ADB

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ADB-PRC Regional Knowledge Sharing Initiative

Talk China SEMINAR

Wetland Conservation in China: Policy Evolution, Innovative Practices, and Future Pathways

中国湿地保护：政策演进、创新实践与未来展望

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Auditorium Hall 1, ADB Headquarters

主要内容

1. 中国湿地概况 Overview of China's Wetlands

2. 政策演进与法治里程碑 Policy Evolution and Legislative Milestone

3. 创新实践与综合成效 Innovative Practices and Achievements

4.中国湿地保护未来展望 Future Pathways for China wetland conservation

1. 中国湿地概况 Overview of China's Wetlands

中国湿地：幅员辽阔，多姿多彩
China’s Wetlands: Vast and Varied, Rich in Diversity

滨海湿地 江苏盐城
coastal wetlland, Yancheng Jiangsu

河流湿地 内蒙古额尔古纳
river, Ergun Inner Mongolia

湖泊湿地 青海湖
lake, Qinghai lake

沼泽湿地 四川若尔盖
peatland, Ruoergai Sichuan

人工湿地 云南哈尼梯田
artificial wetland, Yunnan Hani Rice Terraces

人工湿地 京杭大运河
artificial wetland, Beijing-Hangzhou Grand Canal

1. 中国湿地概况 Overview of China's Wetlands

中国湿地资源现状

China’s Wetland Resources:

- **从平原到高原、从内陆到沿海、从寒温带到热带均有分布**

  distributed from plains to plateaus, from inland regions to coasts, and from temperate to tropical zones

- **湿地总面积约5559万公顷，湿地覆盖率5.79%**

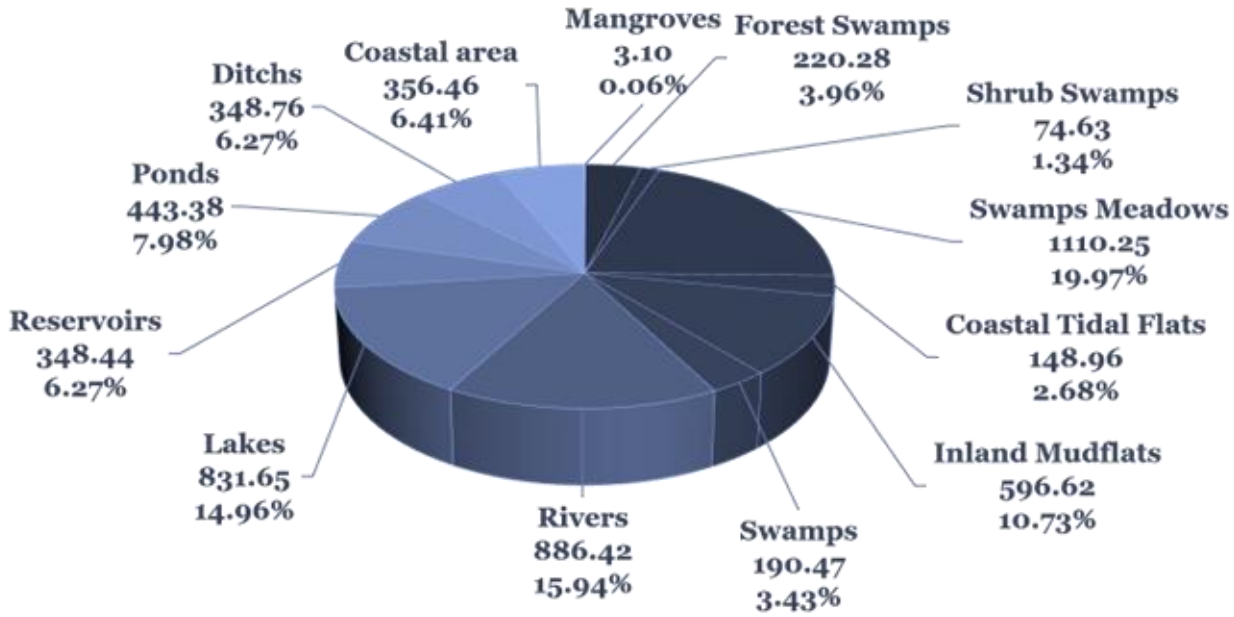
  55.59 million hectares, with a wetland coverage rate of 5.79%.

- **占全球湿地面积的4%**

  accounts for 4% of the global wetland area

- **居亚洲第一、世界第四**

  ranking first in Asia and fourth in the world



自然湿地占80%　人工湿地占20%

Natural wetlands: 80%; Artificial wetlands: 20%

(国家林业和草原局统计数据，2025.12 statistical data from the National Forestry and Grassland Administration, Dec 2025)

1. 中国湿地概况 Overview of China's Wetlands

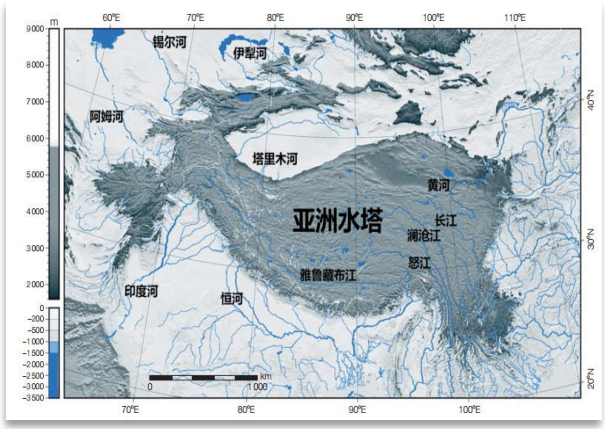
中国湿地在全球生态系统中发挥着不可替代的作用

China’s wetlands play an irreplaceable role in the global ecosystem

生物多样性支撑 Biodiversity Support

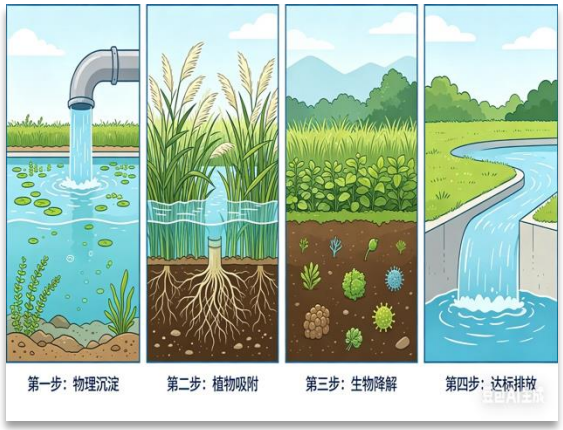
- 物种基因库与濒危物种的庇护所
- Species gene pool and sanctuary for endangered wildlife

水源涵养 Water Restoration



- “亚洲水塔”：青藏高原是许多内陆河流和跨国河流的发源地
- The Asian Water Tower: The Qinghai-Xizang Plateau is the birthplace of numerous inland and transboundary rivers.

营养物质循环 Nutrient Cycling



- 每公顷湿地每年可去除1000多公斤氮和130多公斤磷
- Each hectare of wetland can remove over 1,000 kilograms of N and more than 130 kilograms of P annually.

碳储量与气候调节 Carbon Storage

- 中国湿地碳储量达 16.87 Pg C，约占全球湿地碳储量的3.8%
- China’s wetland carbon storage reaches 16.87 Pg C, accounting for about 3.8% of the global wetland carbon stock.

第二次全国湿地资源调查（The Second National Survey of Wetland Resources），2014

Mao et al., 2019

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候鸟栖息地与迁徙驿站
Migratory Bird Habitat

- **全球 9 条主要候鸟迁飞通道中，有 4 条全程或关键段途经中国**
- **Of the world’s nine major migratory bird flyways, four pass through China either entirely or in critical segments.**

- **中国为候鸟提供繁殖、停歇、越冬全周期关键生境，是全球候鸟的 “补给站” 与 “避难所”**
- **China provides essential habitats for migratory birds across their breeding, stopover, and wintering stages, serving as a vital “refueling station” and “refuge” along global migration routes.**

新疆巴音布鲁克：大天鹅
Cygnus cygnus

吉林莫莫格湿地：丹顶鹤
Grus japonensis

云南大包山：黑颈鹤
Grus nigricollis

江苏盐城：勺嘴鹬
Calidris pygmaea

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中国湿地保护管理政策发展历程 Evolution of China’s Wetland Conservation Policies

分散管理阶段
Sectoral Management

1992年以前

- 没有专门的湿地法规，湿地由环境、海洋、水资源等不同法规分散管理

初步发展阶段
Early development

1992~2003

- 1992年：加入《湿地公约》
- 2002：《全国湿地保护工程规划(2002-2030)》发布

抢救性保护阶段
Emergency rescue cobservation

2004~2015

- 2004年：国务院办公厅发布《关于加强湿地保护管理的通知》；
- 2013：《湿地保护管理规定》实施（2017年修订）

全面保护法治化管理阶段
Comprehensive Conservation & Law-based Management

2016~至今

- 2016年：国务院发布《湿地保护修复制度方案》；
- 2021年：《湿地保护法》颁布
- 2022年，《全国湿地保护规划（2022—2030）》印发
- 2026年：《中华人民共和国生态环境法典》通过（3 月 12 日），自 8 月 15 日起施行

从资源利用到生态保护
from resource exploitation to ecological conservation

从地方试点到国家立法
from local trials to national legislation

从单一保护到全域治理
from isolated conservation to holistic governance

2. 政策演进与法治里程碑 Policy Evolution and Legislative Milestone

中国湿地保护管理政策里程碑 Milestones in China’s Wetland Policy and Management

1. **《关于加强湿地保护管理的通知》 (2004) Provisions on the Administration of Wetland Protection**
   明确湿地保护重要战略地位，理顺管护体系，遏制湿地无序开发破坏乱象 Emphasize wetlands’ strategic value, streamline management, and prevent unregulated development

2. **《湿地保护管理规定》 (2013,2017) Provisions on the Administration of Wetland Protection**
   第一部针对湿地保护的专门部门规章 China’s first special departmental regulation dedicated to wetland conservation

3. **《湿地保护修复制度方案》 (2016) Scheme on Wetlands Protection and Restoration System**
   湿地保护上升为国家的顶层制度设计和生态文明体制改革的核心任务 Wetland conservation has been elevated to a top-level national institutional arrangement and a core task of ecological civilization system reform

4. **《中华人民共和国湿地保护法》 (2021) Wetland Protection Law of the People's Republic of China**
   专门针对湿地生态系统进行综合立法的国家法律 A national law specially formulated for comprehensive legislation on wetland ecosystems

5. **《中华人民共和国生态环境法典》 (2026) Ecological and Environmental Code of the People's Republic of China**
   湿地融入国家最高级别的生态环境法治体系 Wetlands have been integrated into the country’s national ecological and environmental legal system

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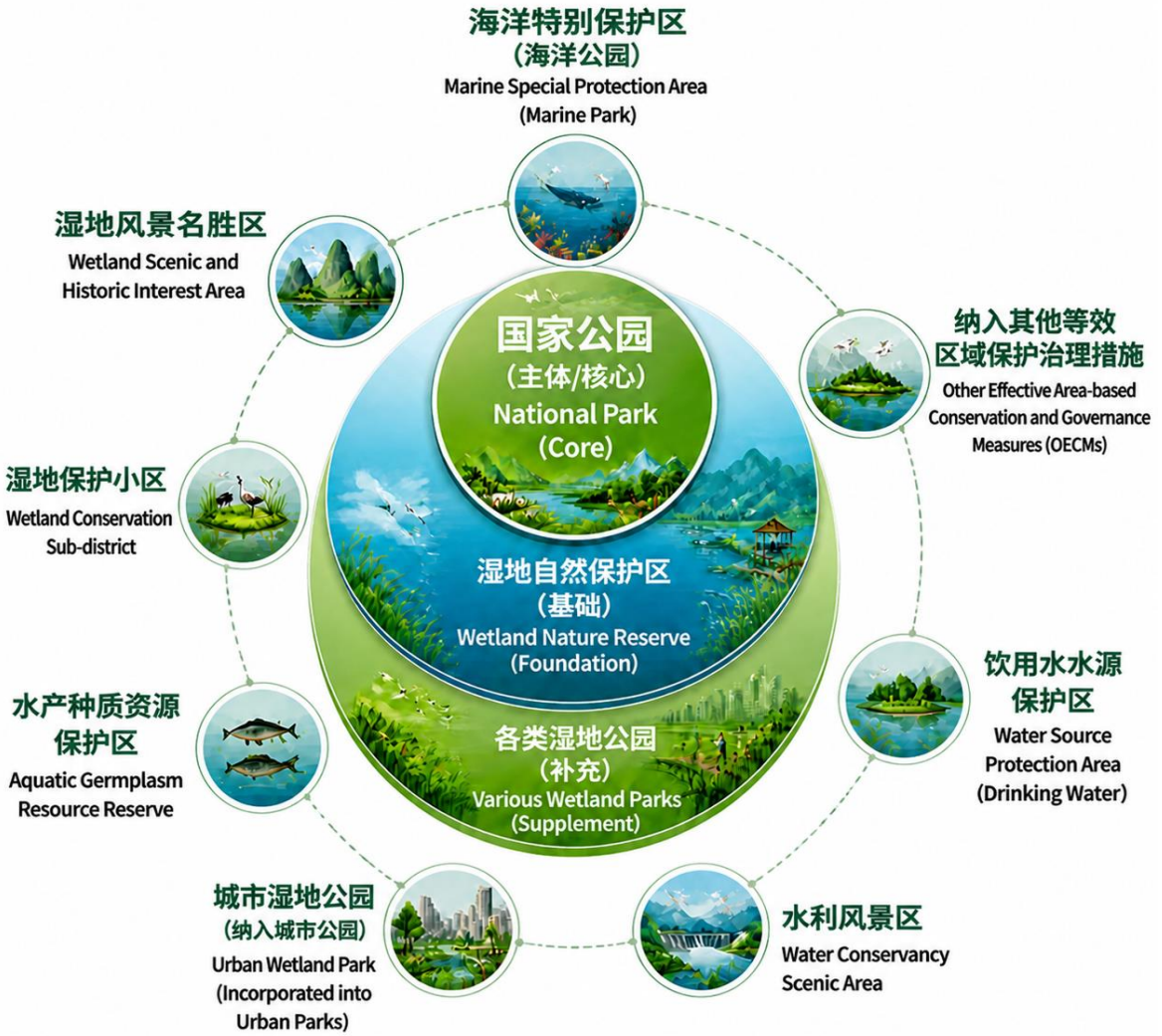
中国湿地保护体系 China Wetland Conservation System



中国湿地有多重保护管理形式，涵盖国家公园、湿地自然保护区、湿地公园、湿地风景名胜区、湿地保护小区、水产种质资源保护区、城市湿地公园、水利风景区、饮用水水源保护区、海洋特别保护区，并纳入其他等效区域保护治理措施 China adopts a diversified management approach for wetland conservation （as shown in the left figure）.

自然资源部、国家林草局于2020年启动自然保护地整合优化工作，构建以国家公园为主体的自然保护地体系

In 2020, China launched the integration and optimization of nature reserves. The former fragmented system has been replaced by a unified protected area system centered on national parks.

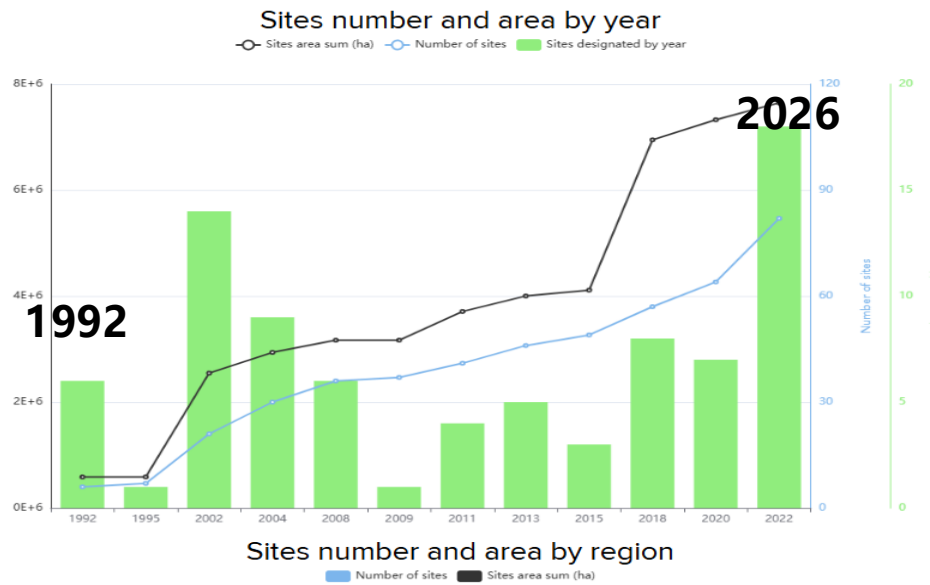
截止2026年，建成湿地类型自然保护地2200多个，其中包括湿地自然保护区600余处，湿地公园903处 As of 2026, more than 2,200 wetland-related protected areas had been established in China, including over 600 wetland nature reserves and 903 wetland parks.

3. 创新实践与综合成效 Innovative Practices and Achievements

中国积极融入全球湿地保护框架 China's Participation in Global Wetland Conservation

国际重要湿地Wetland of International Importance

- **中国指定的国际重要湿地达到 82处**
  The number of Ramsar Sites designated by China has reached 82
- **面积7647895公顷，占全国湿地总面积比例：13.76%**
  covering an area of 7,647,895 hectares, accounting for 13.76% of the total wetland area in China



国际湿地城市Ramsar Wetland Cities

- **全球共有74个“国际湿地城市”**
  There are 74 Ramsar Wetland Cities worldwide.
- **中国有22个，总数位居全球第一**
  China has 22, ranking first in the world in terms of total number.

3. 创新实践与综合成效 Innovative Practices and Achievements

中国湿地保护修复工程 China's Wetland Conservation and Restoration Projects

跨越四个“五年规划”的持续投入，成就全球最大规模的湿地修复实践

sustained investment over four Five-Year Plan periods has led to the world’s largest wetland restoration effort

“十一五”时期

11th Five-Year Plan (2006–2010)

- 投资30.3亿元3.03 billion yuan
- 保护管理建设550+处550+ protection and management sites
- 恢复湿地7.92万公顷79,200 ha of wetlands restored
- 污染防治2093公顷2,093 ha of pollution control

“十二五”时期

12th Five-Year Plan (2011–2015)

- 投资67.02亿元6.702 billion yuan
- 湿地公园705个705 wetland parks built
- 湿地保护区600多个600+ wetland nature reserves
- 恢复湿地16万公顷160,000 ha of wetlands restored

“十三五”时期

13th Five-Year Plan (2016–2020)

- 投入98.7亿元9.87 billion yuan
- 保护修复项目3000+3,000+ conservation and restoration projects
- 修复湿地38.31万公顷 383,100 ha of wetlands restored
- 新增湿地20.26万公顷 202,600 ha of new wetlands created

“十四五”至今

14th Five-Year Plan (2021–Present)

- 恢复湿地28.96万公顷 289,600 ha of wetlands restored
- 保护项目1000+1,000+ conservation projects
- 903处国家湿地公园903 national wetland parks
- 自然保护区600+600+ nature reserves

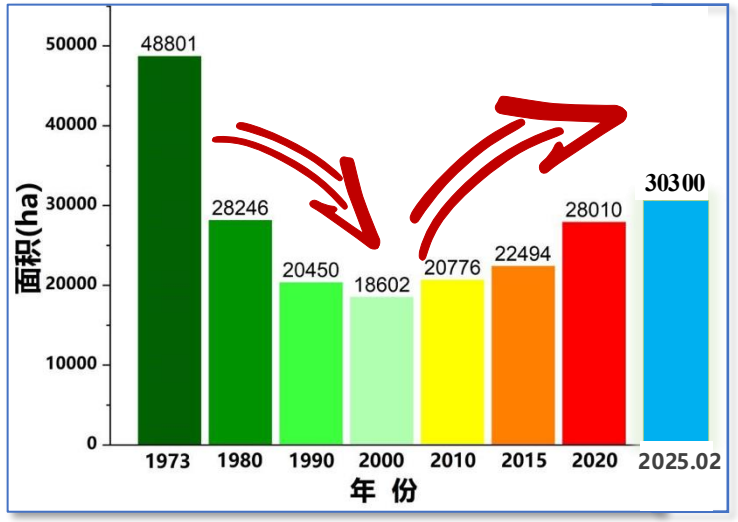
累计完成3800多个保护修复项目；新增和修复111.45万公顷湿地

Over 3,800 conservation and restoration projects completed; 1,114,500 ha of new and restored wetlands; 9,200 ha of mangroves planted

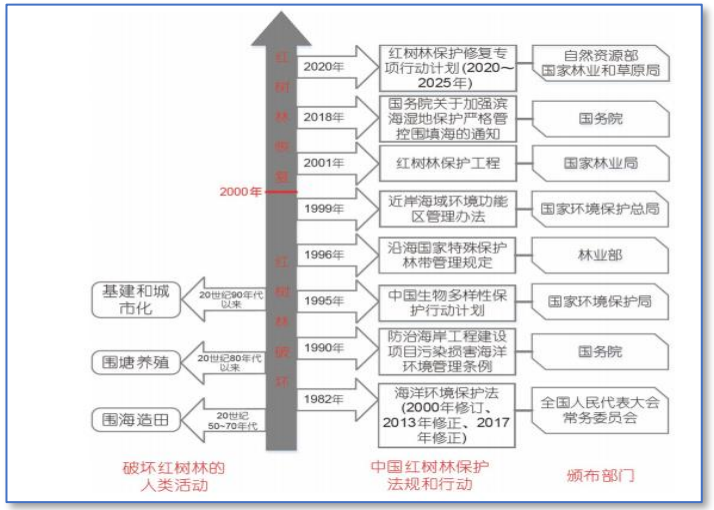
3. 创新实践与综合成效 Innovative Practices and Achievements

中国红树林：从退化到恢复 China’s Mangroves: from decline to recovery

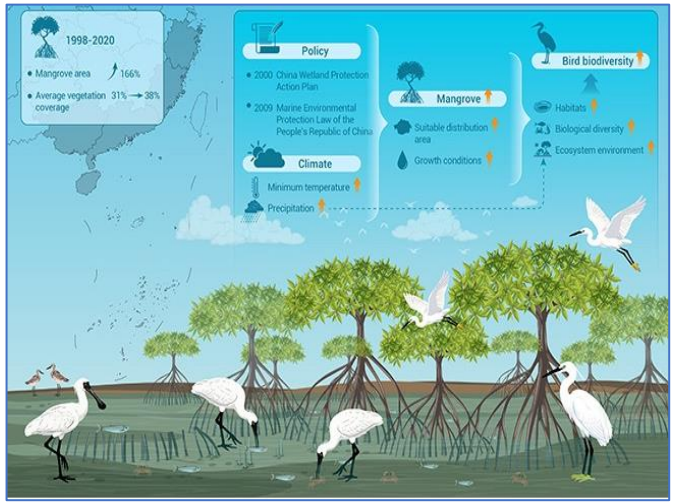
- **近1973-2000年中国红树林减少了30199 ha，约62%的红树林消失；** **fom 1973 to 2000, China lost 30,199 ha of mangroves, with about 62% of mangrove cover disappearing**
- **2000-2020年红树林面积增加9408 ha，恢复到1980年水平; 2020年至2025年6月，全国新营造红树林约9200公顷，全国红树林面积超过3万公顷；** **2000-2020, mangrove area increased by 9,408 ha, recovering to the level of the 1980s. 2020-2025, about 9,200 ha of new mangroves were restored nationwide, bringing the total mangrove area to over 30,000 ha**
- **红树林面积与植被覆盖度与鸟类多样性显著正相关；红树林栖息地中IUCN受威胁鸟类物种数增加91%。** **the number of IUCN Red List–threatened bird species in mangrove habitats increased by 91%.**



近50年中国红树林面积变化
Changes in China's Mangrove Area in the Past 50 Years



中国红树林破坏、保护和管理发展历程
Development of Destruction, Protection and Management of China's Mangroves



红树林植被扩张促进了鸟类多样性
Mangrove Vegetation Expansion Promotes Bird Diversity

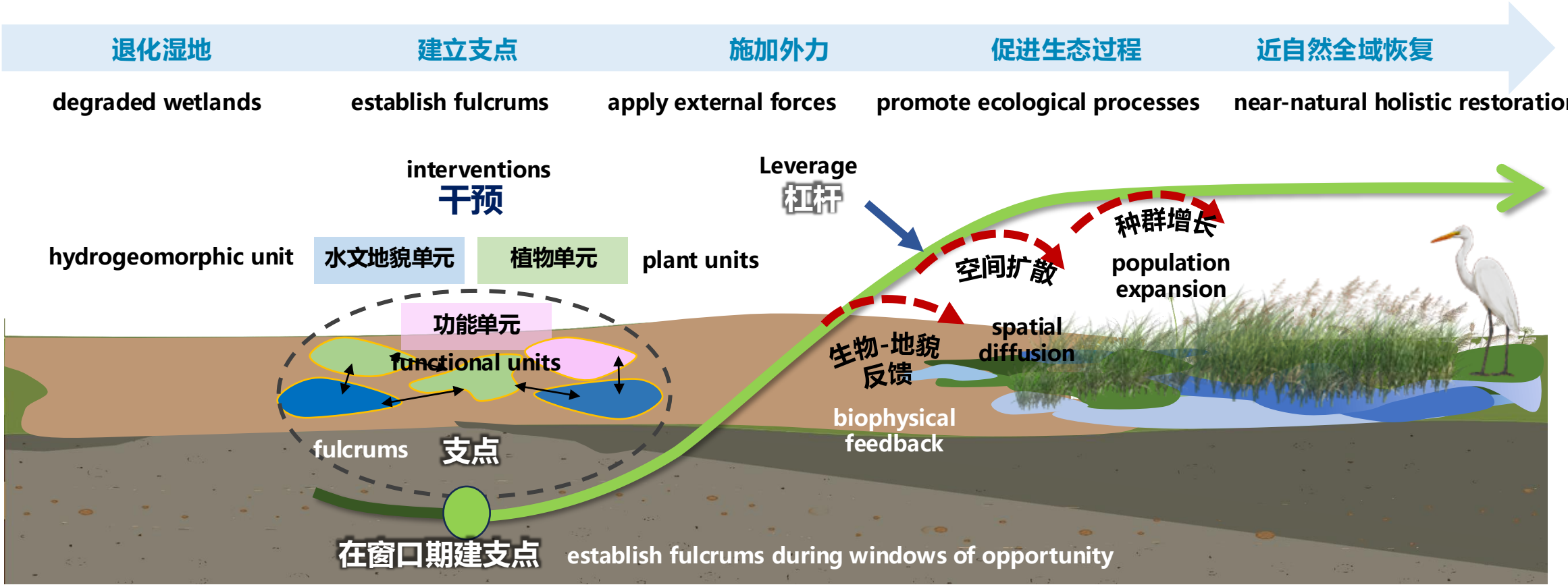
贾明明等. 2021；张韫，廖宝文，2022；Yang et al.,2026

3. 创新实践与综合成效 Innovative Practices and Achievements

中国湿地保护理念与技术Wetland Conservation Concepts and Technologies in China

由“工程干预”到“近自然修复”的修复范式转型

Paradigm shift from engineering intervention to near-natural restoration



湿地恢复的生态杠杆理论 Ecological Leverage Theory

崔丽娟等，中国科学，2025

3. 创新实践与综合成效 Innovative Practices and Achievements

生态杠杆恢复技术应用案例 Application of ecological leverage restoration technology

3. 创新实践与综合成效 Innovative Practices and Achievements

引领小微湿地保护的“中国方案” China's approach to leading small wetland Conservation

- 2018年湿地公约COP13，中国提出"小微湿地保护"决议草案；2022年湿地公约COP14，中国的《加强小微湿地保护和管理》决议正式通过

  At Ramsar COP13 in 2018, China proposed a draft resolution on small wetland conservation; at Ramsar COP14 in 2022, the resolution of Small Wetlands was formally adopted

- 2021年，北京编制了首个小微湿地地方标准；2023年发布了小微湿地保护与管理的国家标准

  In 2021, Beijing issued the first local standard for small wetlands in China; in 2023, the national standard for small wetland conservation and management was released

- 从地方技术先导到国家制度确立，中国构建了全球领先的小微湿地标准化治理体系

  From local technical pilots to a nationally institutionalized framework, China has established a globally leading standardized governance system for small wetlands

重庆梁平 Liangping district，Chongqing

重庆梁平成为中国西南地区首个以小微湿地入选的“国际湿地城市”

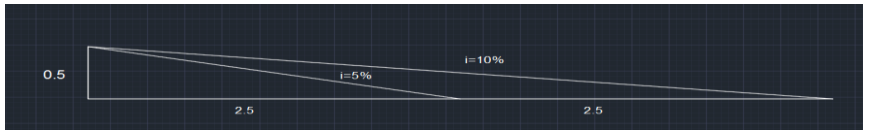
Liangping became the first city in southwestern China to be accredited as an “International Wetland City” with small wetland conservation as a defining feature

3. 创新实践与综合成效 Innovative Practices and Achievements

北京小微湿地修复实践: 三山五园石渠公园 Beijing Small Wetland Restoration: Shiqu Park, Three Hills and Five Gardens Area

1、岸带和基底改造
Shoreline and Substrate Renovation

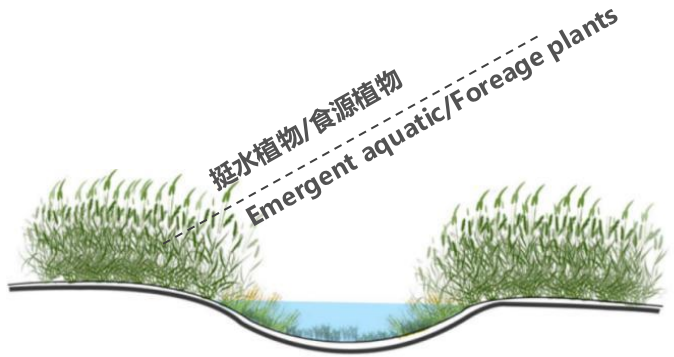
- 缓坡入水+浅滩生境;
- Gentle Slopes+shallow gravel areas
- 块石堆：30-50cm石块若干， 5-8块一堆，每百米20堆。
- 30-50 cm stones (5-8 per pile) every 100 meters (20 piles)



放坡示意图 Slope layout diagram

2、栖息地营造
Habitat Development

- 补种乡土水生植物;
- Plant Native Aquatic Vegetation:
- 构筑水下石块群
- Underwater Rock Structures
- 投放少量本土草食性鱼类
- Introduce Herbivorous Fish
- 浅水区域和深水区域
- Ensure year-round water with shallow and deep areas



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中国湿地合理利用与生态产品价值实现 Wetland Wise Use & Eco-product Value Realization in China

- **理念传承与创新：坚守湿地本底，生态功能转化为经济与社会价值**
  Concept Inheritance & Innovation: Maintain wetland integrity; turn ecological functions into economic & social value
- **落实 “绿水青山就是金山银山”，完善生态产品价值机制**
  Follow “Lucid waters are invaluable assets”; improve eco-product value mechanisms
- **为发展中国家提供增长与自然增值双赢方案**
  A win-win model for growth and natural capital appreciation for developing nations

生态农业模式

- 传承并发展“桑基鱼塘”、“稻鱼/稻蟹共生”等复合湿地农业模式

Ecological Agriculture: rice-crab co-culture in Panjin, Liaoning

生态旅游模式

- 生态修复+数字监测+民俗IP融合科普休闲

Ecotourism: Xixi Wetland, Hangzhou, Zhejiang

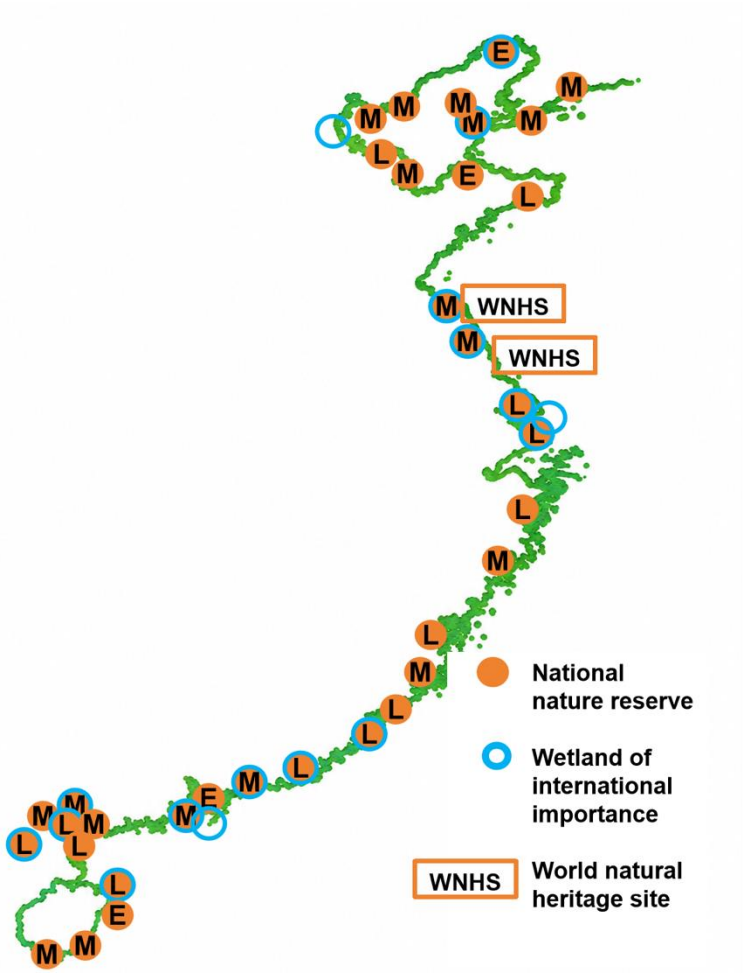
自然教育模式

- 开发体验式、分享式课程，打造“解说规划+实践体验”双轨模式

Nature Education: Guandu Wetland, Taiwan

3. 创新实践与综合成效 Innovative Practices and Achievements

中国滨海鸟类栖息地恢复 Progress in China’s Bird Habitat Restoration



中国鸟类关键栖息地
The key waterbird habitats in coastal China

栖息地保护体系建设Habitat Protection System Development

- 建成35 个国家级自然保护区、16 处国际重要湿地、2 处世界自然遗产地，以水鸟保护为核心目标35 national nature reserves, 16 Ramsar Sites, and 2 World Natural Heritage Sites have been established, with a focus on waterbird conservation
- 生态保护红线覆盖73% 的沿海重要鸟类位点，保护网络大幅扩展The Ecological Conservation Red Line covers 73% of key coastal bird sites, expanding the conservation network
- 2018 年起全面停止新增围填海，从源头遏制鸟类栖息地丧失Since 2018, new coastal reclamation projects have been banned, reducing habitat loss at the source

大型栖息地修复工程成效 Achievements of Major Habitat Restoration Projects

- “十三五”期间修复海岸线1200公里、滨海湿地2.3万公顷，是全球规模最大的湿地修复行动之一 restore 1,200 km of coastline and 23,000 ha of coastal wetlands in the 13th Five-Year Plan period
- 支撑约 230 种水鸟，占全球水鸟物种超 1/4，是东亚–澳大利西亚迁飞区最关键节点 the habitats support approximately 230 waterbird species, accounting for over one-quarter of the world’s total

Ma et al.,2023

主要内容

1. 中国湿地概况 Overview of China's Wetlands

2. 政策演进与法治里程碑 Policy Evolution and Legislative Milestone

3. 创新实践与综合成效 Innovative Practices and Achievements

4.中国湿地保护未来展望 Future Pathways for China Wetland Conservation

4. 中国湿地保护未来展望 Future Pathways for China wetland conservation

推进系统化修复技术：基于生态过程的耦合、多目标

An ecological process-based, multi-objective coupling approach

- **恢复关键生态过程** Restore key ecological processes
  - **水沙(盐)调控** water–sediment (salinity) regulation
  - **微生物调节** microbial regulation
  - **植被恢复与管理** vegetation restoration and manage
- **流域尺度统筹修复** Watershed-scale integrated restoration
  - **从“局地湿地修复”转向“流域—区域整体治理”** from "local wetland restoration" to "watershed-regional integrated governance"
  - **加强上下游、左右岸协同** strengthen upstream-downstream and cross-bank coordination
- **多系统协同治理** Ecosystem Synergy
  - **湿地与森林、草地、农田、沙地协同修复** synergistic restoration of wetlands with forests, grasslands, farmlands, and sandy lands
  - **自然系统与社会系统耦合**Integrate natural and social systems

4. 中国湿地保护未来展望 Future Pathways for China wetland conservation

完善湿地综合管理：适应性、智能化、多元参与、湿地合理利用

Improving integrated wetland management: adaptability, intelligence, multi-stakeholder participation and wise use

重视气候变化的影响
Addressing Climate Change

- **气候变化：极端天气事件频发**
- Climate Change: increasing frequency of extreme weather events
- **湿地的响应机制和适应策略**
- Adaptation: develop wetland response mechanisms and adaptation strategies

强化基于自然的解决方案(NbS)
Strengthening Nature-based Solutions (NbS)

- **NbS主流化趋势**
- **应用领域不断拓展**
- Mainstreaming NbS: expand application in diverse fields.
- **利用生态系统自组织/自调节能力**
- Utilize the self-organization and self-regulation capabilities of ecosystems

智能化与精准化技术应用
Applying Intelligent & Precise Technologies

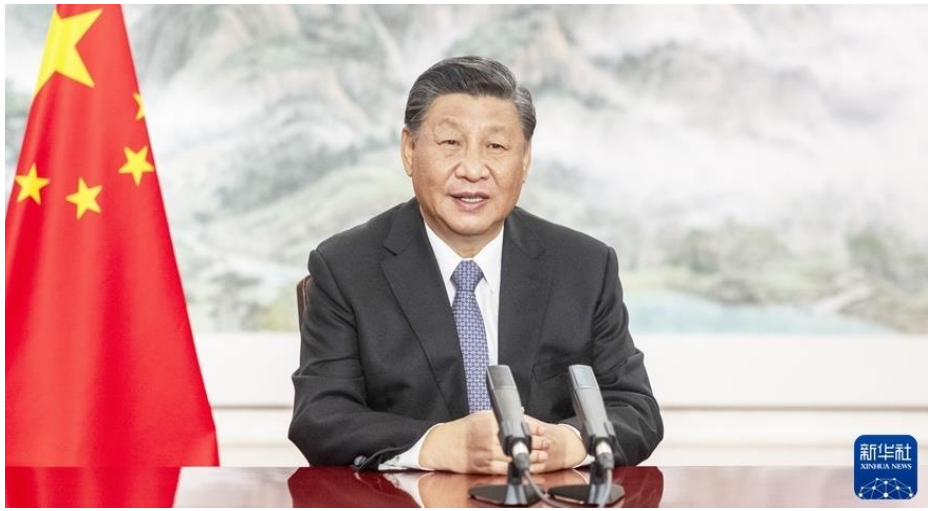
- **遥感/无人机/物联网/AI快速发展**
- Tech Development: rapid advancement of remote sensing, UAVs, IoT, and AI
- **数字孪生系统，智能监测/精准修复**
- Deploy digital twin systems for intelligent monitoring and precise restoration

多主体共同参与的多元共治机制，湿地合理利用
Implementing Multi-stakeholder Governance and wise use

- **多维度的协同**
- Achieve multi-dimensional coordination
- **湿地资源合理利用**
- Wise use of wetland resources
- **利益相关者多方参与**
- multi-stakeholder participation
- **完善生态产品价值实现机制**
- improve the mechanism for realizing the value of ecological products

4. 中国湿地保护未来展望 Future Pathways for China wetland conservation

深化国际合作与全球治理参与 Enhance global cooperation



- **2022年：全球议程Leading the Global Agenda**
  - **成功举办《湿地公约》COP14（武汉/日内瓦）**
    - Successfully hosted the Ramsar Convention COP14 in Wuhan/Geneva
  - **推动出台《武汉宣言》及全球湿地保护战略框架**
    - Promoted the adoption of the Wuhan Declaration and the Global Strategic Framework for Wetland Conservation
- **2023年：落地红树林合作 Advancing Mangrove Cooperation**
  - **“国际红树林中心”正式落户深圳**
    - The International Mangrove Center was officially established in Shenzhen

谢谢大家！ Thank you!

联系：lkyclj@126.com

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ADB-PRC Regional Knowledge Sharing Initiative

26–27 May 2026
Auditorium Hall 1, ADB Headquarters

Talk China SEMINAR

Regional Flyway Initiative

Need Wider Participation and Deeper Understanding of the Migratory Birds and Local Communities

Lei Guangchun

Vice Chair and Secretary General of National Wetland Science and Technology Communittee
Chair, EAAF Flyway University Alliance

EAAFP Biref

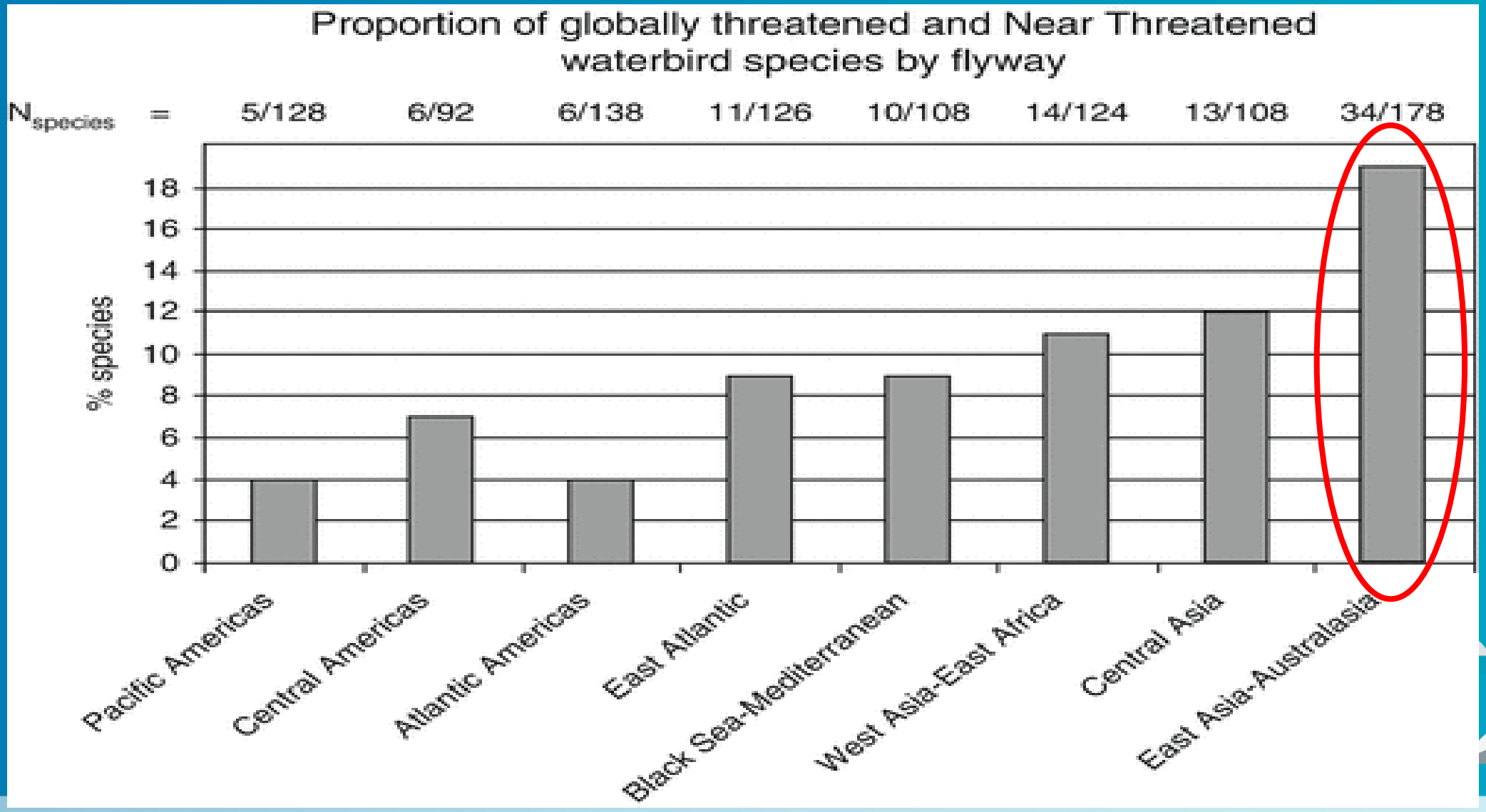
- Asia-Pacific Migratory Water Bird Conservation Committee (MWCC) (1993-2002)
- WSSD Type II Parternship (2002)

Connecting People with Nature: through improving livelihood of local communities, to conserve migratory birds and its habitat

- Development of the EAAFP agreement and strategies (2003-2005)
- Official Launch of the EAAFP (2006)
- Celebrate 20 years practice (2026)

- >2 Billion People， 50 million Birds
- 42 Partners， 159 Flyway Network Sites

EAAFP Biref



•9.0 billion locations
•8.2 billion other sensor records
•9,473 studies
•1,599 taxa

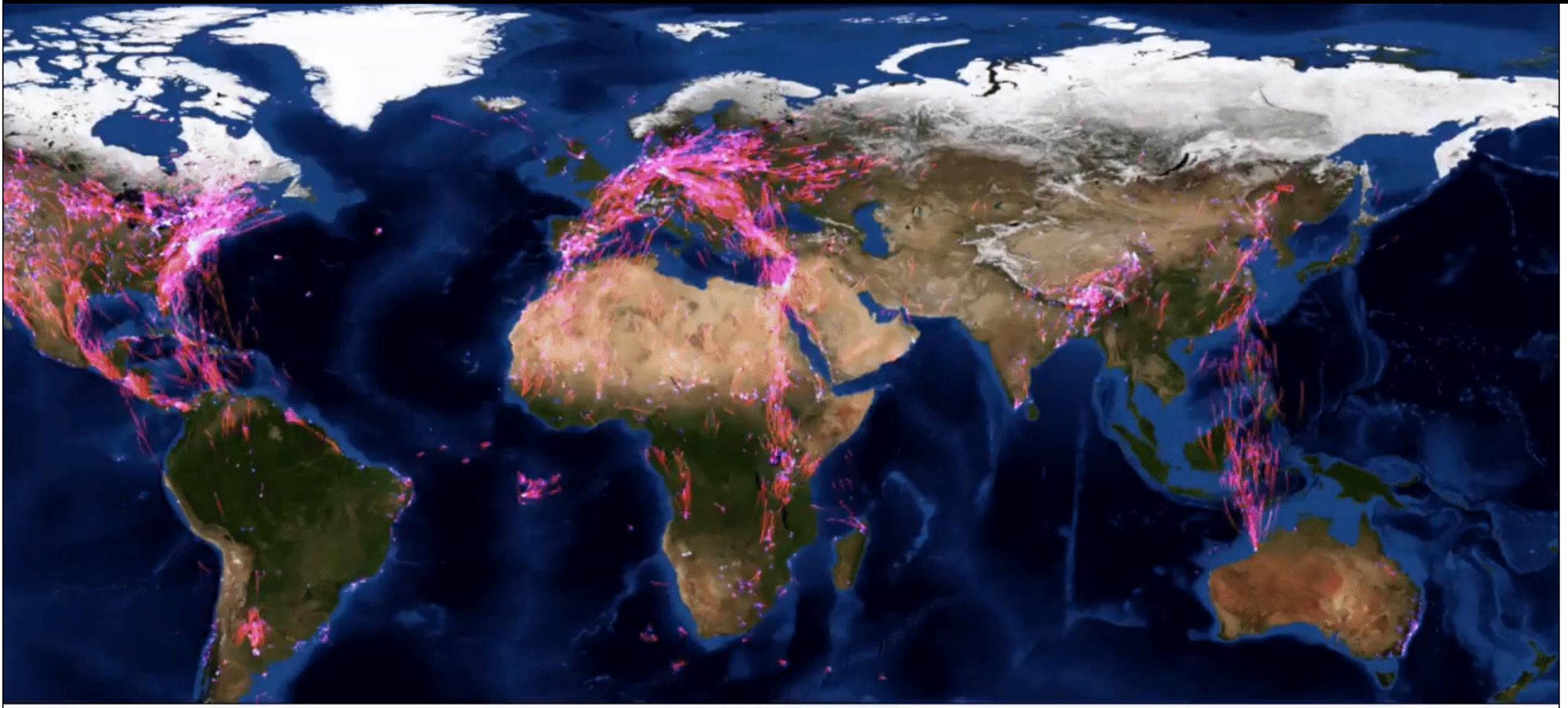
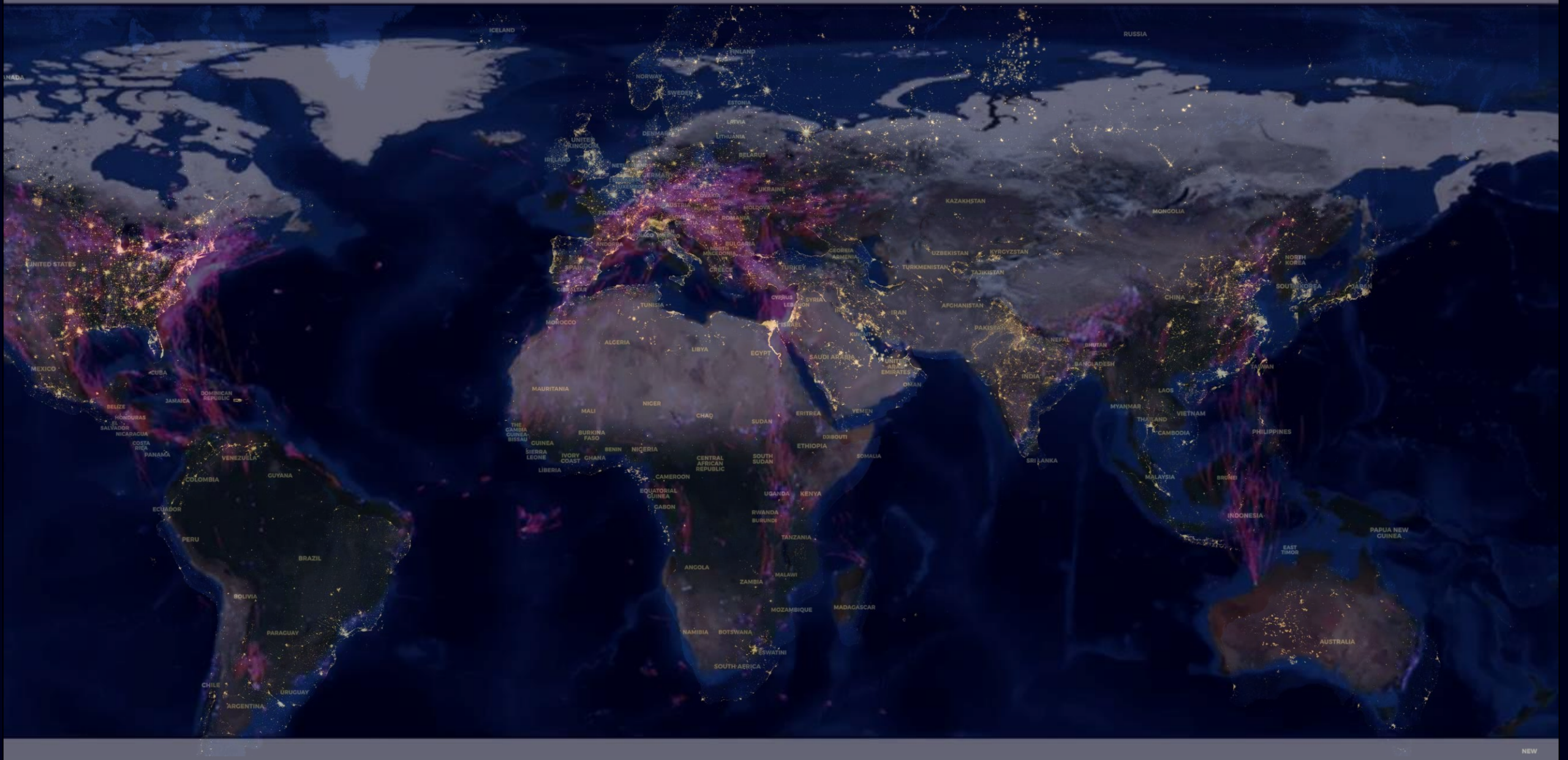


Image of Global Evening Ligh:t： Human Impact on Nature

High Overlap between Human Settlement and Migratory Water Birds

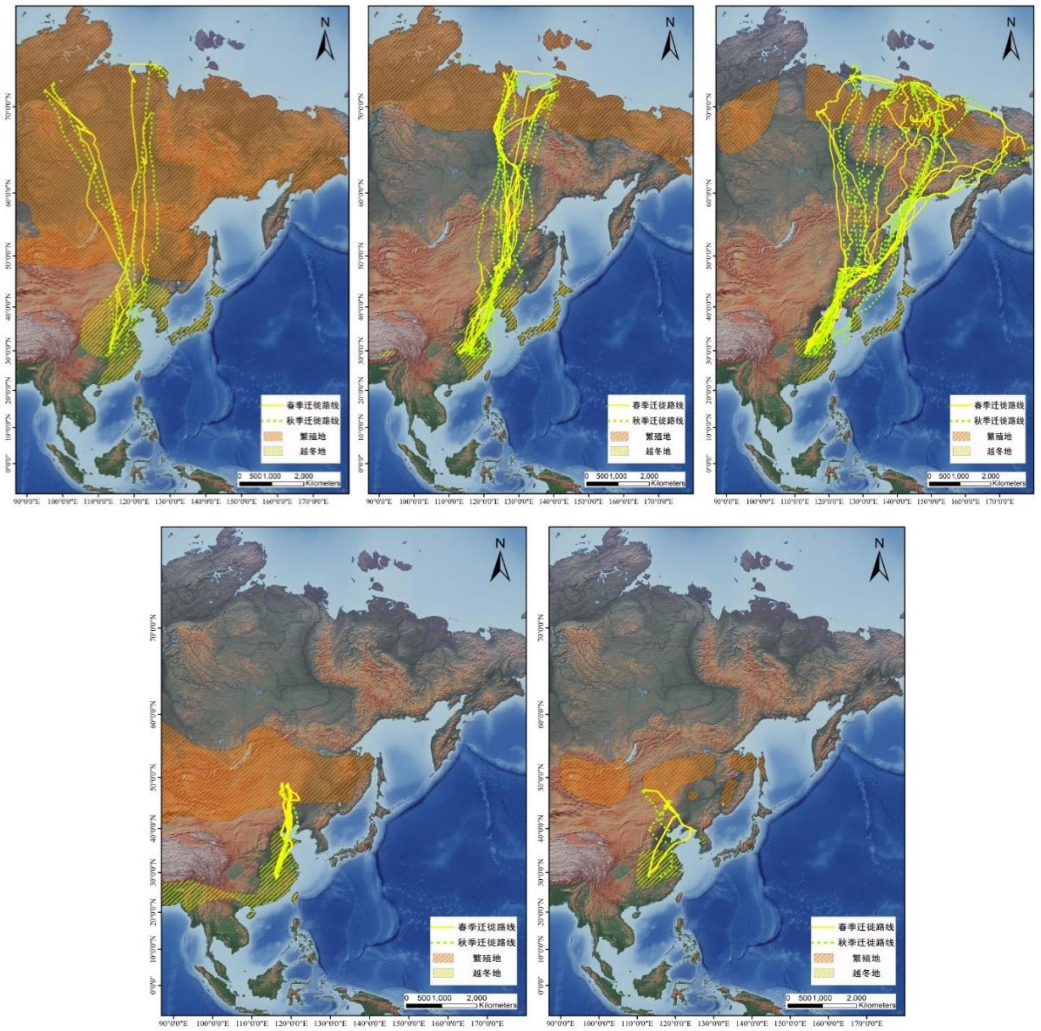


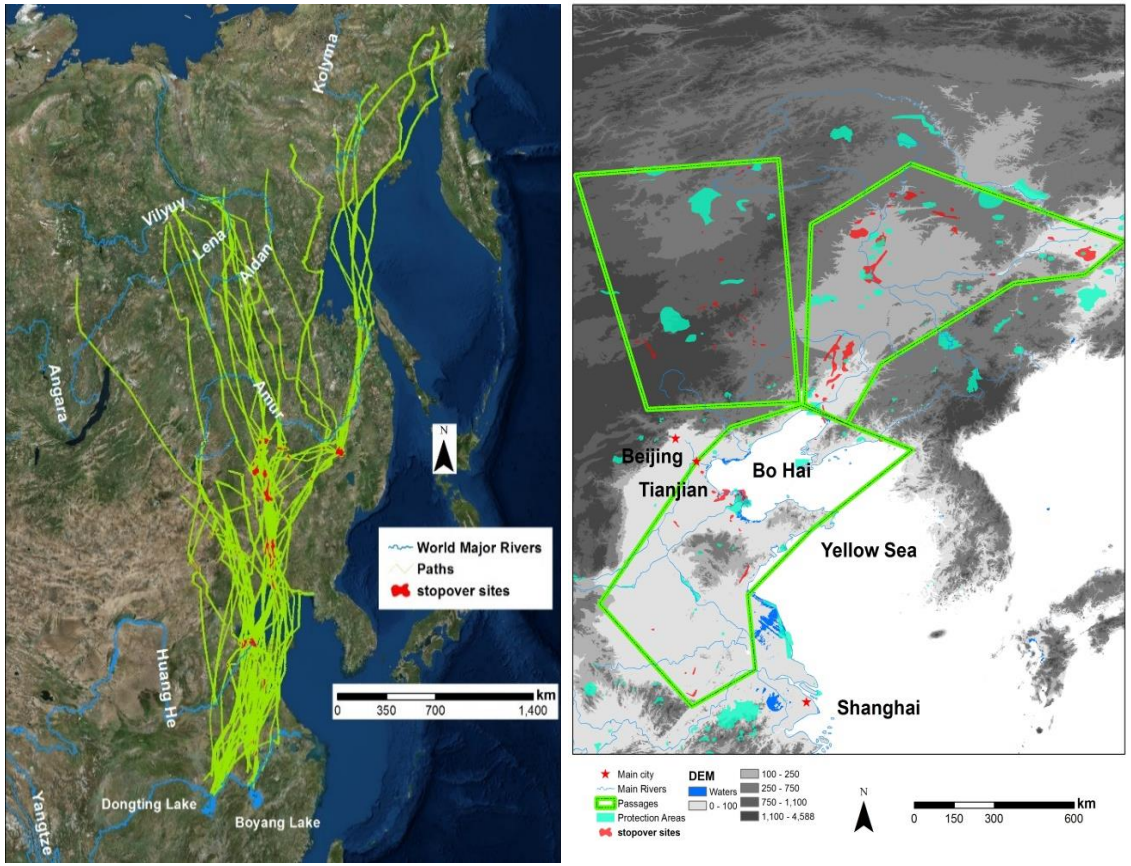
Agriculture Landscap is critical for migratory birds

Harmonizing

Farming and Conservation

Bigger Data-based Protection Gap Assessment





Lei et al 2019, Freshwater Biology

Only 15% of the habitat under protection

Importance of Chinese Habitat to EAAF

EAAFP identified 1031 key habitats: Will these enough?

82 Ramsar Sites

20 Flyway Network Sites

Rank	Country	Name of the Wetlands	Contribution to the EAAF
1	China	Poyang Lake	1056
2	Australia	Eighty Miles Beech	677
3	China	Jiangsu Yancheng National Nature Reserve	417
4	Russia	Moroshechnaya Estuary	392
5	China	East Dongting Lake National Nature Reserve	386
6	Russia	Darwul Nature Reserve	372
7	Cambodia	Prek Toal	294
8	China	North Bohai Bay	285
9	South Korea	Geum (Kum) Estuary	259
10	China	Shengjing Lake National Nature Reserve	245
11	Bangladesh	Tangua Haor Complex	222
12	USA	Yukon-Koskwen Delta	216
13	China	Yellow River Delta	215

Establishment of the Center for East Asia-Australasia Flyway Studies

EAAFP Secretariat Science Unit (2018)

Key Functions of the Center for East Asia-Australasia Flyway Studies

Data

Data base
Dynamic change
Trend

Cooperation

7 working groups
7 task forces
Universities & Institutes
Other flyways

Research

Spatial & temporal
Scientific research

Application

Demonstration
Management & practice

Restoration of high tide roost habitat-‘720 mu’ TZN720

More than 180000 birds in TZN720;

inclduing Great Knot 86,700;
Mongolia Plover 30,130;
Dunlin22,850;

Spoon-billed Sandpiper 5;

Black-faced Spoonbil 62;

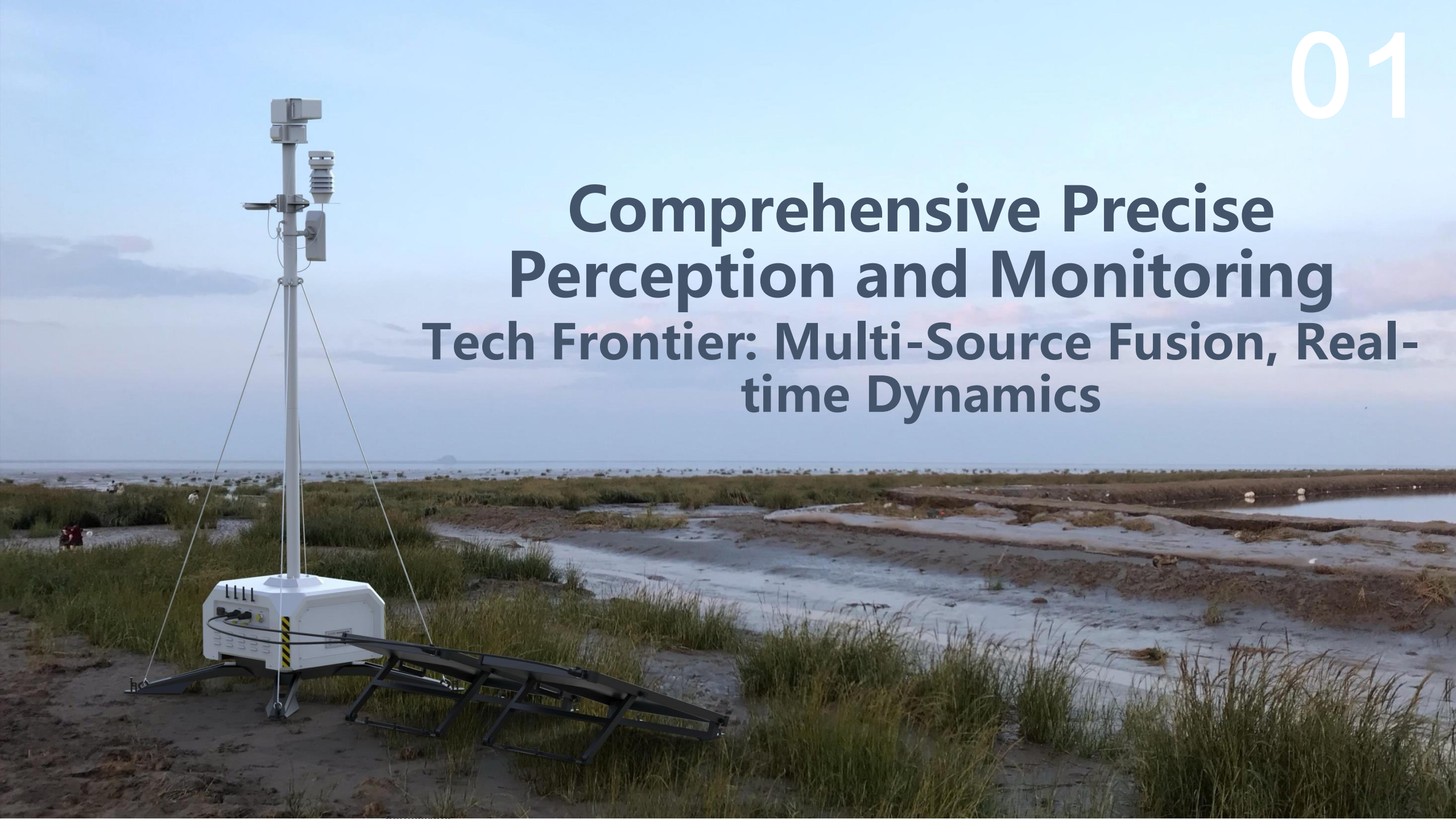
Nordmann's Greenshank1630;

- **（CBD-COP15）**
  (100+Biodiversity Positive Practices and Actions)

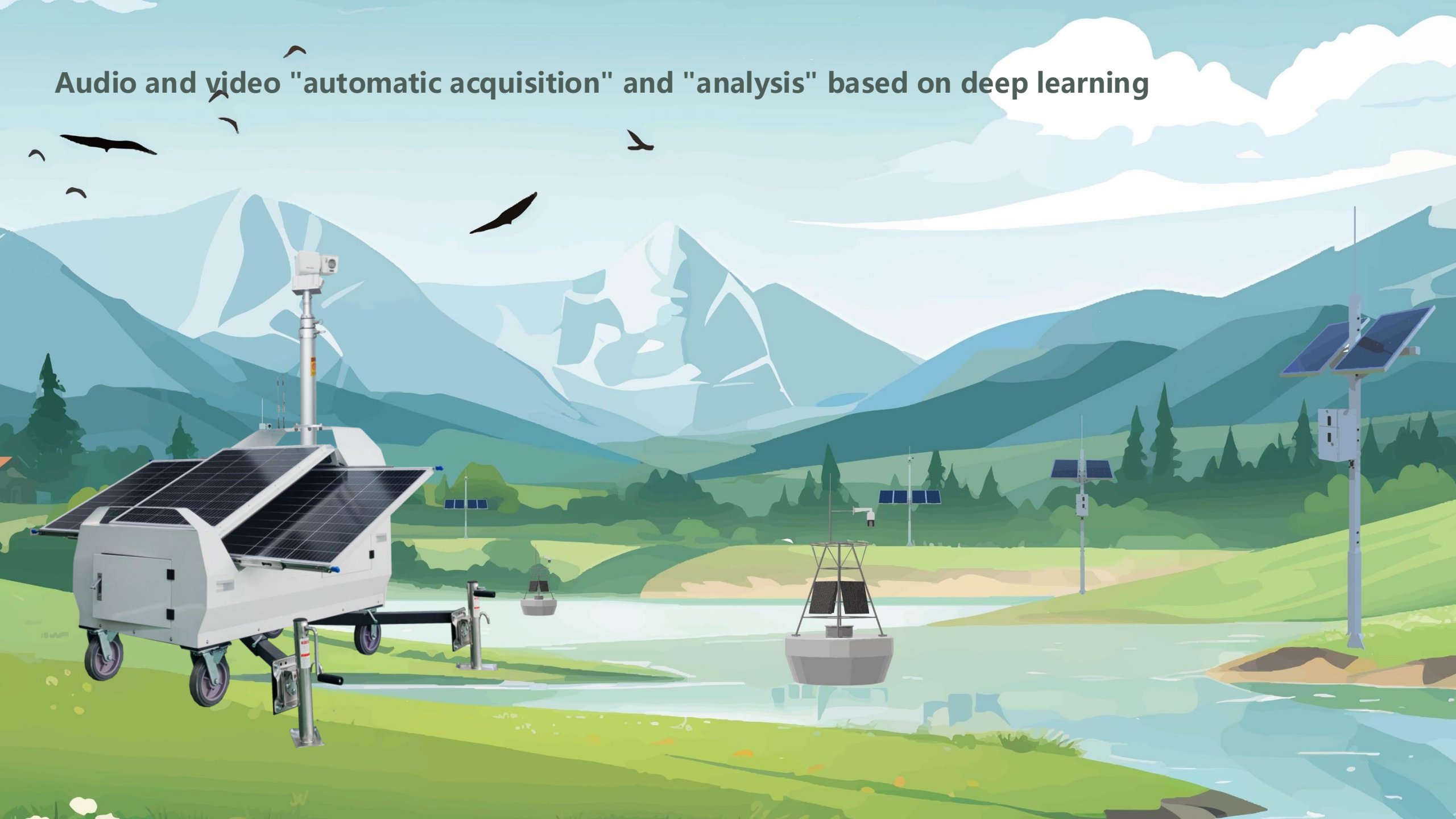
01

Comprehensive Precise Perception and Monitoring

Tech Frontier: Multi-Source Fusion, Real-time Dynamics



Audio and video "automatic acquisition" and "analysis" based on deep learning



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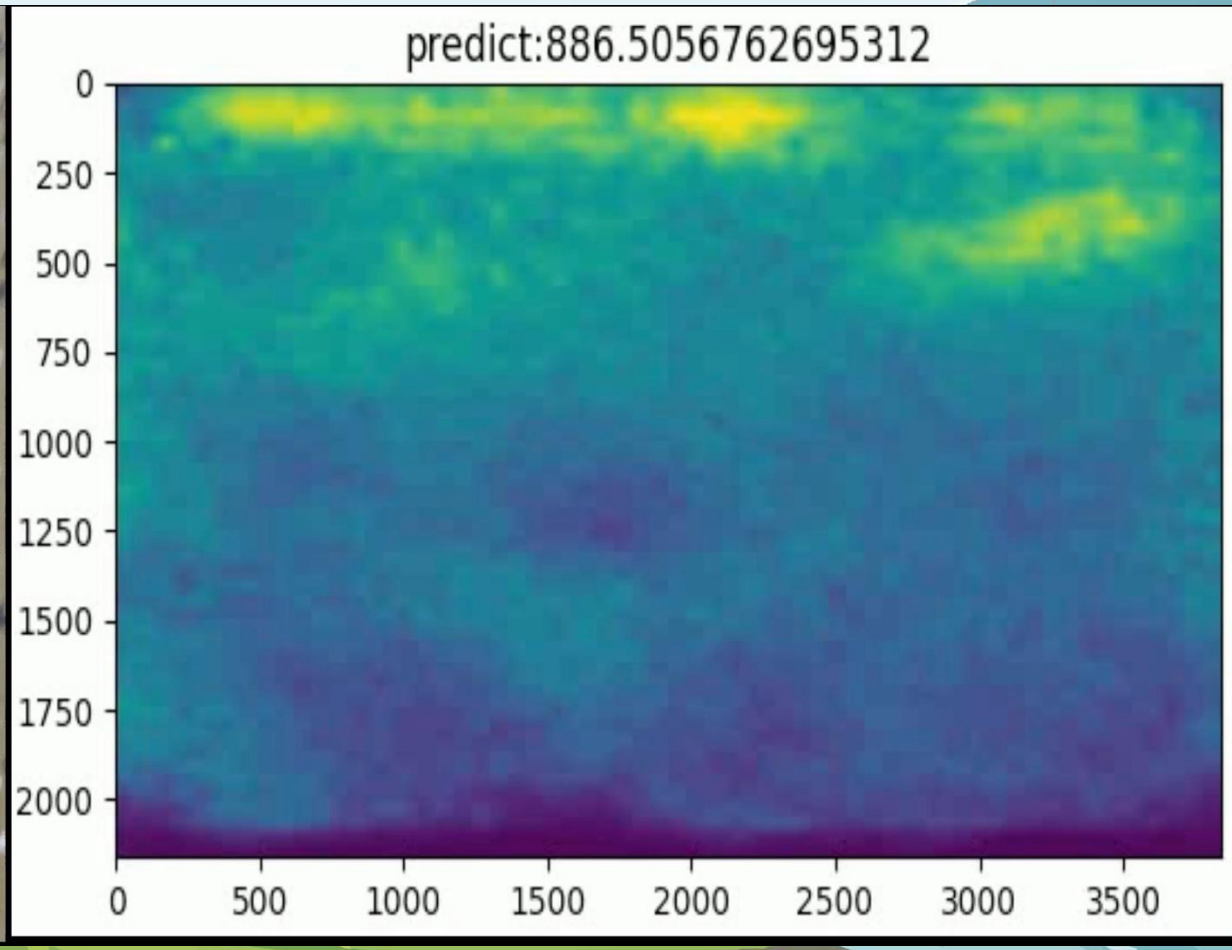
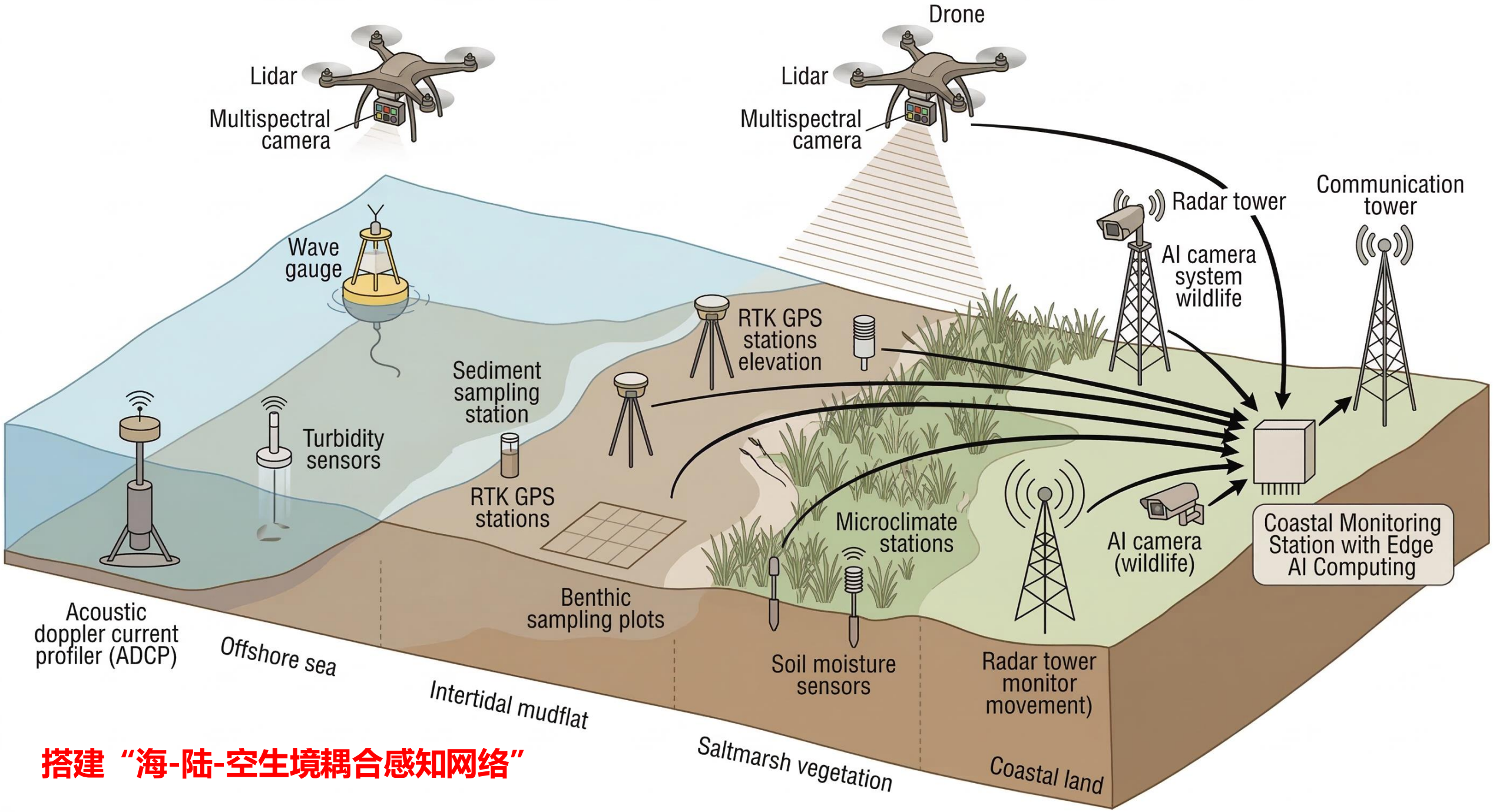
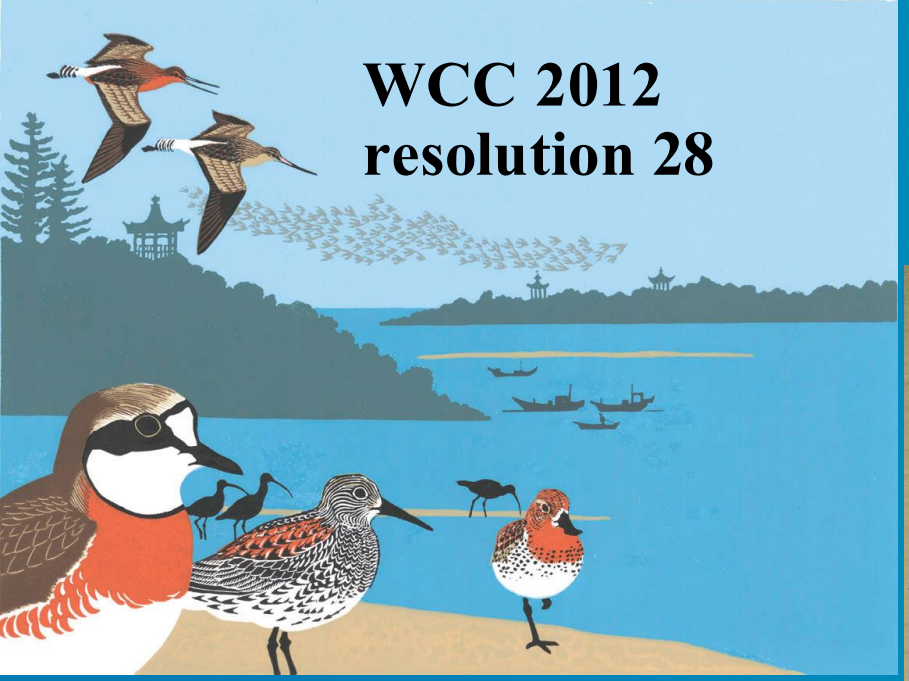
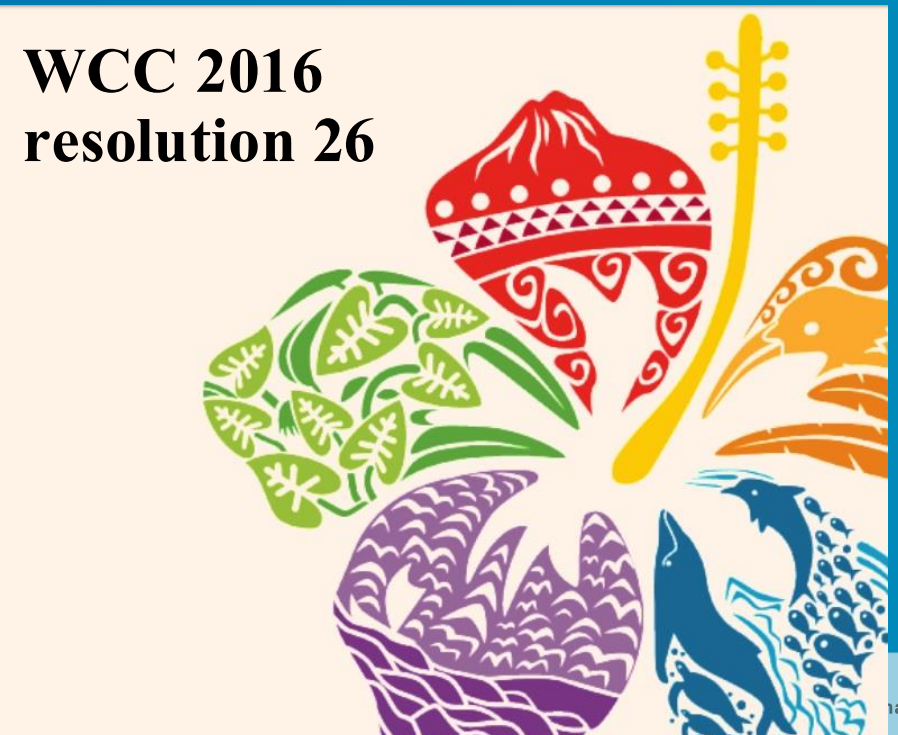


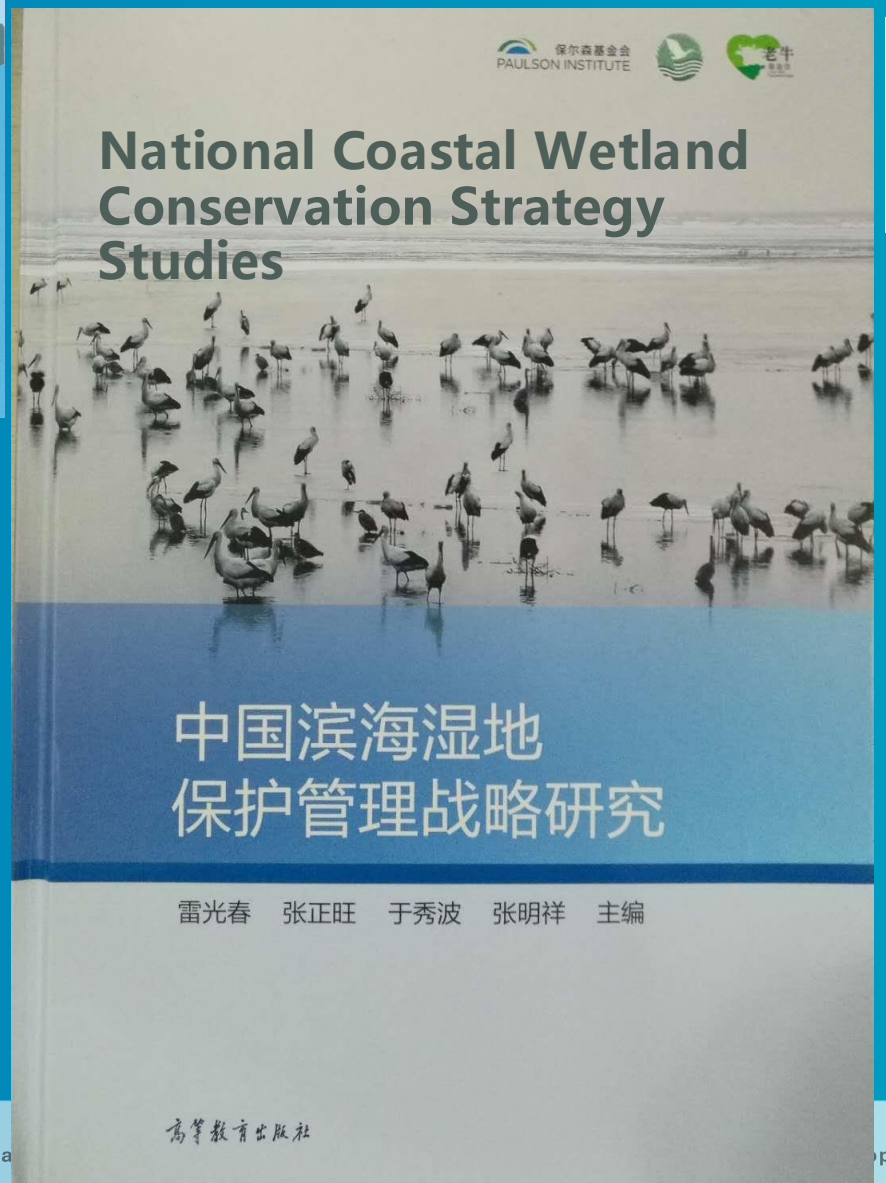


搭建“海-陆-空生境耦合感知网络”

China Coastal Wetland Conservation Blueprint Project







保尔森基金会
PAULSON INSTITUTE

老牛基金会
LAO NIU FOUNDATION

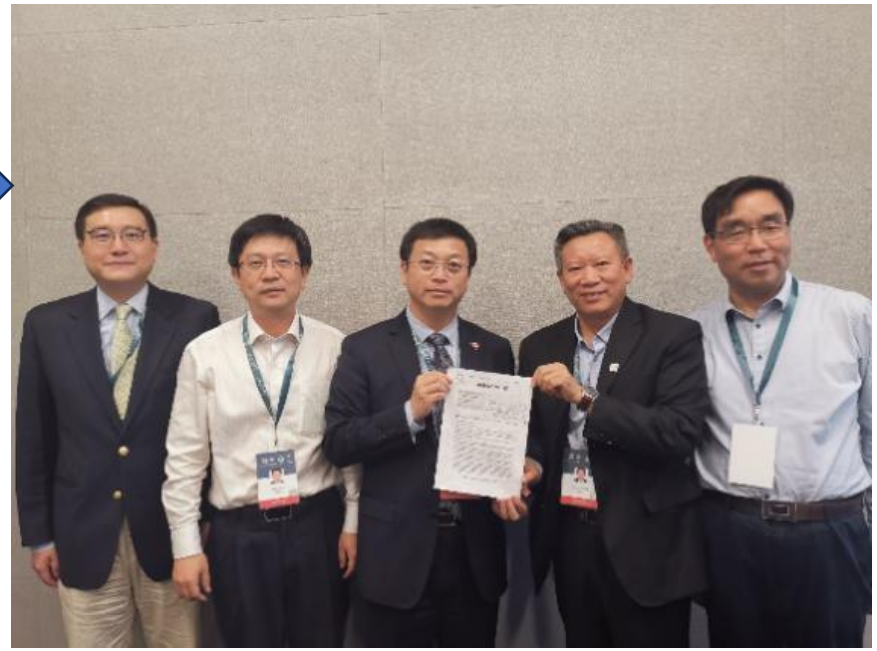
The Nature Conservancy
Protecting nature. Preserving life.
大自然保护协会

EAAFP

World Natural Heritage No. 1606

世界自然遗产1606号[★★★]

2019 Phase I



2024 Phase II

候鸟迁飞通道保护修复中国行动计划（2024–2030）
China's Action Plan for the Protection and Restoration of Flyways (2024-2030)

Additional 144 PA to be setup, to fully cover the 821 key migratory bird habitats

Enhance investigation and monitoring capabilities: 557 monitoring stations

Critical habitats restoration actions 157 sites identified

Established bird-friendly community

CEPA and Ecocompensation

ADB Technical Assistance Project: 57108-001

Research on Protection and Restoration Policy of Migratory Birds

Beijing Forestry University | International Crane Foundation

On 16 October 2024, a meeting was convened of representatives from interested universities to form a Flyway University Alliance,and Professor Lei Guangchun been elected as Chair. Secretariat at Beijing Forestry University.

About Us

Vision

The FUA vision is a flyway where people, birds, and the rest of biodiversity, flourish.

Mission

The mission of FUA is to catalyse and facilitate engagement of universities and research institutes from partner countries to enables national and international efforts to invest, support, and promote flyway science, and university training programs so as to strengthen knowledge and conservation action along the flyway.

Objectives

- **Promote the exchange of information and experience, responding to the major challenges for the flyway.**
- **Develop joint capability building for young leaders, experts, and educators.**
- **Enhance flyway research and monitoring activities through innovative scientific programmes.**
- **Create a globally recognized, independent, Think-Tank to address biodiversity and other challenges across the EAAF.**

MOP12

CLIMATE INVESTMENTS
THAT BENEFIT PEOPLE
AND NATURE

EAAFP

BirdLife INTERNATIONAL

ADB

Key Recommendation

Establish RFI Knowledge Hub in Yancheng

Based on Research, Conservation, Community Development and University Alliance

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R K S I
ADB-PRC Regional Knowledge Sharing Initiative

26–27 May 2026
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Talk China SEMINAR

Thank you very much

Regional Flyway Initiative

A journey from a site to a flyway

Niu Zhiming
Lead Project Officer (Environment), SD2-AFNR

A Success Story - Jiangsu Yancheng Wetlands Protection Project

An Integrated Approach to Preserving the Wetlands in the People's Republic of China

(2007 – 2011 – 2019)

TOTAL PROJECT COST:

- ADB: **$27.2 million**
- GEF: **$1.4 million**
- Government counterpart funding: **$30.5 million**

- **Financing** - Shared responsibilities between provincial and local governments; Sovereign loan blended with GEF grant and government counterparts
- **Nature Conservation** - 4,554 ha wetland restored and rehabilitated with NbS, including converting fishponds to natural habitats of wetlands and invasive species control; rehydration to revive dried wetland areas; sustainable forestry management.
- **Community Benefit** - direct employment, eco-tourism (over 1 million/year visitors); higher value agri-products
- **Payment for Ecosystem Services** - Model used to protect biodiversity and improve livelihoods; blue carbon
- **UNESCO WHS Listing** - Project contributed to 2019 listed of Yancheng as Natural World Heritage Site.

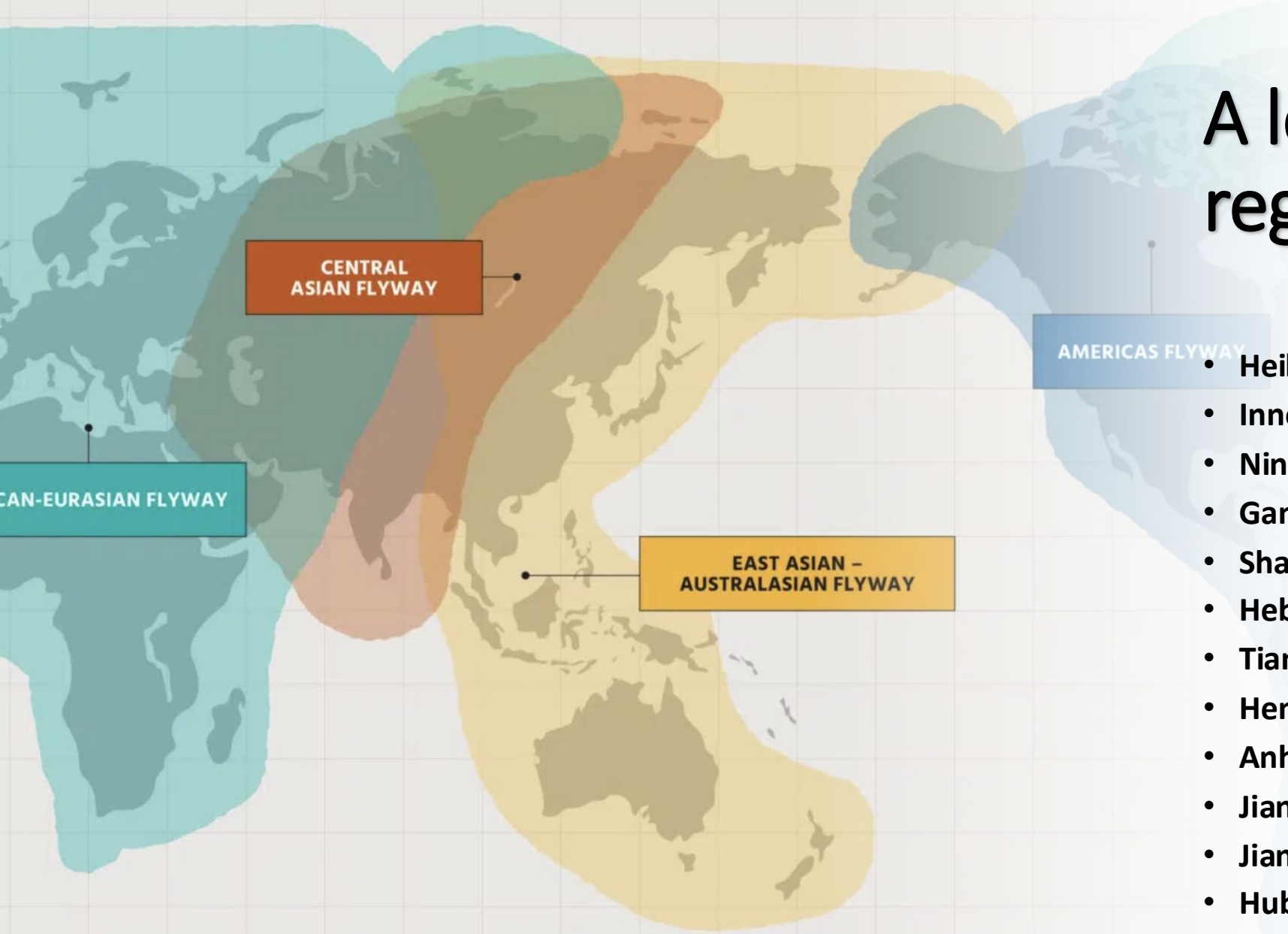

ADB


ADB

At the Yancheng UNESCO WHS ceremony 2019 –

Why not do 50 of this type of project……?

– The Regional Flyway Initiative (RFI) was born!



A long journey to a regional initiative

- **Heilongjiang:** Sanjiang Plain
- **Inner Mongolia:** Dalai Lake
- **Ningxia:** Yinchuan wetlands, Sand Lake
- **Gansu:** Zhangye Heihe Wetland
- **Shaanxi:** Luyang Lake
- **Hebei:** Baiyangdian
- **Tianjin:** Binhai wetlands
- **Henan:** Qihe River
- **Anhui:** Chaohu Lake
- **Jiangsu:** Yancheng wetlands
- **Jiangxi:** Poyang Lake
- **Hubei:** Yiai Lake, Bailianhe

RFI AMBITION — a regional initiative to mobilize $3 billion of investment for wetland protection and management to have flyway level impact

- **Aligned with** EAAFP Strategic Plan, UNCBD, Paris Agreement, Ramsar, CMS, UNESCO
- **$100 Billion Climate Commitment** ADB target cumulative investment by 2030 – Nature will be key to deliver climate adaptation and resilience
- **Regional.** East, Central, Southeast Asia and Pacific. Initial focus on 9 countries.
- **RFI timeframe. Phase 1 (2021–2025):** project development, **Phase 2 (2024–2034+):** implementation
- **Goal.** Improved management of **50 wetlands** (>2 million ha) → build a network of wetland habitats with species numbers maintained or enhanced
- **Co-benefits.** Healthy wetlands: natural capital and ecosystem services; nature-based solutions; livelihoods.

RFI Phased Approach – Development to Implementation

PHASE 1 2022

Initial List Identified

- Scientifically rigorous process
- Extensive consultation with experts.

PHASE 2 2023 - 2024

Refinement

Further Analysis
- Carbon stock assessment
- Ecosystem services assessment

Government and Stakeholders Dialogue
- Government priority sites identified
- Opportunities with Government at local, provincial, and national levels
- Examined obligations under national/ international agreements (i.e. Wetland Acts, Ramsar, CBD, CMS)
- Identified sectors that can contribute (agriculture, aquaculture, tourism, etc.)

Final List

Government endorsement

WE ARE HERE

PHASE 3 2023 – 2025

Project Concepts

Concepts prepared for **50 Priority Sites**

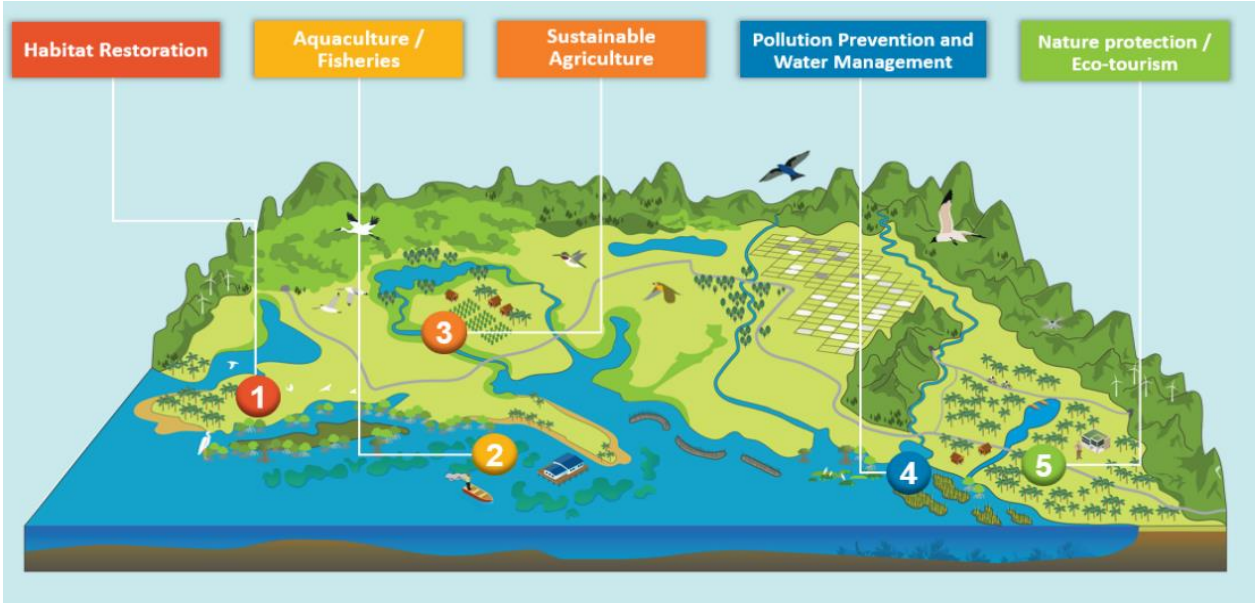
- Nature Credits
- Capacity Building
- Grant Proposals

IMPLEMENTATION PHASE 2024 – 10yrs+

Full Project Preparation

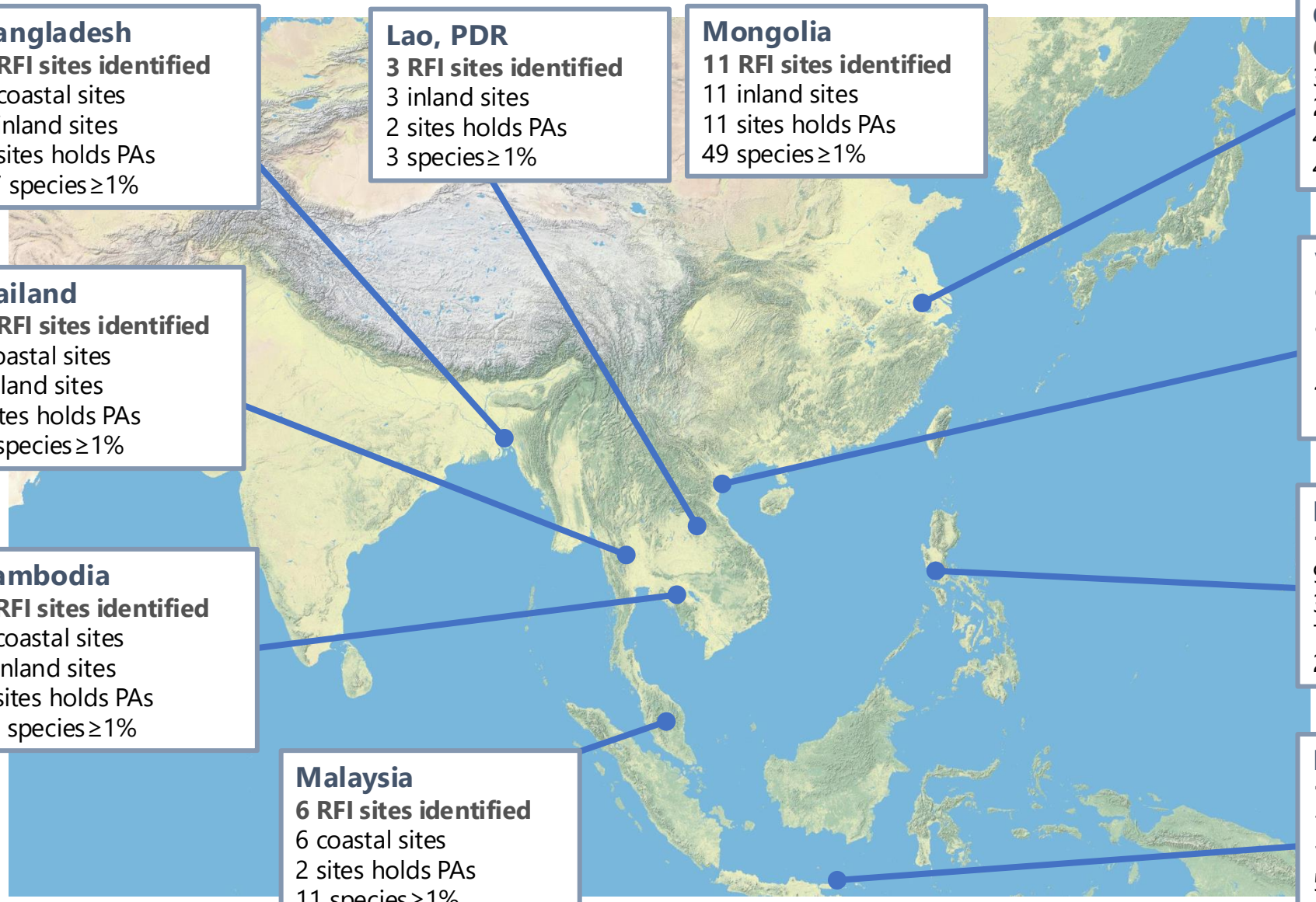
Early support via TA for
- Technical Review
- Project Preparation
- In-country expertise

Additional TA support



Investing in wetlands delivers not only for **nature and livelihoods** but delivers great opportunities for **climate change mitigation, adaptation and resilience**

Phase 1 Results – RFI Priority Sites across the EAAF



Bangladesh
8 RFI sites identified
5 coastal sites
3 inland sites
8 sites holds PAs
17 species ≥1%

Lao, PDR
3 RFI sites identified
3 inland sites
2 sites holds PAs
3 species ≥1%

Mongolia
11 RFI sites identified
11 inland sites
11 sites holds PAs
49 species ≥1%

China, PR
60 RFI sites identified
37 coastal sites
23 inland sites
44 sites holds PAs
49 species ≥1%

Thailand
12 RFI sites identified
9 coastal sites
3 inland sites
8 sites holds PAs
15 species ≥1%

Vietnam
9 RFI sites identified
8 coastal sites
1 inland sites
4 sites holds PAs
12 species ≥1%

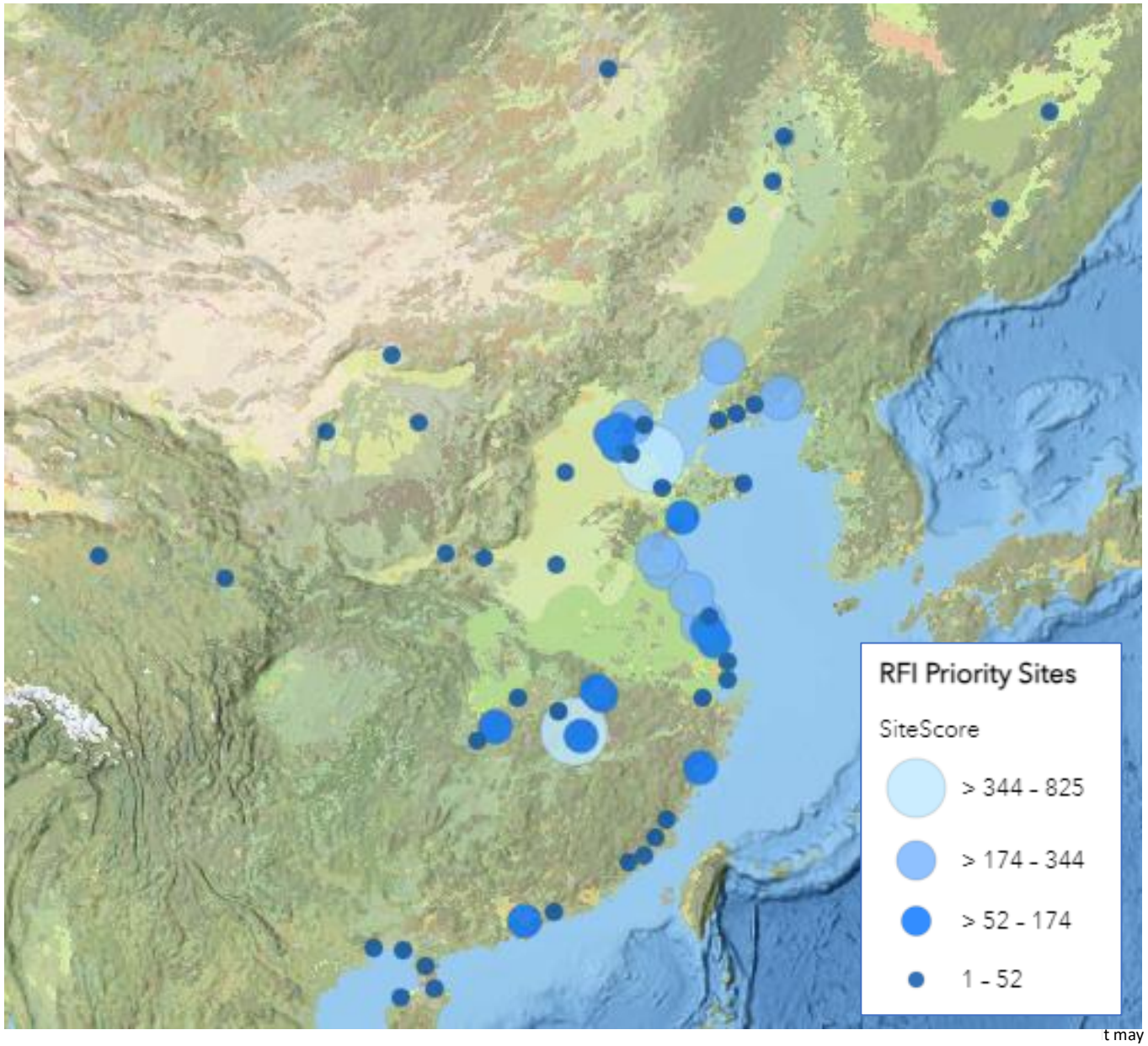
Cambodia
9 RFI sites identified
1 coastal sites
8 inland sites
7 sites holds PAs
11 species ≥1%

Philippines
12 RFI sites identified
9 coastal sites
3 inland sites
7 sites holds PAs
28 species ≥1%

Malaysia
6 RFI sites identified
6 coastal sites
2 sites holds PAs
11 species ≥1%

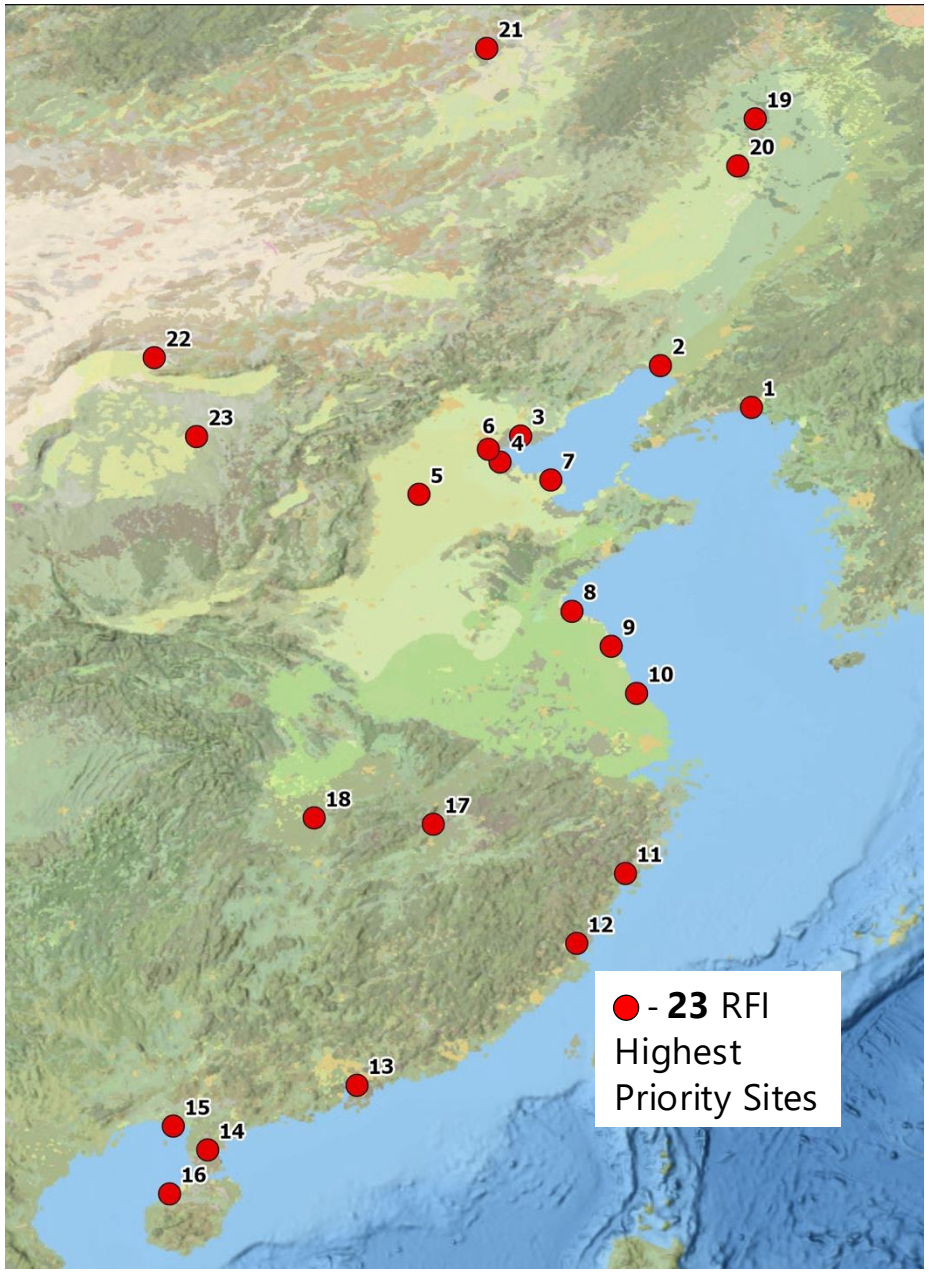
Indonesia
17 RFI sites identified
16 coastal sites
1 inland sites
5 sites holds PAs
19 species ≥1%

Short-listed 60 Priority Sites in PRC



Criteria / Data	Coastal	Inland	Total
Sites Assessed	66	33	99
Priority Sites Identified	**37**	**23**	**60**
Number of site overlapping with Protected Areas	29	23	52

Identified Priority Sites in PRC



Site Number	Priority Site Names	Province
1	Yalu Jiang Estuary	Liaoning
2	Liaohe Estuary National Nature Reserve and Inner Gulf of Liaodong,	Liaoning
3	Luannan-Zuidong Coast	Hebei
4	Huanghua Lake National Nature Reserve	Hebei
5	Hengshui Lake National Nature Reserve	Hebei
6	Beidagang Wetland Nature Reserve	Tianjin
7	Yellow River Delta National Nature Reserve	Shandong
8	Lianyungang Coast	Jiangsu
9	Yancheng National Nature Reserve, Tiaozini Wetlands and Dongsha Shoals	Jiangsu
10	Rudong and Dongling	Jiangsu
11	Wenzhou Bay	Zhejiang
12	Min Jiang Estuary	Fujian
13	Inner Deep Bay and Shenzhen River Estuary	Guangdong
14	Zhanjiang-Leizhou Peninsula Coast	Guangdong
15	Beihai Coast	Guangxi
16	Danzhou-Lingao Coast	Hainan
17	Poyang Lake Landscape	Jiangxi
18	Dongting Lake Landscape (Includes East and West Dongting NNR),	Hunan
19	Zhalong National Nature Reserve	Heilongjiang
20	Momoge National Nature Reserve	Jilin
21	Dalai (Hulun) Lake National Nature Reserve	Inner Mongolia
22	Wuliangsuhai National Nature Reserve	Inner Mongolia
23	Hongjianlao National Nature Reserve	Shaanxi

Hunan South Dongting Lake Wetland Restoration and Sustainable Development Project

- **RFI site:** South Dongting Lake (SDL) - Ramsar site
- **Financing:** $309 million (ADB: $150 million; AFD loan: $65 million; Government: $94 million)
- **Outcome:** climate resilience and ecological security of wetland ecosystems and livelihoods in the SDL basin enhanced
- **Outputs:**
  - Develop high-impact NBS projects (12,000+ ha)
  - Strengthen government capacity to incorporate NBS in project design linking climate and nature
  - Develop innovative financing instruments to enable NBS projects to scale up the flow of finance

First RFI investment and demonstration

Fujian Coastal Cities Climate-resilient Development and Biodiversity Conservation Project

- **RFI site:** Minjiang Estuary and Zhangjiang Estuary Ramsar sites
- **Financing:** $263 million (ADB: $140 million; Government: $123 million
- **Outcome:** Climate change resilience and biodiversity in Fuzhou and Yunxiao enhanced
- **Outputs:**

Support Fuzhou and Yunxiao Cities Climate Resilience

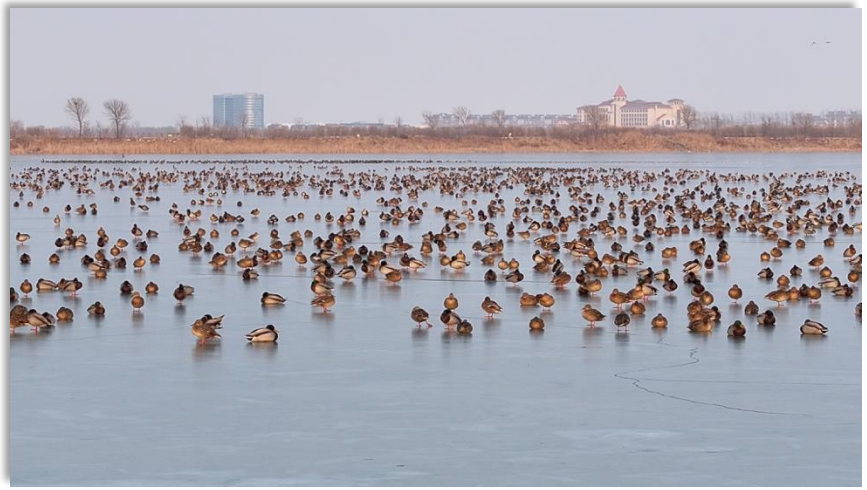
Develop high-impact NBS projects

Strengthen monitoring and management

Develop innovative financing instruments to enable NBS projects to scale up the flow of finance

RFI TA Projects in the PRC

Protection and Restoration Policy of Migratory Birds (2024-2025) - $0.75 mln
EA: NDRC, NFGA and Shanxi FGB
Outcome: Conservation planning for migratory birds in the PRC improved



National Mangrove Restoration Protection (2024-2026) - $0.3 mln
EA: Ministry of Natural Resources
Outcome: Mangroves management capacity enhanced

Climate Change Adaptation Enhancement in Poyang Lake (2024-2025) - $0.3 mln

EA: The Jiangxi Provincial Ecology and Environment Department
Outcome: Climate change adaptation actions in the Poyang Lake watershed enhanced

Hengshui Lake Biodiversity Conservation and Sustainable Development (2026-2027) - $0.6 mln
EA: Hengshui NNR
Outcome: Biodiversity conservation and sustainable development of HSL strengthened

ADB

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Talk China SEMINAR

Advancing the **Regional Flyway Initiative**

Lessons from the People's Republic of China

26–27 May 2026
Auditorium Hall 1, ADB Headquarters

President Masato Kanda meets red-crowned cranes

Visiting Intertidal Art Village

Beautiful Scenery of Huangjian

Wild red-crowned cranes

Protecting wild birds

Village cadres conduct regular bird-protection patrols safeguard

Birdwatchers and Ornithologists

Local villagers learning oil paintings

Diverse business forms for villagers to increase income

Artists and local villagers live in harmony

PRC Fujian Coastal Cities Climate Resilient Development and Biodiversity Conservation Project

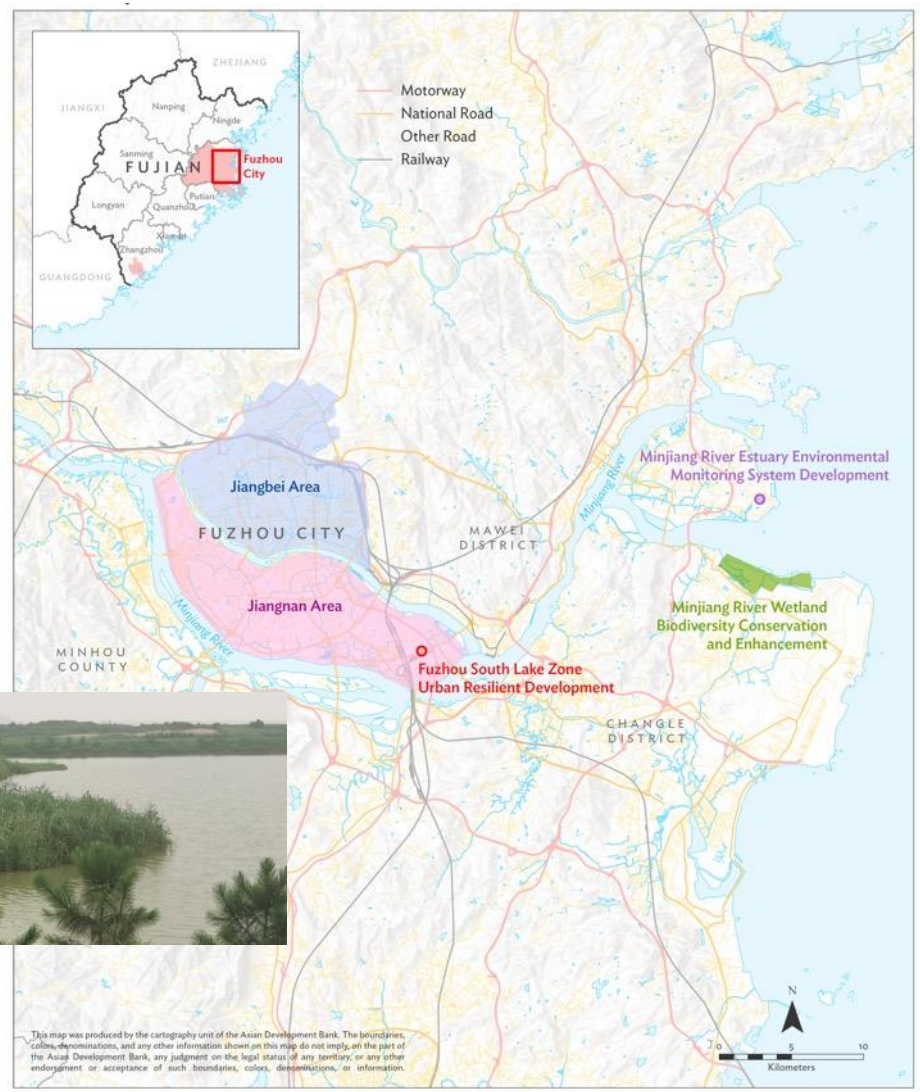
Fujian vulnerable coast in center of EAAF, two significant RFI sites

The East Asian-Australasian Migratory Bird Flyway . ADB's Regional Flyway Initiative (RFI). Two relevant sites supported by this project

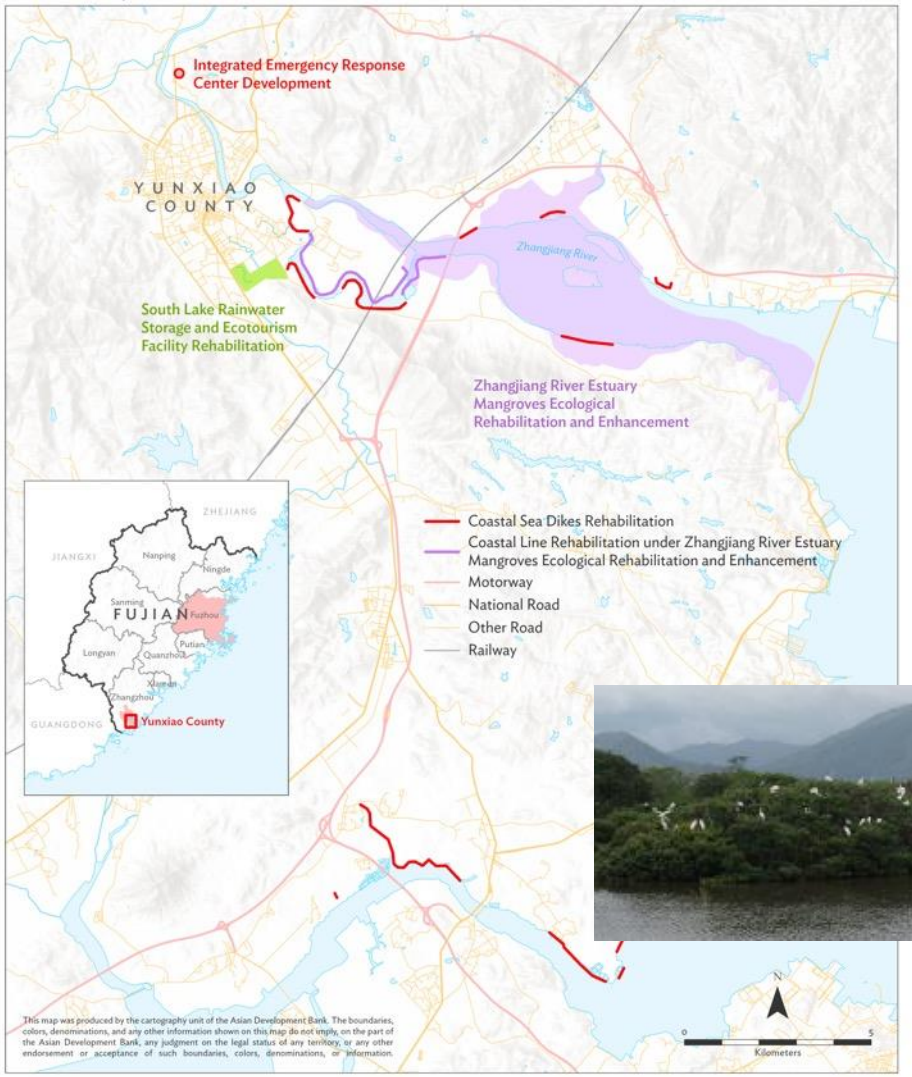
The project supports Fuzhou Municipality and Yunxiao County

Fuzhou Provincial Capital City and Yunxiao County Level City

Fuzhou wetlands



Fuzhou subproject location map



Yunxiao subproject location map

Yunxiao mangroves

Fujian Coastal Cities and Biodiversity Project – Key Features

- **Urban River and Coastal Flood Resilience.** Focus on building resilience to flood and heat risk, operated through smart digital systems, detailed weather forecasting, place-specific early warning and preparedness, improving a system already well developed strategically in hot spots and through expanded digitalization,
- **Integrated and improved Green and Grey Systems.** Gray and green-blue infrastructure systems are each improved and systemically integrated, increased stormwater retention and discharge and pump capacity, through urban green spaces, lakes and wetlands and drainage pipes and channels and pumps installed, all operated centrally
- **Urban to Nature Reconnection** Project links and integrates migratory waterbird habitat improvements with urban coastal resilience as improved wetlands also reduces risk of coastal urban areas from tidal flooding, storm surges, and impacts from cyclones.
- **Ramsar Site Values and National Wetland Protection.** Project aligns with values of Ramsar sites in both estuaries, and Fuzhou as a Ramsar accredited Wetland City in Feb 2025; and aligns with national wetland protection, migratory birds and 'Eco-civilization' agenda.

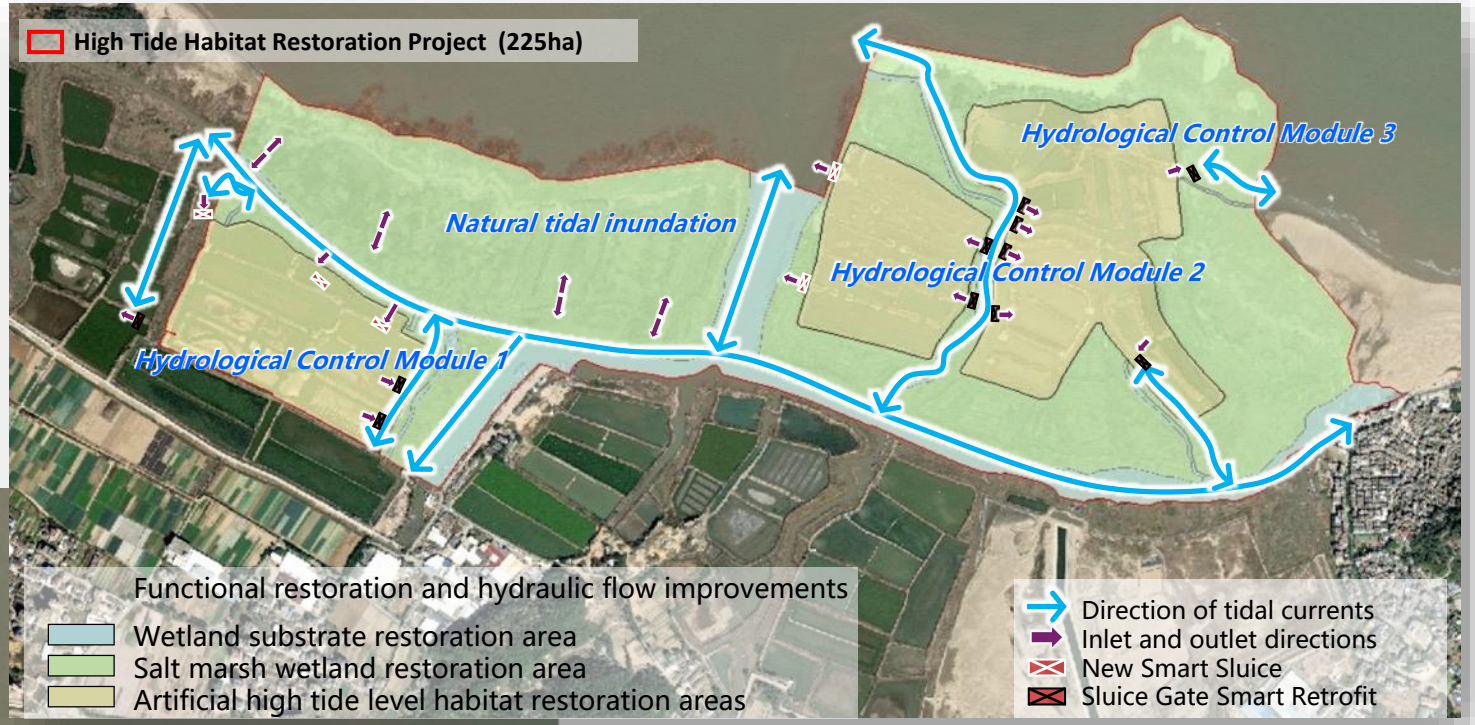
"Wetland conservation is a key component of ecological conservation. To build Fujian into an ecological province, we must pay high attention to wetland conservation."

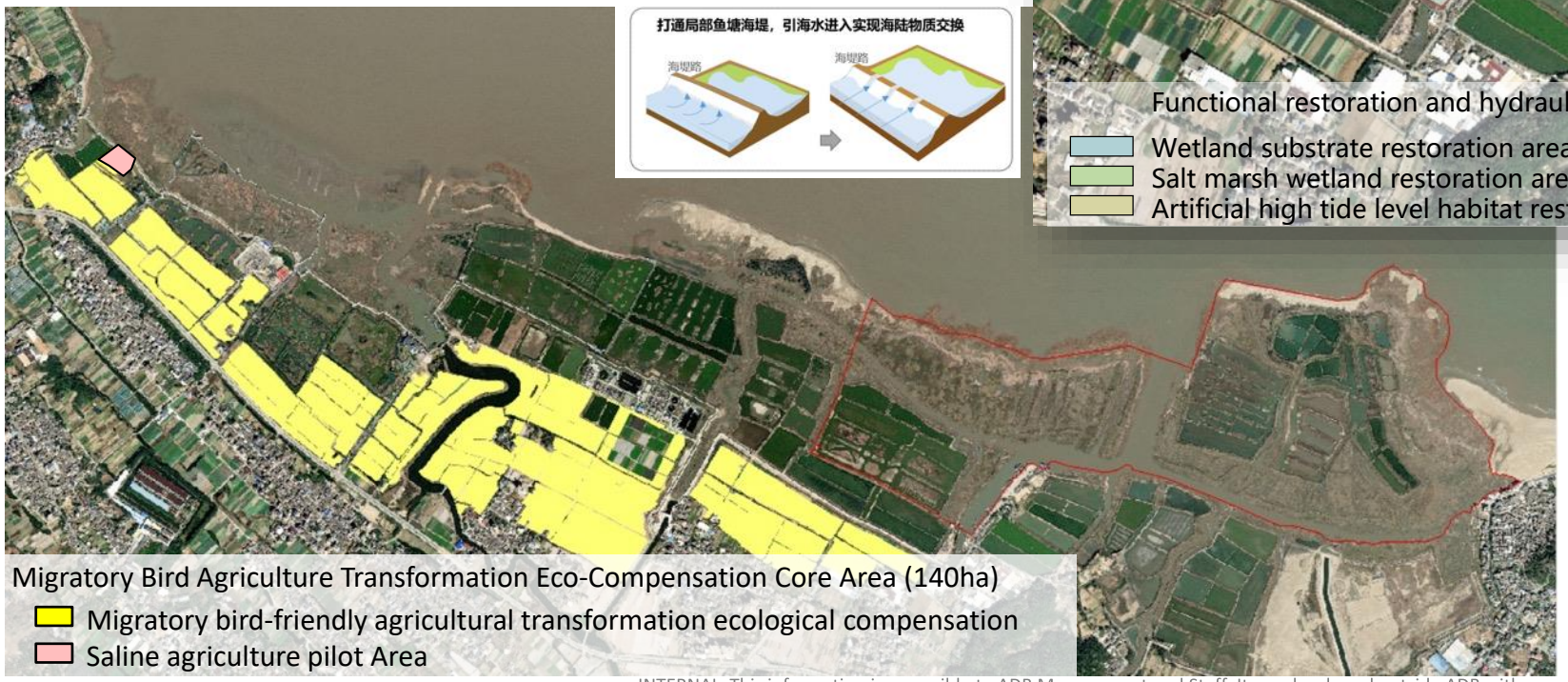
President Xi Jinping when he served as Fuzhou Mayor in 2002

Fujian Coastal Cities and Biodiversity Project – Key Features

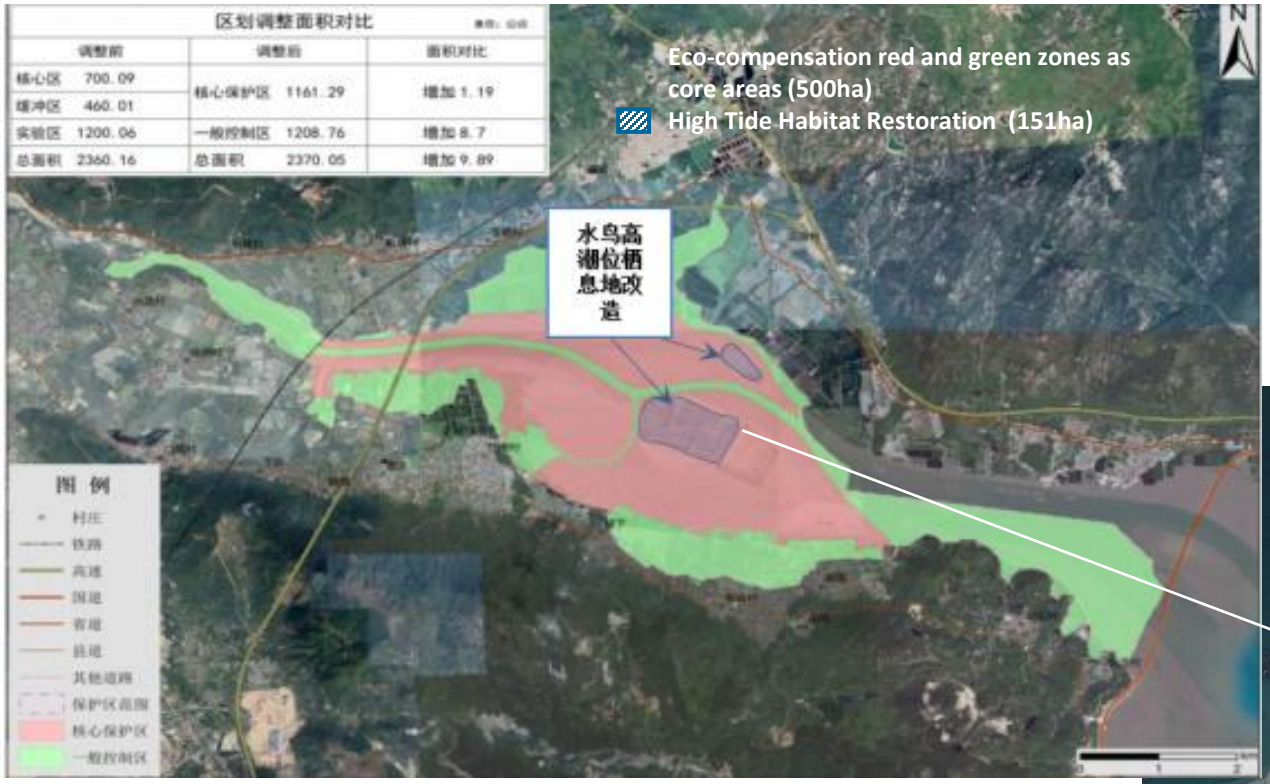
- **Outcome: The project will have the following outcome: climate change resilience and biodiversity in Fuzhou and Yunxiao enhanced**
- **Output 1: Capacity of institutions for coastal climate resilience and biodiversity action enhanced**
  - 4,000+ people and 200+ project staff (at least 30% women participants) with increased awareness and skills in coastal urban adaptation, disaster risk reduction, and wetlands and biodiversity conservation and eco-compensation
  - 2+ gender-responsive action plans on coastal urban climate resilience and wetland and mangroves biodiversity monitoring and management
  - 6+ knowledge exchange visits to other RFI projects
  - 100% of project staff trained in gender-responsive disaster risk management
- **Output 2: Coastal cities green and gray resilience infrastructure and facilities improved**
  - Digitalization of urban infrastructure and integrated cross-sector ICT platforms for disaster risk management, real-time monitoring, and early warning
  - 8+ flood hot spots with drainage pipes (33 km), pumps, and stormwater inlets
  - 27 drainage pump stations and/or gates and 18 sewer pump stations retrofitted
  - Stormwater detention green space and lakes with capacity of 263,000+ m3
  - Integrated emergency response center as green and energy efficient buildings constructed (7,800 m2 floor area), and equipment
  - Gender-sensitive protocols and safety guidelines for emergency response
- **Output 3: Biodiversity conservation, restoration, and resilience measures in coastal wetlands implemented.**
  - 221+ ha wetlands and waterbird habitat rehabilitated, mangroves restored (7+ ha) and coastlines ecologically repaired (6+ km)
  - ECM established, with recognition of women's roles and needs and at least 30 women technically and financially supported
  - 630+ ha farmland or aquaculture adjacent to wetlands improved to pollution-free, migratory bird-friendly production, and with wetland management
  - Public education facilities renovated and expanded (10,000 m2 floor area) of green and energy efficient buildings
  - ICT platforms and digital monitoring equipment using AI for birds and wetlands
  - Wetland management action plans and joint training and monitoring programs

Fuzhou Minjiang Estuary Wetland - Key Components

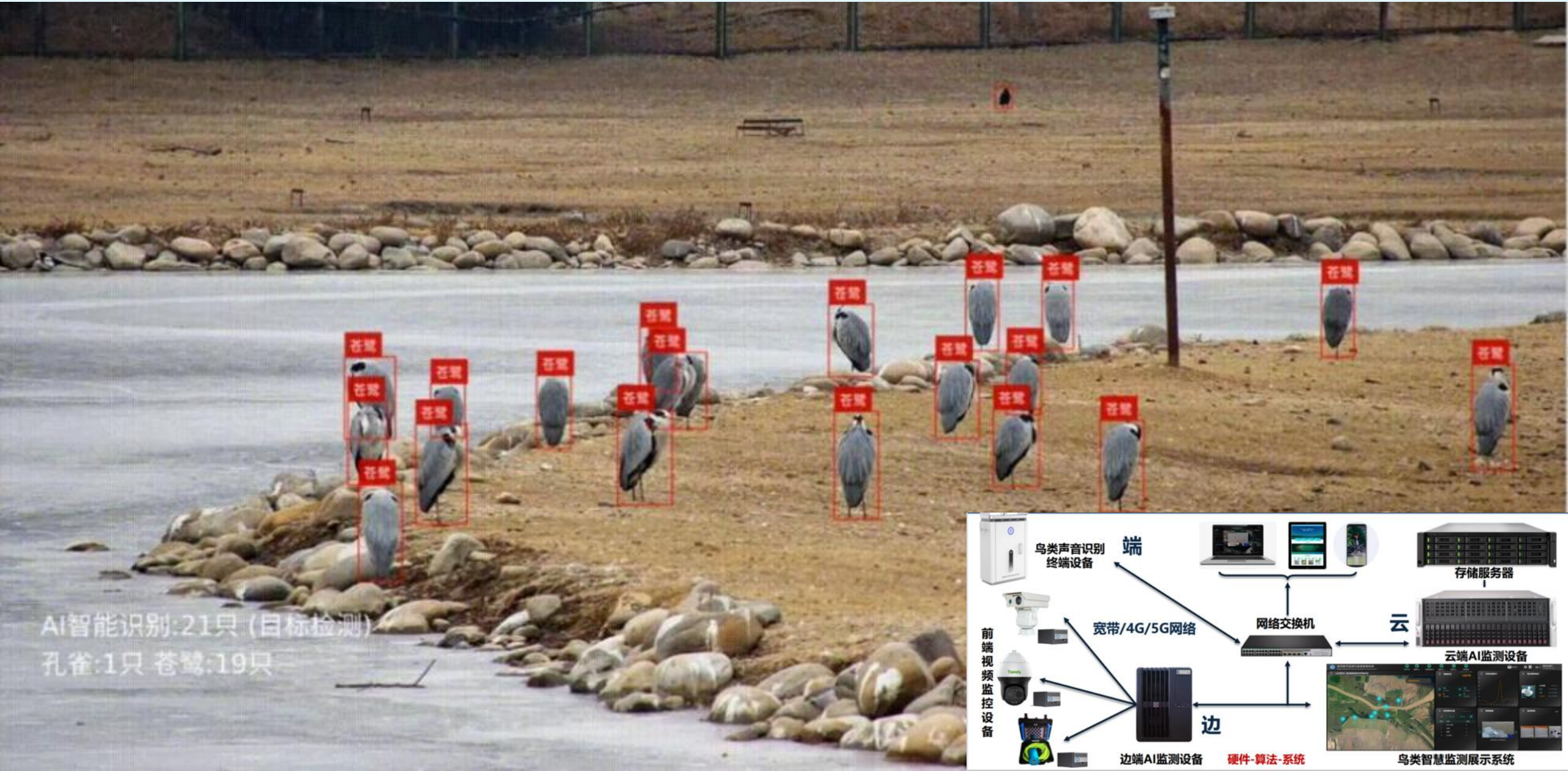




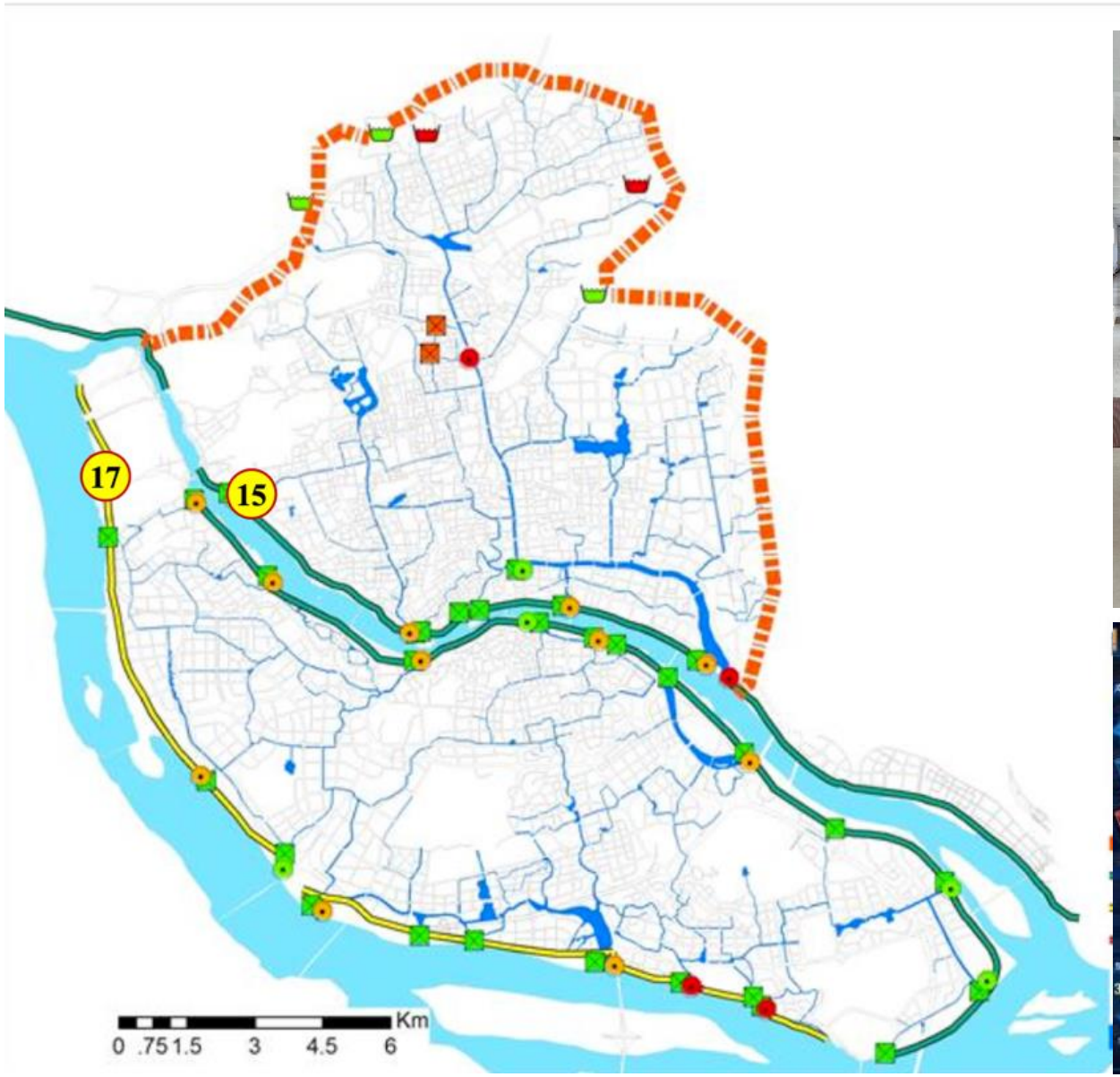
Yunxiao Zhangjiang Estuary Mangroves - Key Components

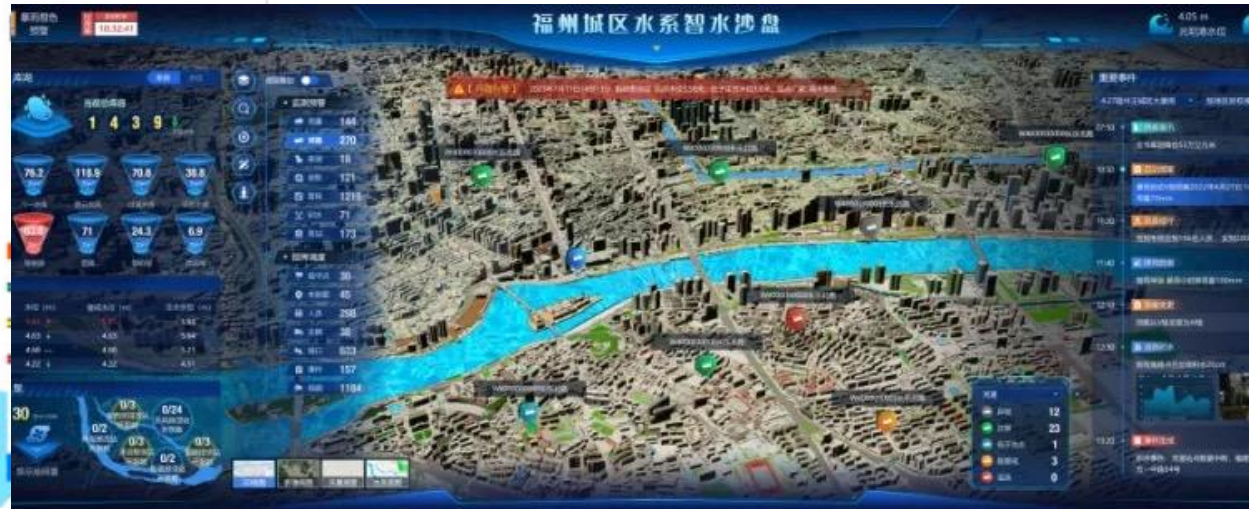


Investments in ICT platforms and AI for improved management and monitoring

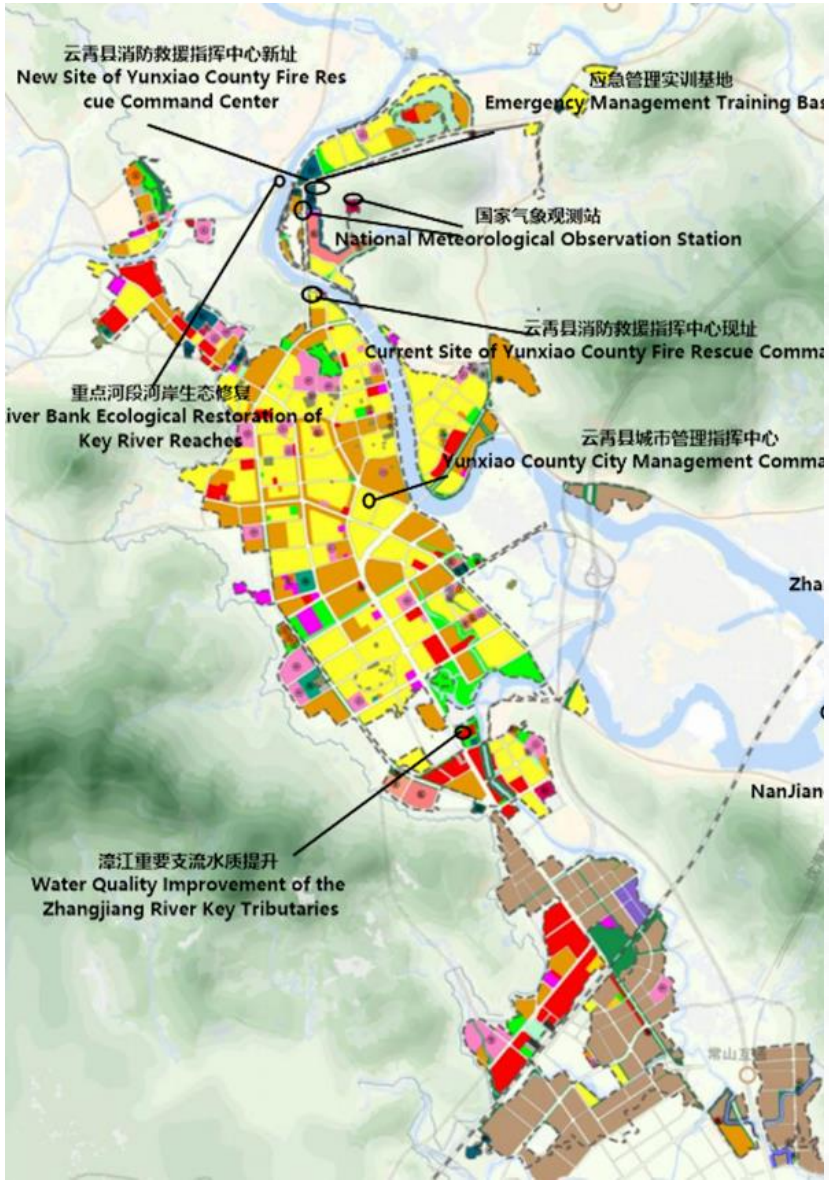


Fuzhou Urban Resilience: System Improvements & Flood Hot Spot Measures





Yunxiao Urban Resilience: Sponge City Park/Lake, Sea-dikes & DRM Center



ADB

R K S I
ADB-PRC Regional Knowledge Sharing Initiative

Talk China SEMINAR

Remote Sensing Advancing the **Regional Flyway Initiative**

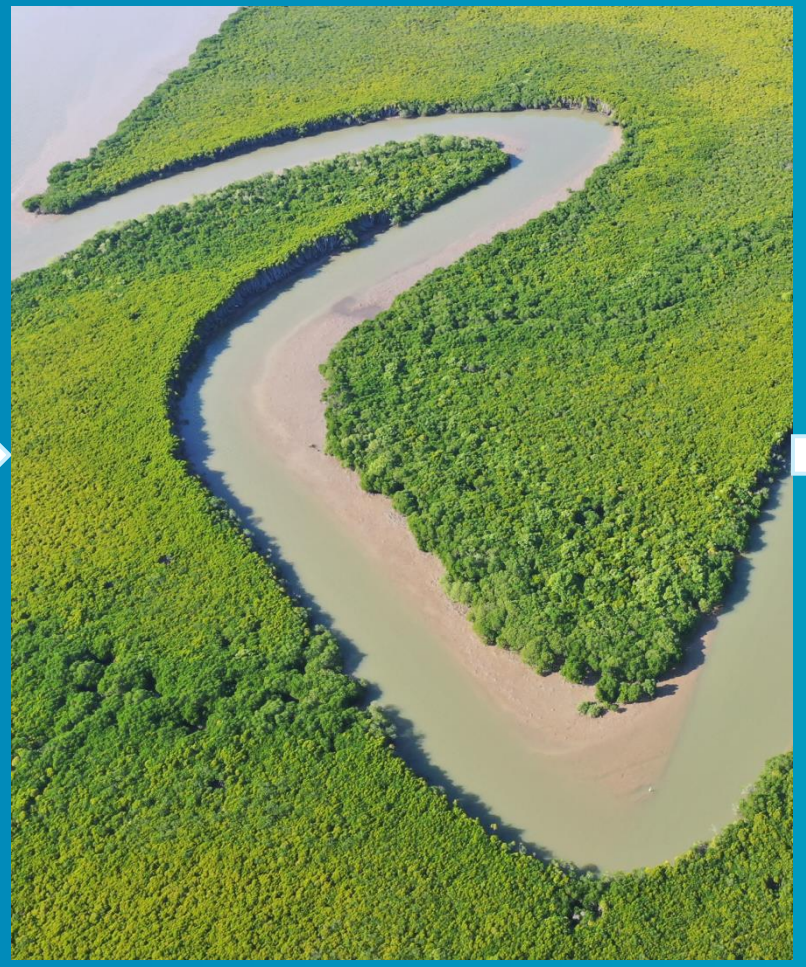
Lessons from the People's Republic of China

Mingming Jia

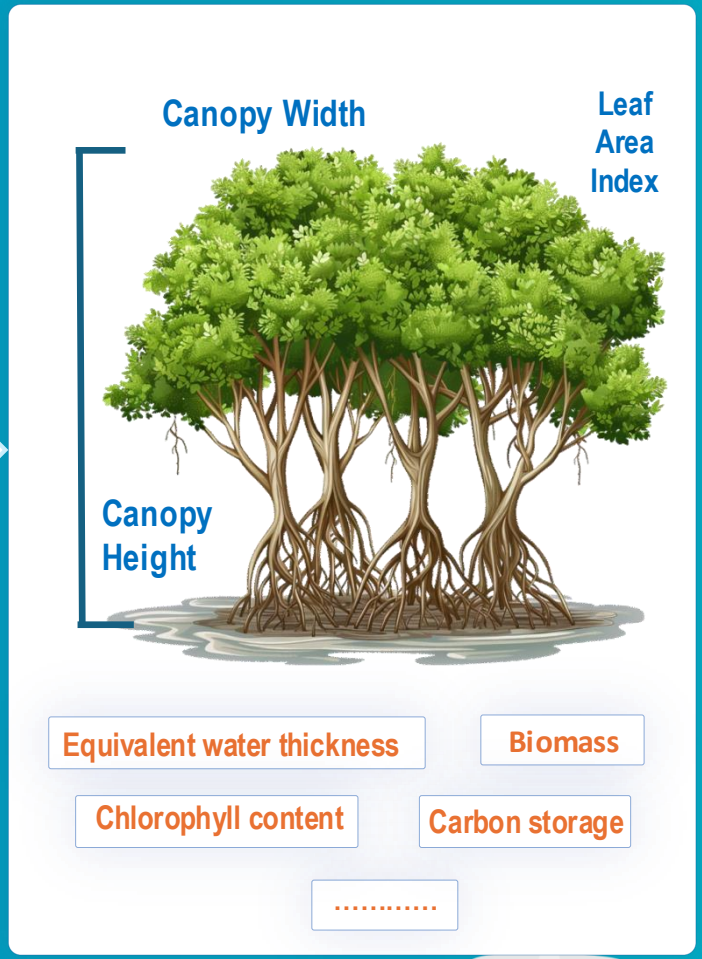
26–27 May 2026
Auditorium Hall 1, ADB Headquarters

Wetlands Remote Sensing

Spatial distribution

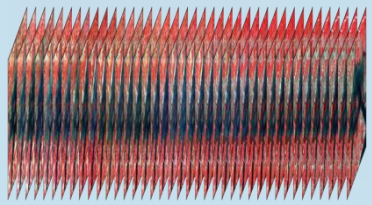


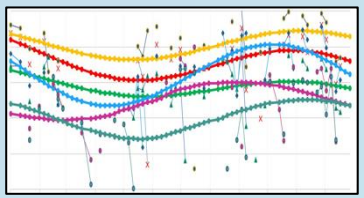
Species



Functional traits

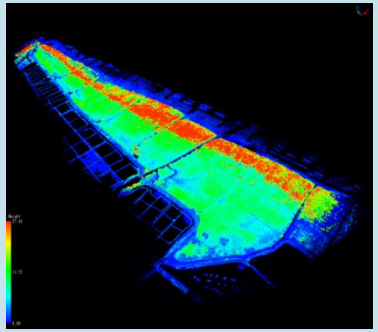
Time Series Satellite Data

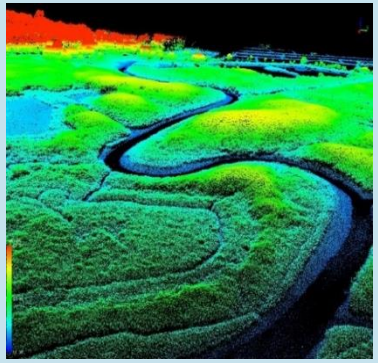


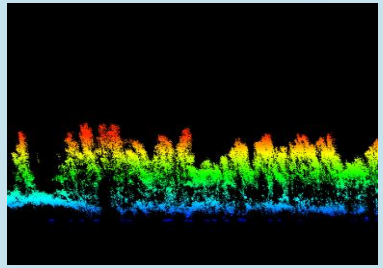


UAV Data

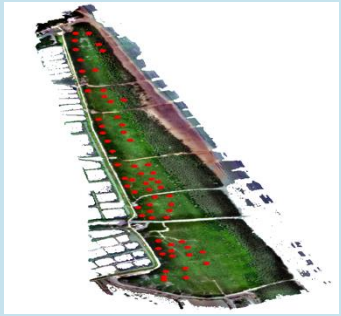
LiDAR Point Cloud







Multi-Spectral



High flexibility

High resolution

Multiple dimensions

Deep Learning Algorithm

- **Convolutional Neural Networks (CNN)**

Core method for image classification and feature extraction

- **U-Net**

Popular for pixel-level mangrove mapping (segmentation)

- **Fully Convolutional Networks (FCN)**

End-to-end semantic segmentation

- **DeepLab (e.g., DeepLabv3+)**

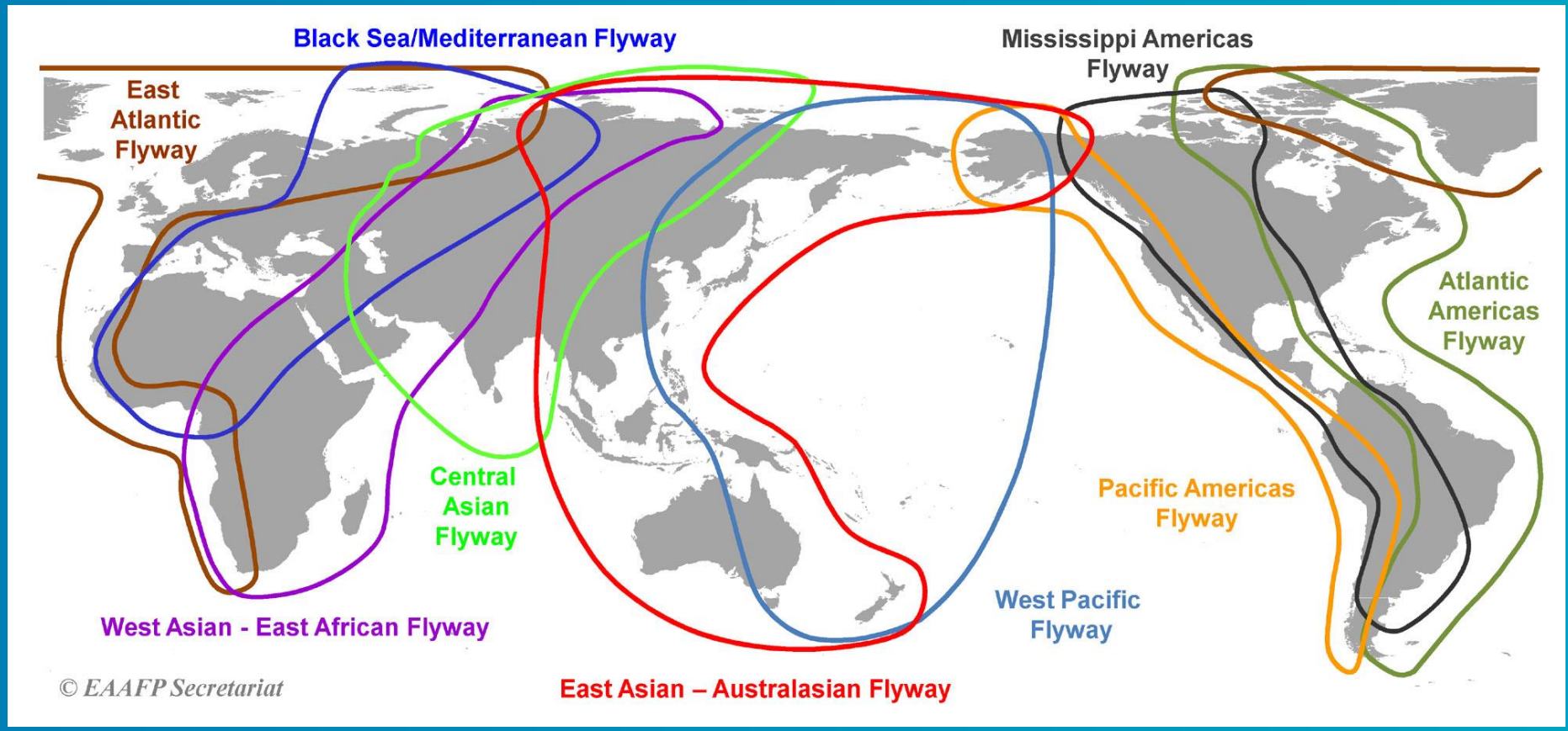
Advanced segmentation with multi-scale feature capture

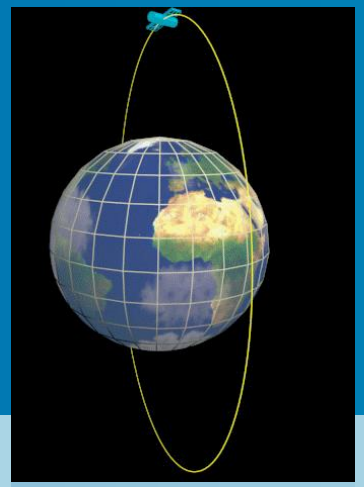
- **Recurrent Neural Networks (RNN / LSTM)**

Suitable for time-series analysis and change detection

- **Transformer-based Models**

Emerging methods with strong global feature learning





Flyway-wide Mornitoring: Standardized habitat maps every 3 to 5 days, and track tidal flat area, flooding extent, and vegetation change.

Supporting decision-making: Automatic early warning turns satellite data into real-time transboundary action.

Scaling up conservation outcomes: Habitat maps + bird tracking data = from isolated sites to a connected, efficiently expanded flyway network.

The East Asian-Australasian Regional Flyway Initiative (RFI)

Panel Discussion 2: Beyond the PRC: Scaling Success

December 2025

Duncan Lang, Principal Environment Specialist, CCSD, CCNE

RFI Commitments – A Reminder

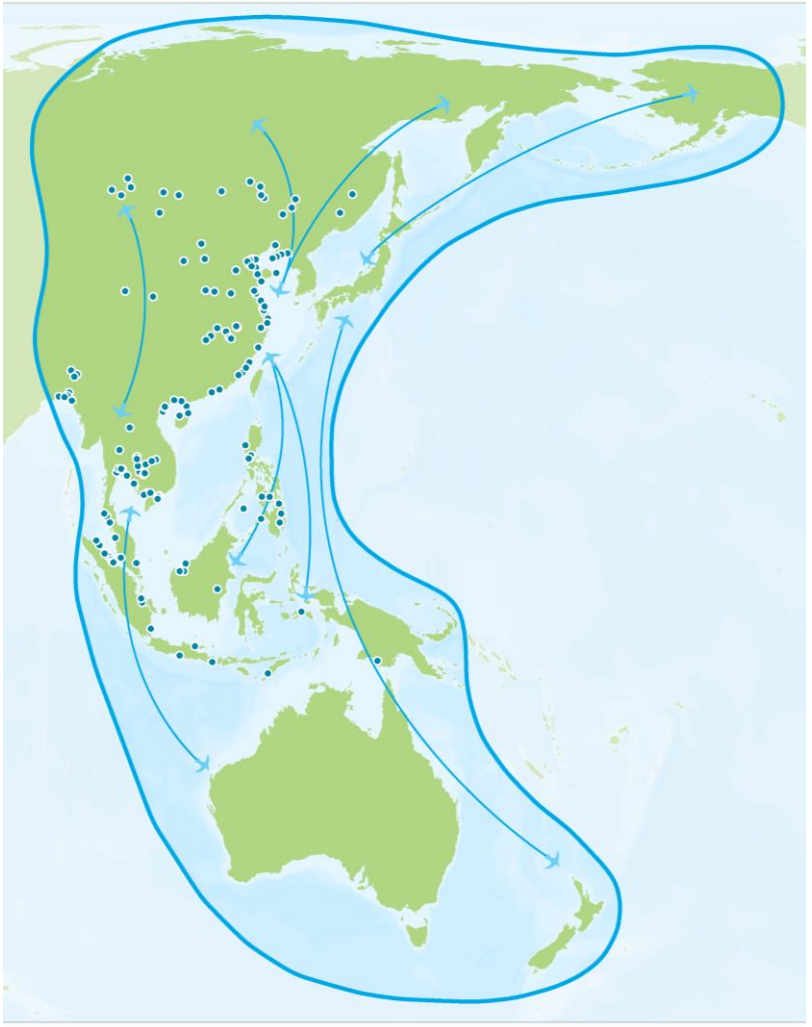
- **Mobilize $3 billion of investment** for protection and sustainable management of priority sites
- **Delivery Period** Over next 10 years (start date considered as 2024 – although one project from 2023 also developed with RFI in mind).
- **Biodiversity Goal.** Improved management of **50 wetlands** (>2 million ha) → build a network of wetland habitats with species numbers maintained or enhanced
- **Partnership.** Existing partners include East Asian-Australasian Flyway Partnership and BirdLife International – long term collaboration.

What Have We Delivered So Far - Project Status as of Dec 2025

Project Name	RFI Sites *Other Wetlands	Project Activities	ADB Investment	Mobilized
Sustainable Coastal and Marine Fisheries Project, Cambodia	Koh Kapik	Board walks, community based eco-tourism, ranger stations.	$350,000	-
South Dongting Lake Restoration Project, PRC	East Dongting Lake, West Dongting Lake *South Dongting Lake	Habitat Restoration of 12,000ha, eco-compensation, wetland museum, eco-tourism, green business	$150 M	$158 M
Fujian Coastal Cities and Biodiversity, PRC	Minjiang Estuary, *Zhangjiang Kou	Habitat Restoration 376 ha, Visitor Center, eco-compensation, eco-tourism 604 ha.	$80 M	$54.6 M
Phil Flyways GEF Project, Philippines	Candaba Swamp, Sibugay, Lake Mainit	Eco-farming, habitat restoration, mangrove restoration, nature credits pilot.	$3 M	-
Migratory Birds, PRC	All Site in PRC + Momoge, *Fen River and Zhalong Wetlands	Policy Actions, Climate Adaptation Plan, Pilot plans for key wetlands, survey methodology planning.	$750,000	-
Poyang Lake Climate Adaptation, PRC	Poyang Lake	Climate Adaptation Plan for Migratory Waterbirds for Poyang Lake	$300,000	-
Hengshui Lake, Biodiversity Conservation, PRC	Hengshui Lake	Protection of key species, wise use of wetland, reduction of pollution.	$600,000	-
Sub-Totals			**$235 M**	**$212.6 M**
TOTAL	**11 RFI Sites Directly Supported +3 others**	**15% of target met**		**$447.6 M**

Moving from the Development Phase to Implementation Phase

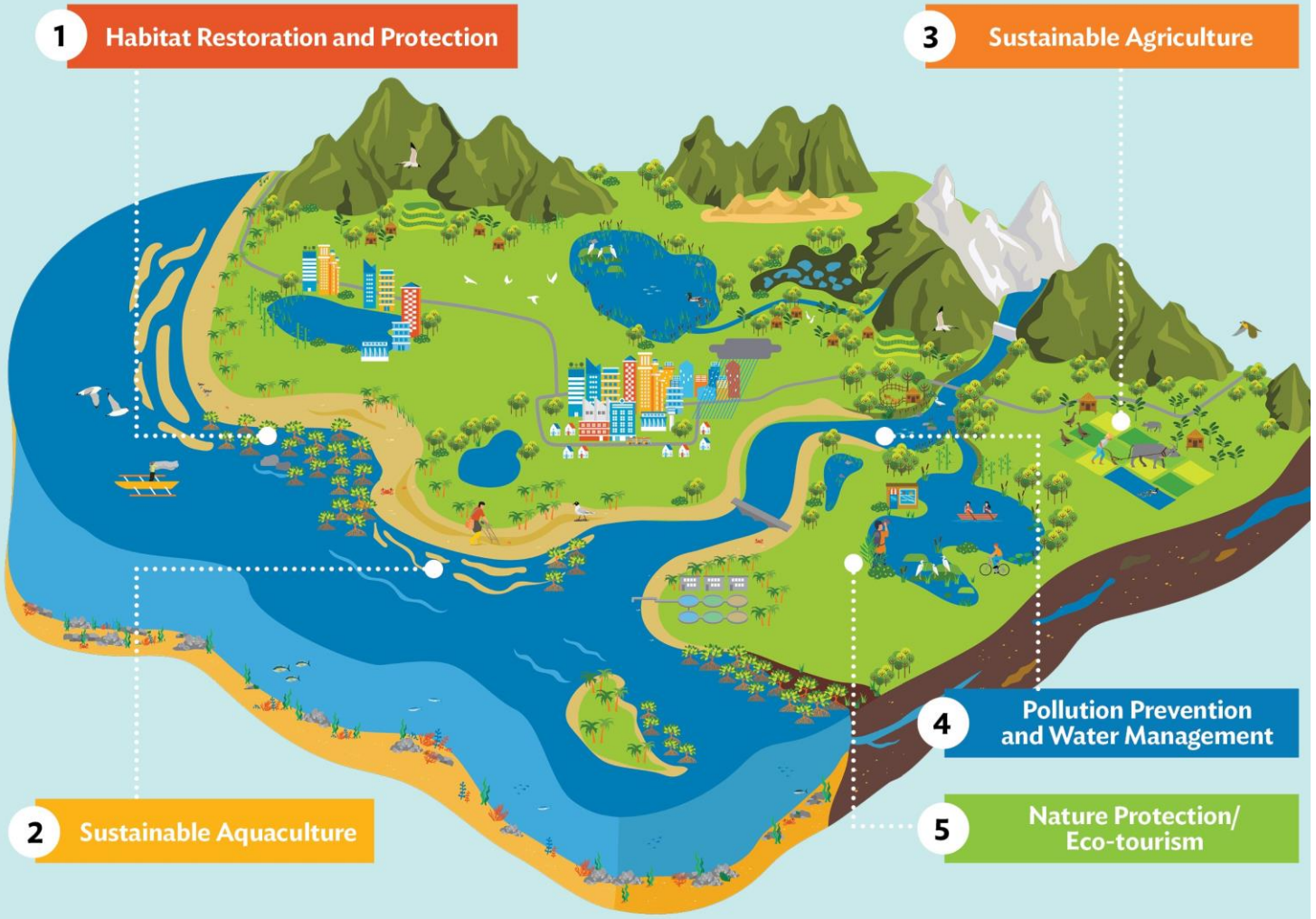
- **Focus -** Scale investment in priority wetlands for protection and sustainable management, building on the successes and sharing knowledge from the PRC.
- **ADB Country Coverage.** 11 countries including BAN, CAM, INO, LAO, MAL, PHI, THA, VIE, PRC, MON, PNG
- **Partner Engagement.** EAAFP, BirdLife, AFD (existing project co-financier)
- **Building from Development Phase Work.** 50 Site Studies covering 5 countries completed, ready to take forward for development. Nature Credits Studies for 3 countries also completed (THA, PHI, BAN)
- **Funding Resources.** Existing TA resources available to take forward ideas.
- **Whole of Society Approach.** Establishing $10M CSO granting mechanism to run in parallel to investments



Understanding RFI Project Investment Typologies

RFI Projects: Investment Concepts

As an initial guide, ADB presents five broad conceptual investment models for wetland sites:



RFI INVESTMENT CONCEPT 1

HABITAT RESTORATION AND PROTECTION

Restoring and protecting mangroves and other wetland habitats has clear economic and ecological benefits.

RFI Investments in restoring and protecting habitats (such as mangroves and mudflats) can lead to compounding co-benefits for local communities, nature and climate along the East Asia- Australasian Flyway.

Interventions include habitat restoration, rehabilitation, disaster risk reduction, reforestation, regeneration and plantation. Mangrove restoration based on best practices can help ensure food security, ecotourism and other income generating opportunities. As a cost-effective intervention on ecosystems management for climate adaptation and mitigation, it can deliver nature-based coastal protection.

WHY MANGROVE RESTORATION MATTERS

$100,000/year
estimated economic loss to fisheries due to removal of 1,200 ha of mangroves (Thailand)

$60.3 million to $91.6 million
value of global climate regulation from carbon storage in wetlands (Myanmar and Viet Nam)

2.4 to 8.4 years
time to recover costs of restoring fisheries through mangrove restoration; after which benefits are generated in perpetuity without additional costs (discount rate not factored in; Thailand)

BENEFITS OF MANGROVE AND OTHER WETLAND HABITATS

$1 billion/year
of averted property damages through floodwater protection annually (Philippines)

$484-$595 per hectare
of products provided to communities (Thailand)*

$53 million/year
diverse value of the Sundarban mangroves and value of tourism and cultural services (Bangladesh)

*Barbier (2007), Net present value

RFI - Project Investment Typologies

RFI INVESTMENT CONCEPT 2

SUSTAINABLE AQUACULTURE

Sustainable aquaculture and fisheries support food, nutrition and water security for wetland communities.

Intensive aquaculture is a key driver of wetland loss, resulting in habitat degradation, species loss, the spread of invasive species, pollution, and increases to nutrients and chemical loads.

RFI Investments in aquaculture can drive communities to more sustainable aquaculture and fisheries practices, delivering long-term sustainable food security and improving nutrition. They could also restore natural waterways and ecosystems and create economic opportunities through the development of sustainable premium products.

WHY SUSTAINABLE AQUACULTURE AND FISHERIES MATTER

43% and 50%
increase in survival rate for tiger shrimp and milkfish due to aquaculture practices (Indonesia)

80% of protein intake in the Lower Mekong region
is derived from the world's most productive inland fisheries supported by Lower Mekong Delta wetlands

BENEFITS OF WETLAND FISHERIES

$708 - 987/ha
net present value of mangroves as breeding habitat which supports off-shore artisanal fisheries (Thailand)

$1,000–$2,750 per ha/year
economic value of clam harvesting (Viet Nam)

12.4 %
wetland-lake resources contribution to household income (Nepal)

2x increase income
for local shrimp farmers after shifting to more sustainable practices (Indonesia)

RFI INVESTMENT CONCEPT 3

SUSTAINABLE AGRICULTURE

Sustainable agriculture can strengthen long-term food and livelihood security while delivering net gains for biodiversity.

Agriculture is one of the greatest threats to wetlands along the Flyway from direct loss as well as from habitat degradation. Wetlands lose their ability to support food security and agriculture when used or managed unsustainably.

RFI Investments in sustainable, climate-smart agriculture can be multifaceted, comprising reduction or elimination of chemical fertilizers and pesticides, integrated crop-livestock systems and introduction of diverse crop rotation, as well as integrated water and waste management. Sustainable agriculture can strengthen long-term food and livelihood security for communities while delivering gains for biodiversity.

WHY SUSTAINABLE AGRICULTURE MATTERS

4000% increase in farmers' earnings
after restoring wetlands and introducing sustainable agriculture practices

80% of households report benefits
from wetland products and services to their food security

52 million hectares
of arable land will be added to the 1,534 million hectares already being exploited for agriculture

Data based on People's Republic of China (2011)

BENEFITS OF WETLANDS TO AGRICULTURE

$5.86 billion/year
of marketed products or commodities from agriculture in wetlands

$6.32 million/ha per year
economic losses if paddy fields are converted to non-agricultural use

$30.73 billion/year
contribution of environmental services to total economic value of the wetland area in West Java Province (Indonesia)

Data based on West Java, Indonesia (2021)

RFI - Project Investment Typologies

RFI INVESTMENT CONCEPT 4

POLLUTION PREVENTION AND WATER MANAGEMENT

Preventing pollution and sound water governance offers massive benefits

Properly managed wetlands can intercept runoff and transform and store pollutants like sediment, nutrients, coliform and certain heavy metals without being degraded.

RFI Investments will aim to realize the full potential wetlands have particularly in urban environments for delivering effective pollution and water management using nature-based solutions. This will ensure local wetland communities are less susceptible to flooding and pollution events and will provide financing schemes to ensure wetlands are managed sustainably, over the long-term.

WHY POLLUTION PREVENTION AND WATER MANAGEMENT MATTERS

$1.4 million/year saved
by 220 people using constucted wetlands for wastewater treatment

48% reduction
of biological oxygen demand in wastewater treated in constructed wetlands (Australia)

85%-90% organic pollutants reduced
in wastewater treatment in constructed wetlands

BENEFITS OF WETLANDS TO POLLUTION PREVENTION

$2.9 billion/year
avoided cost of constructing artificial wetlands to replace natural wetlands' existing phosphorus filtration

$4.2 billion
avoided costs of sediment filtration and phosphorus removal services

$13 billion
cost of implementing agricultural Best Management Practices to remove an equivalent phosphorus load annually

Data based on Canada (2021)

RFI INVESTMENT CONCEPT 5

NATURE PROTECTION AND ECO-TOURISM

Protecting natural wetlands creates massive ecotourism benefits and opportunities

Wetlands along the Flyway possess high untapped ecotourism potential with their biodiversity, spiritual, cultural and recreational values.

RFI investments to protect nature in wetlands and enhance ecotourism for birdwatching and other activities. These interventions can drive sustainable development and can be strong tools of sustainable development and combine conservation, tourism and education functions, delivering direct jobs, economic opportunities and long-term livelihood benefits.

WHY NATURE PROTECTION AND ECO-TOURISM MATTERS

60% per year
potential increase in annual net revenues from reef and mangrove fisheries and tourism expenditures if reef quality and wetland stewardship is improved (Philippines)

10% to 12% growth/year
in ecotourism globally signaling the need for more sustainable practices

Over €5 billion
cost of indirect damage to fishers, tourism industry, local people's livelihoods, and lost natural values due to an oil spill (France and Spain)

20% of all birds from an estimated 9,000 species depend on wetlands (global data)

BENEFITS OF WETLANDS TO ECOTOURISM

60.1%
of wetland ecosystem services support ecotourism, (28.4%) support flood regulation, and (6.7%) local biodiversity (Colombia)

$95,333
recreational benefits enjoyed by visitors in a wetland ecotourism site (India)*
*Venkatachalam & Zareena Begam (2016), value for 2015 only

$1.35 billion/year
contribution of reef-based ecotourism to the national economy (Philippines)

$55/visitor
willingness to pay to enjoy a tidal ecotourism wetlands site, Anmyeondo Island (South Korea)

RFI Investment Phase – In more detail

- **Timeframe –** Investment Phase from 2024 for 10+ years
- **Indicative per site investment level –** Approx. $10-50 million per site,
- **Sector Focus –** Agriculture and Urban. RFI investments are ideal as sub-components of larger loans – as illustrated in the PRC
- **Investment Funding Sources –** Funding partnerships between sovereign governments with support from bilateral, multi-lateral and civil society
- **ADB project investments –** Sovereign loans projects present the most likely opportunities, particularly mixed with grant and TA concessional resources.
- **Private Sector Projects –** Best opportunities likely linked to Carbon Credits of Payment for Ecosystem Services models using a public private partnership.

ADB Data Room: Regional Flyway Initiative

1 October 2020 to 31 December 2026

The Regional Flyway Initiative (RFI) is a large-scale transboundary program that seeks to mobilize $3 billion in investments over ten years to protect, restore, and sustainably manage a **comprehensive network** of threatened natural wetlands— including mangrove forests, peatlands, marshes, tidal mudflats, and coral atolls—along the East Asian–Australasian (EAA) Flyway.

This Data Room contains information on the identification and selection of RFI priority wetland sites, knowledge briefs and infographics, presentation materials from in-country wetland ecosystem services workshops, and other documents related to the ongoing implementation of the RFI.

RFI investments along the EAA Flyway aim to preserve critical biodiversity, mitigate climate change, and sustain the lives and livelihoods of nearly 200 million people in Asia and the Pacific. RFI projects can also help countries achieve Nationally Determined Contributions under the Paris Agreement, National Development Plan objectives, and commitments to the Convention on Biological Diversity, RAMSAR convention, and the Sendai Framework on Disaster Risk Reduction.

Check out the interactive **ADB Globe on the Regional Flyway Initiative here.**

For more information, updates, or specialized advice, please contact Duncan Lang or Karen Ochavo.

Program and Learning Materials

RFI Priority Sites | Briefs and Infographics | Events and Workshops | Case Studies and Projects

Event Coordinator/s

- Duncan Lang
- Karen Ochavo

ADB Organizer/s

- Climate Change, Resilience, and Environment Cluster

Read Also

- 147 RFI Priority Wetland Sites
- ADB Technical Assistance Report: Scaling Up the East Asian-Australasian Flyway Initiative
- Special Feature by CNN: The planet's most threatened flight path, and the $3 billion plan to protect it by N. Lewis, W. Lee & C.
- Insight: The Regional Flyway Initiative: Building a Business Case for Sustainable Wetlands
- ADB Globe on Regional Flyway Initiative

Scaling Success – Opportunities for expansion?

- **CENTRAL ASIAN FLYWAY**
- **ADB Country Coverage.** IND, SRI, PAK, BHU, NEP, AFG, TAJ, KAZ, KYG, UZE, TUR, GEO, ARM
- **Potential Focus Areas.**
    i. Wetland Protection and Sustainable Management;
    ii. Sustainable Production;
    iii. Nature Positive Energy Infrastructure
- **Project Opportunities.** Growing portfolio of project opportunities.
- **Pacific Marine Flyways?**

Many Thanks!

147 RFI PRIORITY WETLAND SITES

RFI SITE STUDIES

Scan the Development Asia QR Codes
to learn more about the highest priority wetlands
in the East Asian–Australasian Flyway

RFI Contacts:
Duncan Lang (dlang@adb.org)
Karen Ochavo (kochavo@adb.org)

Thailand Experiences :

Mainstreaming Biodiversity-based Tourism in Thailand to support Sustainable Tourism Development [MBT]

Natthiya Kongphuthorn
Director, Research Development & Knowledge Management Division , BEDO

Project area, Demonstration Landscape (in detail) and Project Sites (PAs)

Pran Buri District

Sam Roi Yot District

Kui Buri District

Muang D

1

2

0 2.5 5 10 15 20 25

Kilometers

Legend

Project Landscape Area

Pranburi Estuary (include Sam Roi Yot Coastal and wetland areas)

Project Sites(PAs)

1.Kuiburi National Park

2.Khao Sam Roi Yot National Park

Additional Kuiburi National Park

Khao Sam Roi Yot RAMSAR site

District Boundary

Sub-district Boundary

500000 520000 540000 560000 580000 600000 620000 640000

1380000 1360000 1340000 1320000 1300000

2

Project Objective

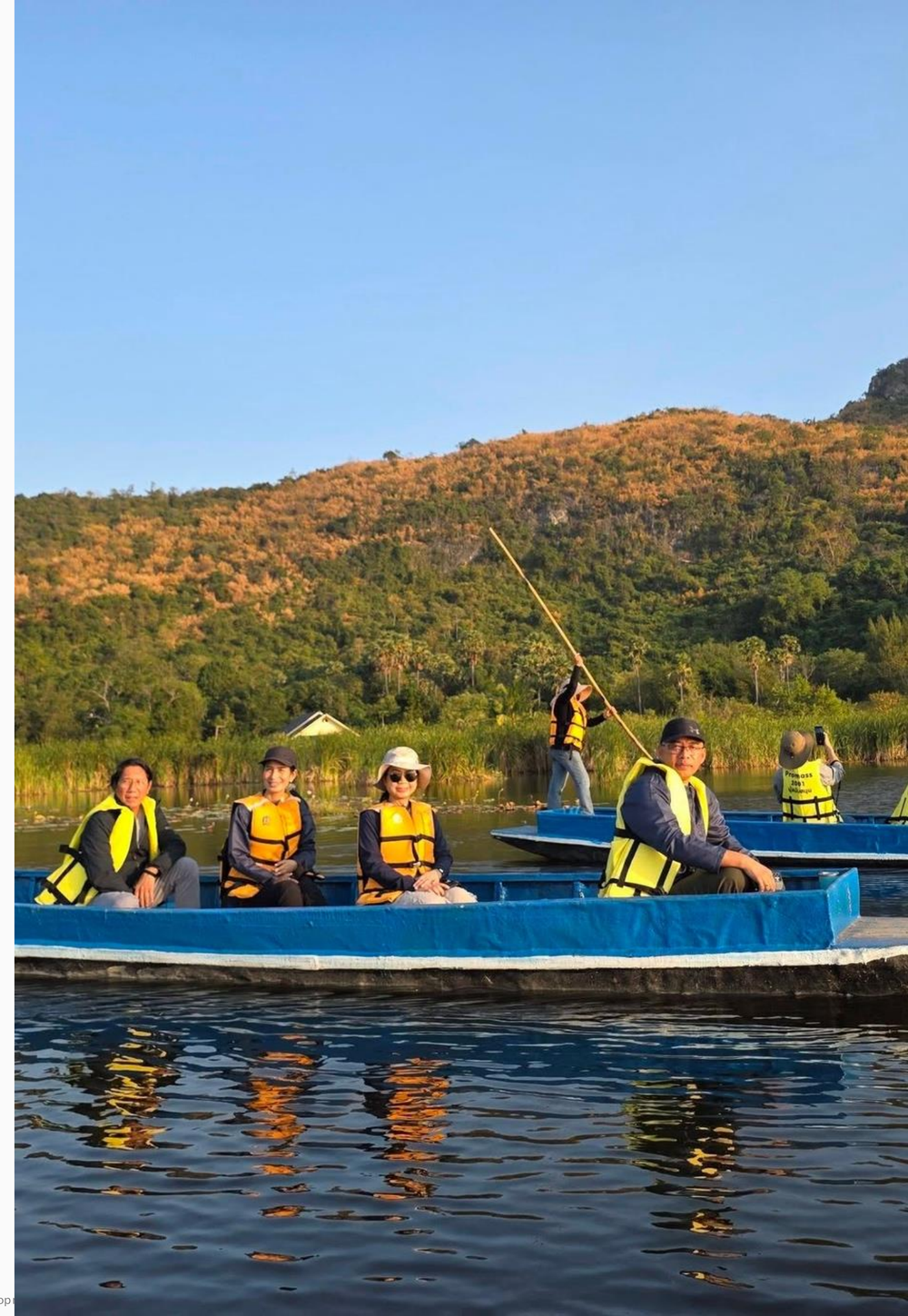
: To mainstream biodiversity conservation into tourism development and operations at national and local levels through policy integration and development of an integrated model for biodiversity-based tourism

Project Outcome

1: Strengthened and harmonized policies and standards to mainstream biodiversity conservation into tourism

2: More sustainable, biodiversity-friendly management and operation of tourism across the ecologically important Prachuap Khiri Khan landscape

3: Upscaling and replication of sustainable, biodiversity-based tourism across Thailand is supported by raised awareness, improved market access and knowledge management



Mainstreaming Biodiversity-based Tourism in Thailand to Support Sustainable Tourism Development : MBT Project

Ministry of Natural Resources and Environment

Biodiversity-based Economy Development Office (Public Organization)

Prachuap Khiri Khan Province

UNDP

gef

Conserving Biodiversity • Strengthening Communities • Creating Sustainable Livelihoods

The MBT Project promotes biodiversity conservation and sustainable tourism in Thailand by integrating policy, community participation, innovation, and partnership to build a resilient future where people and nature thrive together.

GOAL

Conserve biodiversity and enhance community well-being through biodiversity-based tourism.

DURATION

4 YEARS (2022 – 2026)

BUDGET

USD 2.64 MILLION (≈ 81.8 MILLION THB)

Funded by the Global Environment Facility (GEF) through UNDP

FOCUS AREA

Prachuap Khiri Khan Province

3 pilot areas:

Kui Buri, Khao Sam Roi Yot, Pak Nam Pran

THREE INTEGRATED COMPONENTS

01 ENABLING POLICY & INSTITUTIONAL FRAMEWORK

- Develop national policy, strategies and standards for biodiversity-based tourism
- Establish multi-stakeholder coordination and financing mechanisms
- Build capacity of national and provincial agencies
- Assess and monitor environmental, social and economic impacts

02 PILOT MODEL IN PRACHUAP KHIRI KHAN

- Develop master plan and visitor management plan
- Create community-based tourism products and services
- Build skills and business capacity of local communities and entrepreneurs
- Apply tools for environmental and social impact management

03 KNOWLEDGE, COMMUNICATION & SCALING-UP

- Raise awareness and promote biodiversity-based tourism
- Build knowledge and learning networks
- Share lessons learned and scale up to other areas in Thailand
- Enhance access to markets and digital platforms for local tourism providers

EXPECTED IMPACTS

- Enhanced conservation of biodiversity and critical ecosystems
- Stronger local communities and increased participation
- Improved sustainable livelihoods and economic opportunities
- Better knowledge and innovation for informed decisions
- Scalable model for sustainable tourism across Thailand

BEDO CONSERVATION ACTIONS IN SAM ROI YOT WETLANDS

Ministry of Natural Resources and Environment

BEDO
Biodiversity-based Economy Development Office (Public Organization)

Prachuap Khiri Khan Province

UNDP

gef

Biodiversity-based Tourism for Conservation and Community Well-being

BEDO promotes community participation by linking wetland conservation, migratory bird protection, and biodiversity-based tourism to support sustainable local livelihoods and ecosystem resilience.

- **12** community enterprises supported
- **5.4** million THB in community grants
- **1,000+** biodiversity records collected

KEY ACTIVITIES IN SAM ROI YOT

01 Wetland & Migratory Bird Conservation

- Conserving wetland ecosystems and critical bird habitats
- Supporting protection along the East Asian–Australasian Flyway
- Promoting sustainable wetland management

02 Birdwatching Festival & Nature Learning

- Organizing the Sam Roi Yot Wetland Bird Festival
- Creating nature interpretation and birdwatching activities
- Raising public awareness on wetland conservation

03 Community-based Eco-tourism

- Supporting 12 community enterprises through eco-tourism activities
- Providing support for local tourism products and services
- Strengthening community learning centers

04 Youth Engagement & Local Stewardship

- Organizing youth camps and wetland learning activities
- Building conservation leadership among young people
- Encouraging local participation in biodiversity protection

05 Biodiversity Monitoring & Knowledge

- Collecting biodiversity data and ecosystem information
- Supporting science-based conservation planning
- Recording more than 1,000 biodiversity records in the project area

06 Wetland City Vision

- Promoting Sam Roi Yot toward Wetland City recognition
- Enhancing sustainable wetland management
- Strengthening international recognition of the area

OUR IMPACTS

- Enhanced protection of migratory bird habitats
- Increased community participation in conservation
- Improved local livelihoods through eco-tourism
- Better biodiversity data for wetland management
- Strengthened awareness of wetland conservation
- Empowered youth as future conservation leaders

BEDO'S TOOLS & MECHANISMS

- Biodiversity Database and Community Biobank
- Bioeconomy Mark Certification
- Biodiversity Impact Assessment
- Finance for Biodiversity

ความหลากหลายทางชีวภาพ | สัตว์ (363)

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ชะมดแผงหางปล้อง

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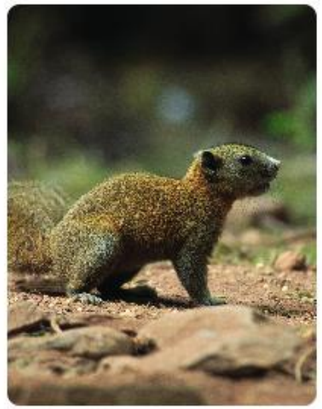

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กระรอกปลายหางดำ

Birds List from Sam Roi Yod Wetland

Invasive aquatic plant

Elephant grass

Typha angustifolia L.

02 Community Economy Development through Tourism in Source Areas, Prachuap Khiri Khan Province

BEDO
Biodiversity-based Economy Development Office (Public Organization)

UNDP

gef

Building learning centers and supporting community-based tourism enterprises in 3 districts

DEVELOPMENT OF COMMUNITY ECONOMY THROUGH TOURISM IN SOURCE AREAS, PRACHUAP KHIRI KHAN PROVINCE

- Develop learning centers and support tourism activities in **8 groups** of community enterprises/organizations **(3.5 million THB)** (FY2025: Oct 2024 – Jul 2026)
- Support equipment for community enterprises to enhance their potential **(2.5 million THB)** (FY2025: Oct 2024 – Mar 2026)
- Upgrade community enterprises to meet standards and build linkages with quality tourism markets, including the **MICE** segment (FY2025: Oct 2024 – Mar 2026)
- Develop products and services based on local biodiversity to create distinctive tourism offerings (FY2025: Oct 2024 – Mar 2026)
- Develop key tourism areas along the Sam Roi Yot wetland landscape (**Ban Nong Bua**) to establish a biodiversity-based tourism model (FY2025: Oct 2024 – Dec 2026)

GOAL

Strengthen local economies through sustainable tourism, conserve biodiversity, and enhance community well-being.

8
Community Enterprise Groups Supported

6.0
Million THB Total Support

Higher Standards & Market Linkages (including MICE)

Biodiversity-Based Products & Services Developed

Model Tourism Area in Sam Roi Yot Wetland















03 Creating Awareness to Scale Up Biodiversity-Based Tourism

Raising awareness, promoting markets, and building networks for biodiversity-based tourism in Thailand

KEY ACTIVITIES

- **Produce and disseminate 4 stories** showcasing pilot areas and biodiversity-based tourism: **Kui Buri, Khao Sam Roi Yot, Pak Nam Pran, and Hua Hin.**
- **Promote and market** biodiversity-based tourism products under the "Reach to Love" campaign at Market Village Hua Hin (1–5 October 2025) and through a Road Trip and media activities to reach target audiences.
- **Collaborate with Prachuap Khiri Khan Province** under the New Tourism Atlas (September 2025).
- **Build youth networks** to engage young people as local tourism champions (September 2025).
- **Organize the Birdwatching and Nature Festival,** Prachuap Khiri Khan – Sam Roi Yot, ครั้งที่ 1 (17–18 January 2026).
- **Expand biodiversity-based tourism areas** to all 5 districts of Prachuap Khiri Khan Province.


Reach to Love @ Market Village Hua Hin


Road Trip & Media Engagement


Youth Network


Birdwatching and Nature Festival

EXPECTED IMPACTS

- Increased awareness and understanding of biodiversity conservation and sustainable tourism
- Stronger networks and collaboration across communities, youth, and agencies
- Expanded markets and visibility for biodiversity-based tourism products
- More tourists and local income distributed to communities
- Conservation values embedded in tourism behaviors and choices

MBT PROJECT

Conserving Wetlands, Empowering Communities, Sustaining Future

Biodiversity-based Tourism for a Thriving Economy, Healthy Ecosystems, and Inclusive Society

1. KEY FINDINGS & CHALLENGES

Unequal Revenue Distribution

Over 80% of tourism revenue goes to large businesses, while communities receive minimal returns despite carrying environmental burdens.

Threats to Biodiversity

Overtourism, illegal hunting, overfishing, pollution, and climate change continue to threaten ecosystems and biodiversity.

Land Tenure Constraints

High-potential wetland areas are privately owned, limiting integrated conservation management and Wetland City development.

Multi-Agency Coordination

Involvement of many agencies leads to complexity and potential delays in long-term implementation.

2. SOLUTIONS & RESPONSES

Balance Conservation & Tourism

Apply VUMF to manage visitor capacity and behavior, minimizing impacts on ecosystems.

Benefits to Local Communities

Direct support to 12 community enterprises to develop local tourism products and services, increasing income and reducing dependence on large operators.

Environmental & Social Safeguards

Use SESA and Gender Action Plan to prevent negative impacts and ensure equity, inclusion, and community rights.

3. AREAS TO DEVELOP FURTHER

Advance to Wetland City

Accelerate feasibility study to achieve Ramsar Wetland City recognition for Sam Roi Yot to enhance global credibility and conservation-based tourism brand.

Expand Digital Market Access

Link community-based tourism products to Online Travel Agency (OTA) platforms to reach high-value tourists.

Document & Replicate

Develop a Biodiversity-based Tourism Manual as a model for replication in other areas of Thailand.

Institutionalize in Provincial Plan

Integrate wetland conservation plans and budgets into Prachuap Khiri Khan provincial development plan for long-term sustainability.

4. KEY CONSTRAINTS

Legal & Spatial Limitations

Privately owned lands restrict integrated wetland management and conservation.

External Threats

Illegal activities and climate change are difficult to control and severely impact biodiversity.

Sustainability Beyond 2026

Dependence on GEF funding raises concerns about long-term financial sustainability after project completion.

. MANAGEMENT, MONITORING & GOVERNANCE FRAMEWORK

TOOLS & INDICATORS

METT
Tracks protected area management effectiveness

VUMF
Monitors visitor behavior and carrying capacity

UNDP Scorecard
Assesses institutional and financial performance

Visitor Count
Collects visitor data for impact analysis

REPORTING MECHANISMS

Project Implementation Report (PIR)
Annual reporting to GEF on progress and outcomes

Annual Progress Report
Submitted to Project Steering Committee (PSC)

Field Surveys & Biodiversity Data
Over 1,000 species recorded as baseline for conservation tracking

GOVERNANCE STRUCTURE

Project Steering Committee (PSC)
Policy oversight & strategic direction

Project Management Unit (PMU) – BEDO
Day-to-day management & coordination

Provincial Project Working Group
Local monitoring with communities & local agencies

SOCIAL & ENVIRONMENTAL MONITORING

Apply SESP (Social & Environmental Screening Procedure) and Gender Action Plan to ensure:

- No negative social & environmental impacts
- Protection of community rights
- Gender equality & inclusive participation

OUTCOME

- Healthy Wetlands Rich Biodiversity
- Stronger Communities Fair Livelihoods
- Sustainable Tourism Green Economy
- A Model for Thailand, Inspiration for the World

How The PRC’s Experiences can be scaled for Success in Thailand and Asean

BEDO
สำนักงานพัฒนาเศรษฐกิจจากฐานชีวภาพ (องค์การมหาชน)
Biodiversity-Based Economy Development Office (Public Organization)

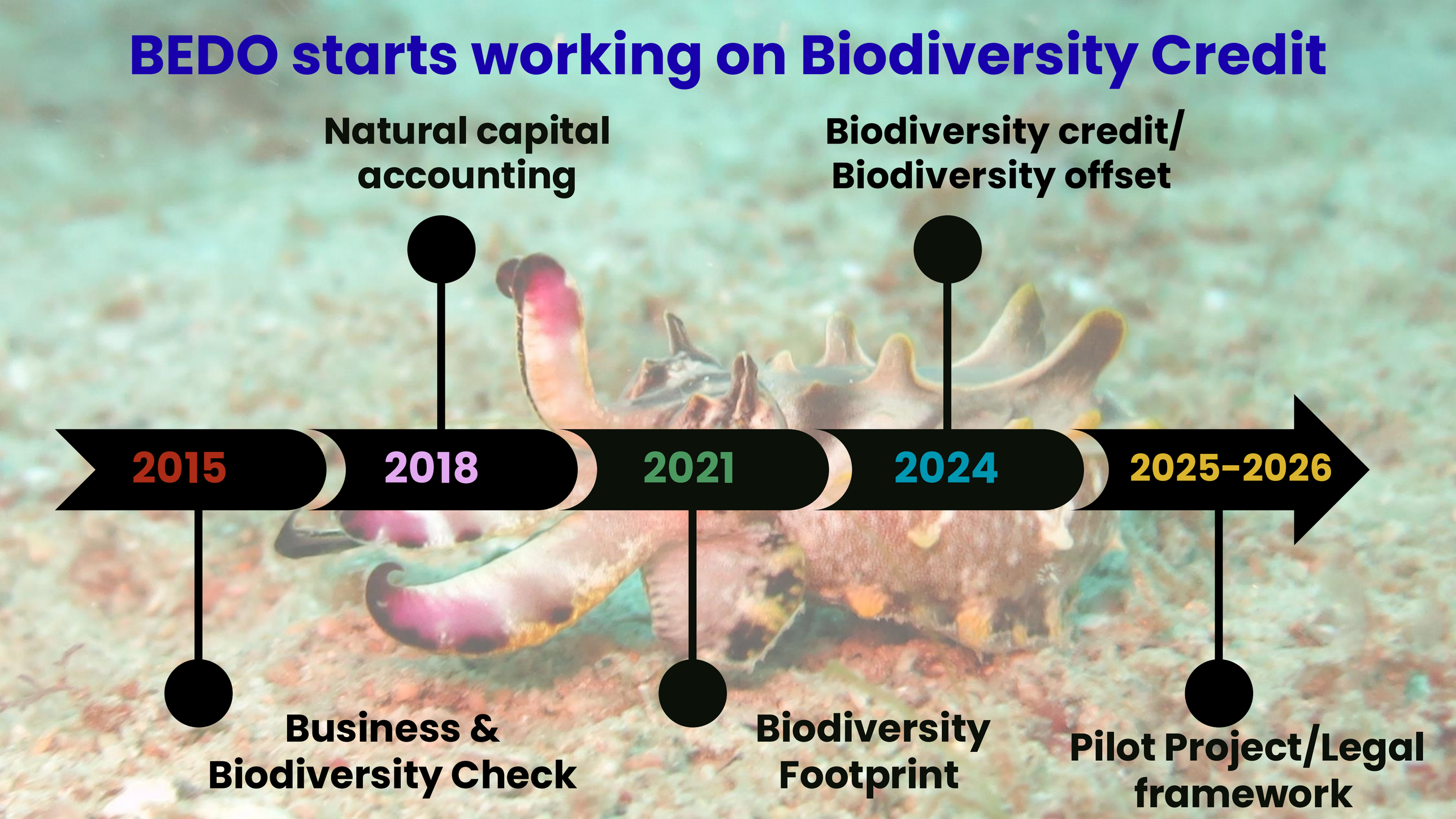
BEDO

BEING NATURE POSITIVE

BEDO aims to elevate Thailand's bioeconomy to the international level approach of Nature Positive

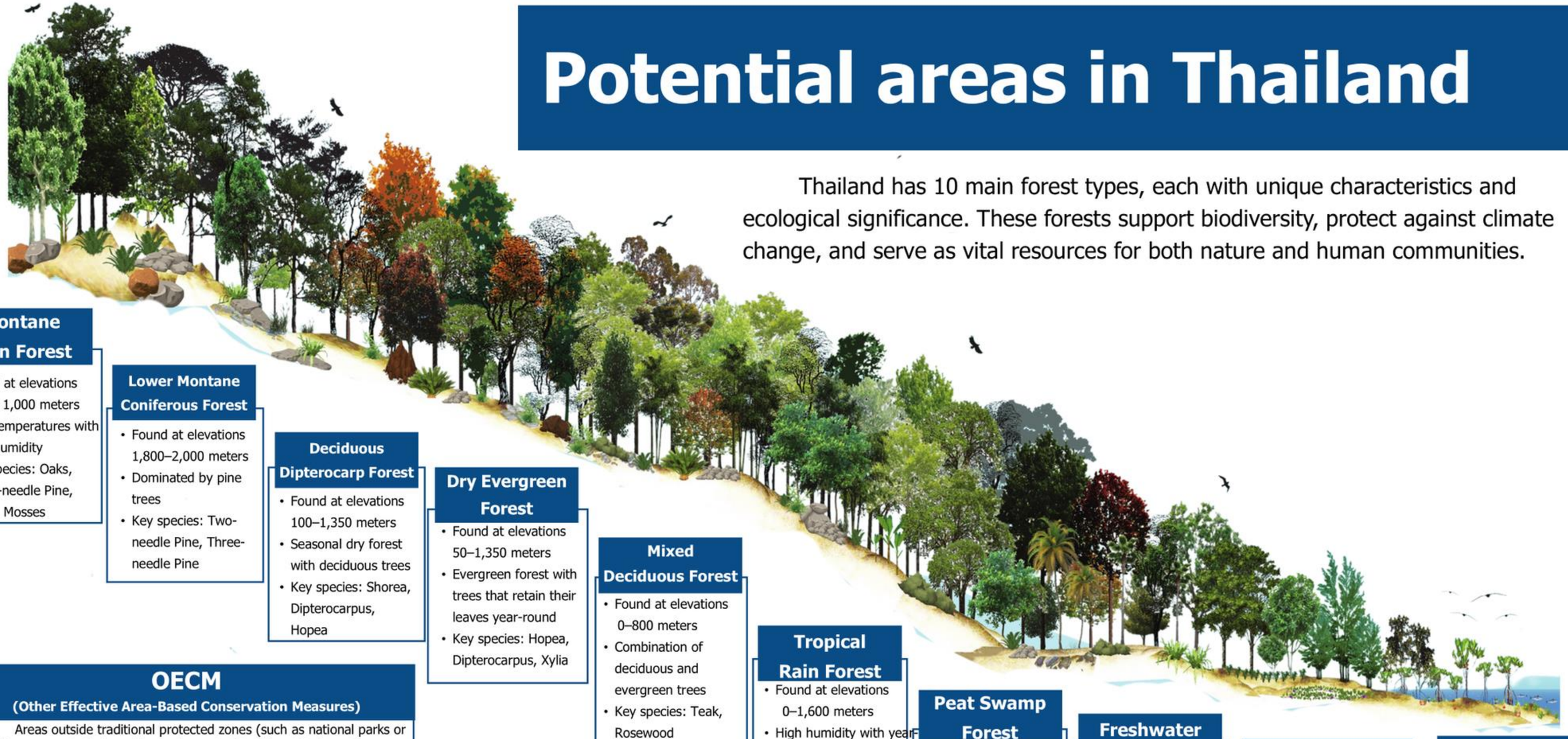
www.bedo.or.th

BEDO starts working on Biodiversity Credit



Potential areas in Thailand

Thailand has 10 main forest types, each with unique characteristics and ecological significance. These forests support biodiversity, protect against climate change, and serve as vital resources for both nature and human communities.



Montane Rain Forest

- Found at elevations above 1,000 meters
- Cool temperatures with high humidity
- Key species: Oaks, Three-needle Pine, Ferns, Mosses

Lower Montane Coniferous Forest

- Found at elevations 1,800–2,000 meters
- Dominated by pine trees
- Key species: Two-needle Pine, Three-needle Pine

Deciduous Dipterocarp Forest

- Found at elevations 100–1,350 meters
- Seasonal dry forest with deciduous trees
- Key species: Shorea, Dipterocarpus, Hopea

Dry Evergreen Forest

- Found at elevations 50–1,350 meters
- Evergreen forest with trees that retain their leaves year-round
- Key species: Hopea, Dipterocarpus, Xylia

Mixed Deciduous Forest

- Found at elevations 0–800 meters
- Combination of deciduous and evergreen trees
- Key species: Teak, Rosewood

Tropical Rain Forest

- Found at elevations 0–1,600 meters
- High humidity with year-round rainfall
- Key species: Dipterocarps, Ironwood, Magnolia

Peat Swamp Forest

- Found at elevations 0–30 meters
- Waterlogged forests with organic-rich soil
- Key species: White Samet, Red Samet, Nipa Palm

Freshwater Swamp Forest

- Found in lowland floodplains and wetlands
- Key species: Papyrus, Reed

Strand Vegetation (Beach Forest)

- Found along sandy coastal areas with strong winds
- Key species: Casuarina (Beach Pine), Beach Morning Glory, Pandanus

Mangrove Forest

- Found in coastal and brackish water areas
- Key species: Mangroves (Rhizophora), Avicennia, Sonneratia

OECM

(Other Effective Area-Based Conservation Measures)

Areas outside traditional protected zones (such as national parks or wildlife sanctuaries) that still contribute significantly to biodiversity conservation. These areas are not formally recognized as protected areas but are managed in ways that sustain ecosystems and biodiversity. OECM sites can be

- Community-managed forests
- Privately protected areas
- Agroforestry systems
- Sacred and cultural forests
- Wetlands and coastal areas

2025 : Biodiversity Credit Framework & Pilot Project Start

01 Biodiversity Credit Standard — BEDO/ACADEMIC

02 Biodiversity Credit Market — UNDP

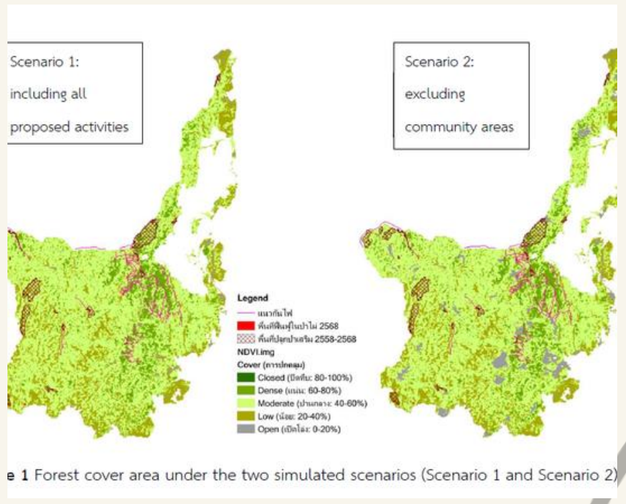
03 Legal Framework /Policy — ONEP

04 Networking & Capacity Building

BEDO
สำนักงานพัฒนาเศรษฐกิจจากฐานชีวภาพ (องค์การมหาชน)
Biodiversity-Based Economy Development Office (Public Organization)

In 2025 Pilot Area

A study on the collection of baseline data on spatial biodiversity



e 1 Forest cover area under the two simulated scenarios (Scenario 1 and Scenario 2)

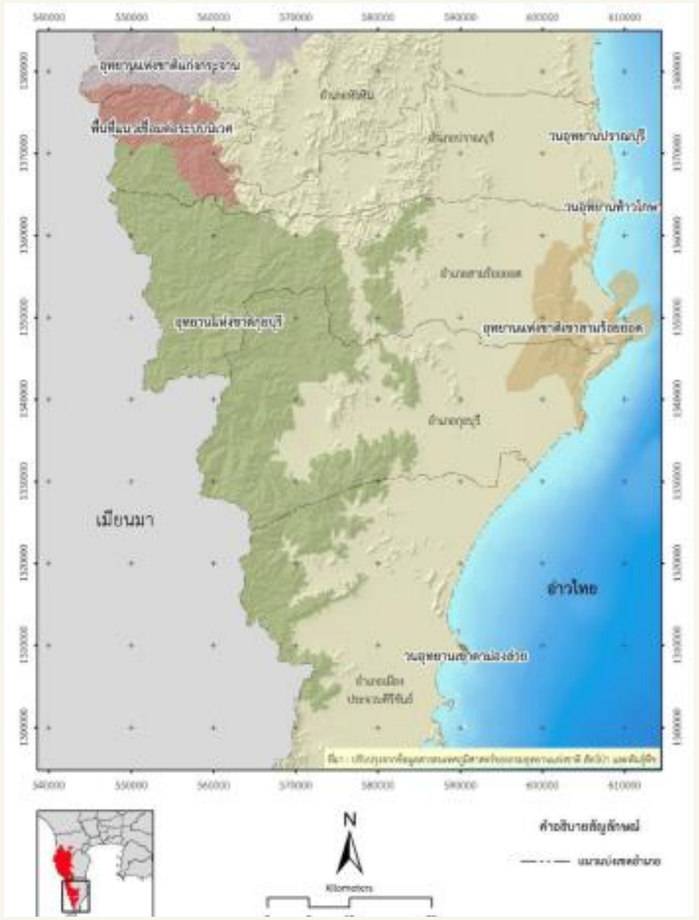
TERRASOS

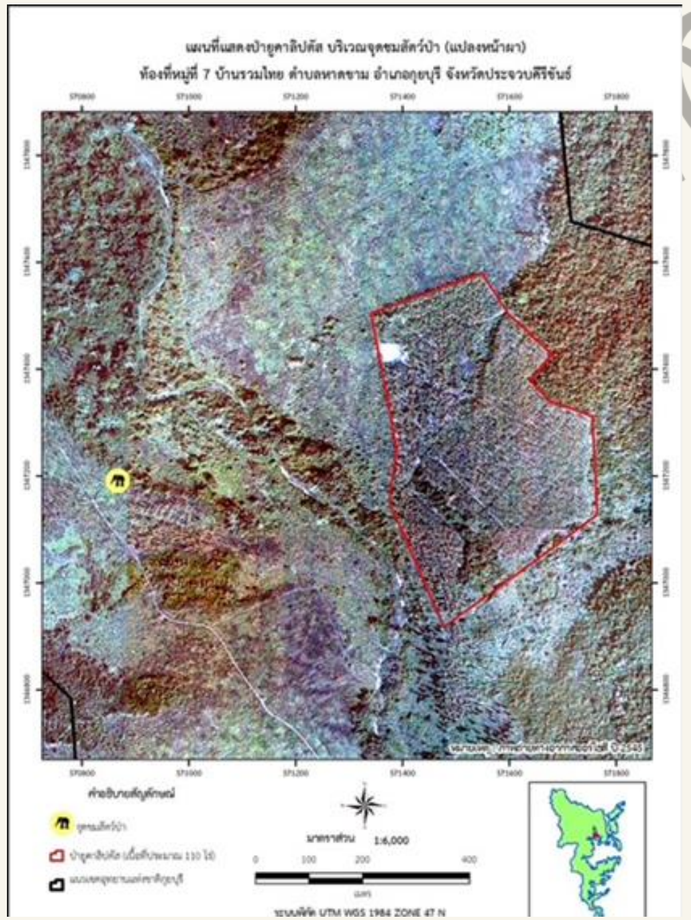
BEDO
สำนักงานพัฒนาเศรษฐกิจจากฐานชีวภาพ (องค์การมหาชน)
Biodiversity-Based Economy Development Office (Public Organization)

In 2026

Expand the study to KuiBuri,Prachuap Khiri Khan

“Protected Area”





VERRA

TERRASOS

Thailand's Readiness — Key Strengths

✓

National Biodiversity Strategies

Aligned with global frameworks + a Biodiversity Finance Plan developed by ONEP & BIOFIN + explicit recognition of Nature Positive and biodiversity credits in the 14th NESDP

✓

Growing Private Sector Commitment

Increasing ESG & sustainability reporting, including growing alignment with TNFD framework

✓

Community-Based Conservation

Extensive community forest network under Royal Forest Department — legally supported co-management model, strong candidate for OECM-linked credits

✓

Landscape Restoration Initiatives

Mae Fah Luang Foundation leading restoration programs as potential pilot sites

✓

Market-Based Mechanisms Experience

Experience with market-based mechanisms like T-VER

Identified Gaps & Challenges to Address

1

No Legal Framework

Thailand lacks specific legislation for biodiversity credits, standardized methodologies, and measurement guidance.

2

Structure and Regulatory Gap

Land tenure conflicts and inconsistent land-use data create friction for project development.

3

Data Limitations

Incomplete baseline & species data, unclear threatened ecosystem priorities, information scattered across agencies.

3

Technical Capacity

Lack of national biodiversity metrics, accredited verifiers, and a unified monitoring system. Standard survey methods are labor-intensive but technology-based methods require expertise.

4

Early-Stage Market

Limited corporate understanding of biodiversity credits and nascent demand.

5

Risk of Double Counting

Without strong MRV systems: double counting, low transparency, and reduced credibility.

Key Challenges for Biodiversity Credit Market in Thailand

01

Risk of Greenwashing

Biodiversity credits used to justify continued environmental harm or generate reputational benefits without measurable ecological gains — e.g., issuing credits for planting without verifying long-term ecological outcomes.

02

Appropriate Biodiversity Indicators

Establishing reliable data collection and monitoring systems to measure increases in biodiversity or long-term persistence. Requires nationally standardized metrics and independent verification.

03

Financial & Technical Costs

High costs for monitoring technologies, long-term data collection, capacity development for local practitioners, and independent verification to ensure environmental integrity.

04

Credibility & Demand Risks

Unclear demand drivers and demand integrity. Creditability builds demand.

SCALING PRC WETLAND GOVERNANCE EXPERIENCE INTO SAM ROI YOT WETLANDS, THAILAND

Three Enabling Pillars Toward a Biodiversity Credit Project

EVIDENCE-BASED • COMMUNITY-CENTERED • FINANCIALLY SUSTAINABLE • ECOLOGICALLY RESILIENT

1 FINANCIAL MECHANISMS

Sustainable Finance for Wetland Resilience

PRC KEY EXPERIENCE

- Ecological compensation schemes
- Eco-restoration investments
- Payment for Ecosystem Services (PES)
- Public-private green finance mechanisms
- Eco-product value realization
- Central–local co-financing

APPLICATION IN SAM ROI YOT

- Develop a Wetland Ecosystem Service Valuation (flood control, fisheries nursery, carbon sequestration, biodiversity, recreation).
- Establish a Wetland Conservation Fund with blended finance.
- Incentivize community stewardship through performance-based grants.
- Explore eligibility for biodiversity credit and carbon credit schemes.

EXPECTED OUTCOMES

- Stable and long-term financing
- Community livelihood enhancement
- Ecosystem restoration at scale
- Financial diversity & risk reduction

2 MONITORING & INTELLIGENCE TOOLS

Science-Based Monitoring for Adaptive Management

PRC KEY EXPERIENCE

- Satellite remote sensing and GIS monitoring
- Ecological redline and spatial zoning
- Biodiversity databases and information platforms
- Hydrological and water quality monitoring
- Decision support systems for wetland management

APPLICATION IN SAM ROI YOT

- Remote Sensing (Sentinel, Landsat, Drone)
- GIS & Habitat Mapping
- Water Quality & Hydrological Monitoring
- Biodiversity Monitoring (Birds, Fish, Vegetation)
- Community Based Monitoring (Citizen Science)

INTEGRATED WETLAND MONITORING FRAMEWORK

Data → Information → Knowledge → Decision → Action

Data Collection (Real-time) → Analysis & Modeling → Early Warning & Alerts → Adaptive Management → Impact Evaluation

EXPECTED OUTCOMES

- Timely and accurate decision-making
- Reduced ecological risk and uncertainty
- Transparent and verifiable data
- Improved ecosystem resilience

3 INVASIVE SPECIES MANAGEMENT

Strategic Management of Typha and Other Invasives

PRC KEY EXPERIENCE

- Ecological zoning and habitat management
- Integrated control combining hydrology, vegetation, and community participation
- Long-term monitoring and early warning of invasive spread
- Adaptive management based on ecosystem processes

APPLICATION IN SAM ROI YOT

Adaptive Invasive Plant Management Plan

1. **Assessment & Mapping** (Extent, Density, Impact)
2. **Zonation** (Core, Buffer, Use, Restoration Zones)
3. **Control & Removal** (Manual, Mechanical, Ecological)
4. **Hydrological Restoration** (Flow, Water Level, Sediment Mgmt.)
5. **Monitoring & Early Warning** (Remote Sensing & (Community Alerts)

KEY PRINCIPLES

- Prevent Further Spread
- Restore Hydrological Balance
- Maintain Habitat Mosaic and Biodiversity
- Engage Local Communities
- Adaptive Management

EXPECTED OUTCOMES

- Controlled invasive species expansion
- Improved habitat quality
- Enhanced biodiversity and ecosystem functions
- Sorongery stewardship

INTEGRATED GOVERNANCE APPROACH

Science • Finance • Community • Policy

Bringing together financial sustainability, intelligent monitoring, and adaptive management to achieve measurable conservation outcomes and generate biodiversity value.

RESTORED WETLAND ECOSYSTEMS
Improved habitat connectivity, water regulation, and ecosystem services

CLIMATE RESILIENCE & NATURE-BASED SOLUTIONS
Flood mitigation, carbon sequestration, and coastal protection

SUSTAINABLE LOCAL LIVELIHOODS
Eco-tourism, sustainable fisheries, and green community enterprises

VERIFIABLE ENVIRONMENTAL OUTCOMES
Science-based metrics and transparent reporting

BIODIVERSITY CREDIT PROJECT

Credible • Measurable • Additional • Verifiable

Generating biodiversity credits through high-integrity wetland conservation, restoration, and community stewardship.

- Habitat Integrity
- Species Conservation
- Ecosystem Services
- Community Benefits
- Financial Sustainability

SAM ROI YOT WETLANDS, THAILAND

A Model for ASEAN Coastal Wetland Governance and Nature-Positive Development

VISION: Healthy Wetlands • Resilient Communities • Sustainable Economy • Biodiversity Positive Future

Thank You!

Becoming Nature Positive is a Potential Solution to the Biodiversity Crisis

TALK TO US

Biodiversity-Based Economy Development Office (Public Organization)
The Government Complex, Building Ratthaprasasanabhakti. 9th floor 120
3 Chaeng-watthana Rd., Thungsonghong Laksi, Bangkok 10210 Thailand

EMAIL: NATTHIYAK@BEDO.OR.TH
NAMPHUNG@BEDO.OR.TH

www.bedo.or.th

BirdLife International and Flyways

Spoon-billed Sandpiper

BirdLife INTERNATIONAL

Presented by:
Vinayagan Dharmarajah

Date:
May 2026

BirdLife's Vision of Flyways Conservation

Flyways as a mechanism to deliver Sustainable Development and Green Growth

Birds

Work at a structured network of sites along the EAAF as well as addressing other threats to birds is critical for flyways conservation.

Climate

Protection, restoration, and management of migratory bird habitats alongside proper siting of energy infrastructure helps address the climate emergency.

Agriculture

Sustainable management of agricultural landscapes benefits both people and birds.

Water Management

The sustainable management of waterbodies used by birds benefits people.

Photos left to right: © 1&3 Nick Athanas/Tropical Birding Tours, 2 Jeffrey R. Hapeman.

Civil Socity Partnership for Nature

Civil society support through network of national Partners with local insight and expertise who can;

- Support and work with national decision-makers to facilitate conservation
- Working with communities and local governments to facilitate investments that benefit nature

126 partners globally

who understand local challenges and needs

Conservation Science

Scientific support as the **IUCN Red List Authority on Birds** and as **thought leaders and leading practitioners** in the transnational conservation of migratory birds.

GLOBAL FLYWAYS

KBA
KEY BIODIVERSITY AREAS

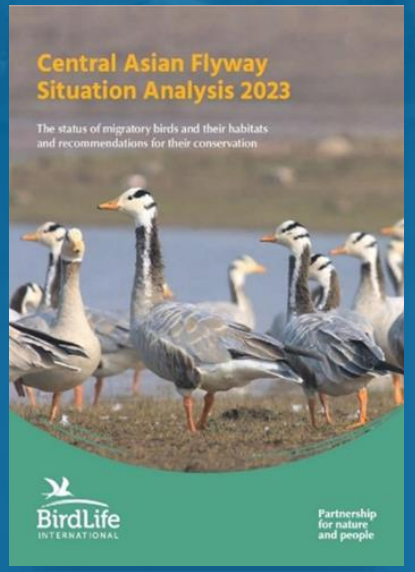
Photos left to right: © Ben Jobson, Jacelyn See, Shutterstock.

Selangor
© Jacelyn See

Supporting Flyways Policy

Support the work of the **EAAFP**

Lead the **CMS Energy Task Force**



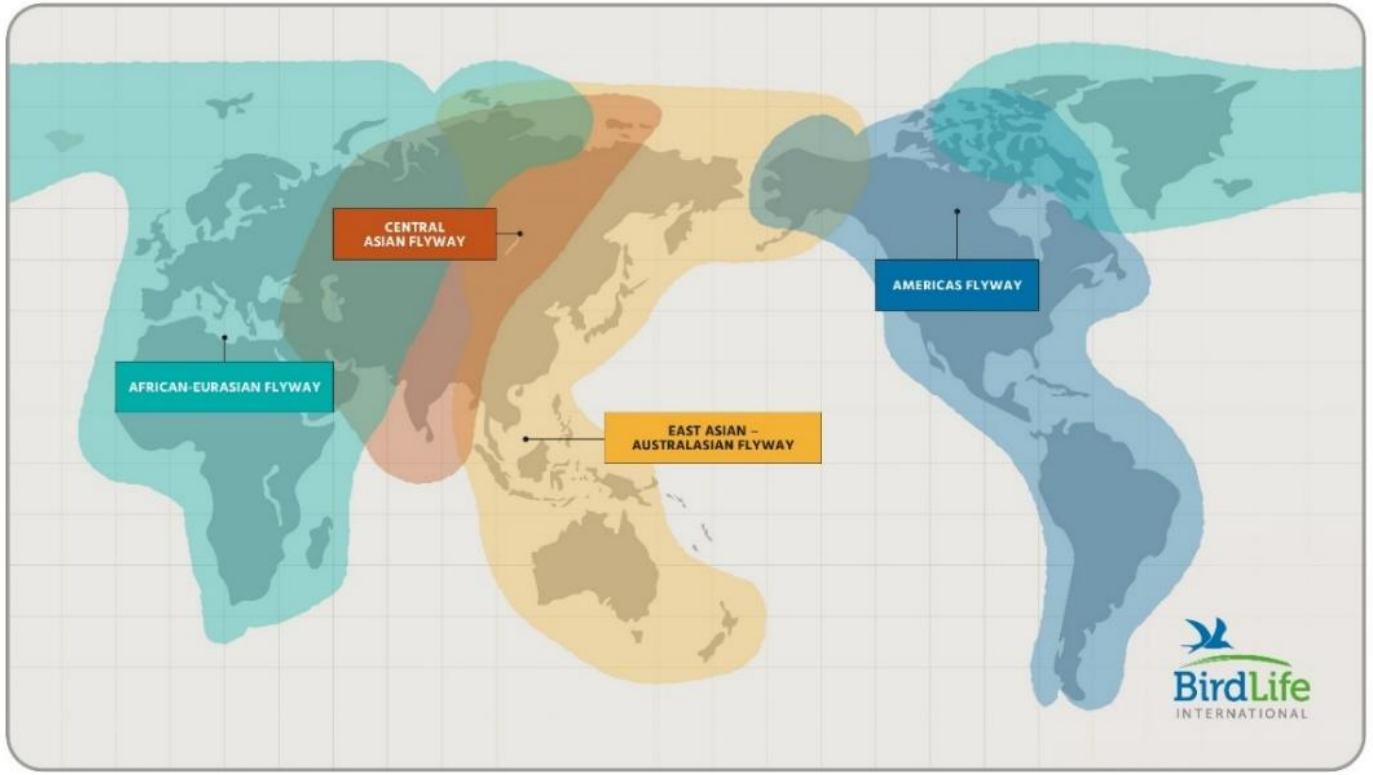
Developed the **Central Asian Flyway Situation Analysis and the Vulture Multiple Species Action**

Supported the establishment of 3 regional task forces to combat the **illegal take of birds** and **developed 3 Situation Analysis including for Mainland Southeast Asia**

Supporting and catalysing Regional Flyway Initiatives around the world

Technical expertise to;

- Identify the most important sites for **birds and climate**
- Identify ecosystem services and design investments at these sites that benefit both **birds** and **people**
- Support the **safeguarding** of investments and **measuring conservation impact**

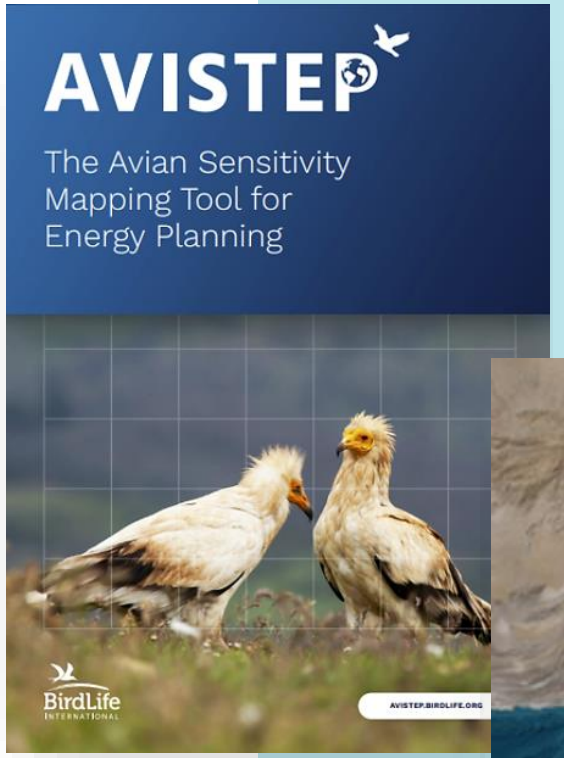


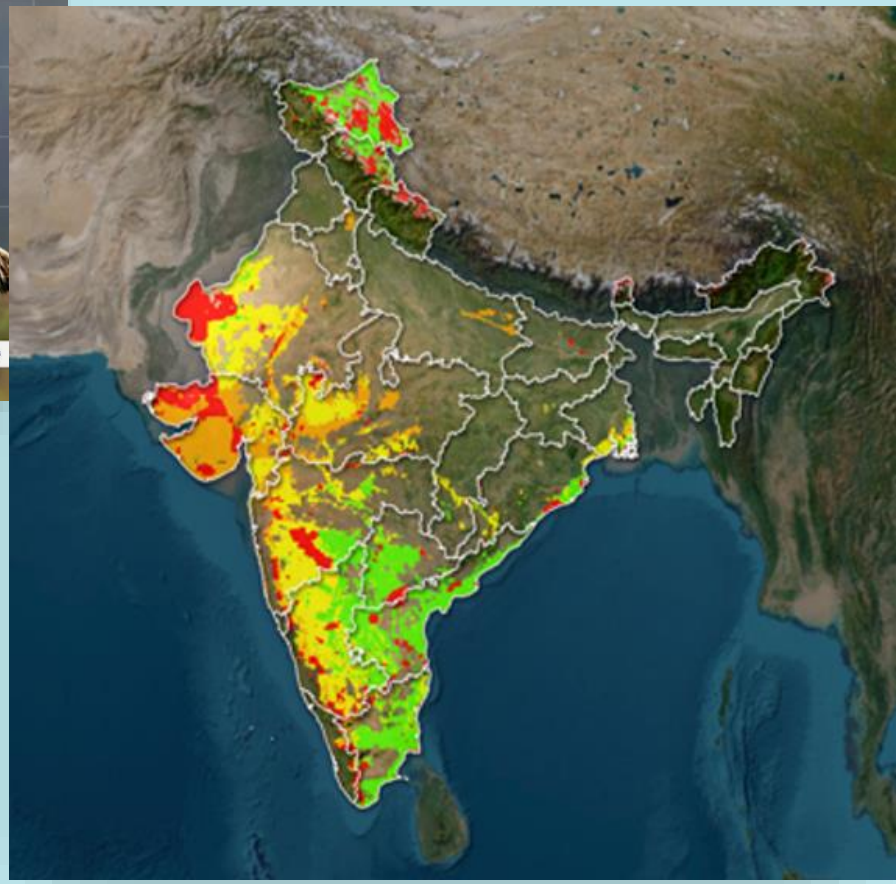
THE WORLD BANK

ADB

CAF BANCO DE DESARROLLO DE AMÉRICA LATINA

Innovative solutions to guide investment decisions





IBAT
Integrated Biodiversity Assessment Tool

Photos left to right: © Ben Jobson, Jacelyn See, Shutterstock.

Civil Society Granting

Experience in **bolstering capacity of civil society** through regranting.

CRITICAL ECOSYSTEM PARTNERSHIP FUND

BirdLife INTERNATIONAL

CEPF Mediterranean Basin Biodiversity Hotspot

Investment Summary (October 2017 to December 2023):

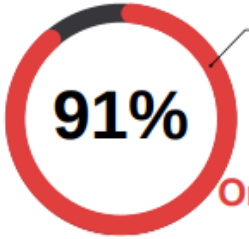
USD **10.3** million granted

129 Civil Society Organizations have been awarded

170 projects granted (131 small grants, and 57 large grants)

13 countries funded

In North Africa, the Middle East, the Balkans, and Cabo Verde



of grants awarded to Local Organizations

69 KEY BIODIVERSITY AREAS have benefited from grantee actions, covering 624,497 ha.

METTs have been completed for **52** PROTECTED AREAS covering 973,108 ha

Thank You

Far Eastern Curlew

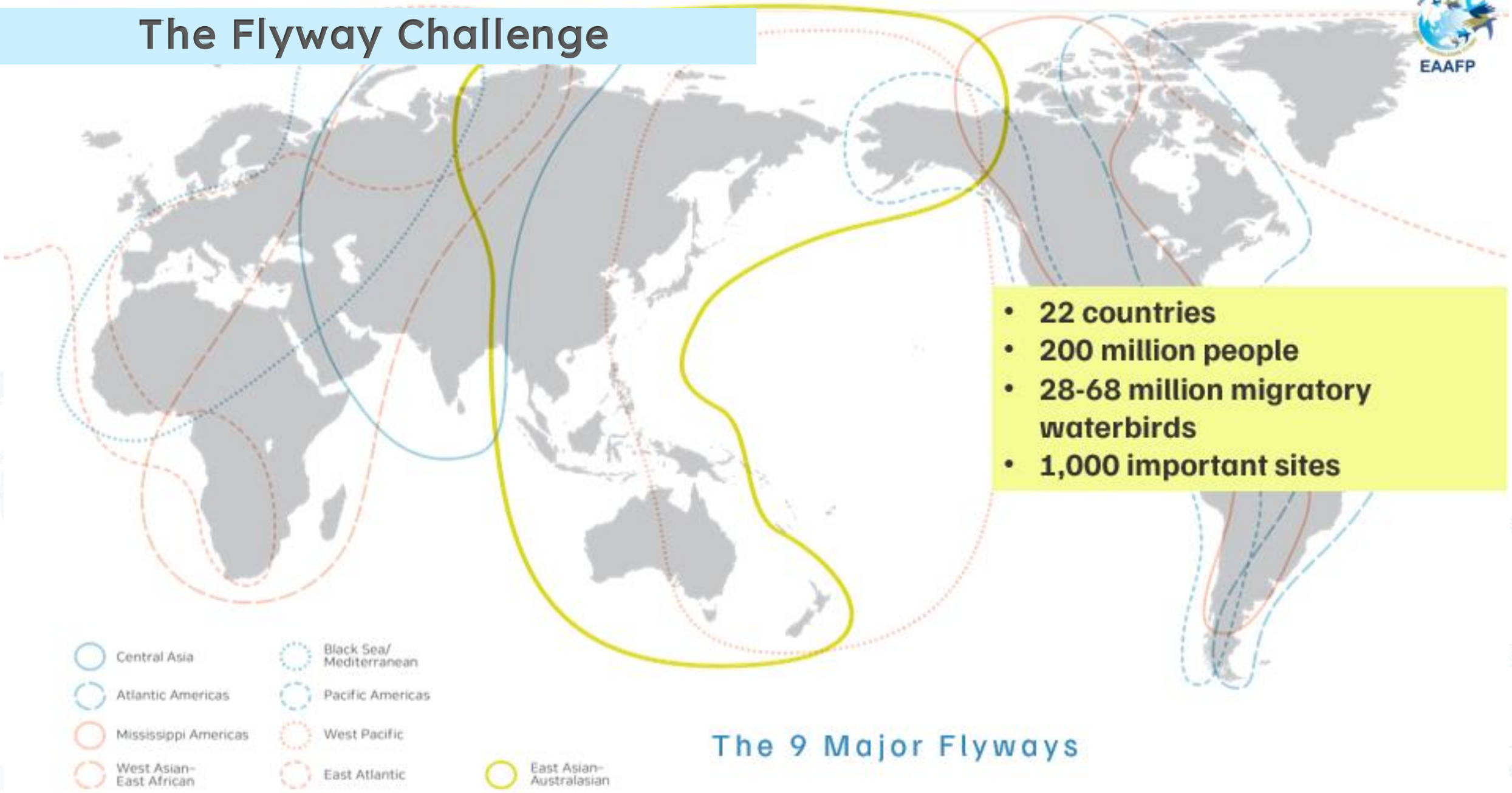
BirdLife INTERNATIONAL

EAST ASIAN–
AUSTRALASIAN FLYWAY
PARTNERSHIP

Connecting Regional Cooperation, Science, and Development Finance Across the Flyway

Yoon Kyung Lee
Deputy Chief Executive, EAAFP Secretariat
26 May 2026, Manila, Philippines

The Flyway Challenge



The 9 Major Flyways

- 22 countries
- 200 million people
- 28-68 million migratory waterbirds
- 1,000 important sites

The East Asian–Australasian Flyway Partnership – 42 Partners

National Governments (18)

Inter-Governmental Organisations (6)

CMS

Ramsar

FAO

CAFF

Convention on Biological Diversity

ACB

International Organisation (1)

IUCN

International Non-Government Organisations (16)

AWSG

International Crane Foundation

Wetlands International

WWF

BirdLife International

公益財団法人 日本野鳥の会

WWT

Pūkorokoro Miranda Naturalists' Trust

WCS

Hanns Seidel Stiftung

保尔森基金会 PAULSON INSTITUTE

HKBWS 香港觀鳥會

MCF 红树林基金会

Ramsar Regional Center East Asia

ECO FOUNDATION GLOBAL

ICLEI Local Governments for Sustainability

CBC Cities Biodiversity Center

International Private Enterprise (1)

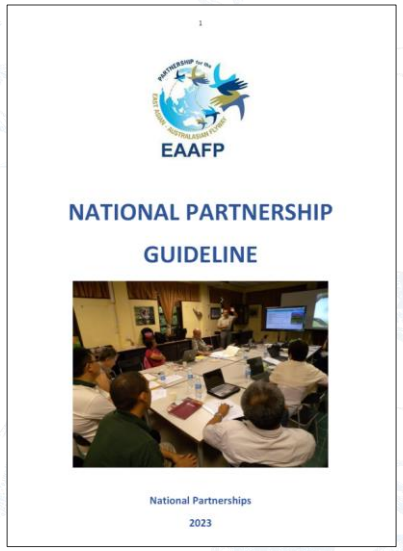
RioTinto

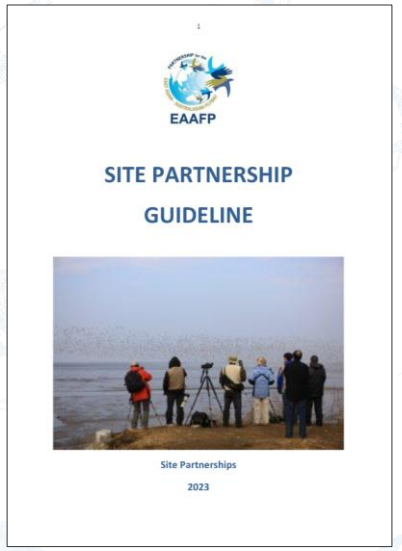
EAAFP Flyway Site Network

1,000+ sites support 28 to 68 million migratory waterbirds

USA (2)	EAAF109	Yukon Delta National Wildlife Refuge	2012
	EAAF133	Qupaluk	2016
Mongolia (11)	EAAF024	Mongol Daguur Strictly Protected Area	1997
	EAAF040	Ogii Nuur	1999
	EAAF041	Terhiyn Tsaggan Nuur	1999
	EAAF074	Khurkh-Khuiten Valley	2003
	EAAF075	Ugtam Nature Reserve	2003
	EAAF114	Dashinchilen Tsagaan Wetland	2014
	EAAF126	Buir Lake	2016
	EAAF127	Ganga Lake	2016
	EAAF128	Khar-Us Lake	2016
	EAAF129	Khyargas-Airag Lake	2016
China (20)	EAAF002	Chongming Dongtan Nature Reserve	1996
	EAAF003	Mai Po - Inner Deep Bay	1996
	EAAF004	Shuangtai Hekou National Nature Reserve	1996
	EAAF005	Yancheng National Nature Reserve	1996
	EAAF006	Yellow River Delta National Nature Reserve	1996
	EAAF025	Poyang Hu Nature Reserve	1997
	EAAF026	Xingkai Hu Nature Reserve	1997
	EAAF042	Sanjiang National Nature Reserve	1999
	EAAF043	YaluJiang National Nature Reserve	1999
	EAAF064	Dalai Hu National Nature Reserve	2001
	EAAF067	Cao Hai National Nature Reserve	2002
	EAAF068	Shengjin Hu National Nature Reserve	2002
	EAAF069	Xiang Hai National Nature Reserve	2002
	EAAF070	Zhalong National Nature Reserve	2002
	EAAF082	Anqing Yangtze Riverine Wetland Nature Reserve	2005

National Partnership & Site Partnership





- EAAFP Partnership Guidelines (PDF)
- EAAFP National Partnership Guideline (PDF)
- EAAFP Site Partnership Guideline (PDF)
- Guidelines for Sister Site Program

#	Flyway Network Site	Country	Country	Flyway Network Site
1	Yalujiang National Nature Reserve			Firth of Thames
2	Junam Reservoir			Kejo-numa
3	Zhalong National Nature Reserve			Janghang Wetland Protected Area
4	Moreton Bay, Boondall Wetlands			Yatsu-higata
5	Hunter River Estuary Wetlands			Kushiro Wetland
6	Suncheon Bay			Izumi
7	Fujimae Tidal Flat			Swan Bay Tidal Flats
8	Yubudo Tidal Flat			Sungei Buloh Wetland Reserve
9	Chongming Dongtan National Nature Reserve			Sungei Buloh Wetland Reserve
10	Incheon Songdo Tidal Flat			Mai Po Inner Deep Bay
11	Qupałuk			Higashiyoka-higata
12	Mai Po Inner Deep Bay			Sungei Buloh Wetland Reserve
13	Mai Po Inner Deep Bay			Chongming Dongtan National Nature Reserve

EAAFP Sister Sites

as of March 2026

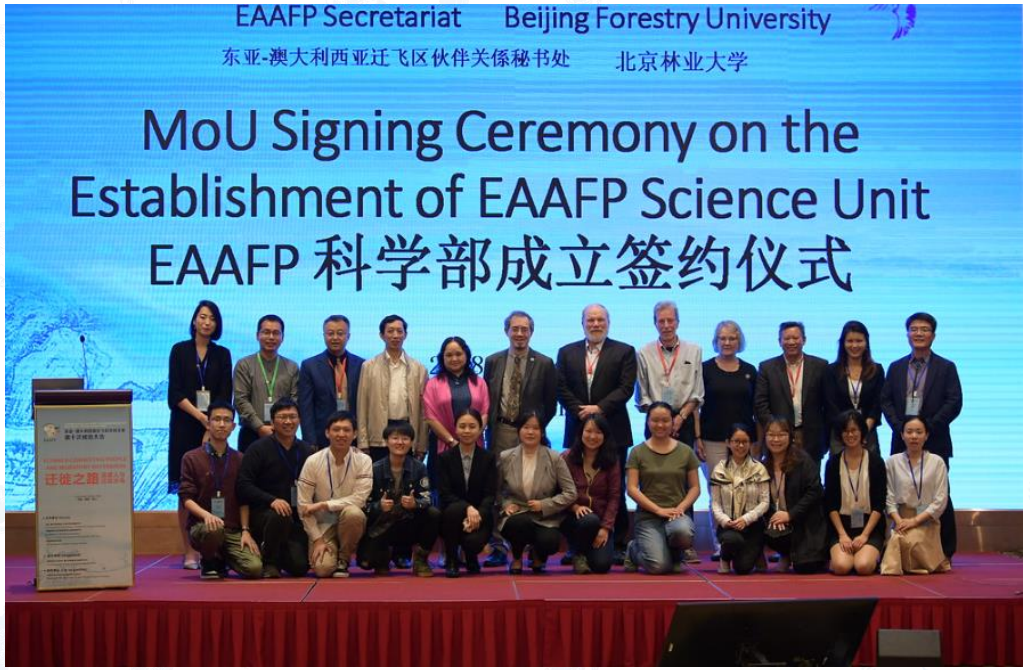
Building a chain of internationally important sites

EAAFP Strategic Plan 2019-2028

1. Flyway Site Network
2. Communication, Education, Participation, & Awareness
3. Research, building knowledge, information exchange
4. Build capacities on habitat and waterbird management
5. Flyway-wide approaches

China’s Leadership in EAA Flyway Conservation

- Joined EAAFP in 2008
- National Focal Point: National Forestry and Grassland Administration
- Hosts the EAAFP Science Unit through Beijing Forestry University
- 20 Flyway Network Sites
- Hosted two Meeting of Partners (MOPs)
  - MOP2– Beijing (2007)
  - MOP10– Changjiang (2018)
- Launched the EAAFP Science Symposium & Flyway University Alliance (2024)
- Yellow Sea Conservation
- World Heritage Sites inscription
- World Coastal Forum




首届 EAAFP 科学大会
1st EAAFP Flyway Science Symposium
迁飞通道科学大会


热烈庆祝北京林业大学建校72周年


WCF 2025 全球滨海论坛
World Coastal Forum
构建可持续滨海管理伙伴关系
Building a Partnership of Sustainable Coastal Management

Partnership with the Asian Development Bank

20 Years for the Flyway

Woven by People, Carried on Wings

The Most Threatened Flyway on Earth

Why shared mission — and shared action — cannot wait

65%	of Yellow & Bohai Sea tidal flats lost in five decades
50M+	migratory waterbirds depend on these wetlands
76	priority wetlands identified in Yellow River Basin

Nanpu, Luannan County, Bohai Coast · Photo: Terry Townshend

Red Knot
Calidris canutus
红腹滨鹬 · Nanpu, May 2026

Curlew Sandpiper
Calidris ferruginea
弯嘴滨鹬 · Nanpu, May 2026

Red-necked Stint
Calidris ruficollis
红颈滨鹬 · Nanpu, May 2026

What Nanpu reminds us

"Each of those birds carries its own extraordinary story — a journey of thousands of miles already behind it."

01 Scale beyond imagination

Tens of thousands of birds on a single mudflat — godwits, knots, sandpipers — each on a continental journey.

02 Irreplaceable stepping stones

Nanpu is one of 147 RFI priority sites along the flyway — a coastal stepping stone on Bohai Bay. Remove any one link in this chain and the whole system weakens.

03 Stakes that are personal

These are not abstract populations. They are individual lives — and the livelihoods of 200 million people who depend on these wetlands.

Three Conditions for Flyway Success

Lessons from the Yellow River Basin — and what they mean for the wider flyway

Sharp-tailed Sandpiper · Nanpu

Drawing on: "Strategy and Priority Actions for Wetland Conservation in the Yellow River Basin" · Paulson Institute / Chinese Academy of Sciences / Lao Niu Foundation (2021–2024)

1

Country Ownership

The will to protect these places must ultimately be rooted locally — in governments and communities that live alongside them.

In the Yellow River Basin, 20 high-priority wetlands remain without adequate protection. Formalising their status — as Ramsar sites or national importance wetlands — is the essential first step, and one only national governments can take.

2

Making the Economic Case Visible

Wetland value is invisible in national accounts until it disappears. RFI's work on nature credits and ecosystem services must reach finance ministries, not only conservationists.

Yellow River Basin example: diversified financing — carbon trading, green finance, ecotourism concessions — could unlock private capital at the scale that government budgets alone cannot reach.

3

Sustained Monitoring & Data

We cannot protect what we cannot measure. Much of the flyway — and especially its freshwater interior — remains data-poor.

Yellow River Basin example: year-round synchronised waterbird surveys across nine provinces showed what is possible — but most areas still lack a permanent monitoring mechanism. ADB can help change that.