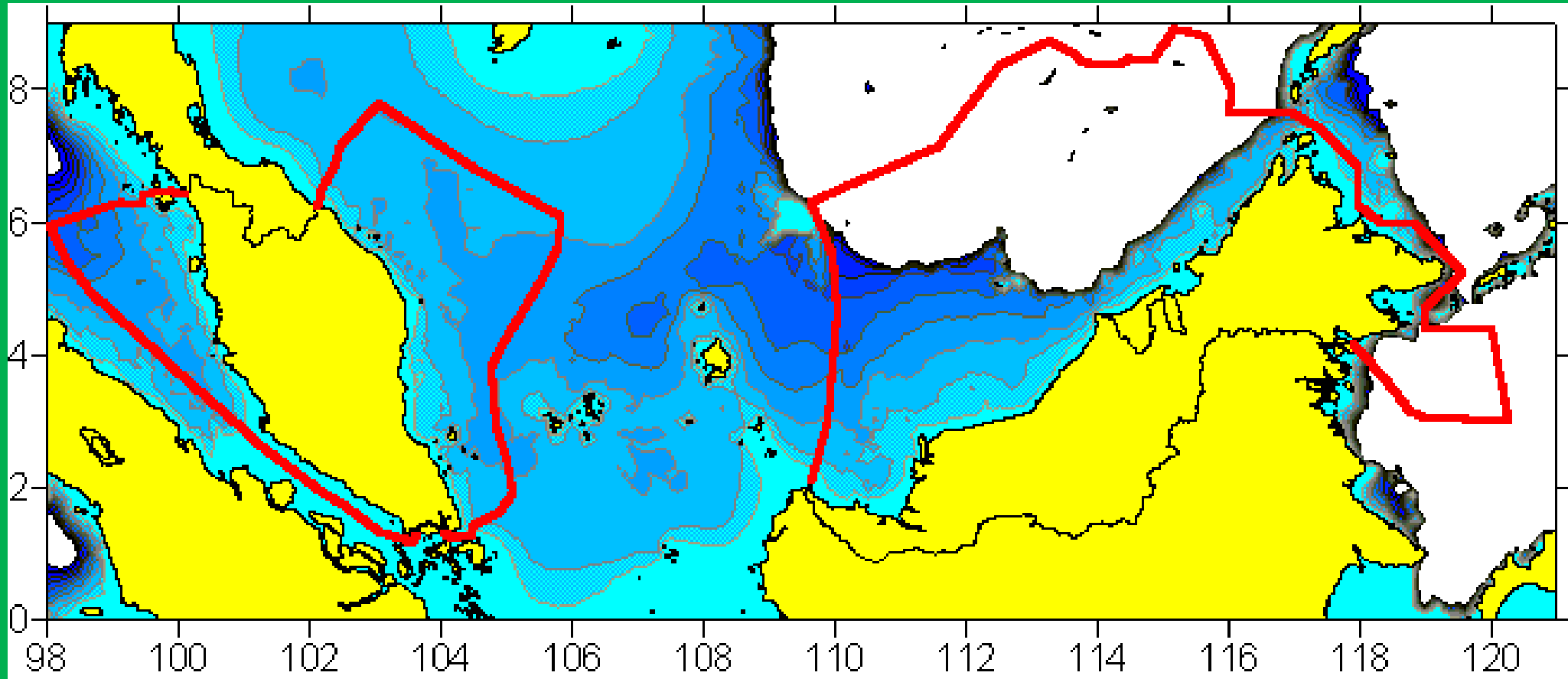


Fisheries Resource Enhancement in Malaysia

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Department of Fisheries Malaysia

Regional Technical Meeting on Fisheries Resource Enhancement in Southeast Asia
24-26 April 2018, Bangkok Thailand

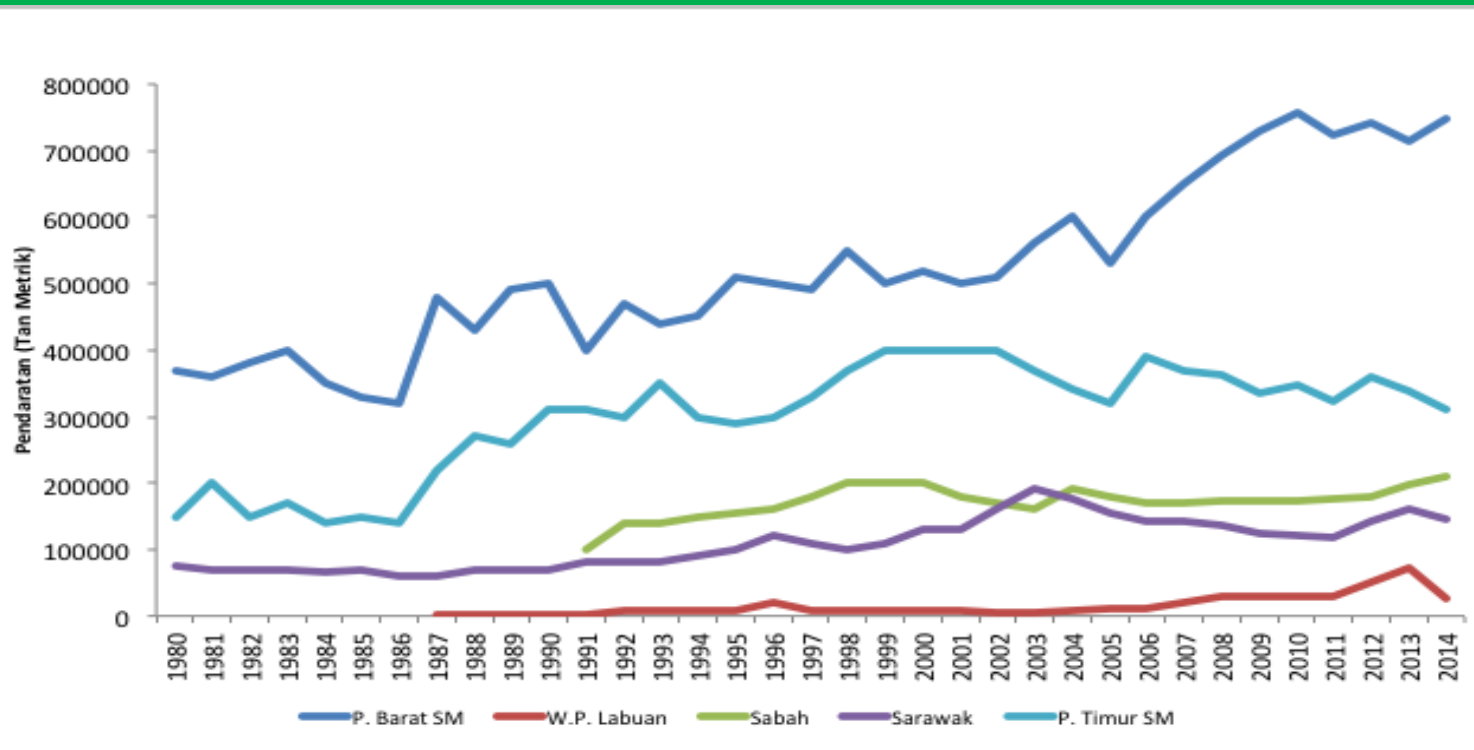
Malaysian Waters



Coastal waters of Malaysia covers the area of 373,500 km² which is 69% of total Malaysian waters.

Malaysia ZEE declared in 1980 - 548,800 km²
29% located in Sarawak waters,
16% in Sabah waters and
55% in Peninsular Malaysia

Marine Fish Total Landing of Malaysia



Marine Total Landing (Metric Tonnes)

2015: 1,486,051

2016: 1,574,447

2017: 1,488,401

Marine Total Landing by Areas (%)

Year 2016:

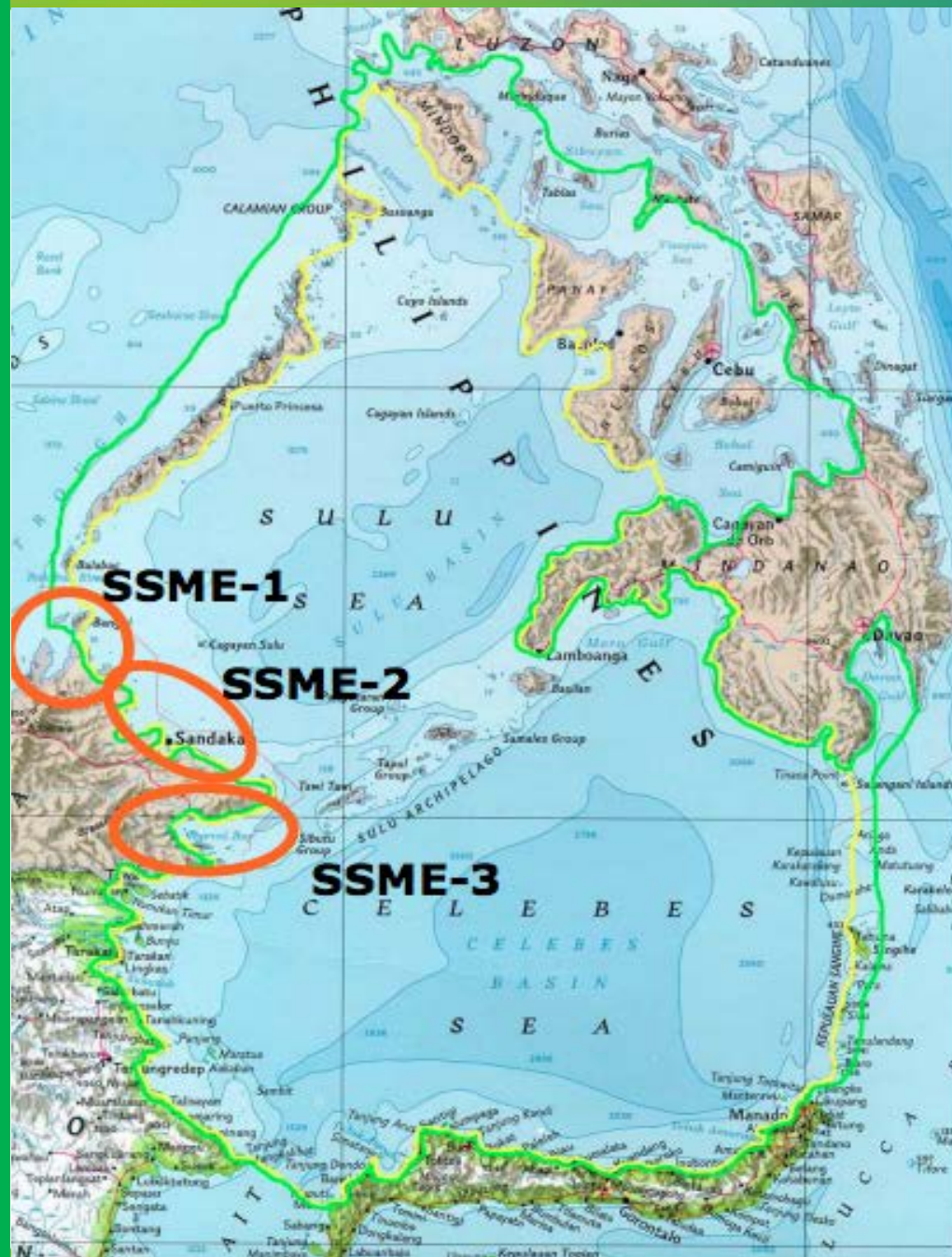
Pantai Barat Sem. Msia (West Coast): 51.7%

Pantai Timur Sem. Msia (East Coast): 27.7%

Sabah: 10.1%

Sarawak: 9.4%

Labuan: 1.1%



MALAYSIAN PORTION OF THE SSME AREA

MALAYSIAN SSME

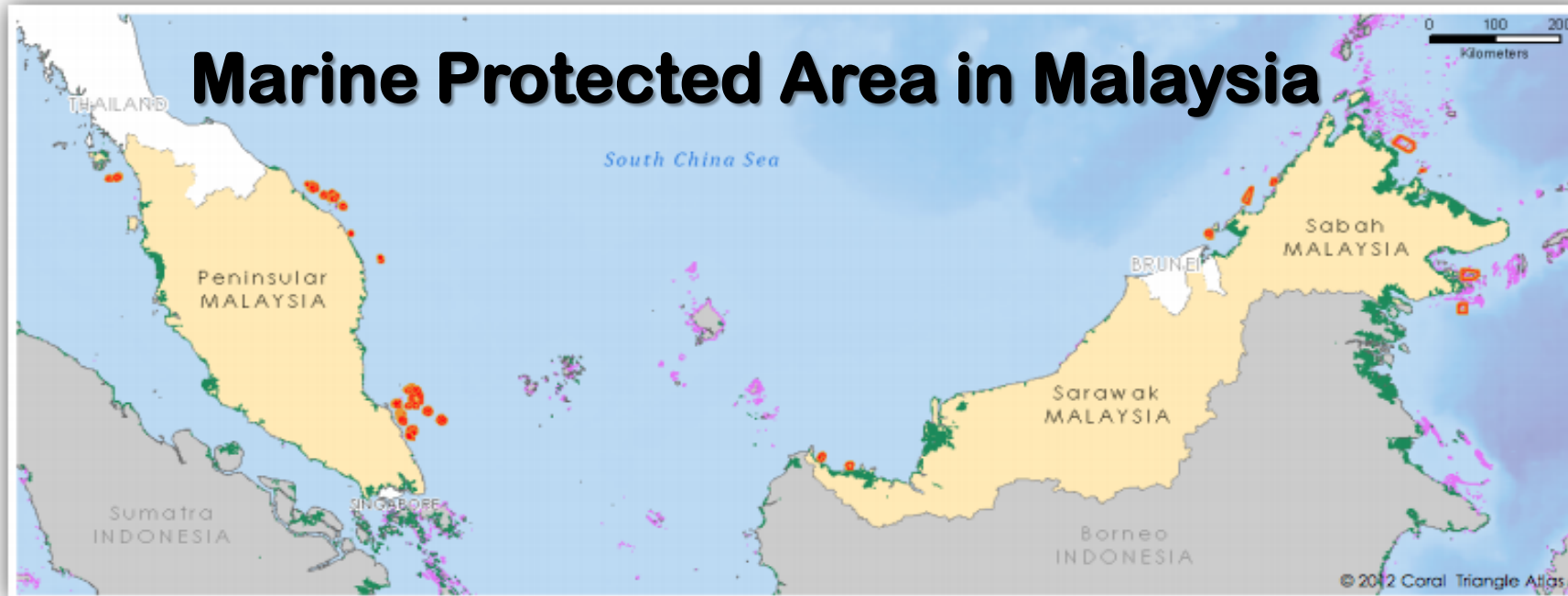
- Area: 29,000 km² – 5% SSME area (600,000 km²)
- 3 sub zones




SSME-1: 7,500 km² (26% SSME)
SC Balabac Straits,
South China Sea & Sulu Sea

SSME-2: 9,600 km² (33% SSME)
TIPHA – Selingan Group of
Islands, Sulu Sea

SSME-3: 11,800 km² (41% SSME)
SC Sibutu Channel,
Sulawesi Sea

***MALAYSIAN SSME – small in area
but with significant fisheries role***



	Number of MPAs (known boundaries)*	50 (49)
	Total MPAs area (km ²) for known boundaries	3,856 ^a
	MPAs in EEZ (%)	0.8
	Coral Reef area (km ²)**	1,687
	Reef area in MPAs (km ²)	157
	Reefs in MPAs (%)	9
	Mangrove area (km ² ***)	7,041
	Mangrove area in MPAs (km ²)	0.51
	Mangrove in MPAs (%)	0.01

*Missing spatial polygon for Miri Sibuti National Park in Sarawak (1,869km²). It would add up to total area of 5,725km².

MPA Management Authority:

- Federal (Marine Park Department)
- State (Sabah and Sarawak government)
- Private company

Coral Reef:

- Number of coral species (Veron *et al.*, 2009): 540
- Coral reefs is generally categorised as "fair", based on Average Percentage of Substrate Type Cover Recorded which valued 44.31% (ReefCheck, 2010) but it might declining with no further protection

Mangrove:

- Number of mangrove species (Spalding *et al.*, 2010): 40
- Malaysia primarily lost about 16% ha of mangroves from 1980 to 2005 due to conversion of land for agriculture, shrimp ponds or urban development (FAO, 2007)

*Compiled from various sources by CT Atlas team up to July 2012;

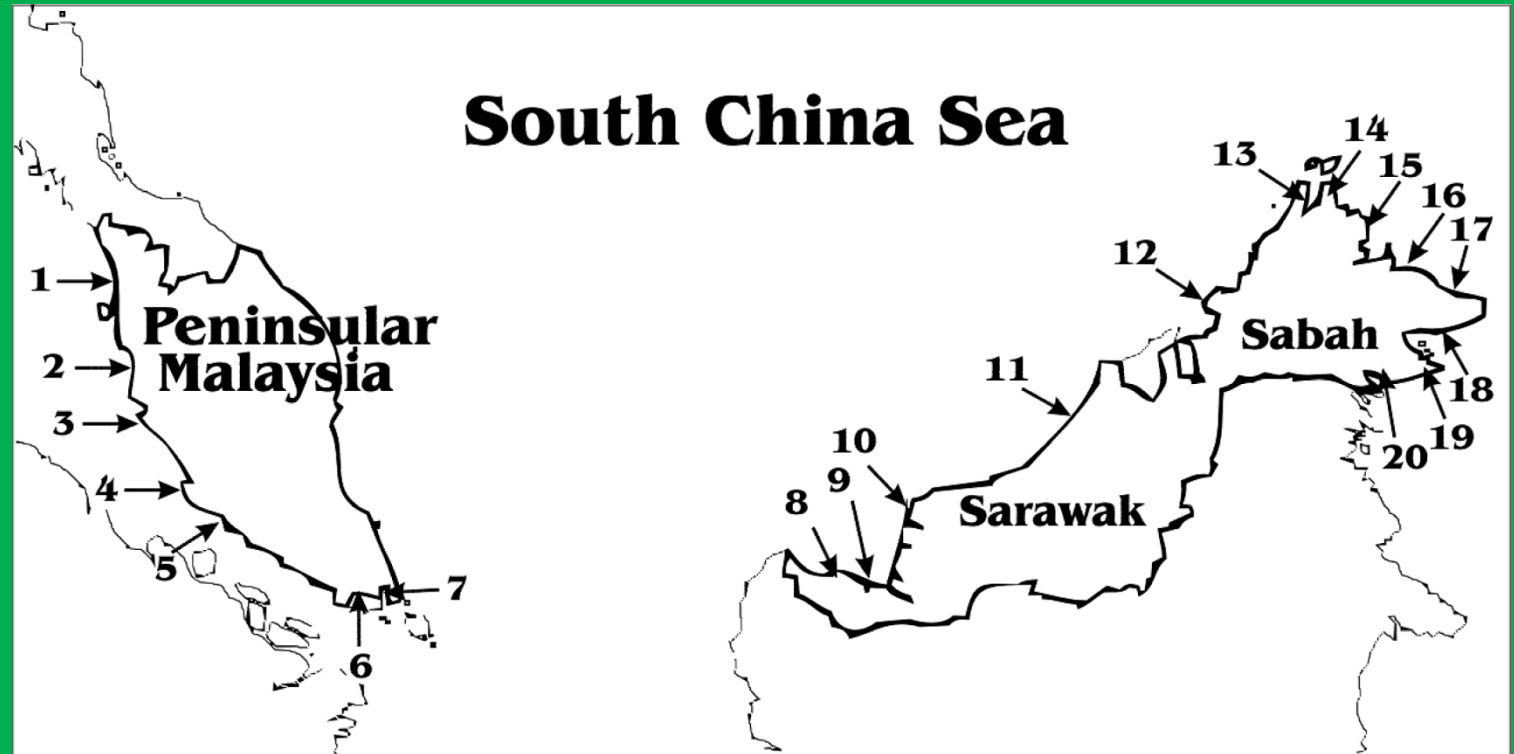
**UNEP-WCMC (2010) Global Distribution of Coral Reefs. Download from UNEP-WCMC's Ocean Data Viewer (<http://data.unep-wcmc.org/datasets/13>) and further correcting the topology error by CT Atlas team (2012);

***UNEP-WCMC (2010) Mangroves of the World 2010. Preliminary global dataset provided to ReefBase.



Mangrove Areas in Malaysia

- Matang Mangrove Forest Reserve (No. 2):
- Covering an area > 40,000 hectares
 - Known as one of the best managed of mangrove forest in the world
 - Gazetted as a permanent forest reserve in 1906

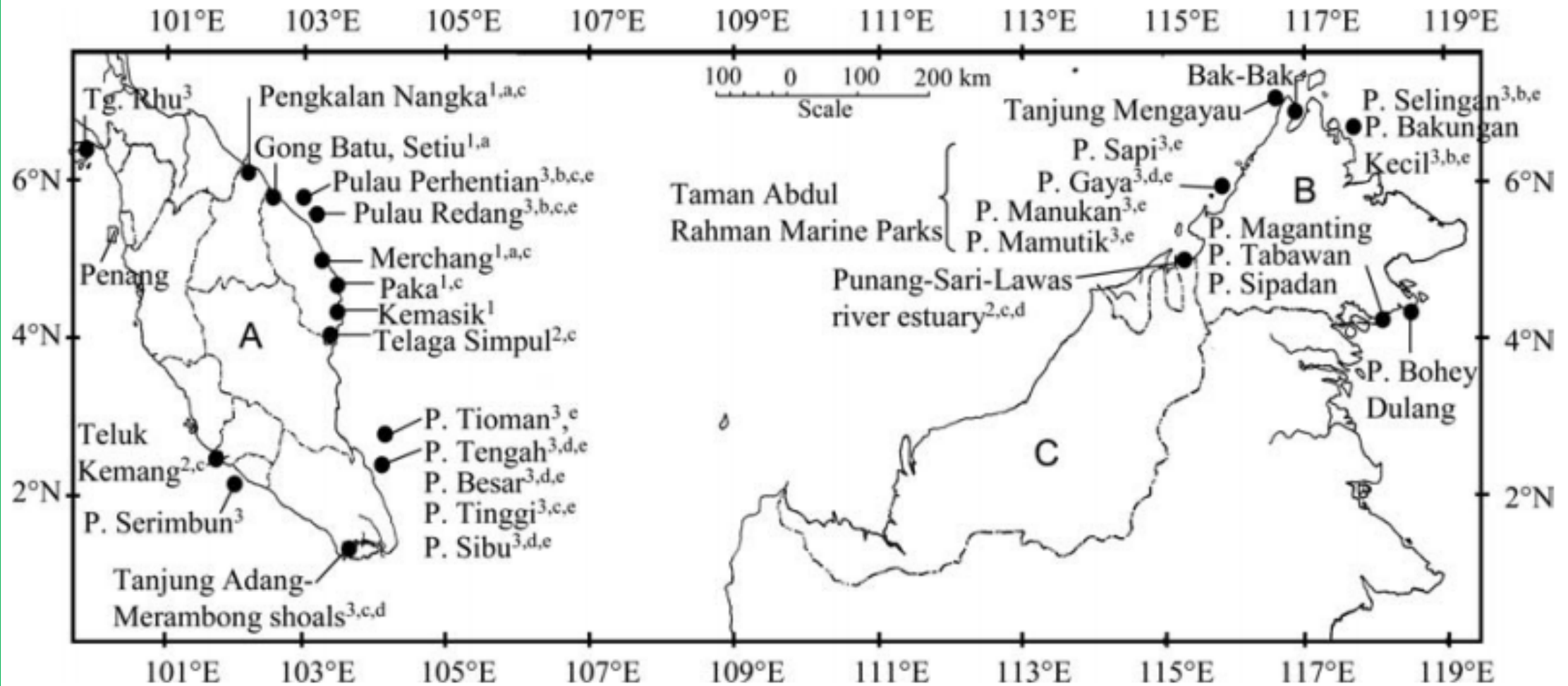


Map showing the main mangrove areas in Peninsular Malaysia, Sarawak and Sabah

1 = Merbok; **2 = Matang**; 3 = Rungkup and Bernam; 4 = Klang; 5 = Sepang and Lukut; 6 = Pulau; 7 = Sungai Johor; 8 = Sungai Sarawak; 9 = Kampung Tian; 10 = Rajang; 11 = Kuala Sibuti; 12 = Menumbok; 13 = Kudat and Marudu Bay; 14 = Bengkoka; 15 = Sungai Sugut & Sungai Paitan; 16 = Trusan Kinabatangan; 17 = Kuala Segama and Kuala Maruap; 18 = Lahat Datu; 19 = Segarong and Semporna; 20 = Umas-Umas, Tawau and Batumapun.

Malaysia's mangroves presently cover 577,558 ha, with 341,377 ha (59%) located in Sabah, 132,000 ha (23%) in Sarawak and 104,181 ha (18%) in the peninsular part of Malaysia

Seagrass Distribution



The major and important seagrass areas, associated habitats, utilization by coastal communities and other users in Peninsular Malaysia (A) and east Malaysia-Sabah (B) and Sarawak (C). Lagoon¹, inter-tidal², sub-tidal³. Aquaculture^a, turtle sanctuary^b, traditional capture fisheries^c, dugong feeding ground^d and marine park^e.

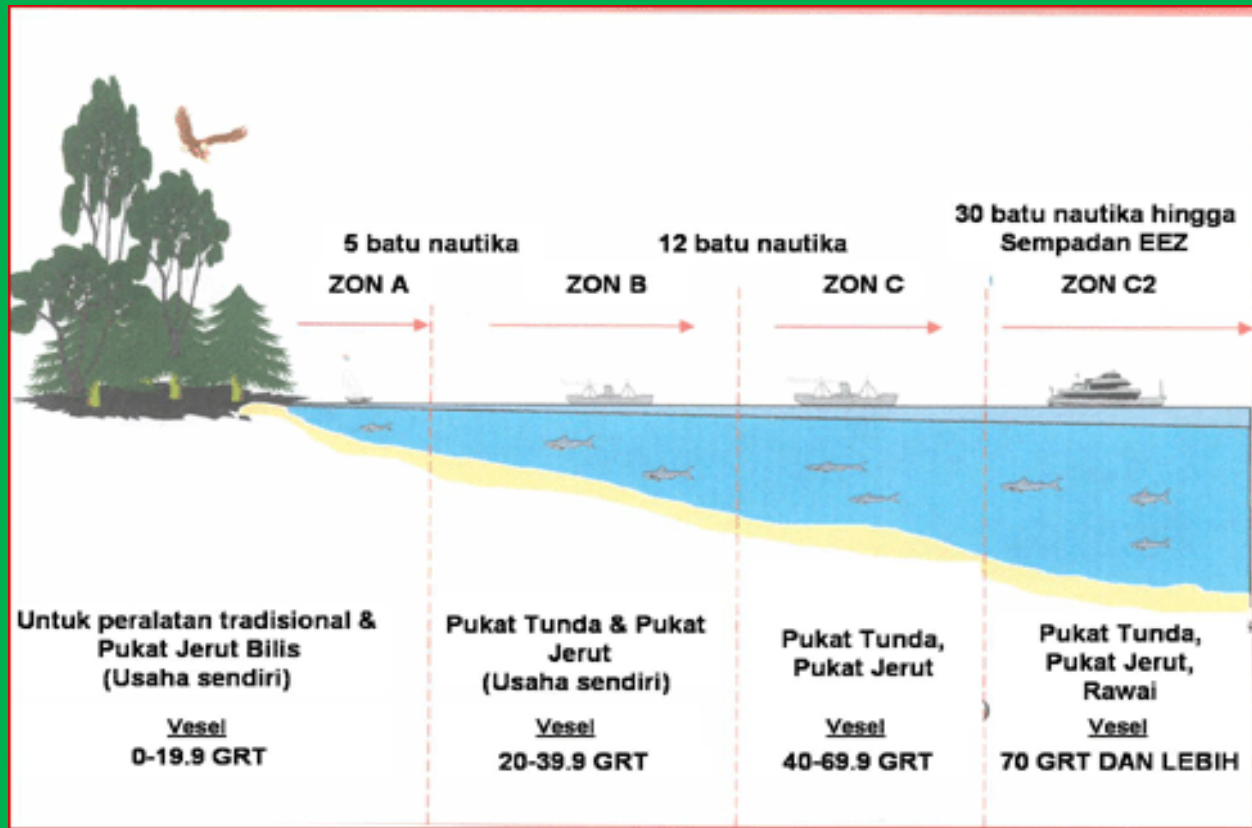
National Policy

1. Dasar Agro-Makanan Negara 2011-2020 (2011)
 - Modernization and transformation of capture fisheries industry
2. Pelan Strategik Jabatan Perikanan Malaysia 2011-2020 (April 2012)
 - Increase the deployment of artificial reef and unjam (FAD) to enhance fisheries resources
3. Pelan Strategik Penyelidikan Perikanan Tangkapan 2014-2020 (2014)
 - Establishment of fisheries refugia
 - Transplant of coral reef
 - Biological study of coral reef fishes
 - Ecological study, habitat and species distribution at selected artificial reef site

Fishing Zone

Establishment of Conservation Zone (0 -1 nm) on the West Coast of Peninsular Malaysia waters

Before 2014



>> Tiada halangan bagi vesel dari zon yang berhampiran pantai untuk menjalankan operasi tangkapan ikan di zon yang lebih jauh sebagai contoh vesel yang beroperasi di zon A boleh menangkap ikan di zon B, C dan C2.

After 2014

Jarak (Batu nautika)/ Zon		GRT, Jenis Vesel/ Aktiviti
0 – 1	Zon Konservasi	Aktiviti akuakultur, ternakan kerang dan penglibatan komuniti nelayan
1 – 8	Zon A	< 40 GRT Vesel tradisi/sampan/pukat jerut bilis (Usaha Sendiri – US)/ 100 % nelayan tempatan
8 – 15	Zon B	<40 GRT Pukat Tunda/Pukat Jerut (US)/apit/pembantu tekong/nelayan asing 80 % / wajib pasang Mobile Transceiver/Transmitter Unit (MTU)
15 – Sempadan ZEE	Zon C	40 – 70 GRT ke atas Pukat Tunda/Pukat Jerut/BUS/Nelayan asing 100 %/ Wajib pasang MTU
Lautan Hindi	C3	70 GRT dan ke atas Pukat Jerut/Rawai Tuna (BUS) Wajib pasang MTU

Fisheries Regulation for Catching Groupers Juvenile

Kelantan and Terengganu waters

PERATURAN-PERATURAN PERIKANAN (MUSIM TERTUTUP MENANGKAP ANAK IKAN KERAPU) 1996*

PADA menjalankan kuasa yang diberikan oleh perenggan 61(f), Akta Perikanan 1985, Menteri membuat peraturan-peraturan yang berikut:

1. Nama dan pemakaian.

Peraturan-peraturan ini bolehlah dinamakan **Peraturan-Peraturan Perikanan (Musim Tertutup Menangkap Anak Ikan Kerapu) 1996** dan hendaklah terpakai di perairan perikanan di negeri Kelantan dan Terengganu.

2. Larangan.

Semua kegiatan menangkap anak ikan kerapu adalah dilarang dari bulan November hingga Disember setiap tahun di negeri Kelantan dan Terengganu kecuali dengan kebenaran Ketua Pengarah Perikanan Malaysia untuk tempoh tertentu yang ditetapkan.

Dibuat 30 November 1996.

Peninsular Malaysia waters

PERATURAN-PERATURAN PERIKANAN (LARANGAN CARA MENANGKAP ANAK IKAN KERAPU) 1996*

PADA menjalankan kuasa yang diberikan oleh perenggan 61(i) Akta Perikanan 1985, Menteri membuat peraturan-peraturan yang berikut:

1. Nama dan pemakaian.

Peraturan-peraturan ini bolehlah dinamakan **Peraturan-Peraturan Perikanan (Larangan Cara Menangkap Anak Ikan Kerapu) 1996** dan hendaklah terpakai di perairan perikanan Malaysia di Malaysia Barat sahaja.

2. Larangan.

Tiada seorang pun boleh menangkap anak ikan kerapu di dalam lagun atau muara sungai kecuali dengan menggunakan bubu yang dilesenkan.

Dibuat pada 30hb November 1996.

Establishment of Fisheries Refugia

Definition

“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 stages of their life cycle, for their sustainable use”

Refugia Sites and Present Research Activities



- Consultations with stake holders
- Record of lobster landing data
- Survey of lobster resource
- Sampling of lobster larvae

1. Tanjung Leman, Johor – Lobster
2. Kuala Baram, Sarawak – Tiger prawn



Coral Reef

Reefs Propagation (2012)

- Background
 - Programme conducted by researchers at Fisheries Research Institute (FRI) Penang, DoF Malaysia
- Objectives
 - Accelerate the coral growth by replanting in the nursery.
 - To restore the coral ecosystem.
- Activity
 - Master coral was taken from Port Dickson, Negeri Sembilan, Pulau Kendi, Penang and Pulau Songsong, Kedah.
 - Coral is cut and attached to the substrate cement before it is put back into the nursery tank.
- Achievement
 - As many as 23 species of hard coral and 6 species of soft coral has been undergoing replanting.
 - Hard coral survival rate in the first 6 months is more than 70%, while soft corals is more than 50%.



Coral Reef

Coral Propagation Program (2012)

1. Background

- Organised by Ocean Quest (NGO)
- Conservation activity in local communities along the coastline and islands of peninsular Malaysia.
- Participation of everyone regardless if they are divers or non-divers.

2. Objectives

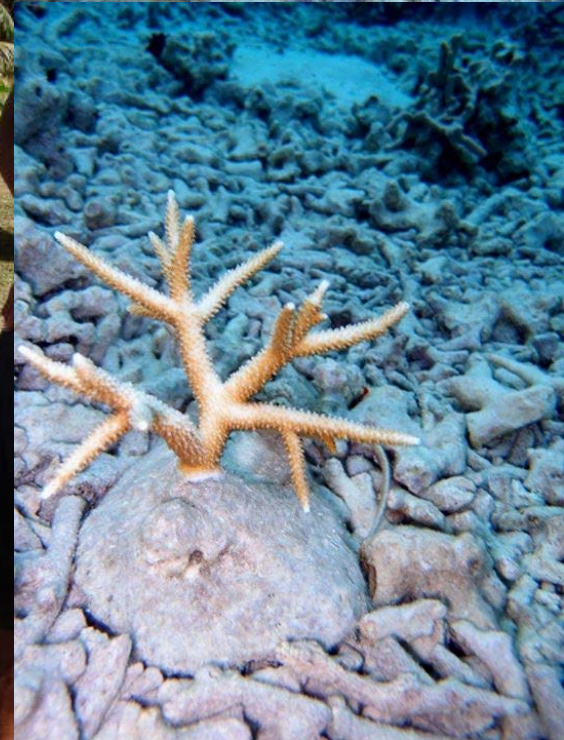
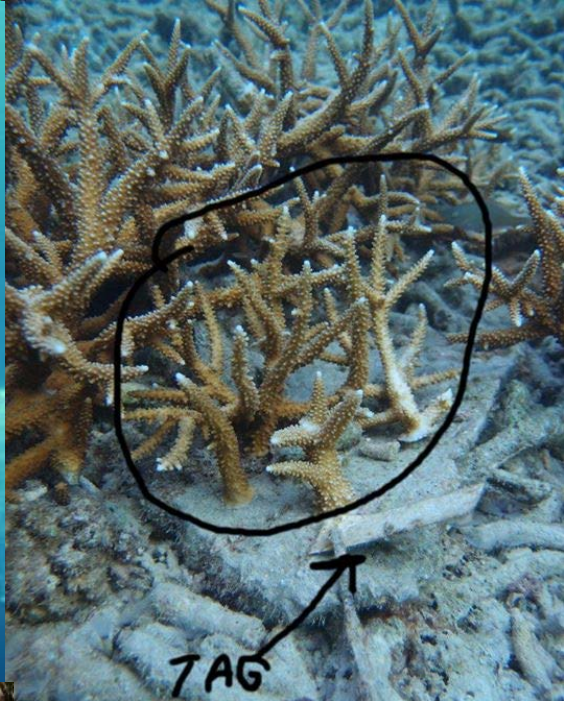
- To help rehabilitate reefs that was destroyed by a natural disaster.
- To create a research platform for marine biologist or furtherance of science.
- To collect some coral brood stock from nearby reef and propagated them at two sites.

3. Activity

- Coral propagation workshops
- Coral propagation

4. Achievement

- Some of the corals propagated has grown eight times.
- Propagated approximately 50 new corals at the nearby reef.
- The corals planted in September 2012 has grown to approximately 25 cm tall and is blending with the other corals.



Mangrove

Mangrove Planting Program (2015)

- Organized by Universiti Malaysia Sabah.
- Objective
 - To protect and conserve the environment
- Activity
 - 300 mangrove trees were successfully planted by a group of students in Sulaman Lake Replanting Site located in Tuaran, Sabah
- Achievement
 - Brought awareness to everyone regarding the importance of conserving the environment



Mangrove

Ecological Mangrove Rehabilitation for Village Protection and Sustainable Community Livelihood (2011)

- Background

- Promote cost-effective mangrove rehabilitation through community based mangrove action project and enhance the biodiversity of the riverine ecosystem

- Objective

- Aimed at rehabilitating degraded mangrove belt along Bernam River through ecological mangrove rehabilitation (EMR) approach

- Achievement

- Eight hectare of the degraded area was rehabilitated with local community participation to recover the degraded mangrove to its nearest original condition and to prevent intrusion of river water into the village.
- Successfully replanted with 5,300 native species by 846 volunteers.



Seagrass

Mapping of Seagrass Bed

- This year project which is conducting by Fisheries Research Institute in Batu Maung, Penang
- Objective of this project is to map the location of seagrass bed in Mersing waters (East Johore)
- At least 8 species of seagrass have been discovered in the study area

Seagrass Bed

Community-Based Seagrass Meadows Conservation In Penang South Channel (2012)

- Background

- A research project by Universiti Sains Malaysia, Penang
- Seagrass serves as vital fish nursery grounds and the seagrass conditions reflects the overall health of South Channel

- Activity

- The local community participants, public volunteers and corporate members will be given training and take part in seagrass meadow monitoring & assessments

Constraints

Coral Reef

- Rubble is unstable and it rolls with storms, turtles and fish. This rolling either abrades the baby corals or turns them downwards into the sand
- Large populations of black spiny sea urchins increase the problem by eating algae and baby corals off all available surfaces

Mangroves Forest

- Unregulated urban development and increases pollution
- Lack of clear understanding and recognition of the importance of mangroves
- Lack of law enforcement and monitoring to protect from illegal encroachment

Seagrass Bed

- The continual physical damage by anthropogenic and developments. The potential damage also from sea level rise
- Misunderstanding of the general public is that seagrass is similar to terrestrial grass. A single prop scar does not recover quickly, unlike terrestrial grasses

Thank you
Terima kasih