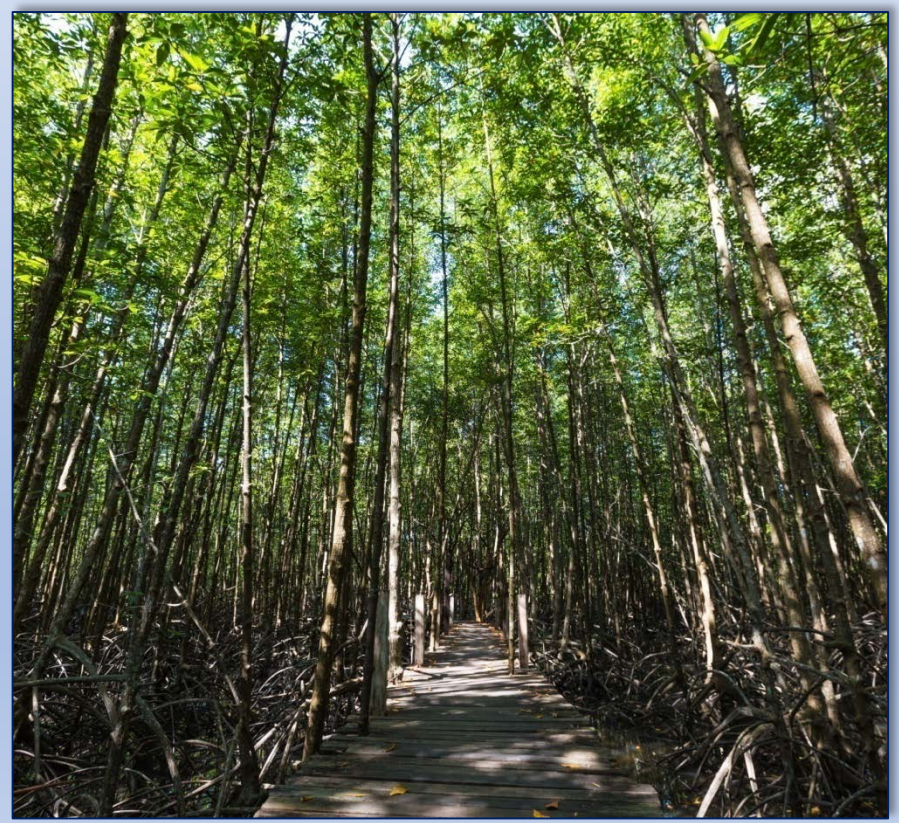


Regional Technical Meeting

on

Fisheries Resource Enhancement in Southeast Asia

Bangkok, Thailand, 24-26 April 2018

SEAFDEC

JTF
TRUST FUND - FISHERIES AGENCY OF JAPAN

Regional Technical Meeting on Fisheries Resource Enhancement in Southeast Asia

Bangkok, Thailand, 24-26 April 2018

AGENDA 4

Update SEAFDEC activities on fisheries resources enhancement

SEAFDEC/UNEP/GEF ESTABLISHMENT AND OPERATION OF A REGIONAL SYSTEM OF FISHERIES *REFUGIA* IN THE SOUTH CHINA SEA AND GULF OF THAILAND



Dr. Chris Paterson/Project Director
Weerasak Yingyuad/Technical Coordinator

content

- Introduction on fisheries and habitat in the South China Sea
- Development of Fisheries *Refugia* concept
- Development of Fisheries *Refugia* Project

Fisheries of the South China Sea

Fish stocks critically important for food security, income, and foreign exchange

↓

Fish production from SCS ≈ 10% of global production

↓

Most fish stocks fully-fished or over-fished

↓

Future landings will decline unless total effort reduced

↓

Difficult to reduce effort – high community dependence

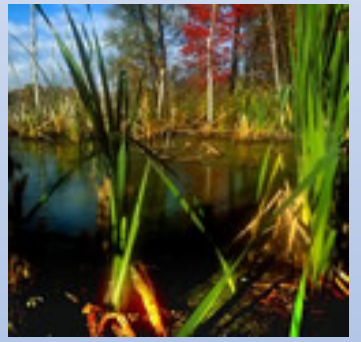
SCS habitats play a critical role in sustaining fish stocks, food supply, and incomes

- **Role of Fisheries Habitats in Sustaining Fisheries**


Mangroves


Coral Reefs


Seagrass


Wetlands

↕

Habitats are refuges for fish during critical stages of their life-cycles - e.g., as larvae, when spawning, and feeding

Ocean & Coastal Management 85 (2013) 153–163

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Status and trends in coastal habitats of the South China Sea

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ABSTRACT

The South China Sea is an area of globally significant biological diversity. The Transboundary Diagnostic Analysis prepared for this marine basin identified the issue of coastal habitat degradation and loss as a key priority issue for action. The UNEP/GEF project entitled "*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*" (SCS project) focused on these concerns through implementing a series of activities under the component on habitat degradation and loss. Important outputs of this project component were national reports on coastal habitats. This paper reviews and analyses available information from these reports and recent studies to present a review of the status and trends in coastal habitats of the South China Sea. This includes a technical summary of the best available information relating to the: distribution and extent of the dominant coastal habitats of mangroves, coral reefs, and seagrass; richness of habitat building species and hotspots of biodiversity; ranking of threats and the related rates of coastal habitat degradation and loss; and the state of coastal habitat management regimes. The use of this information in developing National Action Plans for habitats and the Strategic Action Programme for the South China Sea is reviewed. It is concluded that the science-based planning fostered by the SCS project was essential in reaching multi-lateral agreement on the regional targets and priority actions for coastal habitat management in this transboundary water body.

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1. Introduction

The South China Sea, including the Gulf of Thailand, is a global centre of shallow water marine biological diversity providing environmental goods and services critical to Southeast Asian economies. The coastal sub-regions of the nations bordering the South China Sea are home to 270,000,000 people, or 5% of the world's population, many of whom depend on the South China Sea for food and income. The high biological diversity and productivity of this globally significant marine basin is threatened by continuation of the current unsustainable patterns of use. It has also been seriously degraded in the recent past as a result of poorly planned coastal development.

The Transboundary Diagnostic Analysis (TDA) prepared for this marine basin identified the issue of coastal habitat degradation and loss as the key priority issue for action (Talaue-McManus, 2000). The UNEP/GEF project entitled "*Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand*"[3] focused on these concerns through implementing a series of activities as part of the project component entitled "*Habitat Degradation and Loss*". This component comprised four sub-components, addressing the four priority habitats in the region, namely mangroves, coral reefs, seagrass, and coastal wetlands. It is important to note that the scope of the SCS project was limited to the South China Sea and Gulf of Thailand. Hence project activities, data and information collection focussed only on the South China Sea coastlines of the riparian countries. Coastal areas of participating countries that lay outside the South China Sea were excluded from consideration.

National-level project activities of each habitat sub-component included the establishment or re-vitalisation of National Committees or technical working groups to compile and review national information and data on the science and management of coastal habitats. Information and data from past and on-going research and publications were used to develop overall descriptions of the distribution and diversity of coastal habitats, define the threats to the quality and expanse of habitats, quantify rates of coastal habitat loss

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[3] Hereafter referred to as the 'SCS project'.

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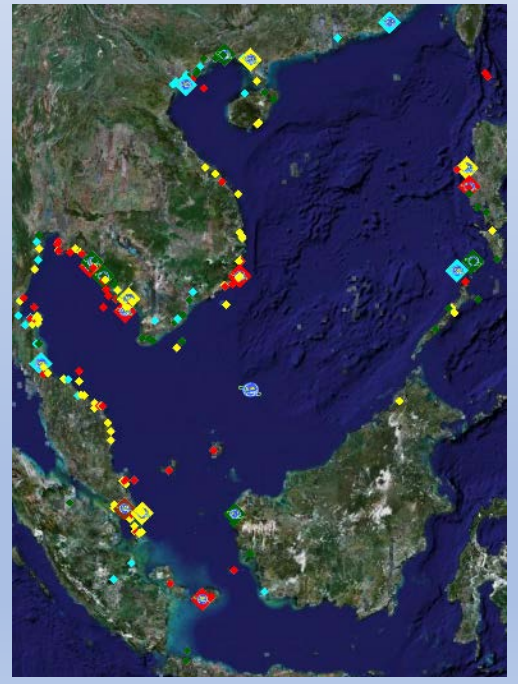
- ❖ Located at centre of the Indo-west Pacific biogeographic province (global & local significance)
- ❖11% of the world's total mangrove is found along the margins of the South China Sea (SCS)
- ❖~930,000 ha of coral reef in coastal waters of the SCS
- ❖~78,000 hectares seagrass (~1/3 of the 60 known seagrass species)
- ❖ Significant basin-wide and intra-country variation in the richness and extent of habitat building species
- ❖ Degradation and loss of habitats is a result of a multitude of persistent and emerging threats

Continued decline in the total area of habitats has raised serious concerns for sustainability of fisheries

- **Loss of Fisheries Habitats of the South China Sea**

Estimated Decadal Rates of Habitat Loss:

- Seagrass – 30%
- Mangroves – 16%
- Coral Reefs – 16%
- **Fishing is a key factor in the continued loss of marine habitats and biodiversity in the South China Sea**



Fish production is intrinsically linked to the quality and expanse of coastal habitats

Dilemma for fisheries & environment sectors is that conservation of habitat does not necessarily result in increased fish stocks while lowering fishing effort does not necessarily result in the improvement of habitat

• Development of the Fisheries *Refugia* Concept

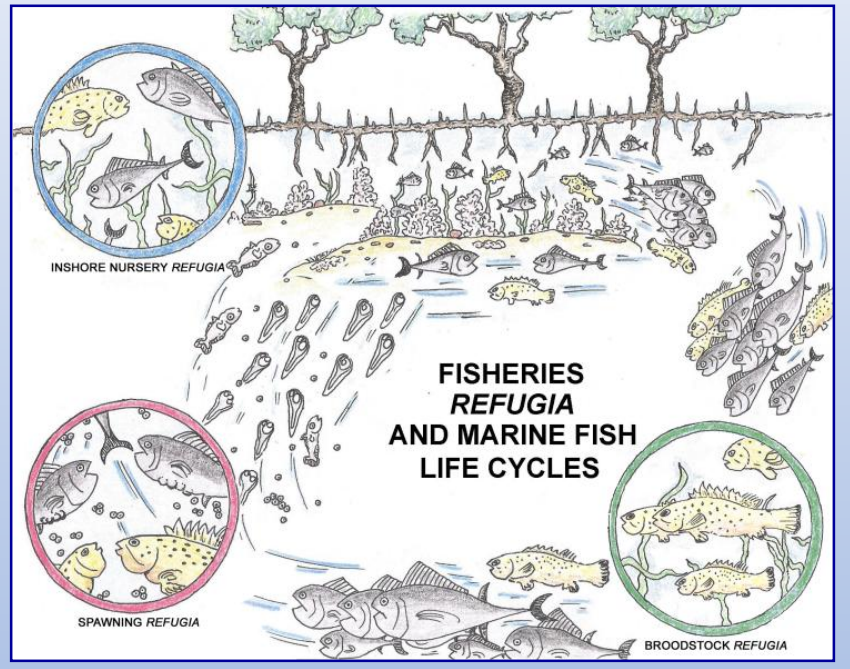
Fisheries *Refugia*:

❖Specific areas of significance to the life-cycle of fish species

❖Should be defined in space and time

❖Should NOT be no-take zones

❖Serve to safeguard spawning aggregations, nursery grounds, and migration routes



Fisheries *Refugia* are "*Spatially and geographically defined, marine or coastal areas in which specific management measures are applied to sustain important species [fisheries resources] during critical phases of their life-cycle, for their sustainable use*."

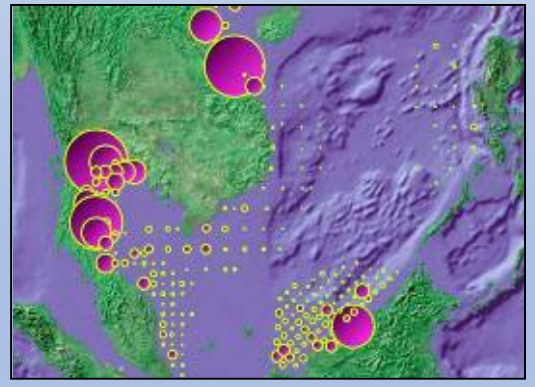
Regional Technical Meeting on Fisheries Resource Enhancement in Southeast Asia

Bangkok, Thailand, 24-26 April 2018

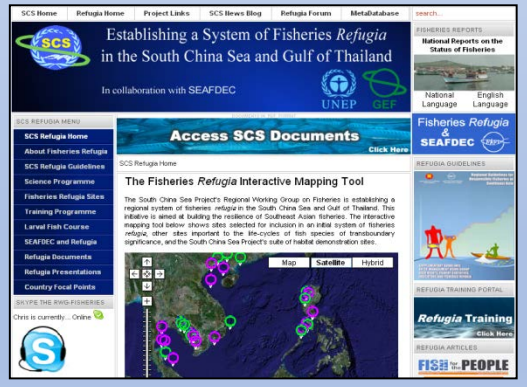
Stakeholder Consultations on *Refugia* Concept

Intergovernmental Guidelines on *Refugia*

Technical Workshops on Mapping Known *Refugia*



Review of Fish Egg and Larvae Data for *Refugia* Identification



Development of a Fisheries *Refugia* Information Portal

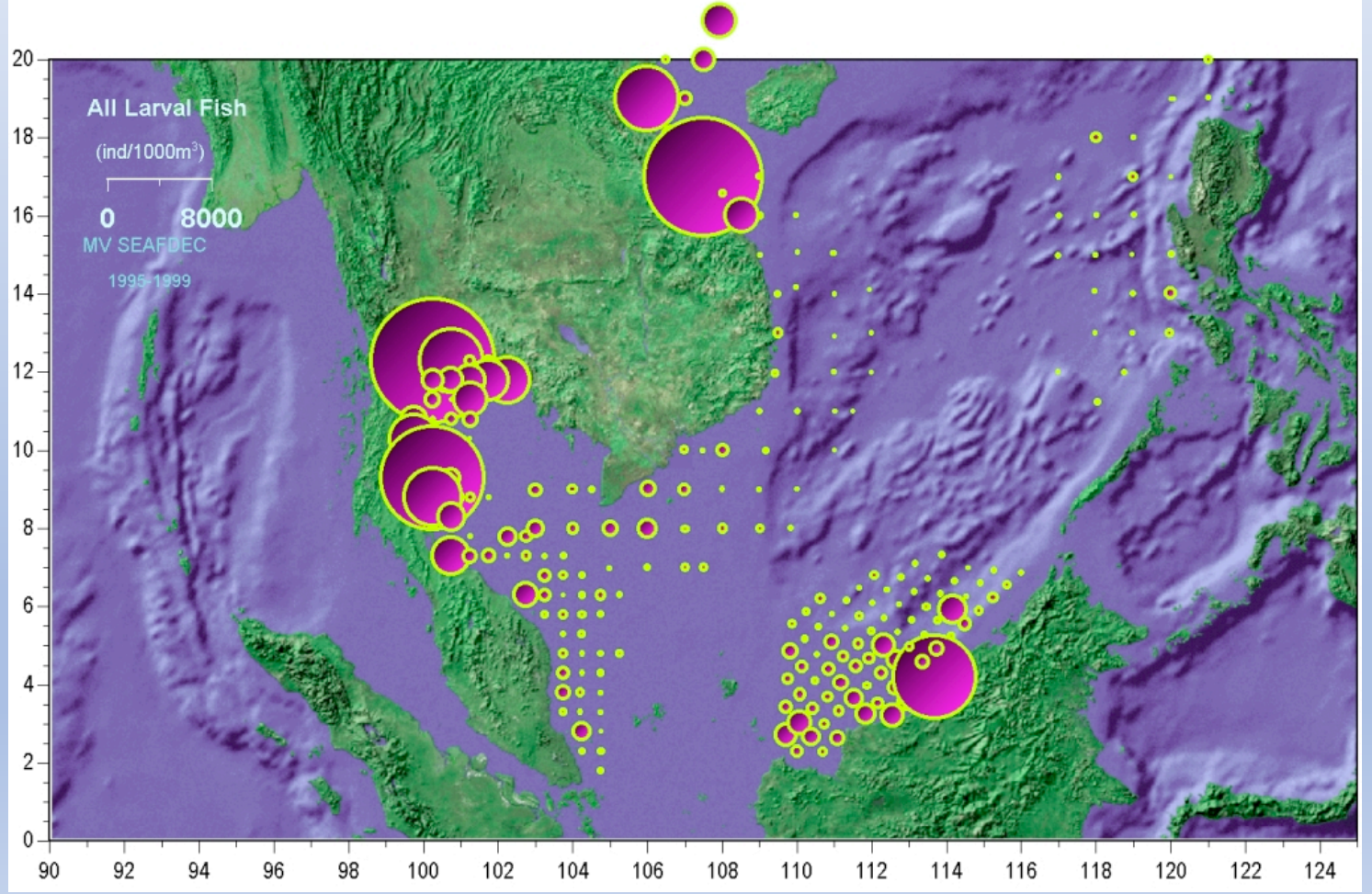
Conduct of Regional Training Events on *Refugia* Science and Management

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

Review of Information Collated by the South China Sea Project on Links Between Fish Life-Cycle and Critical Habitats

- 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

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



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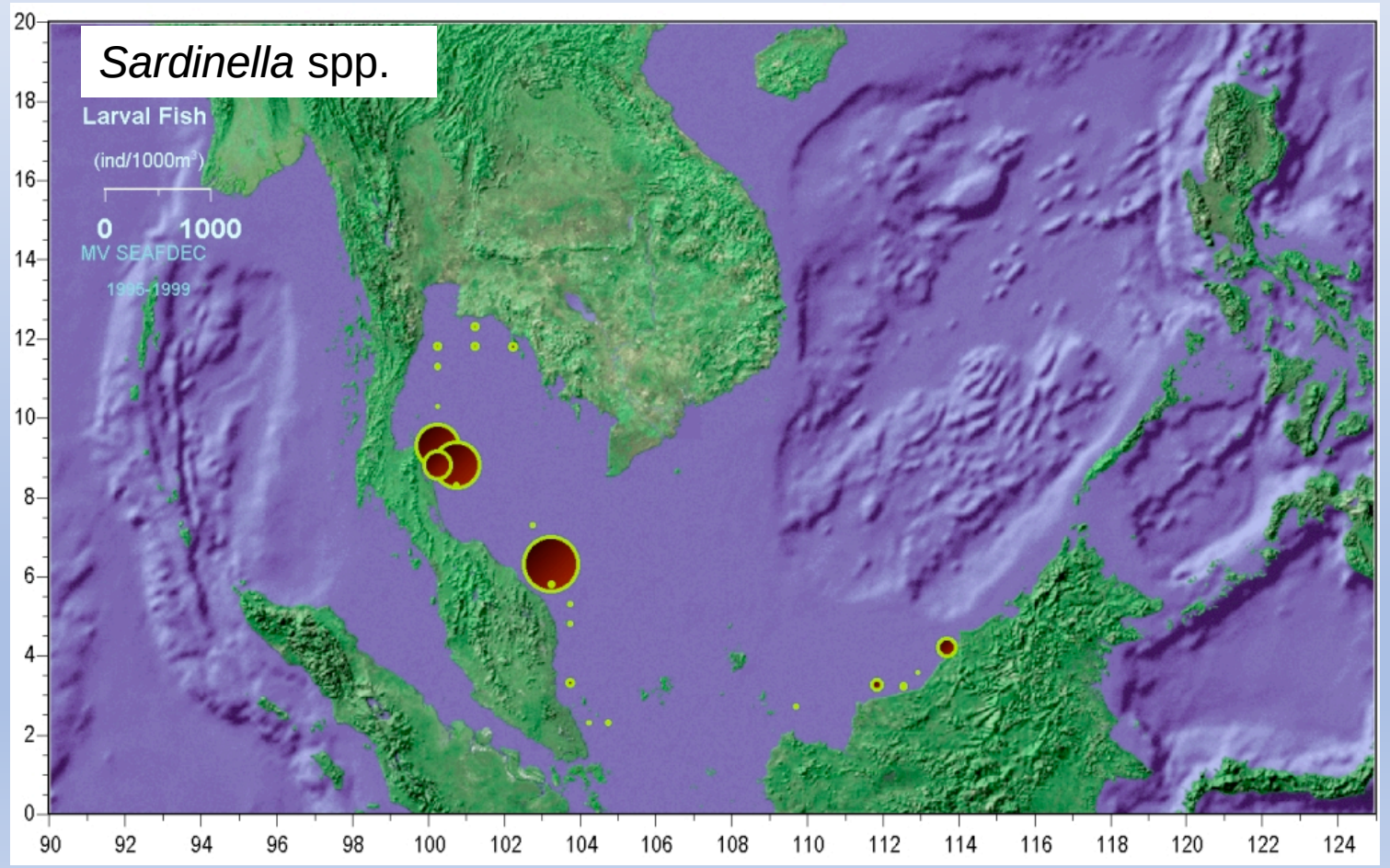

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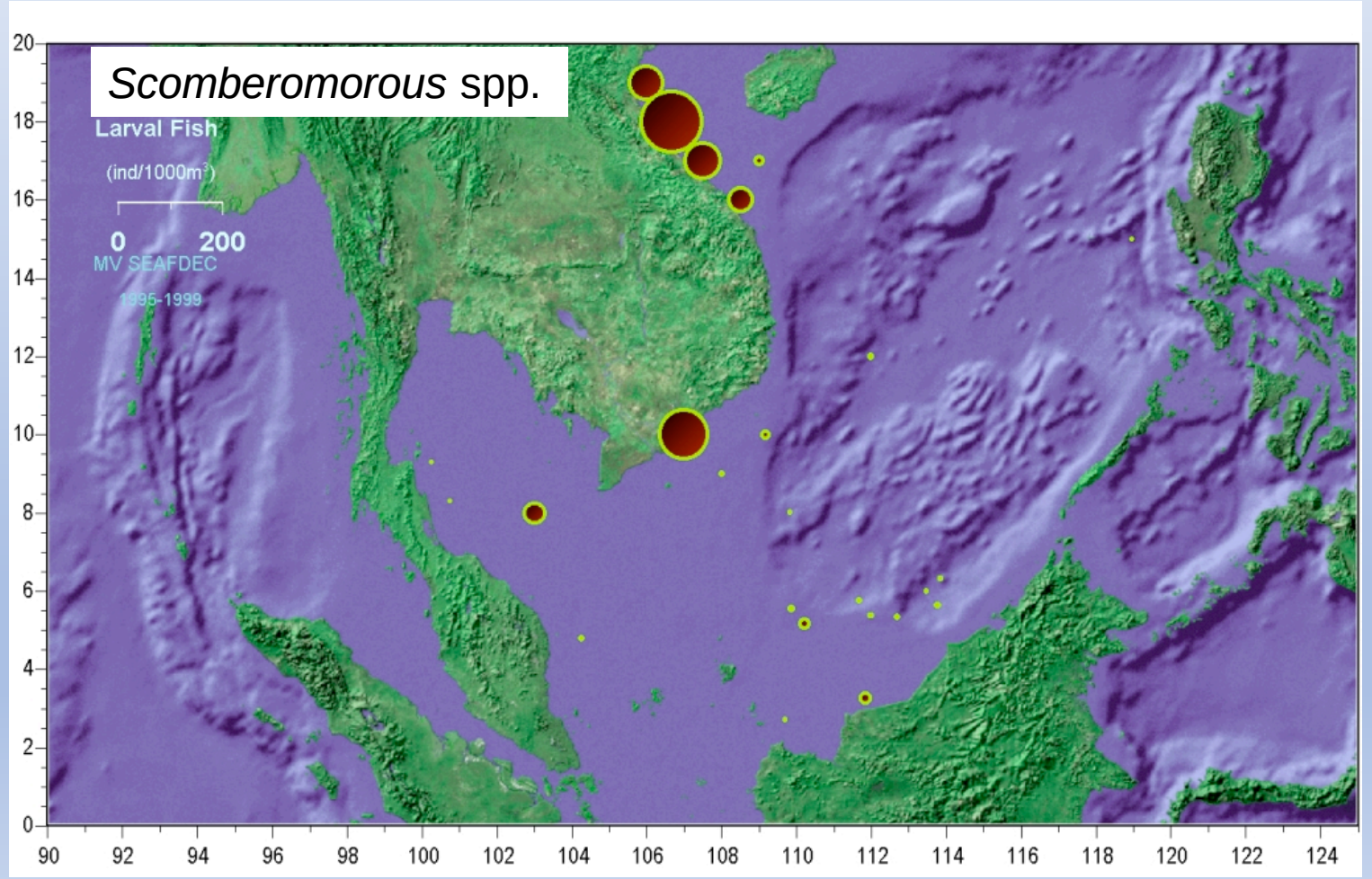
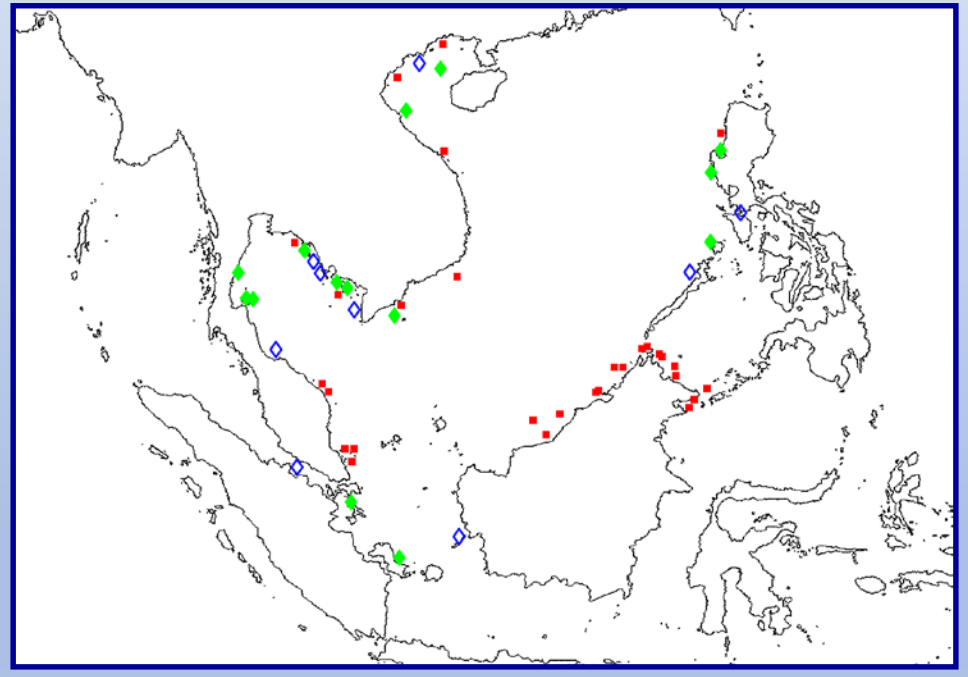


52 known spawning and nursery areas identified

- **Identification of Fisheries *Refugia* Sites**

Site Information Collated:

- Site name
- Geographic location
- Species utilising the site (spawning/nursery)
- Time of year used



General need for more detailed information about species usage of sites to develop management measures

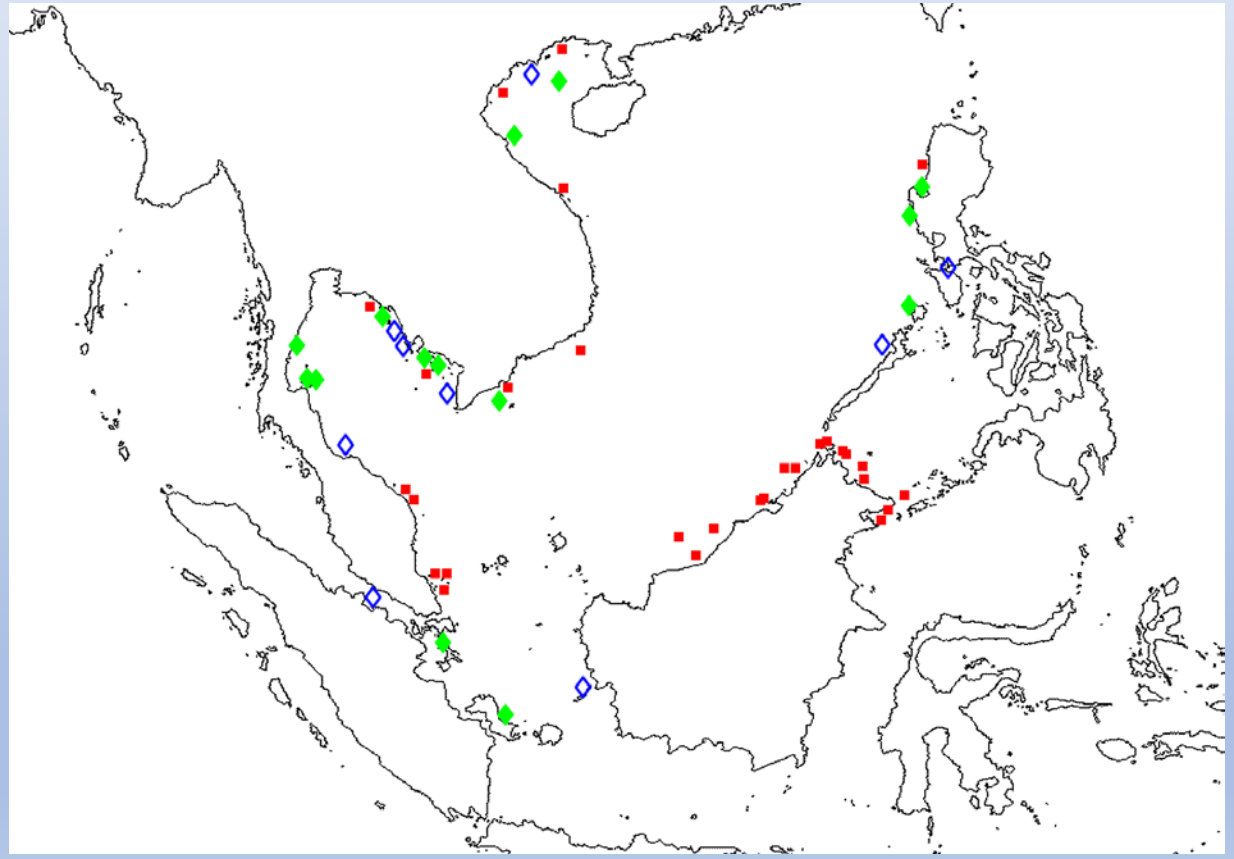
• Identification of Fisheries *Refugia* Sites

Sites Identified

❖ 14 sites for inclusion in initial system of *refugia* (green)

❖ 9 sites accorded high priority for action once initial set established (blue)

❖ Additional 29 spawning and nursery areas for which further information are required (red)



• Development of a Regional System of Fisheries *Refugia*

Regional Actions

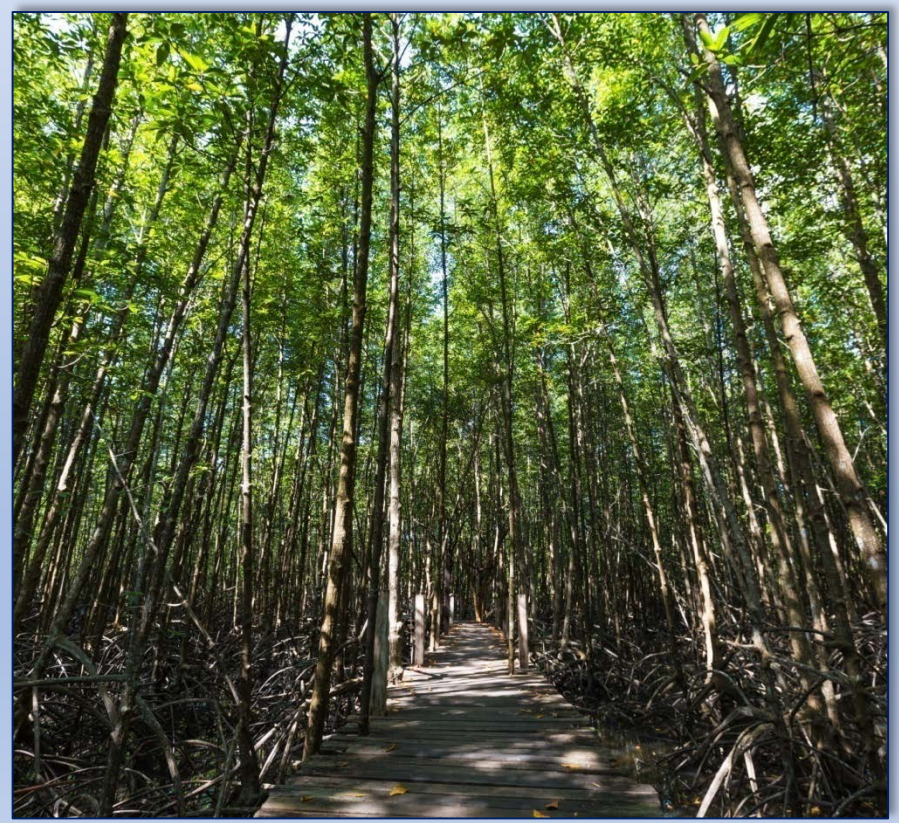
- Regional information and data management for *refugia* system
- Targeted demonstration activities
- Capacity development
- Supporting regional fisheries management
- Monitoring and evaluation

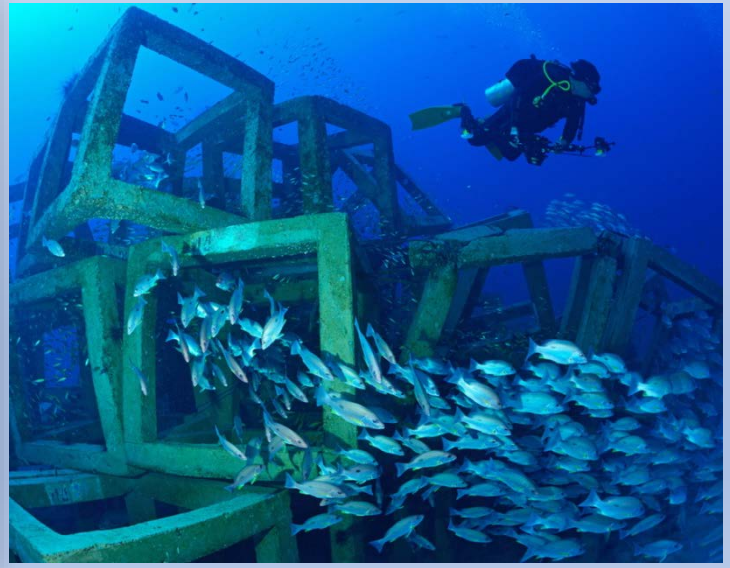
National Actions

- Enhancing national coordination
- Strengthening the enabling environment
- Building the national and site-level science and information base
- Planning operational management of *refugia*

Local Actions

- Establish local management boards
- Delineate *refugia* boundaries/formal designation of sites
- Identify fisheries management problems/solutions for *refugia* sites
- Establish regulations and monitoring





Thank you for your kind attention

Overview Project Objectives

The specific objective of this project is:

- ***'To operate and expand the network of fisheries* refugia *in the South China Sea and Gulf of Thailand for the improved management of fisheries and critical marine habitats linkages in order to achieve the medium and longer-term goals of the fisheries component of the Strategic Action Programme for the South China Sea'.***

Overview Project Objectives

Specific anticipated outcomes include:

- by 2020, to have established a regional system of a minimum of fourteen *refugia* for the management of priority transboundary, fish stocks and endangered species; and
- by 2020, to have prepared and implemented fisheries management systems in the identified priority *refugia* based on and consistent with, the ASEAN SEAFDEC Regional Guidelines for Responsible Fisheries in Southeast Asia.

• Identification of Fisheries *Refugia* Sites

Sites Identified

❖ 14 sites for inclusion in initial system of *refugia* (green)

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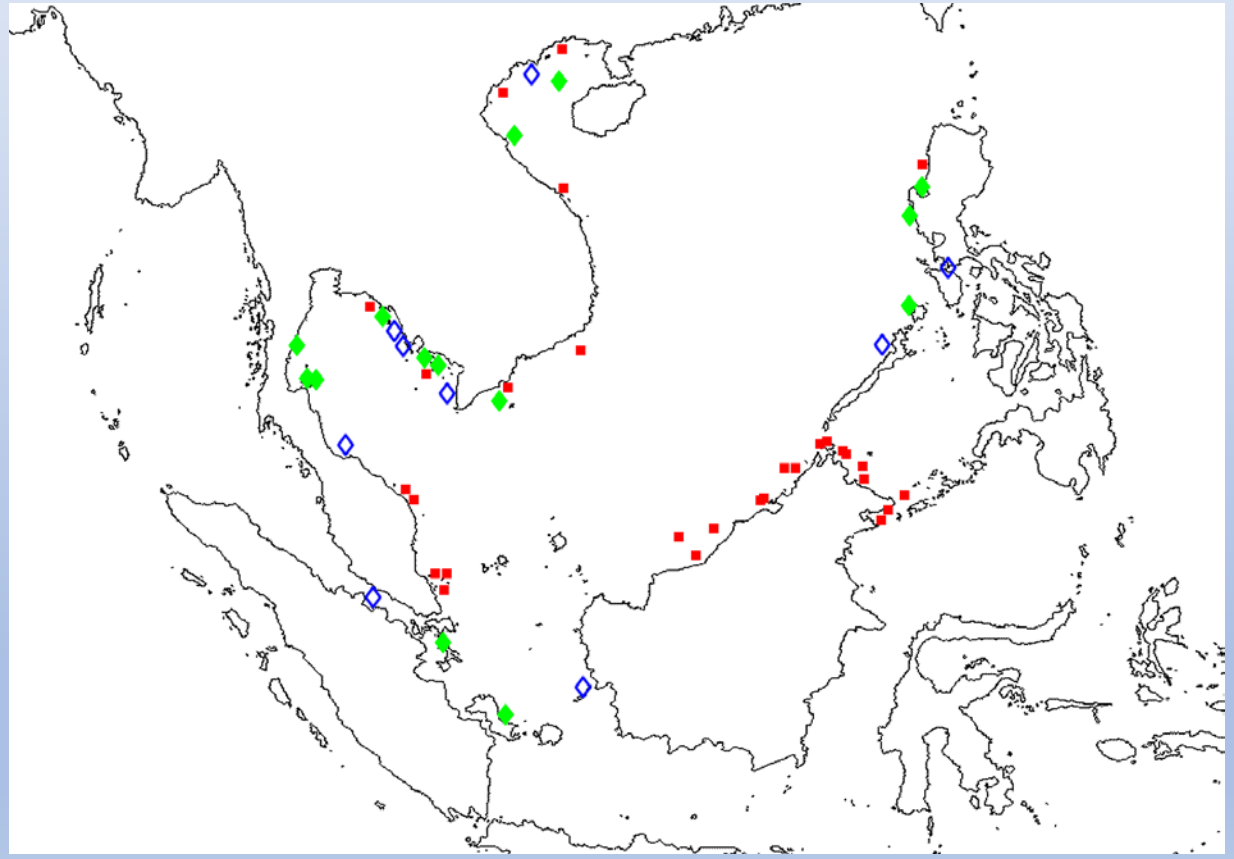


Overview Project Components

Component 1: Identification and management of fisheries and critical habitat linkages at priority fisheries *refugia* in the South China Sea

Component Indicator: Status of formal designation, management plan adoption, and community engagement in implementation of agreed management measures, including enforcement, for priority sites

Component 2: Improving the management of critical habitats for fish stocks of transboundary significance via national and regional actions to strengthen the enabling environment and knowledge-base for fisheries refugia management in the South China Sea

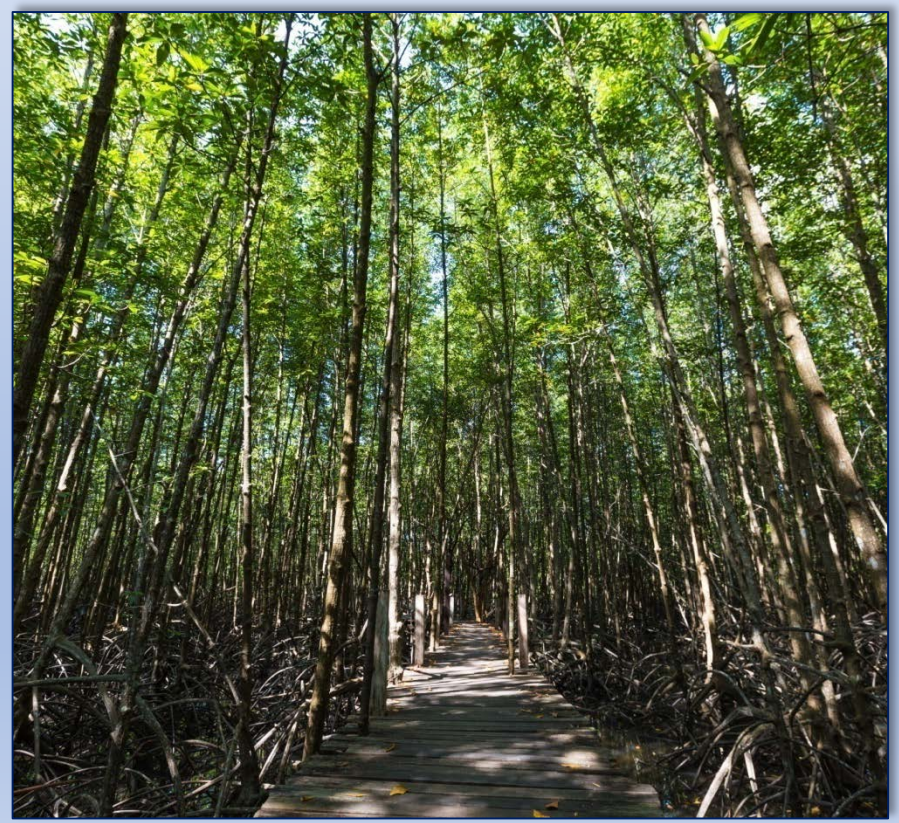
Component Indicator(s): (a) Status of enabling environment reform, including extent of behavioural change among small-scale fisherfolk at priority sites; (b) Extent of use of available environmental state and socio-cultural information in policy and planning frameworks

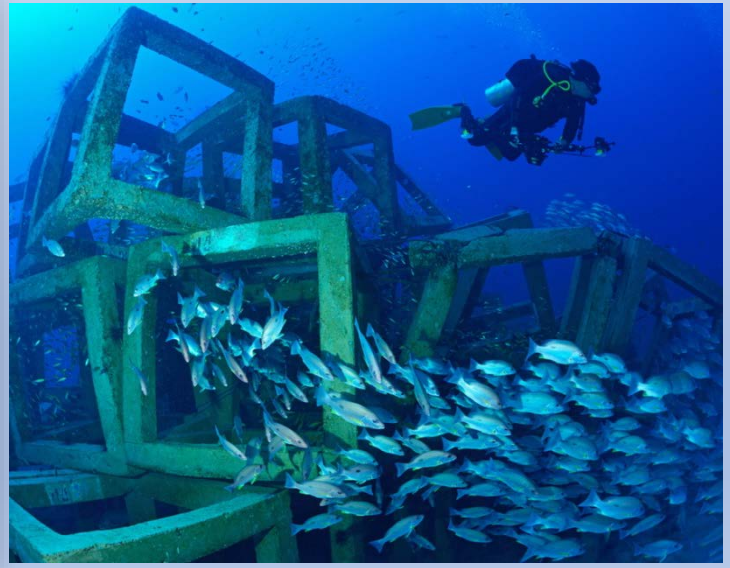
Component 3: Information Management and Dissemination in support of national and regional-level implementation of the fisheries *refugia* concept in the South China Sea and Gulf of Thailand

Component Indicator: Extent of demonstrable use of examples of good practice in guiding the replication, scaling-up and mainstreaming of fisheries *refugia* approaches

Component 4: National and regional cooperation and coordination for integrated fish stock and critical habitat management in the South China Sea and Gulf of Thailand

Component Indicator: Extent and continuity of stakeholder participation in meetings of project management bodies, including the scope and uptake of joint management and planning decisions





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