of designation as WPA)

MPA status

MPA MARINE PROTECTED AREA

Designation and Management of Tidal Flat Eco-Villages

Overview (Designation Process, etc.)

✓ Among villages within tidal flat management areas, restoration project sites, areas adjacent to WPA, and recognized wetland cities, a “Tidal Flat Eco-Village” refers to a village that possesses excellent tidal flat ecosystems and beautiful scenery, has the capacity to sustainably conserve and utilize them, and is designated as such by the Minister of Oceans and Fisheries or the head of a local government.

MOF	Metropolitan City/ Province	City/County/District	Village
① Public notice of the project	② Disseminate to City/County/District	③ Disseminate to villages. Appoint village manager/operators	④ Form a Resident Consultation Body
⑧ Review the submitted application and conduct on-site assessment	⑦ Evaluate the submitted application and sent designation request to MOF	⑥ Confirm the formation of the Resident Consultation Body. Review and make necessary adjustments o the submitted designation application. Send the application to metropolitan or provincial office	⑤ Prepare designation application and submit the prepared application to city/county/district office
⑨ Notify result and make public announcement	⑩ Notify results	⑪ Notify results	⑫ Operate eco-village

Support for Tidal Flat Eco Villages

✓ (Securing and Improving Tourism Facilities) Support installation and repair of ecotourism facilities (such as visitor centers and trails) and barrier-free access facilities.
✓ (Environmental Conservation Activities) Support management of tidal flat management areas, waste collection, protection of flora and fauna, and preservation of traditional culture activities.
✓ (Capacity Building for Tidal Flat Eco Villages) Support resident education, workshops, development and operation of village tourism programs, and matching with relevant ESG companies.
✓ (Customized Eco-Guide) Provide financial support and capacity building for eco-guide needed for the operation of Tidal Flat Eco Villages

MPA status

MPA MARINE PROTECTED AREA

Overview of Tidal Flat Restoration Projects

✓ (Concept) A project to restore and enhance the physical form and ecological functions of damaged tidal flats to their original state.
✓ (Current Status) South Korea established promotion plans of tidal flat restoration projects in 2009. From 2021 to 2022, a basic plan and technical guidelines for tidal flat restoration were prepared. As of 2025, there are 14 tidal flat restoration projects currently underway.

Types of Tidal Flat Ecosystem Restoration Projects	
Tidal flow restoration	❖ Restores areas where tidal flow has been reduced due to structures, e.g., causeways.
Tidal flat regeneration	❖ Restores areas that were formerly tidal flats but have been reclaimed or developed.
Functional improvement	❖ Restores areas where tidal flat functions have been degraded due to pollution and contamination by wastewater, sedimentation, or surrounding waste.
Landscape enhancement	❖ Restores areas in need of functional improvement due to the degradation of surrounding landscapes or tourism-related impacts.
Estuarine zone restoration	❖ Large-scale restoration of estuarine zones, e.g., coastal reservoirs.

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MPA MARINE PROTECTED AREA

Efforts to Enhance International Cooperation

- Coordinating collaboration on wetland conservation and sustainable use
- Response to climate change
- Community participation
- Awareness-raising for tidal flat conservation
- Expansion of networks

Common Wadden Sea Secretariat

- Building networks and promoting cooperation among regional managers of World Heritage tidal flats
- Fostering dialogue, and building capabilities of site managers

EAAF Partnership

IUCN

- Sharing global MPA goals
- Introducing policies on protected area management
- Presenting updates on national management practices
- Organizing site visits and study tours to best practice regions

UK RSPB

- Coordinating cooperation on waterbird monitoring and habitat restoration
- Operating mutual visit programs
- Entering into MOUs
- Building capabilities for wetland conservation

MPA MARINE PROTECTED AREA

Korea Blue Action(OOC)_MPA

1. **Actively Support the Ratification and Implementation of the BBNJ Agreement**

2. **Expand Domestic Marine Protected Areas**

→ **Designate at least one new large-scale MPA annually until 2030**

3. **Actively Participate in Discussions on High Seas MPAs**

MPA status

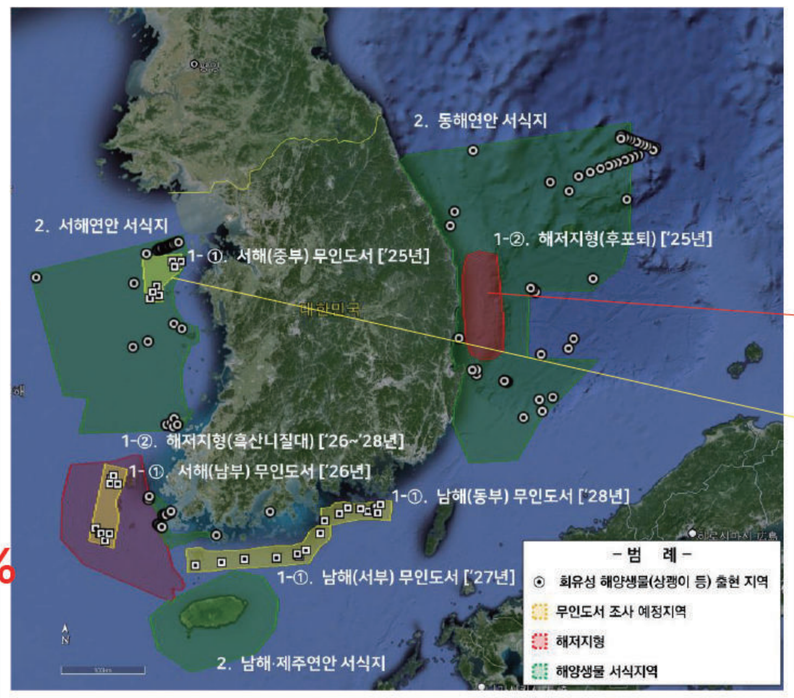
MPA Target

MPA MARINE PROTECTED AREA

Targets for the MPAs
- **(national) 30% of territorial waters by 2030**

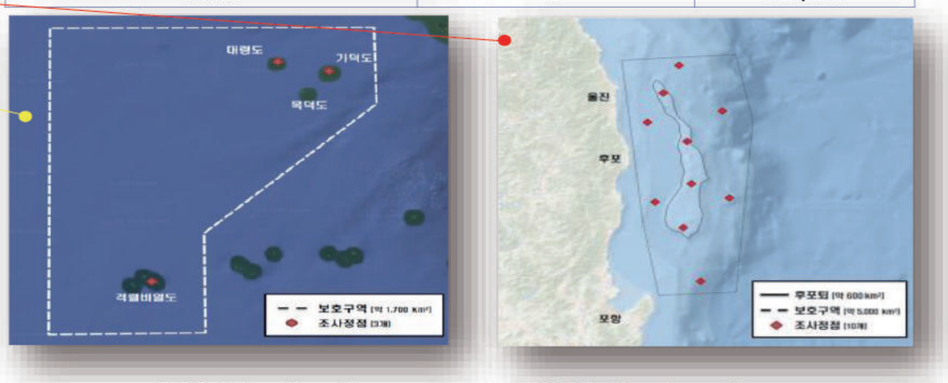
Current score : 2.09%

- **(GBF) 30% of world's ocean by 2030**



Large MPA candidates around Korean sea

Category	No. of candidate	Measures (㎢)
Territorial sea starting point uninhabited island	4	11,200
Upwelling sea area (Open sea)	2	20,000
Migratory area	2	81,000
Underwater topography	1	12,500
Total	**9**	**124,700**



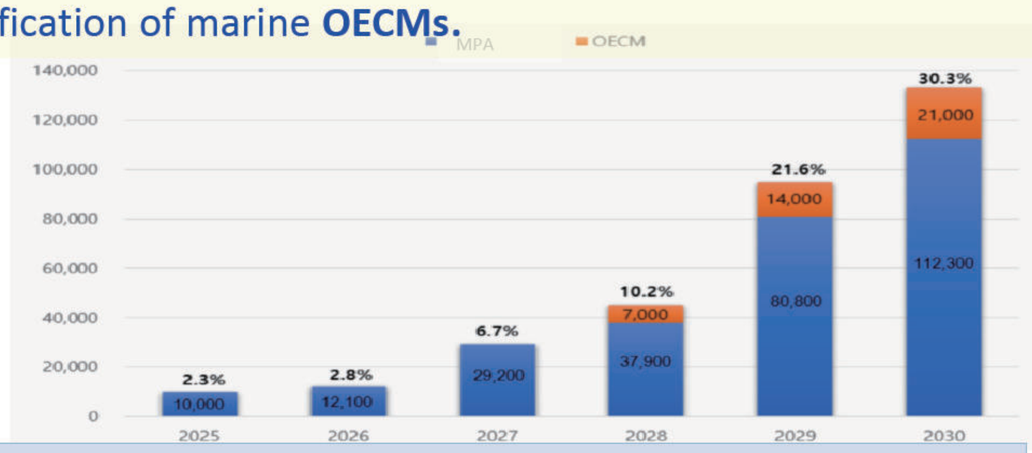
2024 In-depth survey for MPA designation

MPA status

Marine OECMs

MPA MARINE PROTECTED AREA

▷ The **MOF has developed a strategy** to meet the 30 by 30 target for marine protected and **is moving forward with** the identification of marine **OECMs.**



[Key components of the marine OECM strategy]

Guidelines

Develop Marine OECM guidelines by the end of 2025, drawing on IUCN guidance (2021) and other sectoral examples to establish evaluation indicators and standards.
- Ongoing research since June 2025 is focused on drafting these guidelines and preparing the necessary legal framework.

Using the finalized guidelines, begin identifying potential OECM sites starting in 2025, including specific island zones and buffer areas around tidal flats designated as World Natural Heritage sites.

OECM registration

Pilot the registration of marine OECMs through 2027 in line with the guidelines.
– From 2028 onward, aim to register more than 7,000km² of OECMs each year.

Starting in 2026, pursue amendments to the Marine Ecosystem Act to establish a legal basis for OECM definitions, registration procedures, management systems, and support mechanisms.

Institutional framework

MPA status

Marine OECMs

Proposed OECM candidate sites in Korea

Candidate area	Description
Waters surrounding specific islands	Coastal areas **around uninhabited or sparsely populated islands with exceptional ecological, geological, or topographical features**
Buffer zones of World Natural Heritage tidal flats	**Surrounding zones** designated to ensure the effective protection of **tidal flats listed as World Natural Heritage sites**
Tidal flat restoration sites	Areas where degraded tidal flats have been **RESTORED** to their natural state through **ecological restoration projects**
Tidal flats outside marine protected areas	**Tidal flat zones** identified through ecological surveys that have **NOT** yet been designated as MPAs



Getbol : Korean Tidal Flats
UNESCO World Natural Heritage Sites

Getbol, or Korean tidal flats, are now recognized as some of the world's most important and meaningful habitats for preserving global biodiversity.



Source: World Heritage Promotion Team of Korean Tidal Flats

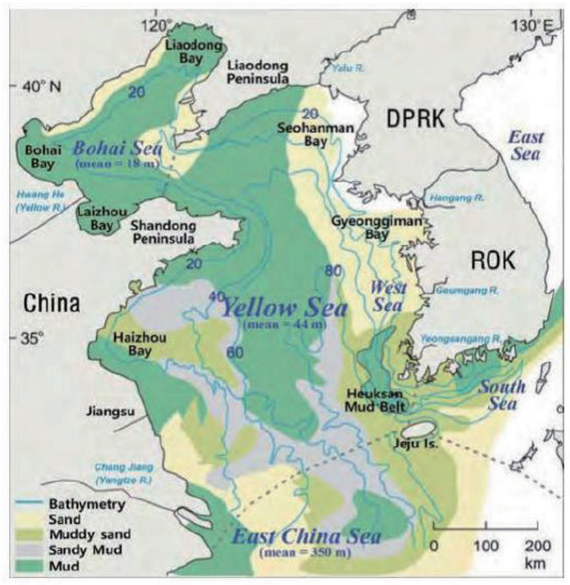
Bird monitoring

Getbol, Korean tidal flats

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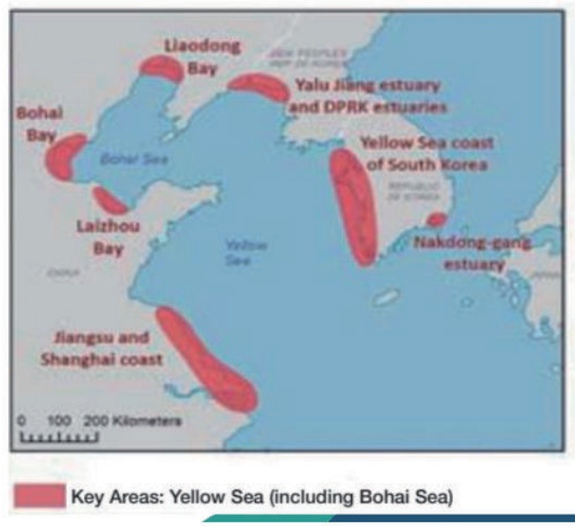
➢ Yellow Sea Ecoregion (YSE)

- Geographic extent across Eastern China, North Korea (DPRK), and **South Korea (ROK)**
- Ecological Importance
  - One of the world's most productive continental shelf ecosystems
  - Supports major fisheries, marine mammals, and over 50 million migratory waterbirds
  - Crucial stopover for the East Asian–Australasian Flyway (EAAF)



➢ Tidal flats in the Republic of Korea

- An area of 2,443 ㎢(as of 2023), accounting for about **35% of the total Yellow Sea tidal flat**
- Complex topography and macrotidal environment, resulting in a unique tidal flat habitat and biodiversity that is different from China's.
- Korea's tidal flats include **the EAAF's 16 key shorebird habitats** (MacKinnon et al. 2012)
- Support **42 globally threatened bird species** on the IUCN Red List



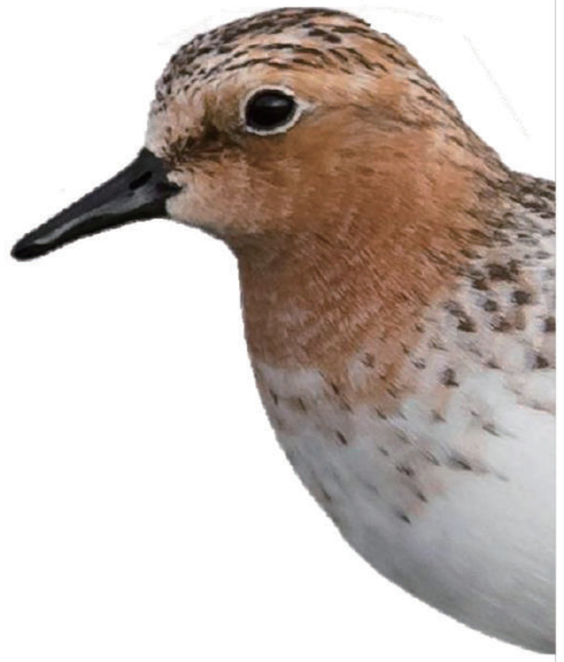
Bird monitoring

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Getbol, Korean tidal flats

➢ **Getbol, Korean Tidal Flats**

- Recognized for its **Outstanding Universal Value (OUV) as internationally important habitats that support the biodiversity of waterbirds and tidal flats** of the Yellow Sea



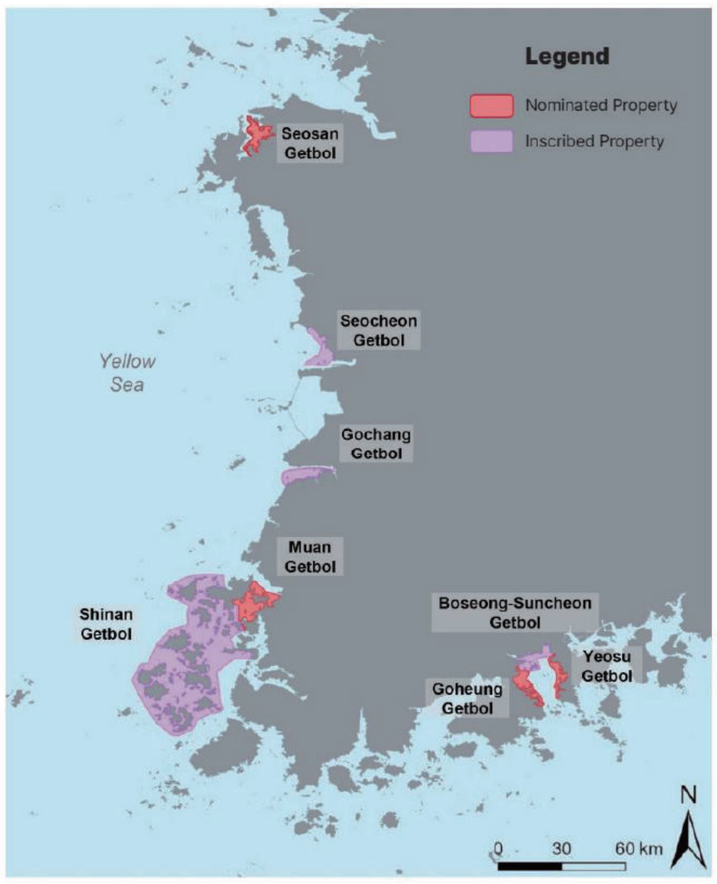
➢ **Criterion (X)**

- The property contains crucial habitats for in-situ conservation of the biodiversity of the Yellow Sea region, including threatened and endemic species.
- The property encompasses many of the critical stopover sites for several globally threatened species of migratory birds, along the EAAF, one of the world's most important yet jeopardized flyways.

Bird monitoring

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Getbol, Korean tidal flats (Phase Ⅰ & Ⅱ)



Name of the Component		Phase	Region(s) / District(s)
1. Boseong-Suncheon-Yeosu-Goheung Getbol	1-1. Boseong-Suncheon Getbol	Phase Ⅰ (Inscribed)	Boseong County, Jeollanam-do Province Suncheon City, Jeollanam-do Province
	1-2. Yeosu Getbol	**Phase Ⅱ (Nominated)**	**Yeosu City, Jeollanam-do Province**
	1-3. Goheung Getbol	**Phase Ⅱ (Nominated)**	**Goheung County, Jeollanam-do Province**
2. Shinan-Muan Getbol	2-1. Shinan Getbol	Phase Ⅰ (Inscribed)	Shinan County, Jeollanam-do Province
	2-2. Muan Getbol	**Phase Ⅱ (Nominated)**	**Muan County, Jeollanam-do Province**
3. Gochang Getbol		Phase Ⅰ (Inscribed)	Gochang County, Jeonbuk State
4. Seocheon Getbol		Phase Ⅰ (Inscribed)	Seocheon County, Chungcheongnam-do Province
5. Seosan Getbol		**Phase Ⅱ (Nominated)**	**Seosan City, Chungcheongnam-do Province**

Bird monitoring

MPA
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Getbol, Korean tidal flats (Phase Ⅰ & Ⅱ)

➢ Critical habitats for biodiversity

- **Getbol, Korean Tidal Flats (Phase Ⅰ & Ⅱ) supports a total of 2,454 living organisms.**
- **A total of 221 bird species have been reported including 44 species of shorebirds and 24 globally threatened species.**
- **Of the 114 waterbird species, 17 and 33 species meet the criteria of >1% of the global and the EAAF biogeographic populations, respectively.**
- **It will also support 2,233 species of tidal flat organisms, including 473 species of benthic diatoms, 173 species of macroalgae, 122 species of halophytes, 1,349 species of macrobenthos, 114 species of fish and two species of marine mammals.**
- **There are 53 endemic species and 13 protected tidal flat organisms including one globally threatened mammal species.**



Bird monitoring

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Migratory bird monitoring

Establishment of an Outstanding Universal Value (OUV) Monitoring System

2022-2023

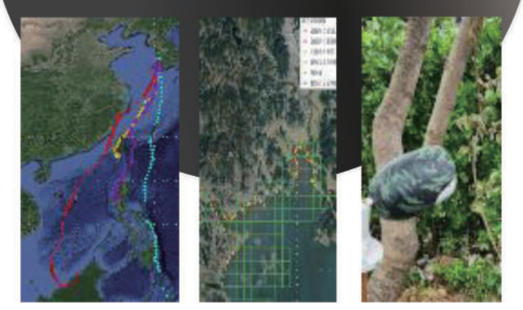
Integrated monitoring manual established



- Diversity of waterbird species
- Biodiversity of tidal flats
- Properties of tidal flats as habitats
- Risk management

2023

Year 1 of OUV monitoring according to the manual (waterbird species)



- Location tracking
- Site survey
- Surveillance

2024 and afterward

Year 2 of OUV monitoring according to the manual (waterbird species)

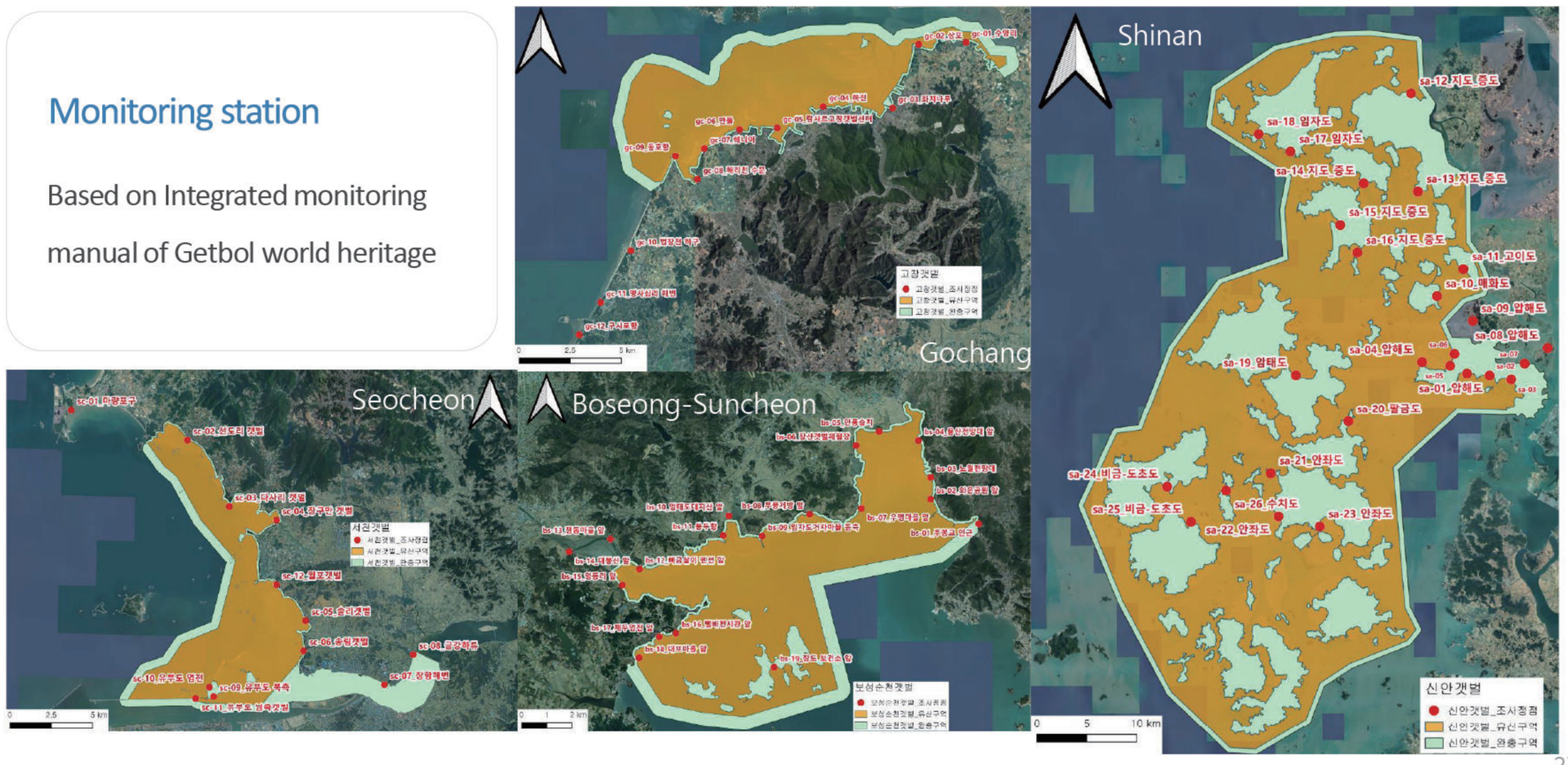


- Increased involvement of citizen science
- Increased exchange with international experts

Migratory bird monitoring

Monitoring station

Based on Integrated monitoring manual of Getbol world heritage



Bird monitoring

Migratory bird monitoring

Year 2 of OUV Monitoring

Survey findings on sea bird species inhabiting Korean tidal flats (July 2024 to April 2025)

A total of 107 species across seven orders and 16 families, with up to 272,441 individual birds counted, including:

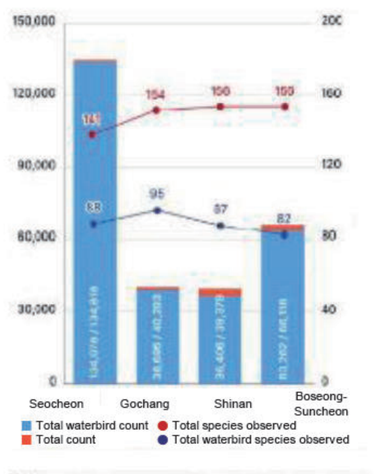
- 25 waterbird species listed as globally threatened on the IUCN Red List; and
- 28 species whose populations exceed one percent of the global population threshold used for waterbird conservation along the EAAF and 47 species exceeding the 0.25 percent threshold.

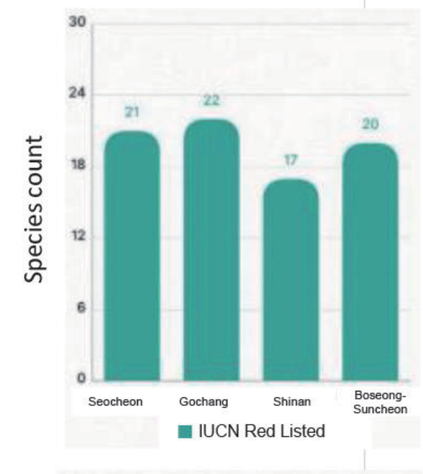
Seocheon:
- 88 species, 134,078 birds counted
- 21 species found on IUCN Red List
- Species exceeding EAAF thresholds: 19 species above one percent, 36 species above 0.25 percent

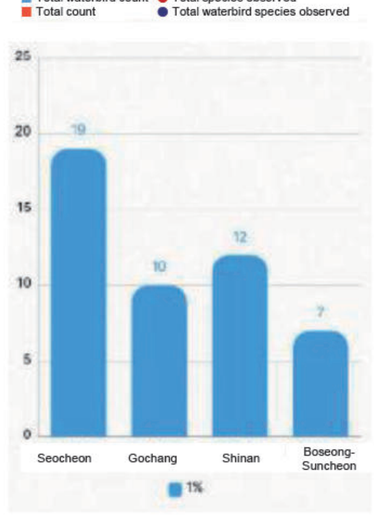
Gochang:
- 95 species, 38,695 birds counted
- 22 species found on IUCN Red List
- Species exceeding EAAF thresholds: 10 species above one percent, 24 species above 0.25 percent

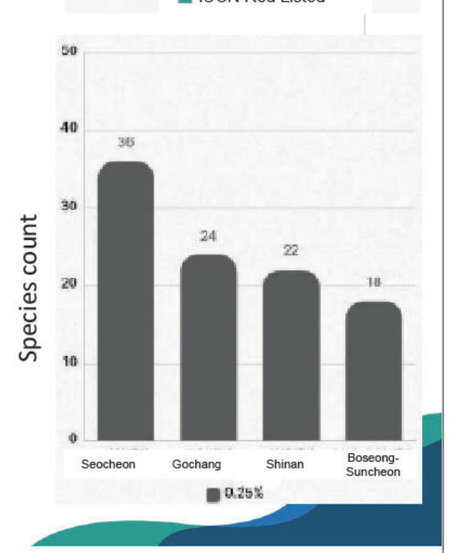
Shinan:
- 87 species, 34,406 birds counted
- 17 species found on IUCN Red List
- Species exceeding EAAF thresholds: 12 species above one percent, 22 species above 0.25 percent

Boseong-Suncheon:
- 82 species, 63,262 birds counted
- 20 species found on IUCN Red List
- Species exceeding EAAF thresholds: 7 species above one percent, 18 species above 0.25 percent









MPA MARINE PROTECTED AREA

Marine Spatial Planning(MSP)

MSP Zoning

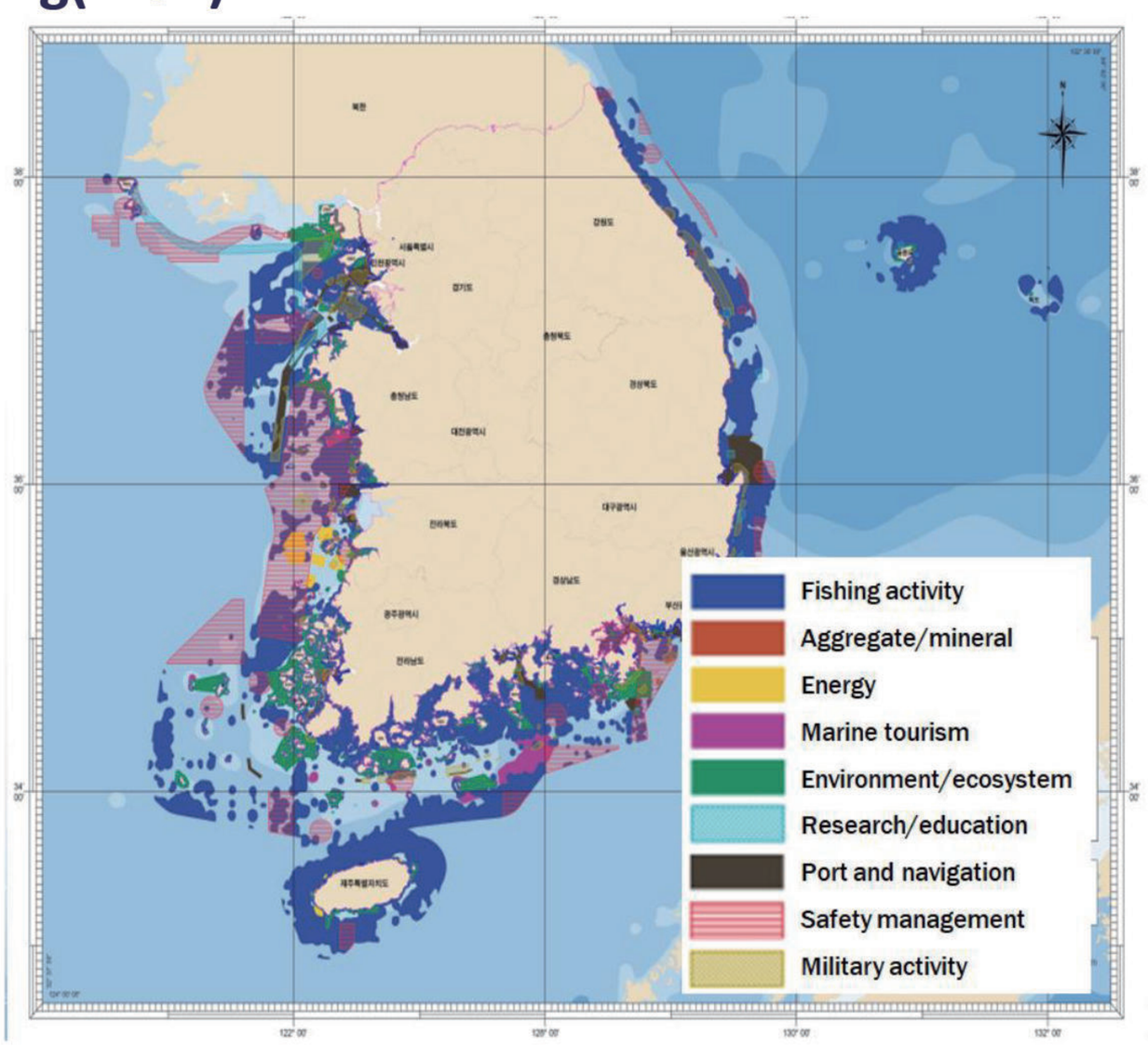
Evaluation of spatial characteristics through the analysis of core activity density
⇒ Zoning

No	Zone / Details
1	**Fishing activity protection** Fishery protected area, Fishing Port, Fishing ground, Catch, Aquaculture, etc.
2	**Environment and ecosystem management** MPA, National Park, Protected species habitat, Diversity, Marine ecology grade, etc.
3	**Marine tourism** Beach, Marina Port, Fishing area, leisure activities, etc.
4	**Aggregate and mineral development** Aggregate permit area, mining rights, Aggregate resources, etc.
5	**Energy development** Power generation, Offshore wind farm, Energy resources, Cable, etc.
6	**Port and navigation** Port, Sea route, Vessel traffic, Docking area, Traffic safety area, etc.
7	**Research and education preservation** Marine observatory, Marine science base, Territorial sea point islands, etc.
8	**Safety management** No leisure activities area, Marine industry facilities, Risk of traffic accidents, etc.
9	**Military activity** Military protection and restricted zones, Training area, etc.

MPA MARINE PROTECTED AREA

Marine Spatial Planning(MSP)

MSP Map



MPA
MARINE PROTECTED AREA

Summary

- **Korea's MPA(including MSP) must be an effective system for spatially conserving migratory birds.**

- **Getbol, Korean tidal flats, designated as a world natural heritage site based on the MPA, has brought about the positive effect of strengthening the monitoring of migratory birds.**

- **MPA can be a solution for the sustainable use of renewable energy while allowing migratory birds to coexist.**



Thank you !

Dr. Young Nam Kim
ynkim@koem.or.kr

MPA
MARINE PROTECTED AREA

Ministry of Oceans and Fisheries

KOEM Korea Marine Environment Management Corporation



제14회
신안 국제철새 심포지엄

2025 Shinan International Migratory Bird Symposium

대만해협 해상풍력발전소의 바닷새 다양성 및 풍부도 변화와 보상 전략

Change of seabird diversity and abundance at offshore windfarms and compensation strategy in the Taiwan Strait

Dr. Chung-Hang Hung | 충항훙

(국립대만대학 / National Taiwan University)

대만해협 해상풍력발전소의 바닷새 다양성 및 풍부도 변화와 보상 전략

훙중항

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국립대만대학교
수리기술연구소
연구부연구원





훙중항 박사

이학 석사 - 환경과학, 동해대학교

박사 - 산림 및 자원보호학과, 국립대만대학교

이학 석사 논문: 2009년 룬웨이(崙尾) 산업단지에서 쇠제비갈매기 부화 성공률에 영향을 미치는 요인 연구

박사 논문: 마쭈(馬祖)섬 제비갈매기 보호구역에서의 중국제비갈매기 및 큰제비갈매기 보전생물학 연구, 2019

태평양 해조류 연구 그룹 아시아/오세아니아 대표 (2019-2021)

Ceta Explorers 주식회사 컨설턴트 (2022-현재)

알바트로스 및 바닷새 보호 협정, 제8차 당사국 회의 대만 대표 (2025)



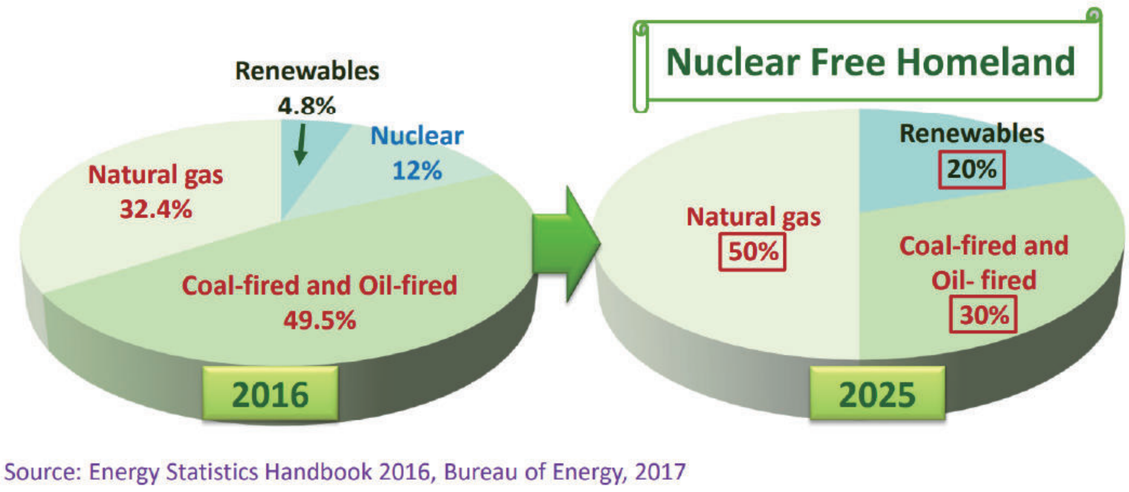
에너지 전환 원리

2025년까지 핵 없는 국가 실현

2025년까지 태양광 20GW, 해상풍력 5.6GW 설비용량 달성

2050년까지 탄소 순배출 제로 달성

■ **Green energy is the core of energy transition in Taiwan**
Raising energy security, building sustainable environment and green economy, including promoting jobs opportunities and industrial upgrading.



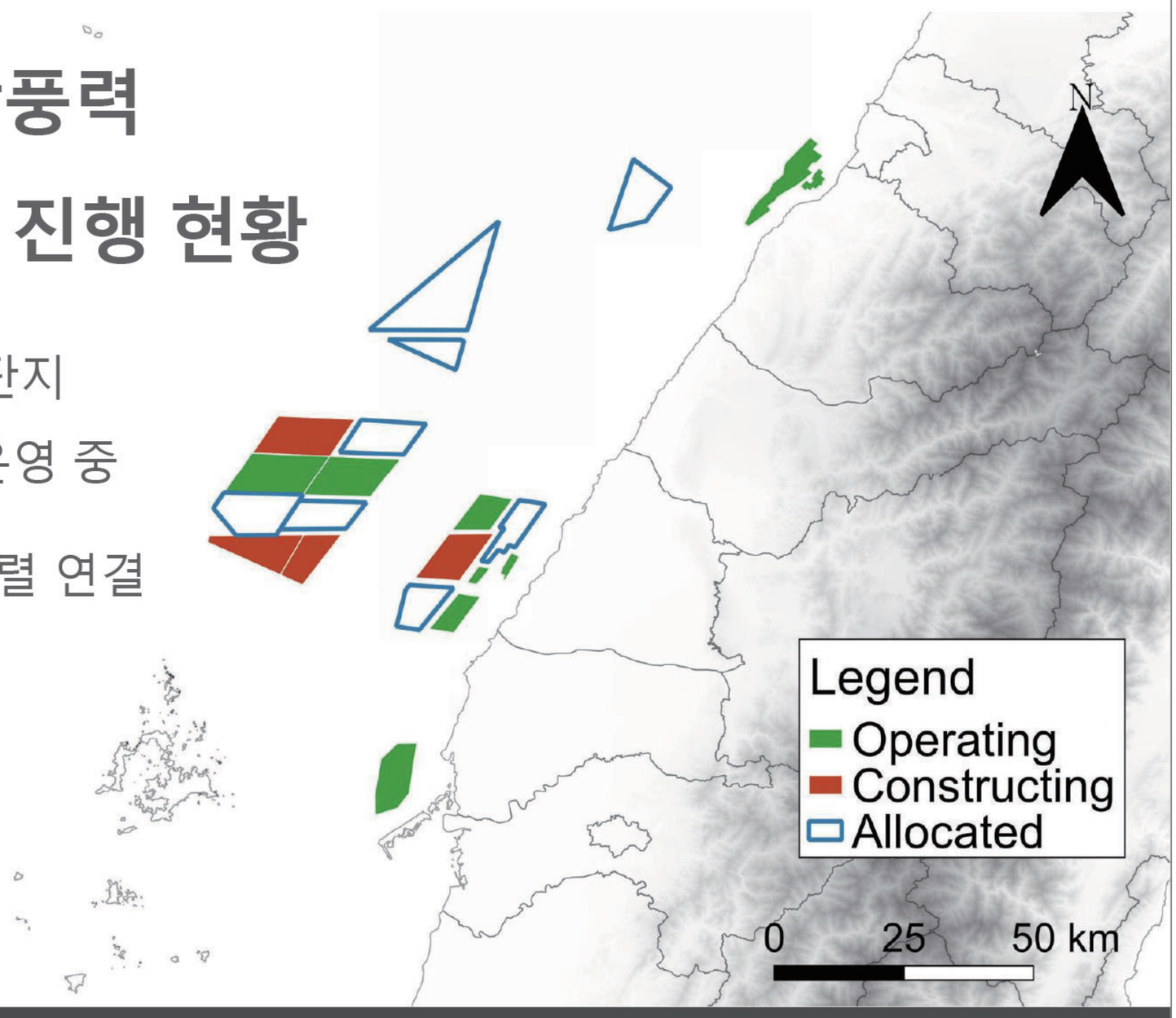
Source: Energy Statistics Handbook 2016, Bureau of Energy, 2017

2025년까지 해상풍력 발전단지 계획 및 진행 현황

2016년 이후 첫 해상풍력 발전단지 설치됨, 2024년 기준 약 3GW 운영 중

2.3GW 건설 중, 2026년까지 병렬 연결 완료 예정

2025년 추가 4.4GW 용량 배정





대만 해상풍력 지식 공백

◆대만에서 적합한 해조류 조사 지침 부재

◆기초 자료 부족 (해조류 분포, 민감종 등)

◆원자료가 컨설팅 회사 보유, 대부분 접근 불가

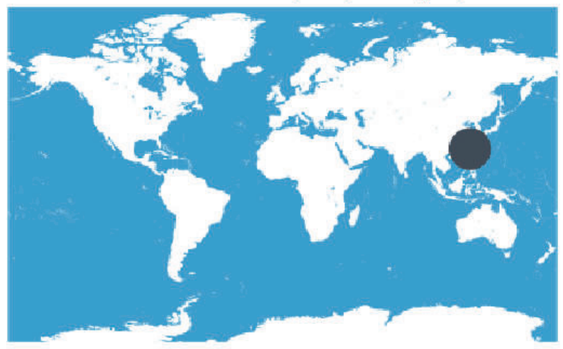
Greater Changhua

(GCH) Ørsted 해상풍력 발전 프로젝트

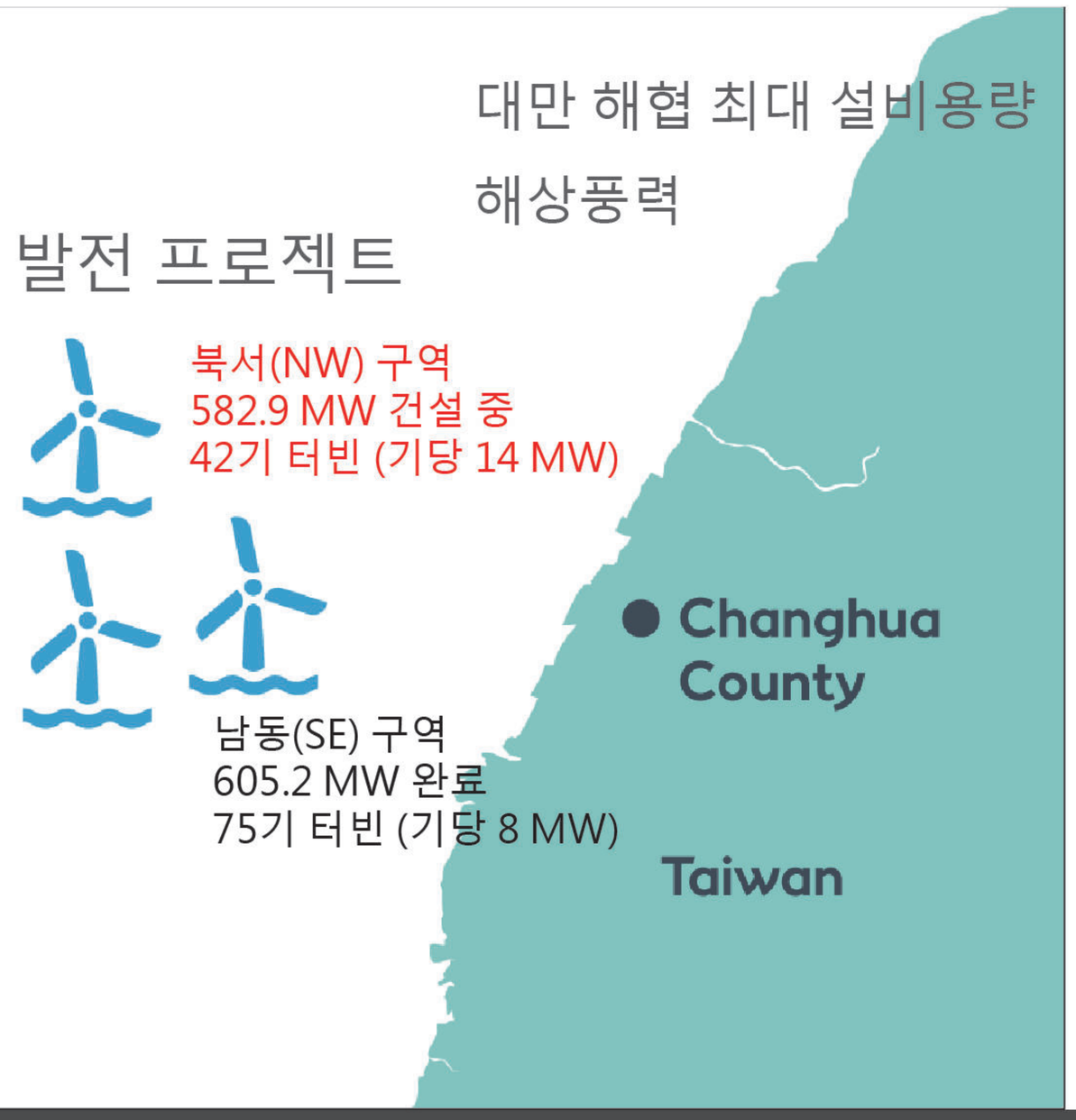
대만 해협 최대 설비용량
해상풍력

북서(NW) 구역
582.9 MW 건설 중
42기 터빈 (기당 14 MW)

남서(SW) 구역
294.8 MW 완료
36기 터빈 (기당 8 MW)
331.7 MW 건설 중
24기 터빈 (기당 14 MW)



남동(SE) 구역
605.2 MW 완료
75기 터빈 (기당 8 MW)



선박 횡단 해조류 조사
2019년 3월부터 진행



봄(3-5월): 3회/계절 × 2019-2024
여름(6-8월): 3회/계절 × 2019-2024
가을(9-11월): 3회/계절 × 2019-2024
겨울(12-2월): 1회/계절 × 2019-2024

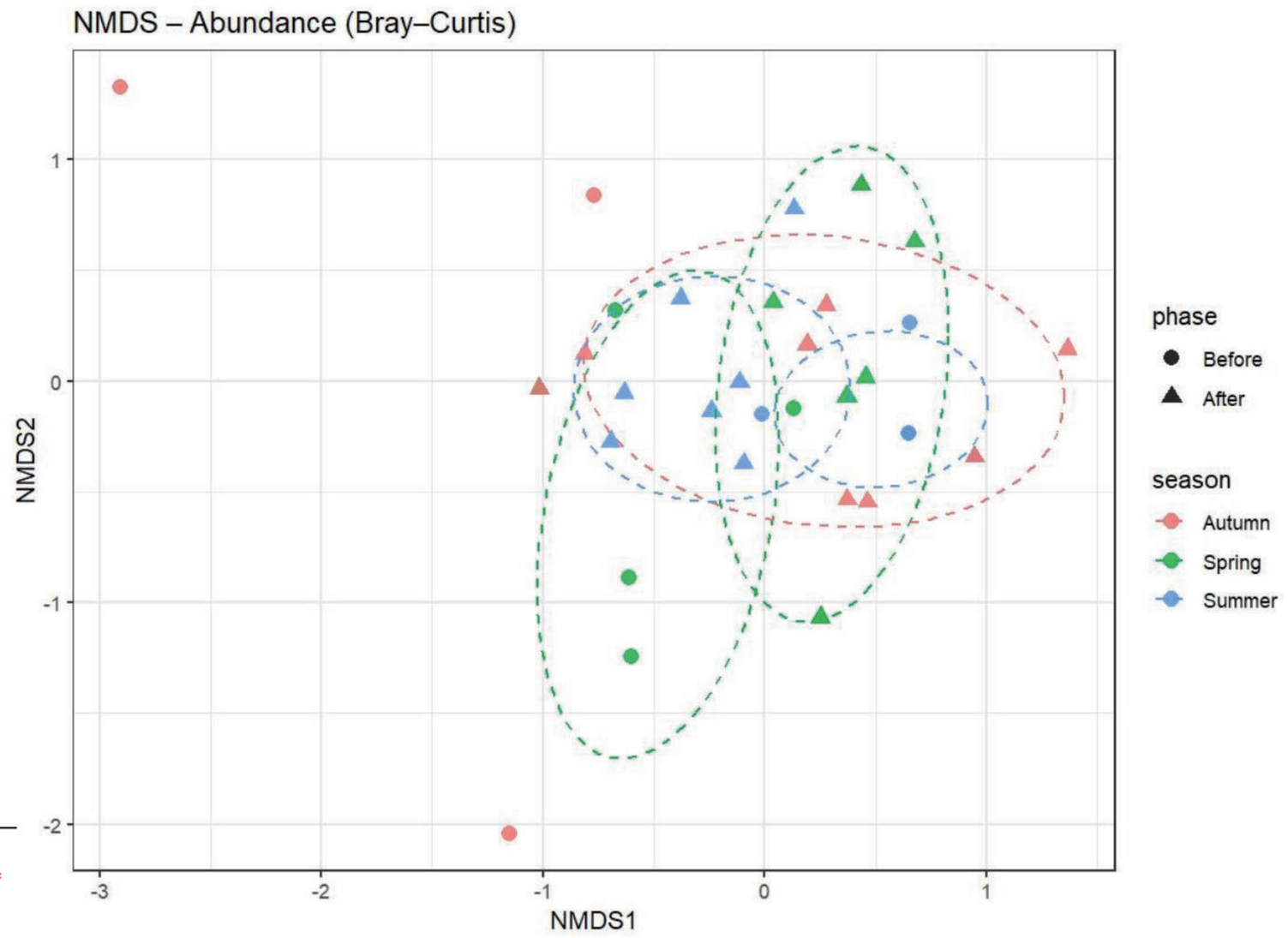
전: 2019-2020
후: 2021-2024

◆ 조사 방법

1. 군집 구성 분석	• 브레이–커티스 거리 순열 다변량 분산분석(PERMANOVA) • 비계량 다차원척도법(NMDS)
2. 종 발생 분석	• 부트스트랩 (샘플 크기 불균형 보정) • 일반화 선형 혼합모형 $\text{presence} \sim \text{phase} + (1\|\text{site}) + (1\|\text{year})$ • 오즈비(OR) 및 포레스트 플롯

NMDS 및 PERMANOVA에 의한 군집 구조 분석

- 분석에 포함된 종: 16종
- 해조류 군집 차이는 계절에 따라 달라짐
- 군집 구조는 주로 계절에 의해 형성됨
- **여름에 유의한 계절 효과 관찰됨** (R^2 = 0.276, p = 0.012, PERMANOVA)

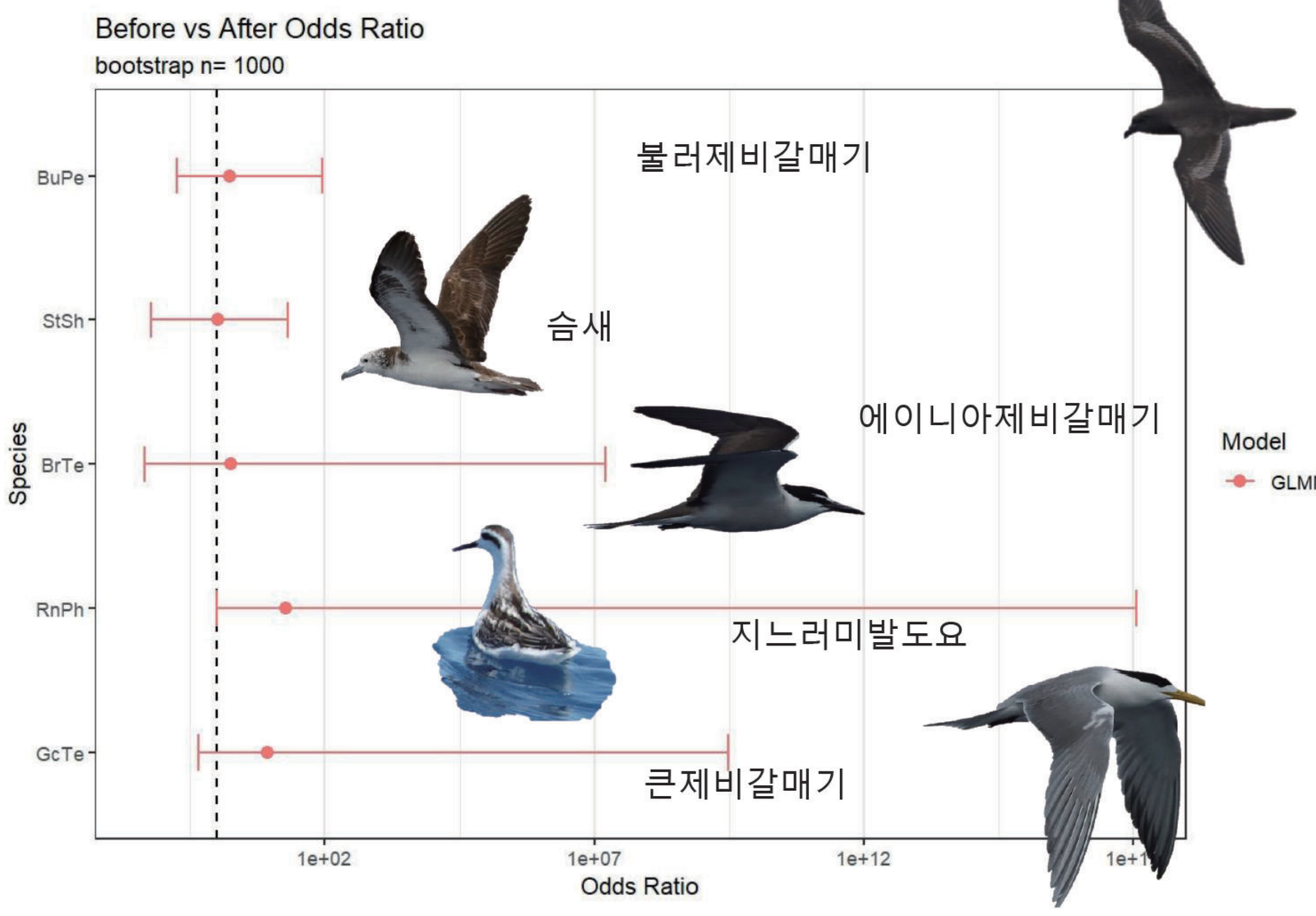


계절별 PERMANOVA

계절	df	제곱합	R^2	F값	p값
봄	1	0.595	0.138	1.60	0.116
여름	1	0.968	0.276	3.82	0.012 *
가을	1	0.623	0.136	1.58	0.093

우점 해조류 종 발생

- StSh, BuPe, BrTe: 거의 반응 없음
- RnPh, GcTe: 발생 증가 가능성 시사
- GcTe 변화: 인근 번식 개체수 증가와 관련 가능성

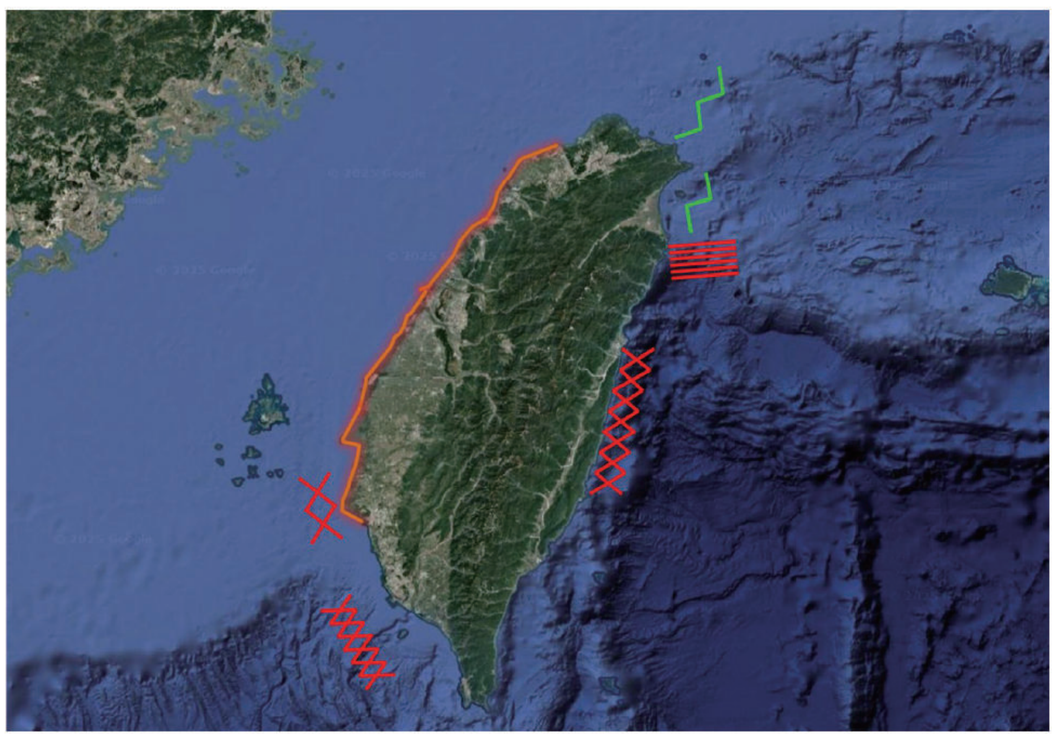


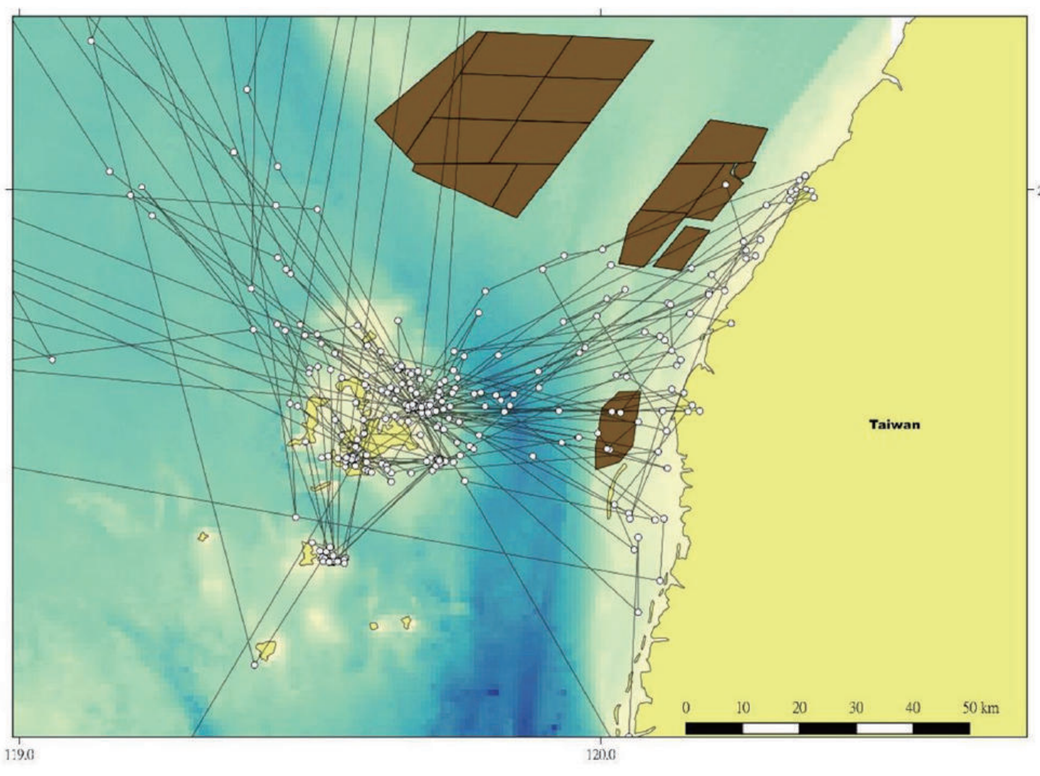
대만 풍력발전단지 조류 영향 완화 전략 (초안)

1) 운영 단계
2) 풍력발전 블록 사이 조류 통과 통로 유지 – 약 2km 폭
3) 터빈 간 날개 끝 간 거리 약 400m 유지
4) 운영 중 첨단 모니터링 장비 배치: 해상 레이더, 적외선 카메라, 음향(마이크) 센서로 조류 활동 추적
5) 준공 후 6개월 이내 터빈 가동 중단(제한) 메커니즘 제출 및 승인

보상 전략

- 기초 해조류 조사 – 민감종 지도 작성
- 해조류 GPS 추적
- 쇠제비갈매기 보호 네트워크 구축





쇠제비갈매기

- 유라시아 대륙 전역에 분포
- 주로 담수 및 해수 어류 섭식
- 개방 수역 인근 환경에서 번식

POPULATION TREND

Decreasing



2021-2026 쇠제비갈매기 개체수 조사 프로젝트

海洋委員會海洋保育署
OCEAN CONSERVATION ADMINISTRATION, OCEAN AFFAIRS COUNCIL

2018년부터 진행

國立臺灣大學 人與自然研究群

中華民國野鳥學會
Taiwan Wild Bird Federation