



**REVERSING ENVIRONMENTAL DEGRADATION TRENDS
IN THE SOUTH CHINA SEA AND GULF OF THAILAND
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Integrating Fisheries and Habitat Management in Asia: the Regional Fisheries *Refugia* Initiative

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Background

- Emerging need to manage fisheries and aquaculture in the context of ecosystems and broader initiatives for marine management
- Several global initiatives have been promoted as mechanisms for integrating fisheries and aquaculture into broader marine management
- A wide gulf continues to exist between fisheries and environment sectors in Asia
- Environment initiatives have been promoted in terms of achieving the state of fisheries, but have often not involved mechanisms to ensure the effective integration of fisheries considerations
- Fisheries ministries and departments are focused on improving the fishery situation in face of high community dependence and participation in small-scale fisheries
- Need for the development of regional experience in building partnerships and enhancing communication between fisheries and environment sectors



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Emerging Policy Challenge

- Ensuring the effective inclusion of fisheries issues into broader initiatives for marine management is an emerging policy challenge

Role of multi-lateral, inter-governmental projects

- The UNEP/GEF South China Sea Projects is working to develop regional capacity to meet this challenge by:
 - (a) improving the understanding amongst fishing communities, managers, and policy makers of ecosystem and fishery linkages, and
 - (b) building the capacity of both fisheries and environment ministries and departments to ensure that issues facing the fisheries sector are integrated into overall marine management frameworks.



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PARTICIPATING COUNTRIES

**CAMBODIA, CHINA, INDONESIA, MALAYSIA, PHILIPPINES, THAILAND,
VIET NAM**

FOCAL MINISTRIES ARE MINISTRIES OF ENVIRONMENT

**12 GOVERNMENT DEPARTMENTS, 14 UNIVERSITIES AND RESEARCH
INSTITUTES AND ONE NGO ENGAGED AS SPECIALISED EXECUTING
AGENCIES**

**MORE THAN 100 ORGANISATIONS DIRECTLY INVOLVED IN PROJECT
IMPLEMENTATION, MORE THAN 400 INDIRECTLY INVOLVED**



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SOUTH CHINA SEA PROJECT COMPONENTS

- HABITAT DEGRADATION AND LOSS (Mangrove, Coral Reefs, Seagrass, Coastal Wetlands)
- OVER-EXPLOITATION OF FISHERIES IN THE GULF OF THAILAND
- LAND-BASED POLLUTION
- REGIONAL CO-ORDINATION
- OVERALL GOAL:
“to create an environment at the regional level, in which collaboration and partnership in addressing environmental problems of the South China Sea, between all stakeholders, and at all levels is fostered and encouraged; and to enhance the capacity of the participating governments to integrate environmental considerations into national development planning”



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Developing a Mechanism for Integrating Fisheries and Habitat Management: the Fisheries *Refugia* Approach

The UNEP/GEF Regional Working Group on Fisheries considered that the concepts used to develop any mechanism should:

- Focus on fish life-cycle and critical habitat linkages,
- Be easy for fishing communities, local government officials, and provincial level fisheries managers to relate to, and
- Provide a suitable platform for the fisheries sector in best representing fisheries issues in fora relating to multiple-use marine management.

Regional Working Group on Fisheries' Definition of Fisheries *Refugia*:

“A spatially and geographically defined, marine or coastal area in which specific management measures are applied to sustain important species [fisheries resources] during ***critical stages of their lifecycle***, for their sustainable use.”



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Conduct of Country Consultations on the Identification and Establishment of Fisheries *Refugia* Sites





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Review of Information Collated by the South China Sea Project on Fish Life-Cycle and Critical Habitat Linkages

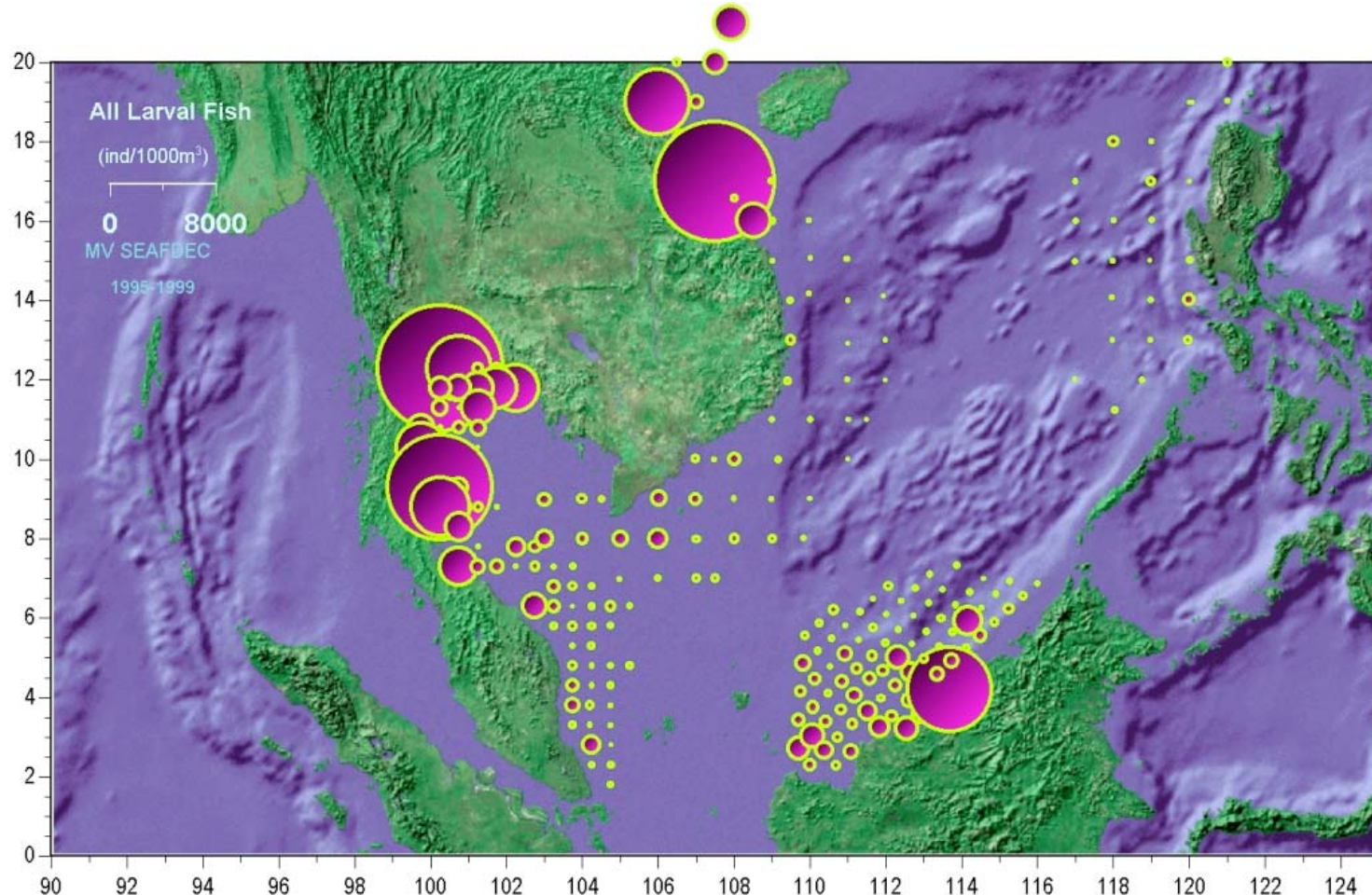
- **National Reports on Fisheries**
- **National Reports on Coral Reefs, Seagrass, Wetlands, Mangroves**
- **142 Habitat Site Characterisations**
- **Habitat Demonstration Site Documents**
- **The South China Sea Meta-Database**





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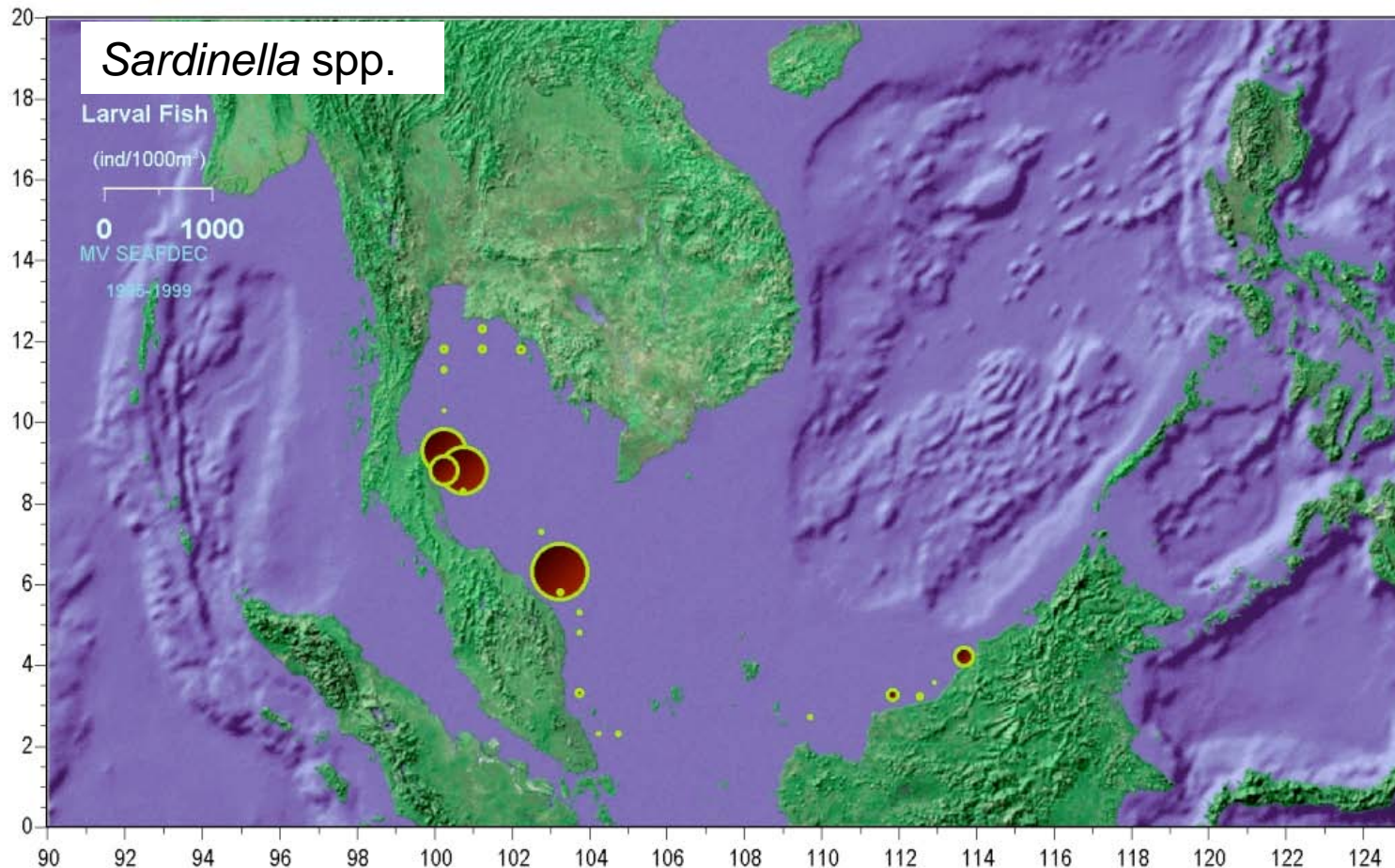
Review of Information Collected by SEAFDEC on Larval Fish Distribution and Abundance





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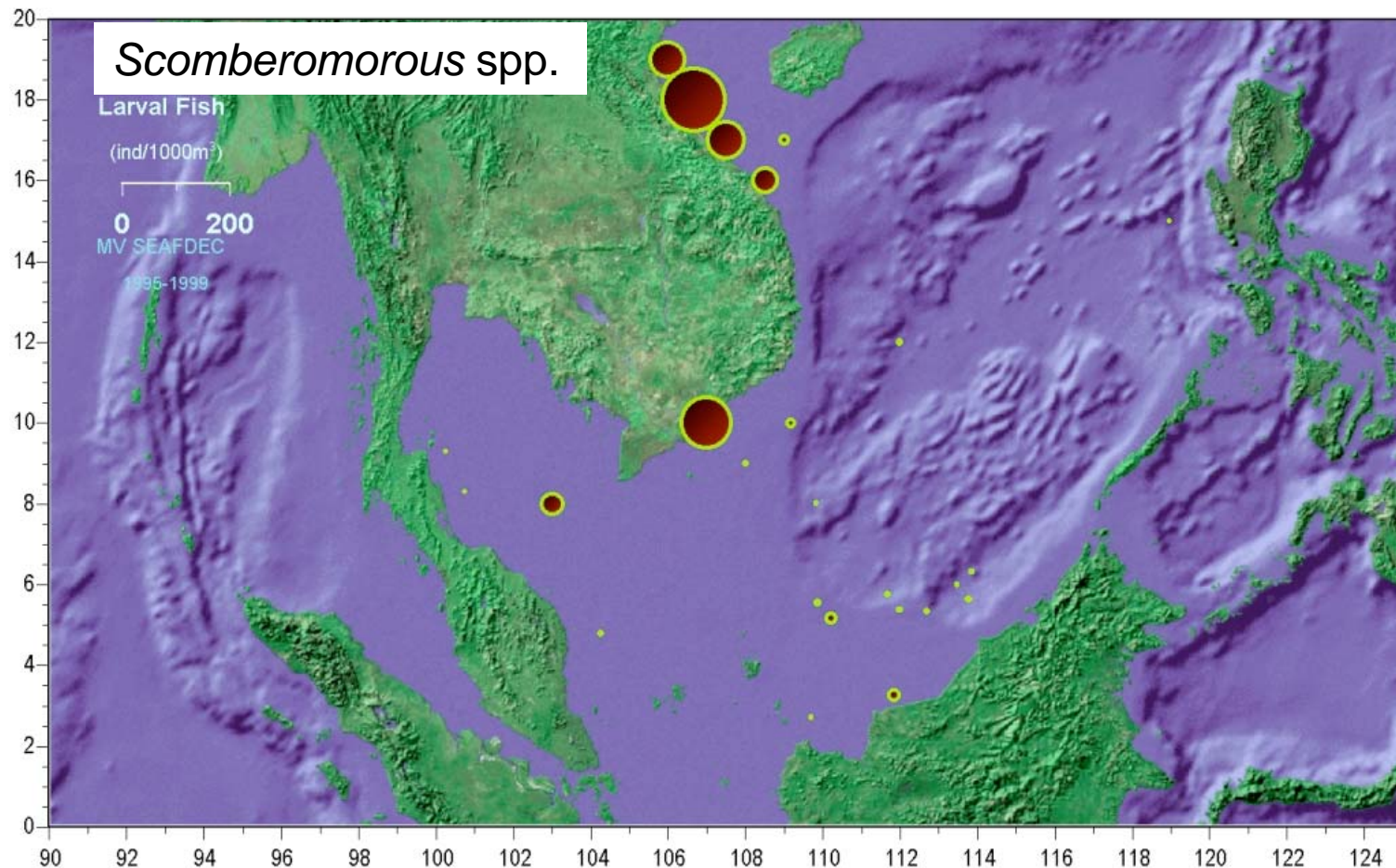
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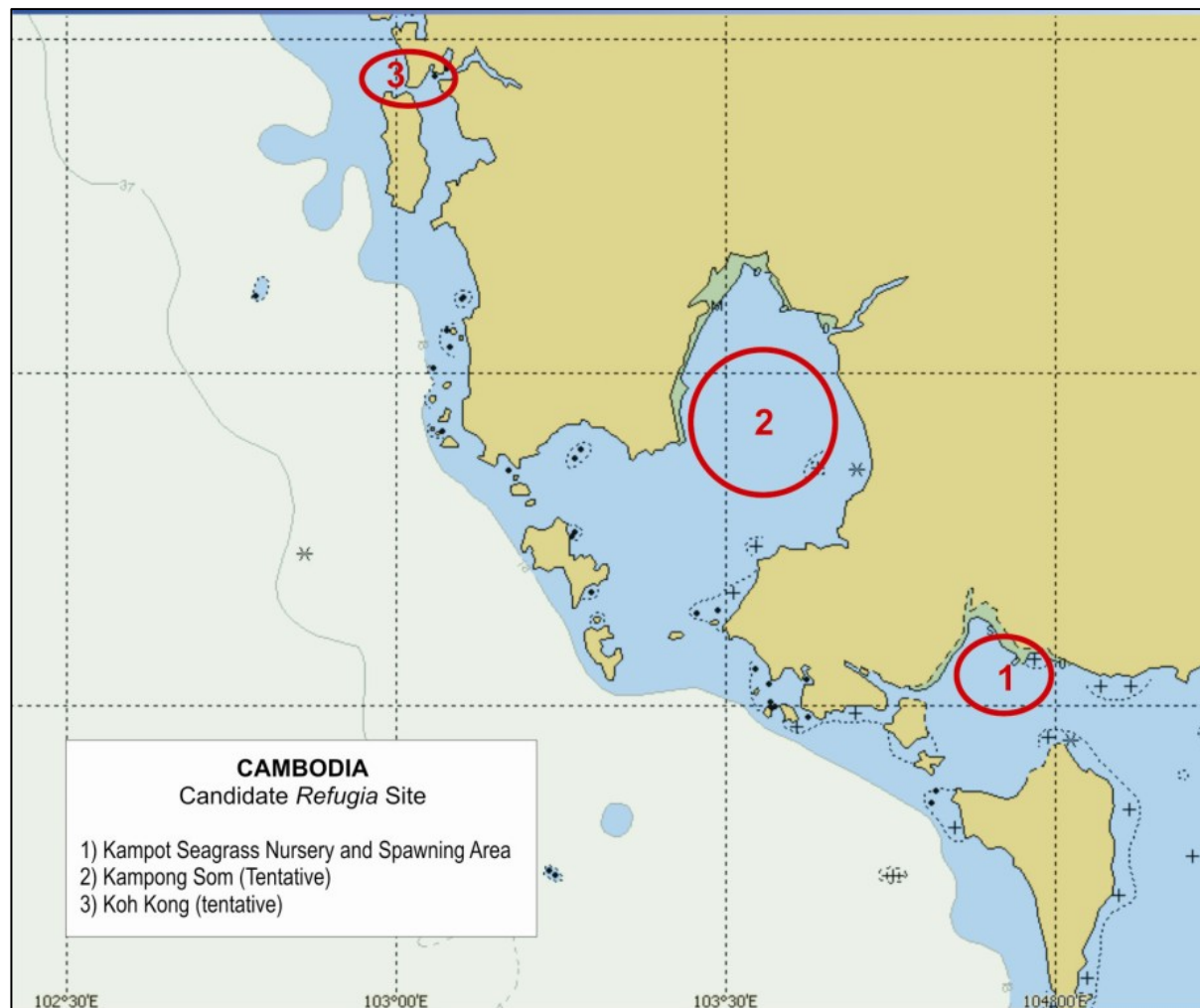
Outputs and Outcomes to Date

- Regional Guidelines on the Use of Fisheries *Refugia* in Capture Fisheries Management – contained in the SEAFDEC Regional Guidelines for Responsible Fisheries in Southeast Asia,
- Characterisation of 46 sites known as critical spawning and nursery areas for important fish species,
- Compilation of information regarding the distribution and abundance of the larvae of 28 important species in the Gulf of Thailand and the South China Sea,
- Selection of 18 sites for inclusion in an initial system of fisheries *refugia*,
- Agreements to develop one pilot fisheries *refugia* site in each participating country by June 2007,
- Syllabus for the training course on larval fish identification and early life-history.



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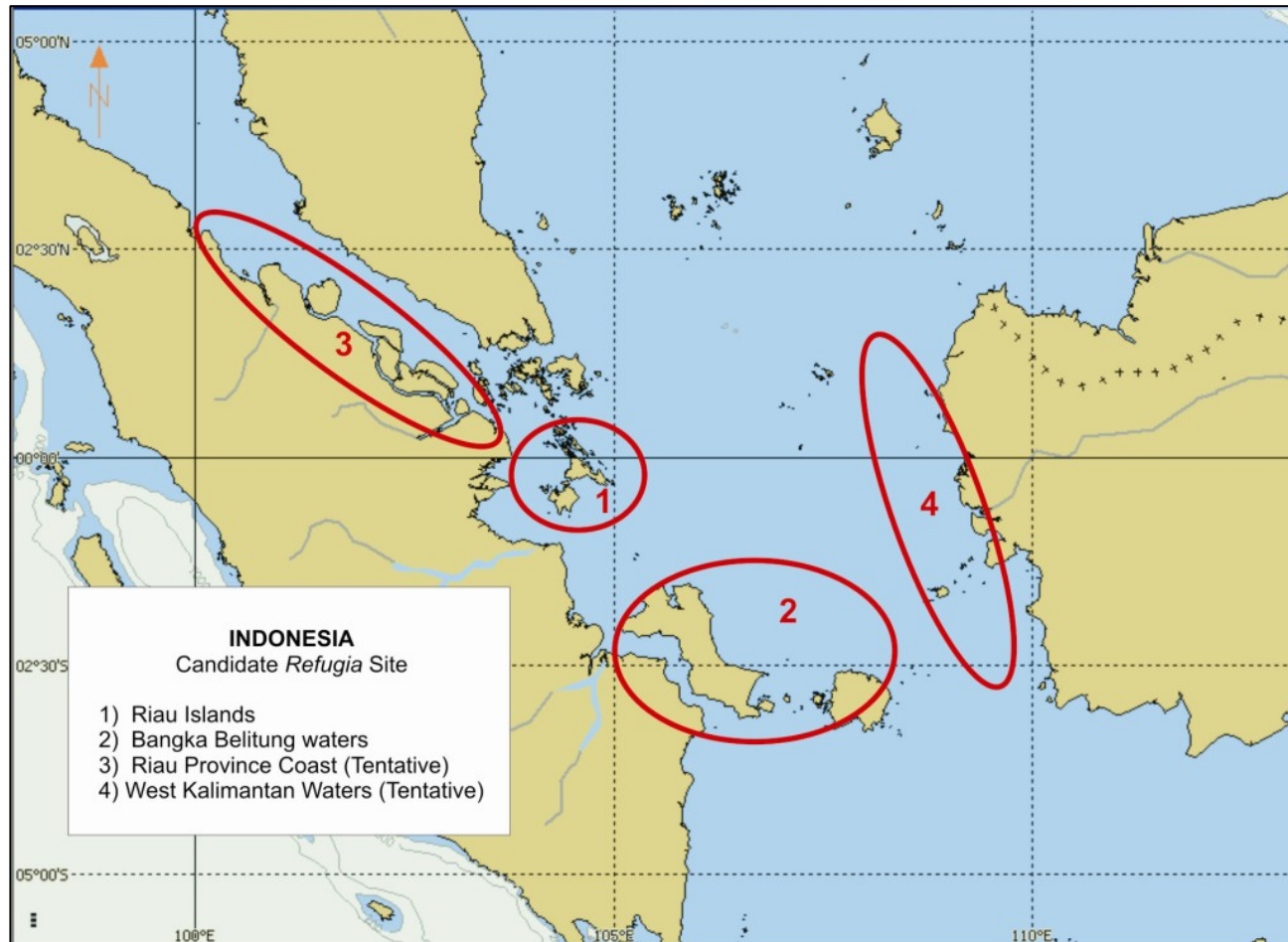
Candidate Fisheries *Refugia* Sites - Cambodia





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Candidate Fisheries *Refugia* Sites - Indonesia





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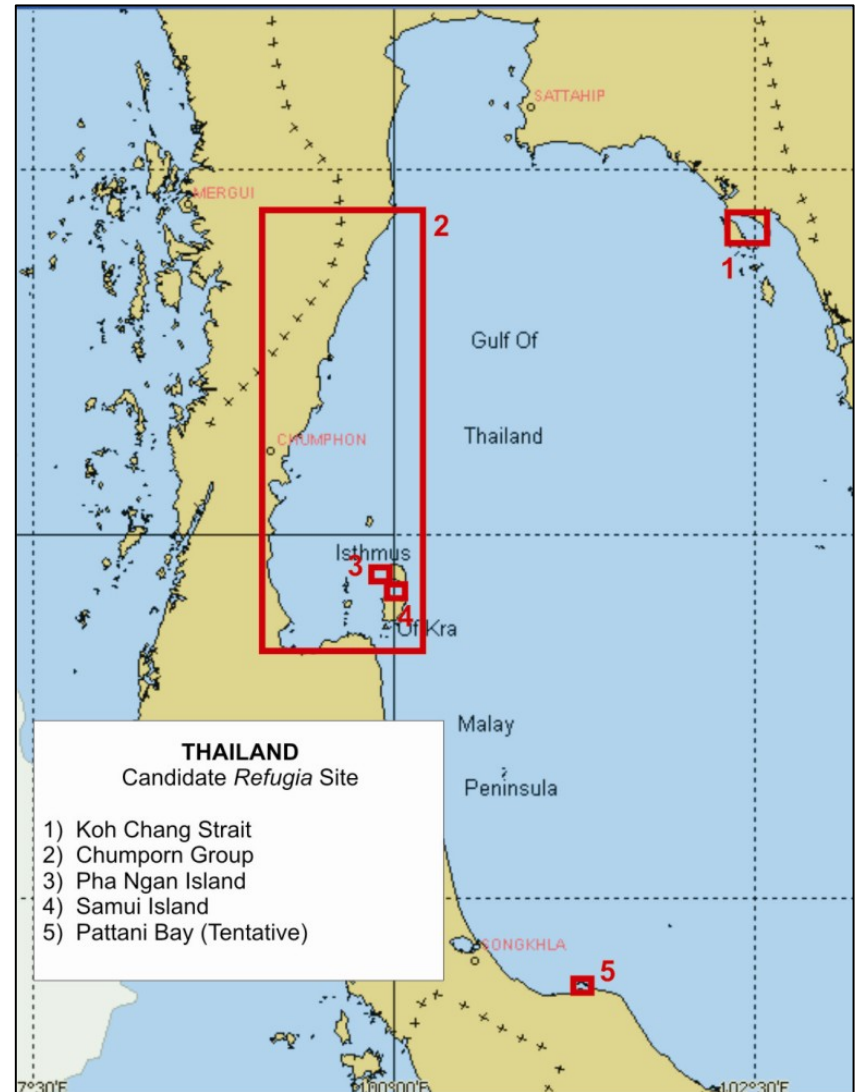
**Candidate Fisheries
Refugia Sites - Philippines**





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Candidate Fisheries *Refugia* Sites - Thailand





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Candidate Fisheries *Refugia* Sites – Vietnam

