



**The 8<sup>th</sup> Meeting of the Project Steering Committee for  
the SEAFDEC/UNEP/GEF Project on Establishment and Operation of a Regional System of  
Fisheries *Refugia* in the South China Sea and Gulf of Thailand**

23 December 2022  
(08:30 – 11:30AM, UTC+7)  
Virtual Meeting via Zoom Platform

**PROGRESS REPORT AS OF 30 NOVEMBER 2021**

**I. Executive Summary**

The South China Sea is a global centre of shallow water marine biological diversity that supports significant fisheries that are important to the food security and export income of Southeast Asian countries. These fisheries are characterised by high levels of fishing effort from the small-scale sector. Accordingly, all inshore waters of the South China Sea basin are subject to intense fishing pressure. This situation of high small-scale fishing pressure and declining fisheries resources has contributed to the adoption of unsustainable fishing methods to maintain catch and increase incomes in the short-term. These include the use of destructive fishing gear and practices, such as the operation of demersal trawls and push nets in seagrass areas, and the detonation of explosives and release of fish poisons in coral reef areas. Small-scale inshore fishing pressure has therefore been identified as a significant cause of the degradation and loss of coastal habitats in the South China Sea.

Although action aimed at reducing the rate of loss of coastal habitats has been implemented by countries bordering the South China Sea. This continued decline in the total area of habitats critical to the life cycles of most aquatic species, combined with the high levels of coastal community dependence on fish, has raised serious concerns for the long-term sustainability of small-scale fisheries in the region. With fish production being intrinsically linked to the quality and area of habitats and the heightened dependence of coastal communities on fish, a need exists to improve the integration of fish habitat considerations and fisheries management in the region. This project entitled “*Establishment and Operation of a Regional System of Fisheries Refugia in the South China Sea and Gulf of Thailand*” has been developed to meet this need via implementation of the fisheries component of the Strategic Action Programme for the South China Sea. The project was funded by GEF in 2015, implemented by GEF and executed regionally by the Southeast Asian Fisheries Development Center in 2016 in partnership with the government agencies responsible for fisheries in the 6 participating countries, namely Cambodia, Indonesia, Malaysia, Philippines, Thailand, and Viet Nam. Initially planned for 48 months from January 2017 until December 2020, the Project duration was extended until December 2022 due to the COVID-19 pandemic. Nevertheless, the communities in the fisheries refugia project sites have been working towards enhancing the integration of habitat and biodiversity conservation into fishery management and practices for the economically important aquatic species. More than 100 multi-stakeholder groups from various institutions not only fisheries and environment agency but also the tourism department, public organizations, navy, coastguards, NGOs, civil society organizations (CSO), academia, research institutes, local government at provincial and state levels, fishing community, private sectors, etc. have been actively involved in the process of Fisheries refugia establishment. As of 30 November 2022, about 7,000 persons are engaged, more than 300 activities conducted at national and regional levels.

**II. ESTABLISHMENT OF A REGIONAL SYSTEM OF FISHERIES REFUGIA**

Throughout strengthening regional collaboration on transboundary fish stock management, development of the national management plans, and engagement of local communities in implementing the system, the effective management of critical threats to 15 fisheries refugia sites of about 1,188,841 ha has been identified and accepted by the relevant stakeholders as shown in Table 1. The distribution and location of 15 refugia sites are mapped in Figure 1. The results indicate the overall fisheries refugia areas are about 4.4 folds higher than the proposed refugia areas (269,500 ha) adopted by the GEF/CEO. In addition, the number of refugia sites is 15 instead of 14 sites endorsed by GEF. Among these, five fisheries refugia were agreed upon among stakeholders and approved by the governments, including three in Cambodia at Kep Province for blue swimming crab (11,307 ha, Figure 2), Preah Sihanouk for blood cockle (116 ha, Figure 3), and Koh Kong Province for Indo-pacific mackerel (1,283 ha, Figure 4), and two in Thailand at Surat Thani for blue swimming crab (900 ha, Figure 5), and at Trat Province for Indo-pacific mackerel (154,600 ha, Figure 6). In addition, eight fisheries refugia sites were recognized by the stakeholders and will be adopted by the responsible agencies. These include one in Cambodia at Kampot Province for the juvenile grouper (284 ha, Figure 7); two in Malaysia at Tanjung Leman, Johor State for spiny lobster (140,023 ha, Figure 8) and at Kuala Baram, Miri, Sarawak State for black tiger prawn (85,200 ha, Figure 9); three in the Philippines at Bolinao for siganids (263 ha, Figure 10), at Masinloc for one-stripe fusilier (624 ha, Figure 11), and Coron for redbelly yellowtail fusilier (1,242 ha, Figure 12); and two in Indonesia at West Kalimantan for white prawn (409,432 ha, Figure 13), and at Bangka Regency for squid (239,302 ha, Figure 14). Moreover, due to delayed initiatives, Viet Nam could identify two refugia sites: one at the Eastern coastal area of Phu Quoc – Kien Giang for blue swimming crab (32,860 ha, Figure 15), and another at the coastal area of Lagi, Binh Thuan for the Subcrenata ark clam (73,900 ha, Figure 16).

### **III. STAKEHOLDERS ENGAGEMENT AND GENDER EQUITY**

The project improved stakeholder engagement and acceptance of the area-based approaches to fisheries. More than 100 multi-stakeholder groups from various institutions such as not only fisheries and environment agency but also the tourism department, public organizations, navy, coastguards, NGOs, civil society organizations (CSO), academia, research institutes, local government at provincial and state levels, fishing community, private sectors, etc. have been actively involved in the process of Fisheries refugia establishment. As of November 2022, about 7,000 stakeholders engaged in 300 activities conducted at national and regional levels. The project considers gender mainstreaming in sustainable management of the fisheries refugia as one of the vital target outcomes which was introduced to all participating countries at the Inception Meeting in 2016 by focusing the gender-integrated activities, considering the needs of women and men engaging in all activities defined by the project. Regarding this, in the 2nd quarter, the PCU analyzed the gender ratio of the overall activities conducted by six countries. The results on gender analysis show an average 40 percent of women participate in refugia implementation and management of the project, which is aligned with the target outcome endorsed by the GEF/CEO (minimum 30% of women engage in the project activities).

### **IV. LEGAL, REGULATION REFORM, AND MANAGEMENT PLAN TO SUPPORT FISHERIES REFUGIA IMPLEMENTATION**

Three of the six countries, namely Cambodia, Thailand, and Malaysia, adopted the Strategic Action Plan or Fisheries Management Plan, while the other three are an ongoing process of adoption by the Government. At the PSC7 Ad-hoc Meeting in May, FiA/ Cambodia has revised the Fisheries Law for the Government's approval by 2022. Considering the management measures, compiled from six countries for safeguard both fish stock and critical habitat linkages, are applied to not only small-scale fishing vessels but commercial vessels, particularly trawlers and purse seiners, that impacted the critical refugia during the fishing closure period. Cambodia and Malaysia proposed management measures to prohibit 100% of trawlers from operating in the refugia areas in Kep province for blue swimming crab and in Koh Kong province for Indo-pacific mackerel, and in Johor and Sarawak states



for spiny lobster and tiger prawn, respectively. In addition, Thailand prohibits 100% of trawlers and purse seiners from operating in the Trat refugia for Indo-pacific mackerel.

In Viet Nam, D-Fish formulated and proposed a new Master Plan to promulgate regulations on fishery resource protection zones in Article 17 of the Fisheries Law 2017 to establish fisheries refugia to protect residences, breeding concentration areas, and fledgling fisheries areas concentrated in inland areas and waters of Vietnam. It replaces the provisions on inland water reserves previously in the Fisheries Law 2003. This master plan includes a total of 73 marine fisheries protection zones or fisheries refugia to be implemented from 2021-2030 nationwide, with a total area of about 1,416,547 ha, equivalent to about 1.5% of the natural size of Vietnam's waters.

#### **V. STRENGTHENED KNOWLEDGE MANAGEMENT AND INFORMATION SHARING AND ACCESS**

In Q2/2022, 14 technical reports from five countries, including two regional meetings report and one Regional Guideline on Indicators are published. Therefore, as of June 2022, a total of 273 documents consisting of technical reports, meeting reports, and policy/legal papers from six countries, as well as 15 regional meeting reports and two regional policy papers: Regional Action Plan for short mackerel in the Gulf of Thailand (2021) and Regional Guidelines on Indicators for Sustainable Management of Fisheries Refugia (2022), are published and uploaded to the SEAFDEC Repository System and Fisheries Refugia Website.

Nine fisheries refugia profiles, including characterizations of refugia sites, were published by Cambodia (3), Indonesia (1), Philippines (3), and Thailand (2). Malaysia and Viet Nam are finalized the refugia profile by Q3/2022.

Thirteen networks of management boards and community-based fisheries and habitats management committees for refugia management and operational enforcement programs are set in five countries excluded Viet Nam. D-Fish of Viet Nam will cooperate with the local government at the provincial level to establish two similar networks by the end of 2022.

In term of the replication and scaling-up program, in 2022, DOF/Thailand announced the fishing closure area in the Gulf of Thailand, covering three coastal provinces: Prachub Kirikhun, Chumphon, and Surat Thani, to protect spawner and juvenile fish stocks from 15 February to 15 May. In addition, DOF/Thailand also announced the fishing closure area in the Andaman Sea, covering four coastal provinces: Phuket, Phangnga, Krabi, and Trang, from 1 April to 30 June. Fishing gear restrictions, by law, are applied to both refugia areas.

**VI.** The target species selected by stakeholders are covered

Table 1: 15 Fisheries refugia sites identified by six countries in the South China sea and Gulf of Thailand (as of 30 November 2022)

No. in map	Fisheries <i>refugia</i> Site	Target species	Area (ha)	Fishing closure period	Status	Habitat linkages	Other management measures
1	Marine Fisheries Management including Refugia at Koh Po & Koh Tonsay Archipelago, Kep, Cambodia	Blue swimming crab ( <i>Portunus pelagicus</i> )	11,307 (417ha FR)	May-Jul (3 months)	Approved (12-04-2018)	CR-52ha SG-755ha	<ul style="list-style-type: none"> <li>all kinds of fishing gears targeting BSC and negatively impact are prohibited</li> <li>No closing season for small-scale Anchovy fishing gears.</li> <li>Deploying 345 concrete blocks to protect marine habitat and prevent illegal fishing activities</li> </ul>
2	Prek Thnaot, Kampot, Cambodia	Grouper (to be confirmed)	8,008 (332ha FR)	Sep-Nov. (3 months)	Final process	CR-347ha SG-269ha	<ul style="list-style-type: none"> <li>Prohibit trawlers and gears with small mesh size</li> <li>Deploying 50 concrete blocks to protect marine habitat and prevent trawlers</li> </ul>
3	Prek Sangke, Village, Tek Thlar Commune, Prey Nub District, Preah Sihanouk, Cambodia	Blood Cockle ( <i>Anadam granosa</i> )	116	Jun-Oct (5 months)	Approved (20-08-2020)	NA	<ul style="list-style-type: none"> <li>all kinds of fishing gears targeting Blood cockle are prohibited</li> <li>Only hand collection is allowed during open season</li> <li>Deploying 50 concrete blocks to protect marine habitat</li> </ul>
4	Peam Krasob, Koh Kong, Cambodia	Indo-pacific mackerel ( <i>Rastrelliger brachysoma</i> )	1,283	Dec-Mar (3 months)	Approved (16-09-2019)	CR-NA SG-NA	<ul style="list-style-type: none"> <li>all kinds of fishing gears targeting mackerel and negatively impact are prohibited</li> <li>Patrolling, crack down illegal fishing.</li> <li>Deploying 50 concrete blocks to protect marine habitat and prevent illegal fishing activities</li> </ul>
5	Off Trat, Thailand	Indo-pacific mackerel ( <i>Rastrelliger brachysoma</i> )	154,600	Jan-Feb (2 months)	Approved (26-05-2022)	CR-2814ha SG-1016ha MG-9553ha	<ul style="list-style-type: none"> <li>No person shall fish in fisheries <i>refugia</i> area in Trat Province by the following fishing gears: (1) Purse seines fitted to motor vessels; (2) Pair trawls fitted to motor vessels.</li> </ul>
6	Eastern coastal area of Phu Quoc – Kien Giang, Viet Nam	Blue swimming crab ( <i>Portunus pelagicus</i> )	32,860		Ongoing		

7	Around Koh Sed, Surat Thani, Thailand	Blue swimming crab ( <i>Portunus pelagicus</i> )	900	Whole Year	Approved (08-03-2022)	SG-8.13ha MG-2.94ha	<ul style="list-style-type: none"> <li>No person shall fish in fisheries <i>refugia</i> area at Koh Sed off Surat Thani Province by the following fishing gears: (1) crab traps; (2) Crab gill nets of a mesh size less than 3 inches.</li> </ul>
8	Tanjung Leman, Johor, Malaysia	Spiny lobster ( <i>Panulirus polyphagus</i> )	171,549	Dec-Feb (3 months)	Final process	SG-706ha	<ul style="list-style-type: none"> <li>During the closure, spiny lobster shall not be harvested, possessed, purchased, or sold</li> <li>This size could be suggested as minimum CL to catch <ul style="list-style-type: none"> <li>Males is 6.58 cm - 8.18 cm CL</li> <li>females is 6.75 cm- 7.58 cm (based on CPL).</li> </ul> </li> </ul>
9	Bangka Belitung Province/ Bangka District, Indonesia	Squid ( <i>Uroteuthis chinensis</i> )	239,302.75		Ongoing*	CR-579ha MG-13,372ha	<ul style="list-style-type: none"> <li>to be updated</li> </ul>
	I. Nurseries & egg laying ground			Apr-May (2 months)	(*Has been proposed and being discussed further in the provincial and national levels for designation and implementation)		
	1) Gugus Karang Jagur	1,790.1					
	2) Gugus Karang Mejan	713.43					
	3) Coastal Riau Silip-Sungailiat	4,187.85					
	4) Coastal Tuing-Riau Silip (KKDP TWP Tuing)	610.67					
	5) Coastal Belinyu	2,279.22					
	<b>SUBTOTAL</b>	<b>9,581.28</b>					
	II. Spawning refugia			Oct-Nov. (2 months)			
	1) Gugus Karang Jagur	78,352.69					
	2) Northern Tuing	69,734.39					
	3) Gugus Karang Sembilan	48,205.32					
	4) Pulau dua	33,429.08					
	<b>SUBTOTAL</b>	<b>229,721.48</b>					
10	West Kalimantan Province/ Kubu Raya District, Teluk Batang District, and Katapang District, Indonesia	Penaeid shrimp ( <i>Penaeus merguensis</i> )	409,432	Nov.-Dec. (2 months)	Ongoing*	MG-3,075ha	
11	Kuala Baram, Miri, Sarawak, Malaysia	Black tiger prawn ( <i>Penaeus monodon</i> )	55,600	Aug-Oct (3 months) Feb-Apr (catch/release)	Final process	Miri-Sibuti CR National Park: 186,930ha	<ul style="list-style-type: none"> <li><b>Mangrove buffer zones</b> of 50 to 100 m facing open seas and 20 to 50 m along riverbanks should be preserved to protect the nursery area of the tiger prawn post larvae and juvenile</li> <li>shifting the trawling area to 8NM and above, the areas of less than 5 NM are considered protected from trawling</li> </ul>

activities where the stations of high concentration of tiger shrimp spawners are in the range of 4.47 – 5.76 NM

12	Off Coron Islands, Palawan, Philippines	Redbelly yellowtail fusilier	163.2	Closure Period	Final process	CR-1151 ha MG-229.6 ha SG-225.78 ha	• to be updated
13	Masinloc coastal area, Zambales, Philippines	One-stripe fusilier	120.69	Closure Period	Final process	CR-1602.2 ha MG- 99.8 ha SG-1182.2 ha	• to be updated
14	Bolinao coastal area, Pangasinan, Philippines	Siganids	99.84	Closure Period	Final process	CR-2518 ha MG-15.56 ha SG-1084.6 ha	• to be updated
15	Coastal area of Lagi – Binh Thuan, Viet Nam	Subcrenata ark clam ( <i>Anadara subcrenata</i> )	73,900		Ongoing		• to be updated
		<b>TOTAL AREA</b>	<b>1,159,241</b>				



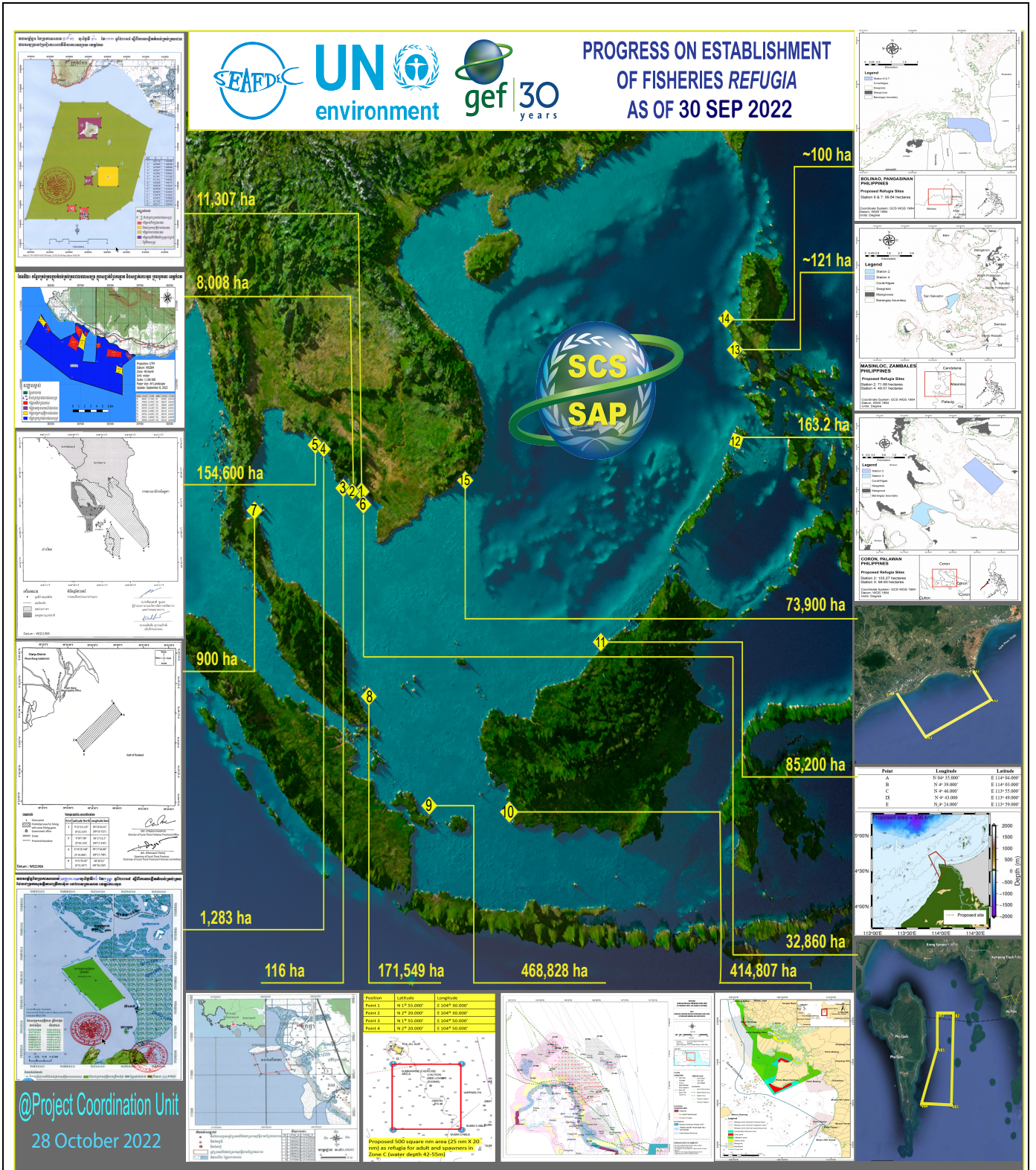


Figure 1: Map of 15 fisheries refugia in the South China Sea and Gulf of Thailand



**ឧបសម្ព័ន្ធ១ នៃប្រកាសលេខ ១៩៣ ចុះថ្ងៃទី ១២ ខែ កក្កដា ឆ្នាំ ២០១៨ ស្តីពីការបង្កើតតំបន់គ្រប់គ្រងជលផលសមុទ្រនៅប្រជុំកោះកោះកុងនិងកោះត្រពាំង ខេត្តកែប**

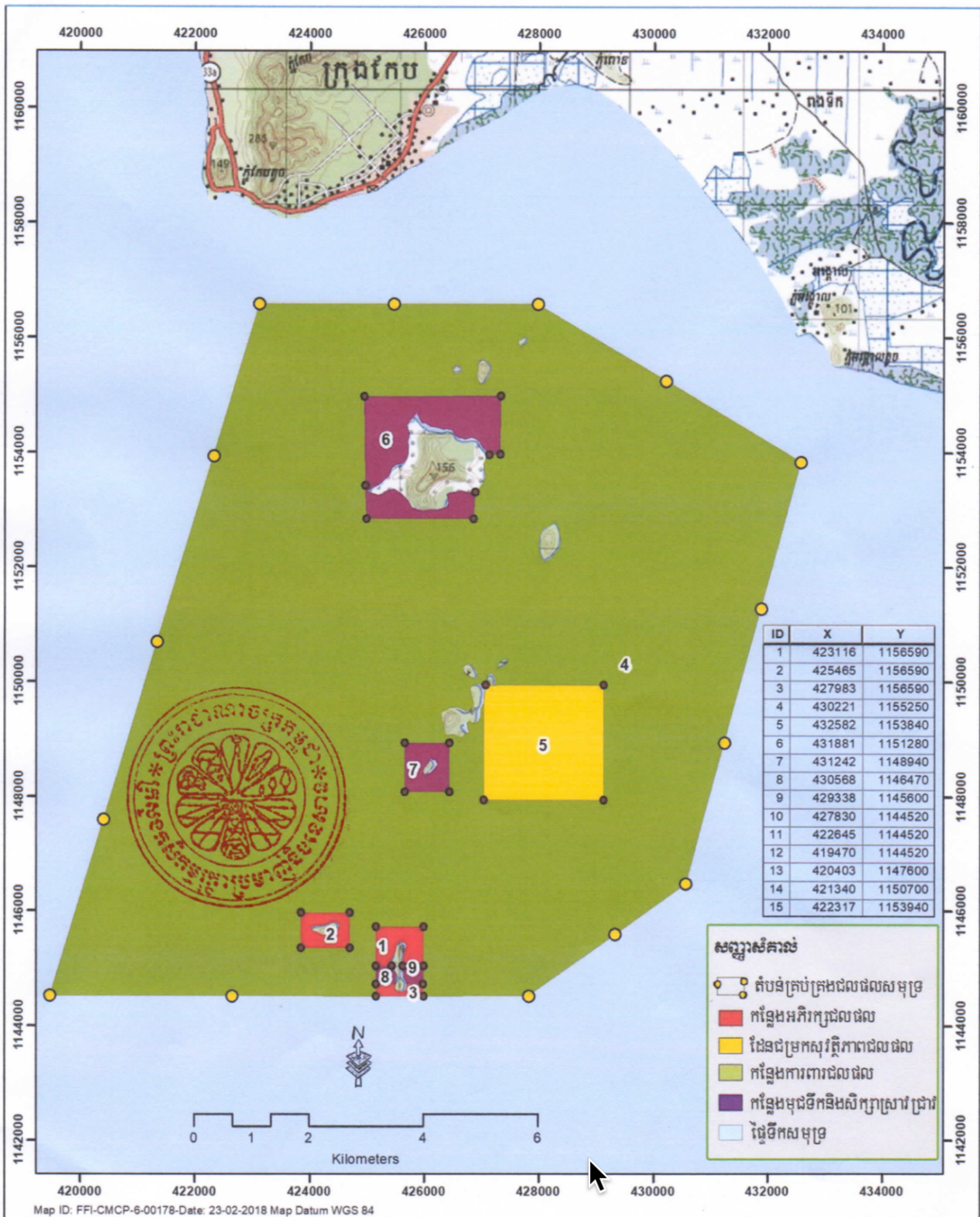


Figure 2: Marine Fisheries Management including Refugia for Blue swimming crab at Koh Po & Koh Tonsay Archipelago, Kep, Cambodia



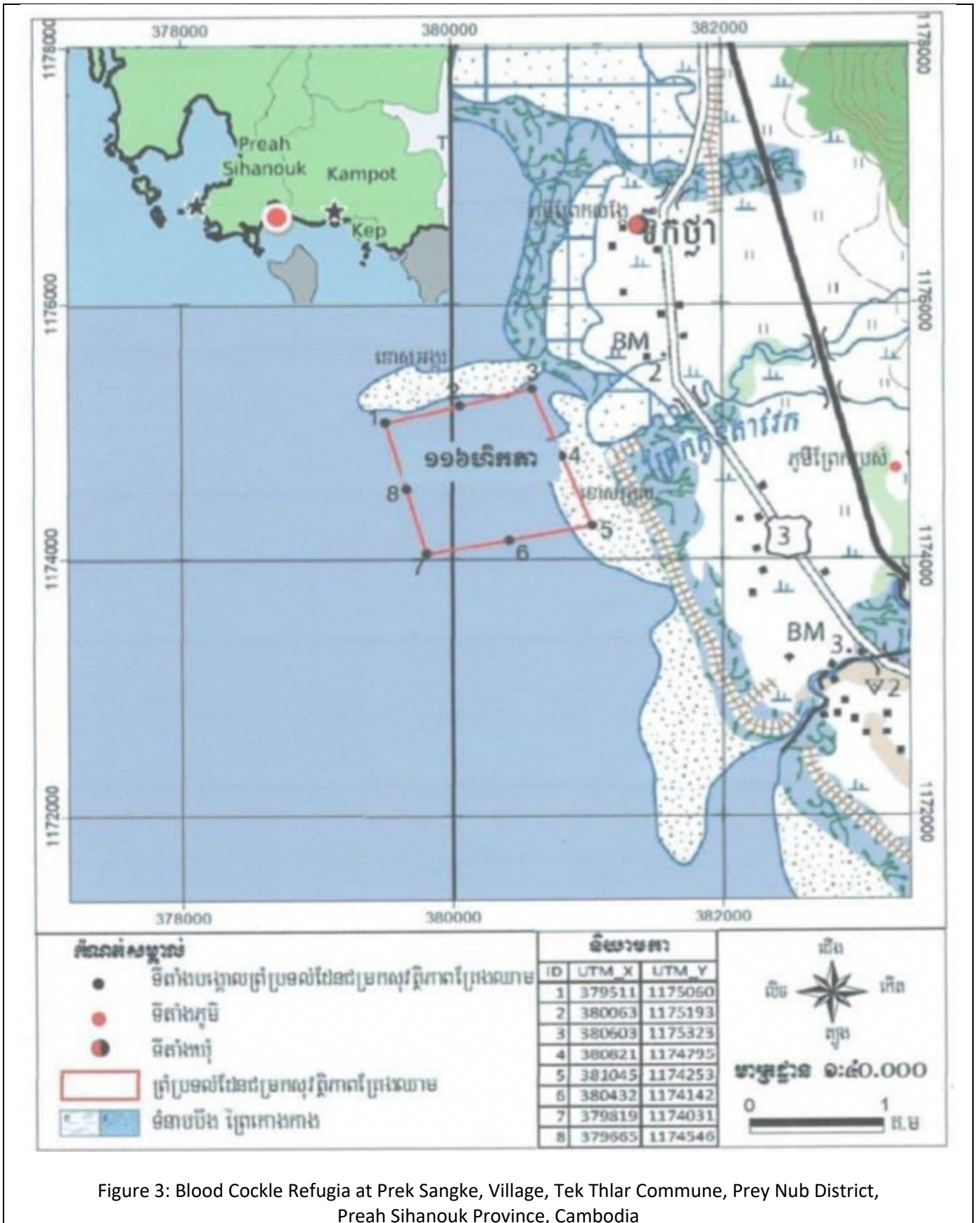


Figure 3: Blood Cackle Refugia at Prek Sangke, Village, Tek Thlar Commune, Prey Nub District, Preah Sihanouk Province, Cambodia



**ឧបសម្ព័ន្ធនៃប្រកាសលេខ ៤០៧ បក.កសក ចុះថ្ងៃទី ១៦ ខែ កញ្ញា ឆ្នាំ ២០១៩ ស្តីពីការបង្កើតតំបន់គ្រប់គ្រង  
ដែនឧបកម្មសុវត្ថិភាពត្រីកាម៉ុង ទៅកម្រសោប ខេត្តកោះកុង**

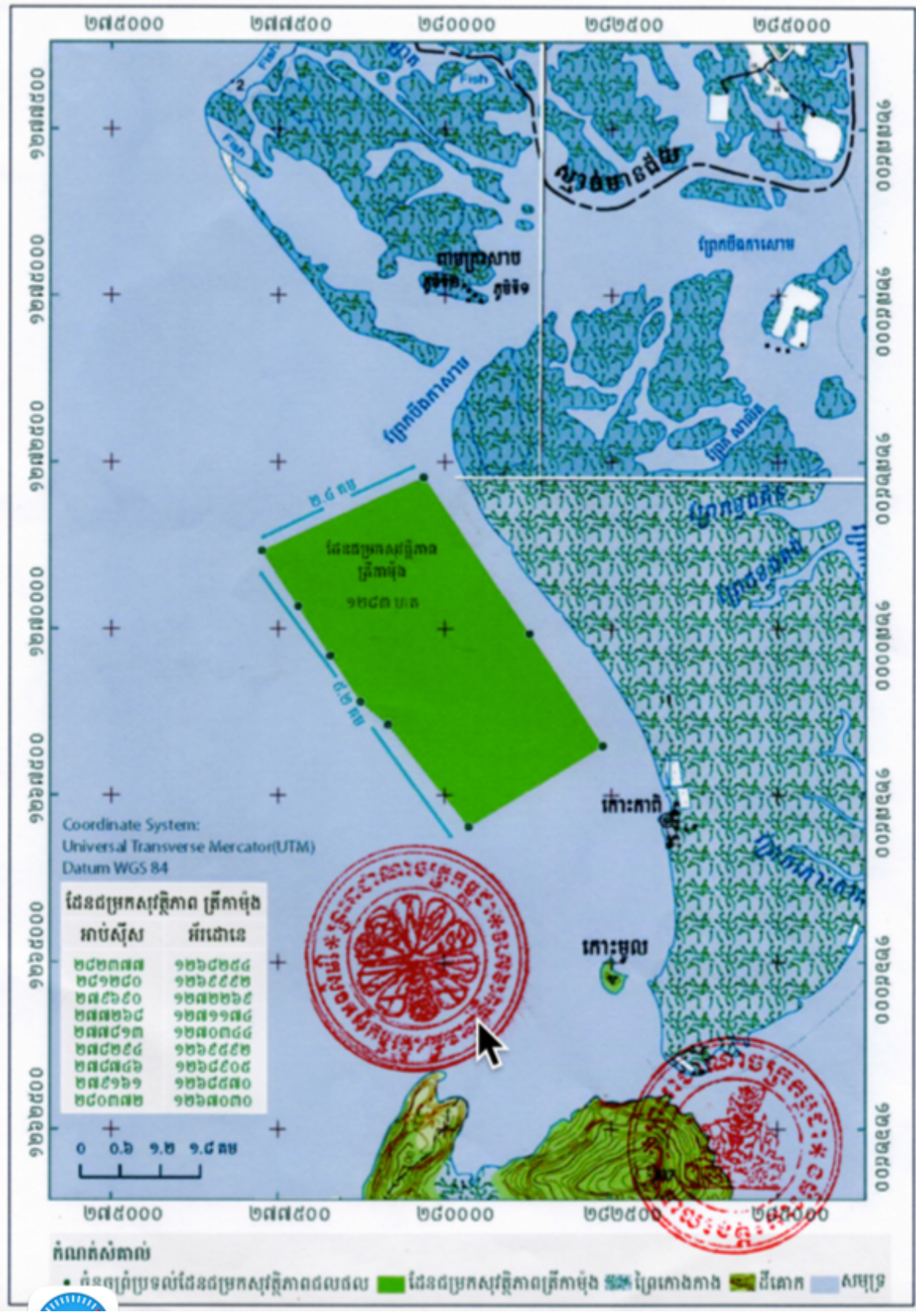


Figure 4: Indo-pacific mackerel Refugia at Peam Krasob, Koh Kong Province, Cambodia

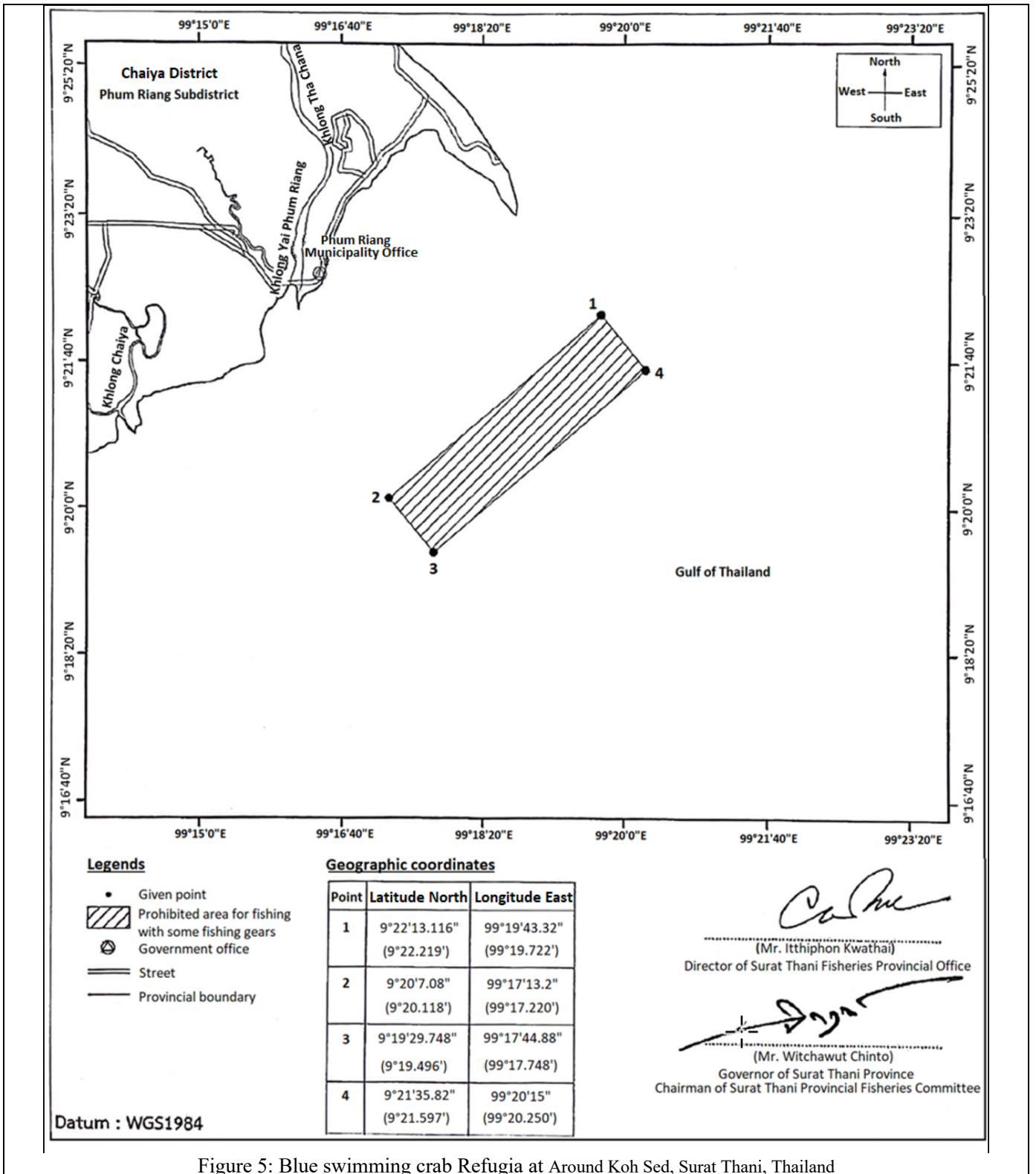


Figure 5: Blue swimming crab *Refugia* at Around Koh Sed, Surat Thani, Thailand

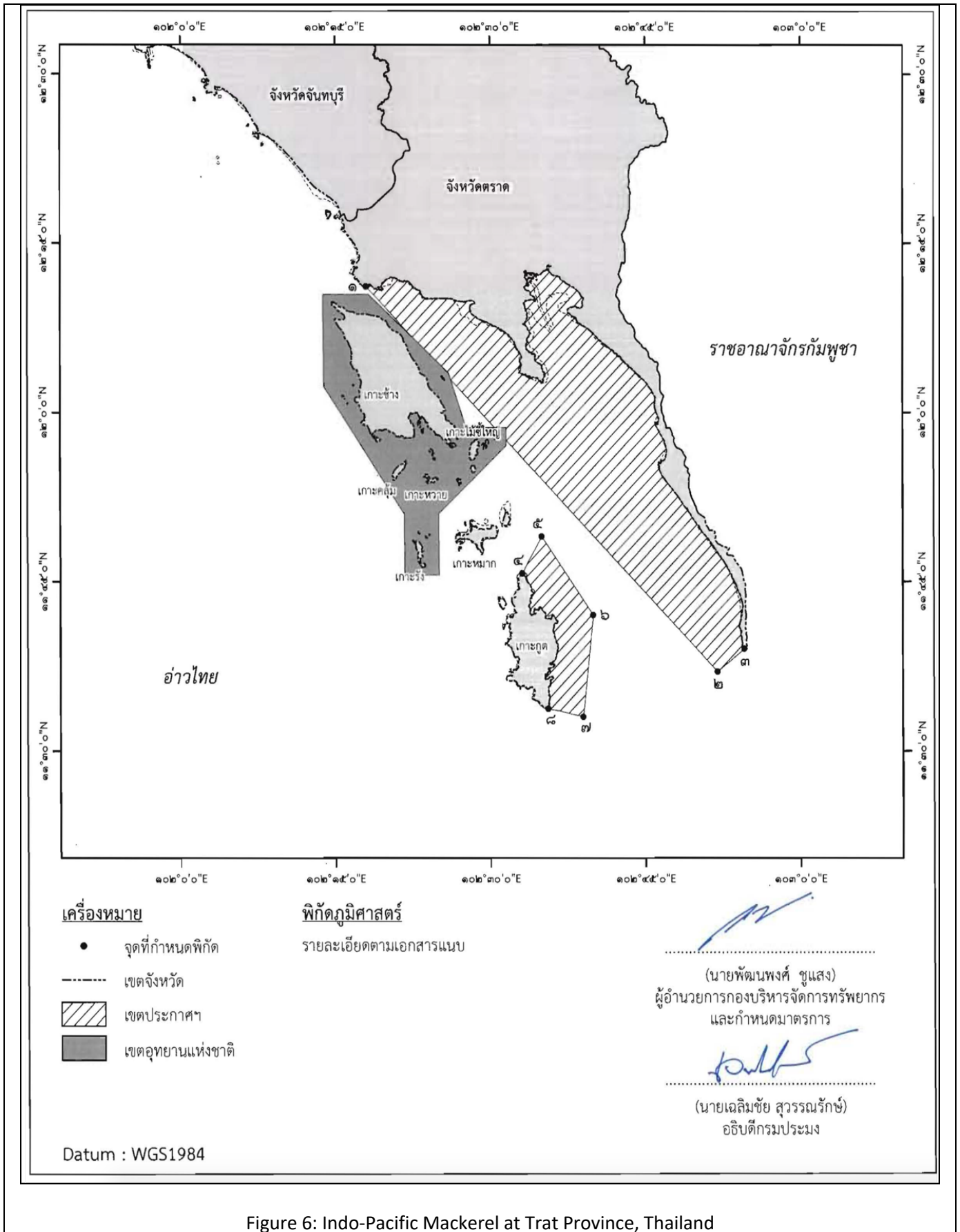


Figure 6: Indo-Pacific Mackerel at Trat Province, Thailand



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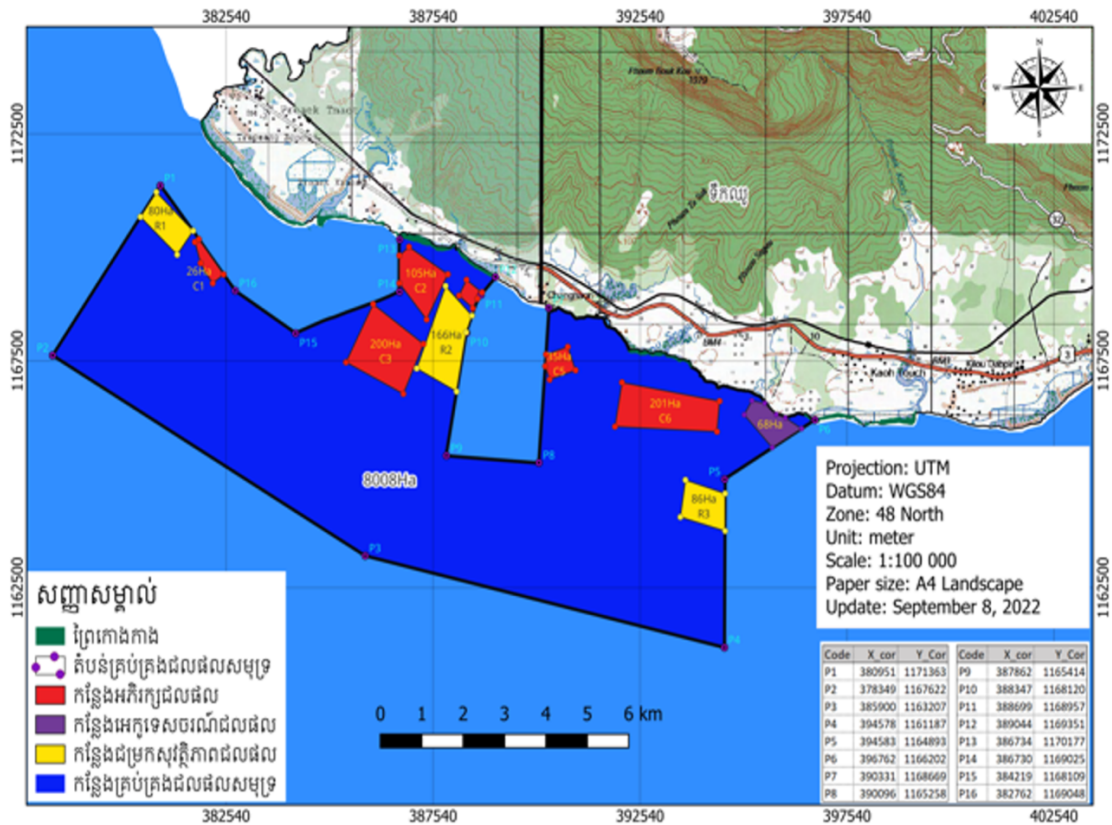


Figure 7: Group Refugia at Kampong Province, Cambodia

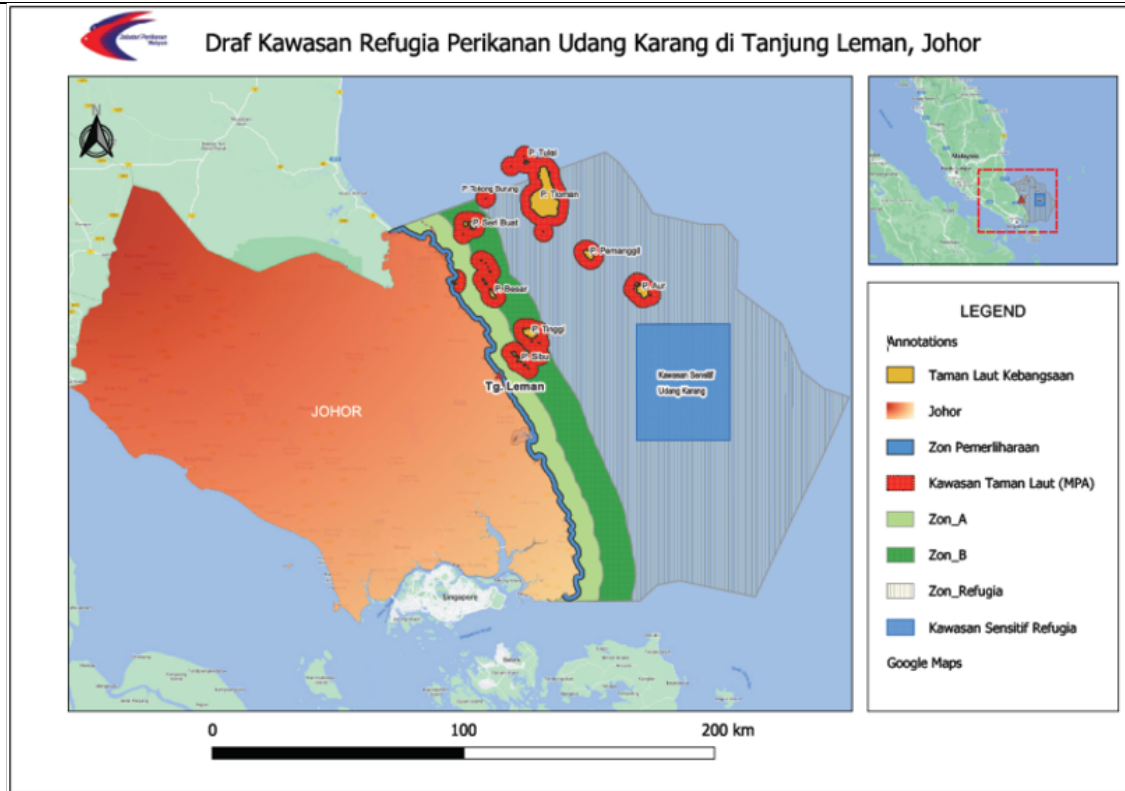
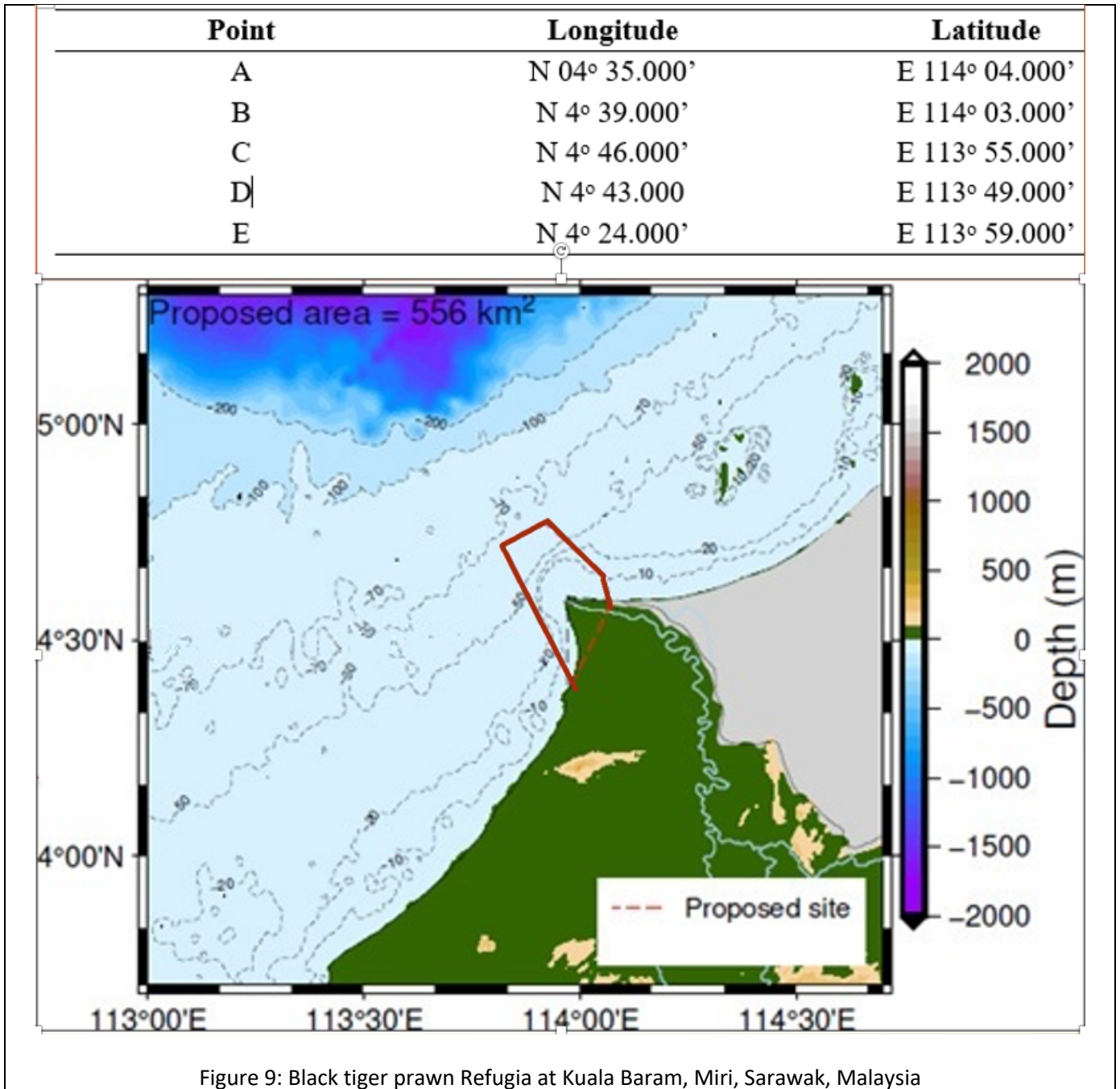


Figure 8: Mud Spiny lobster Refugia in Tanjung Leman, Johor, Malaysia



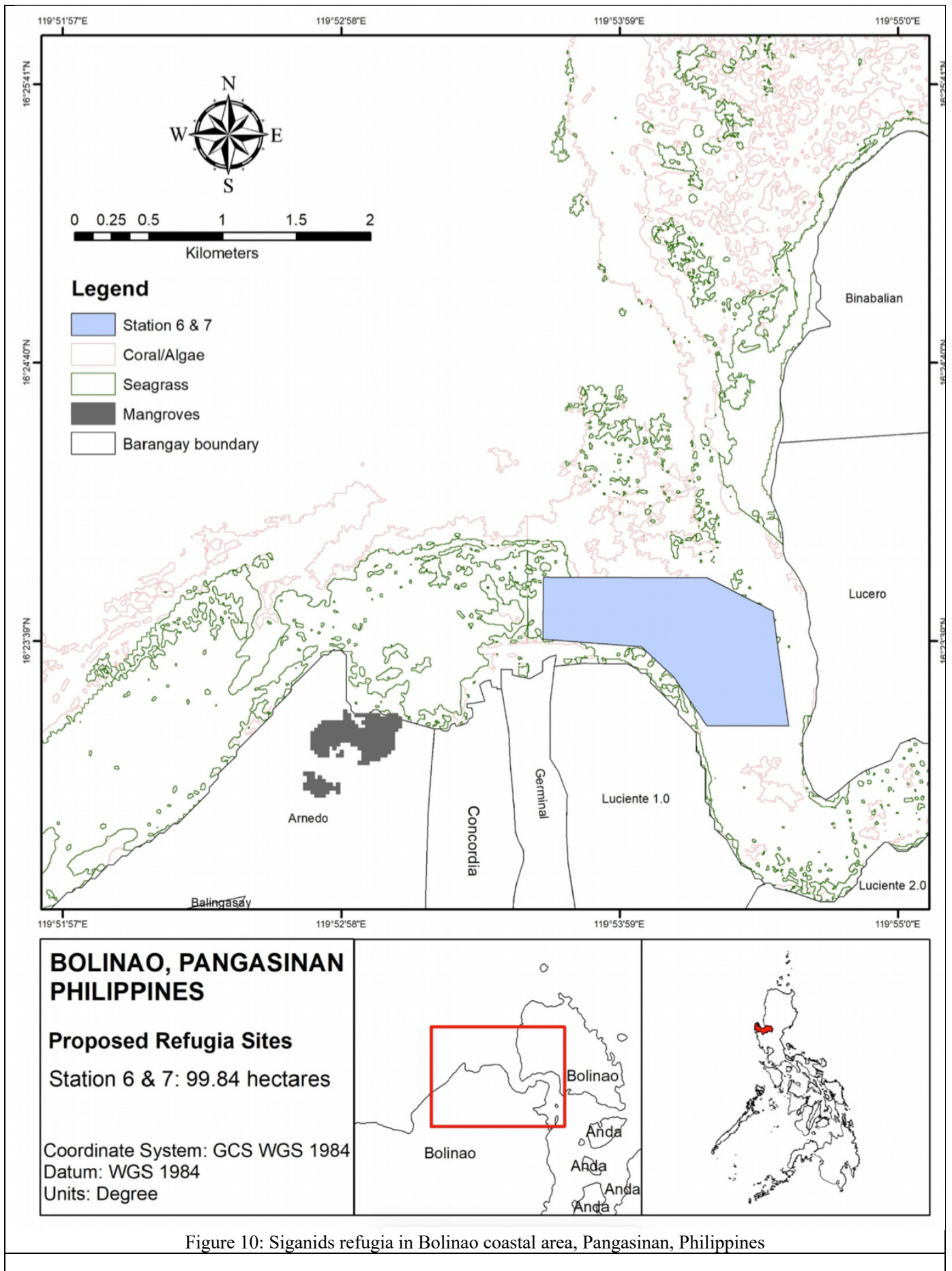


Figure 10: Siganids refugia in Bolinao coastal area, Pangasinan, Philippines



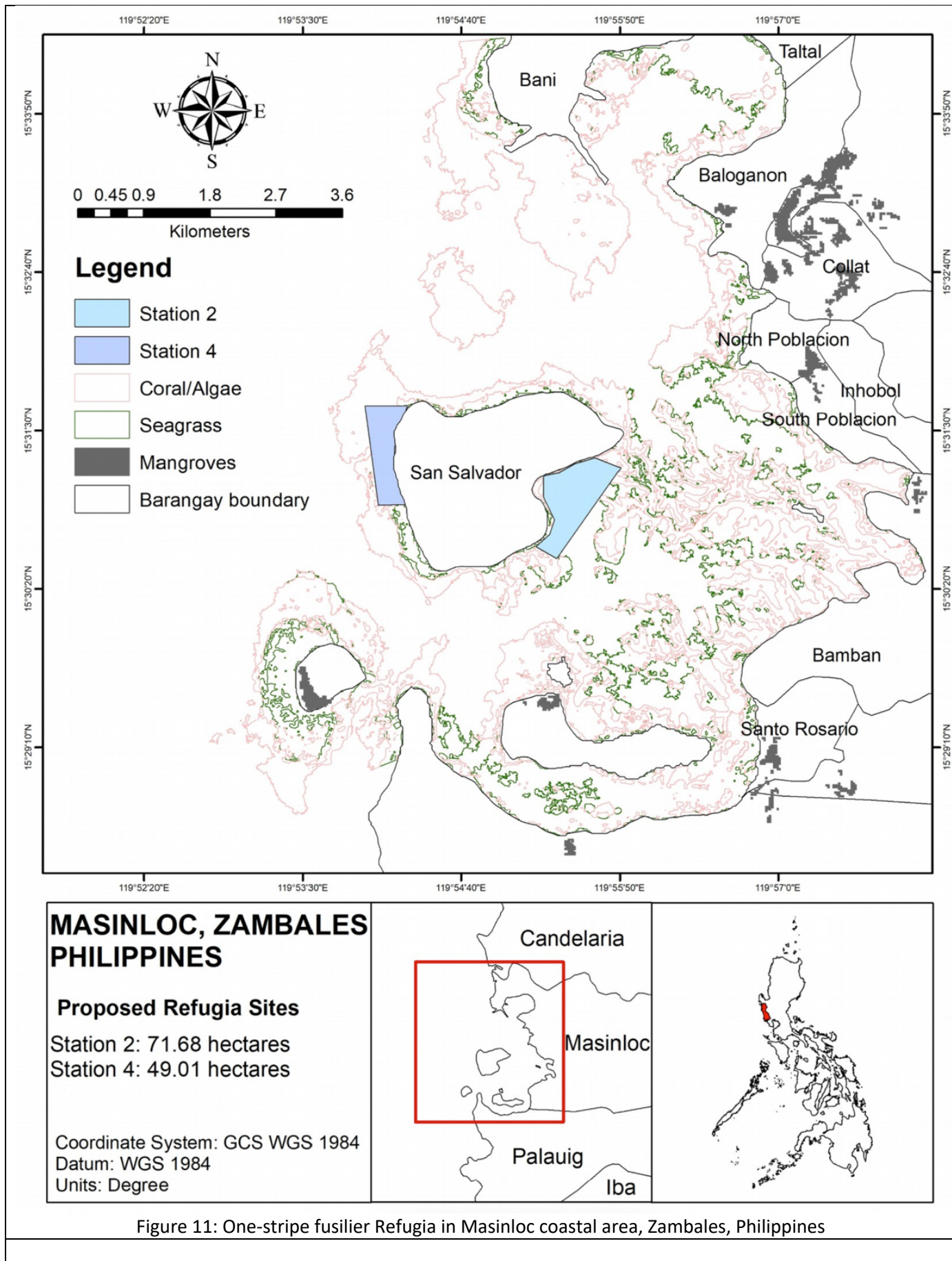
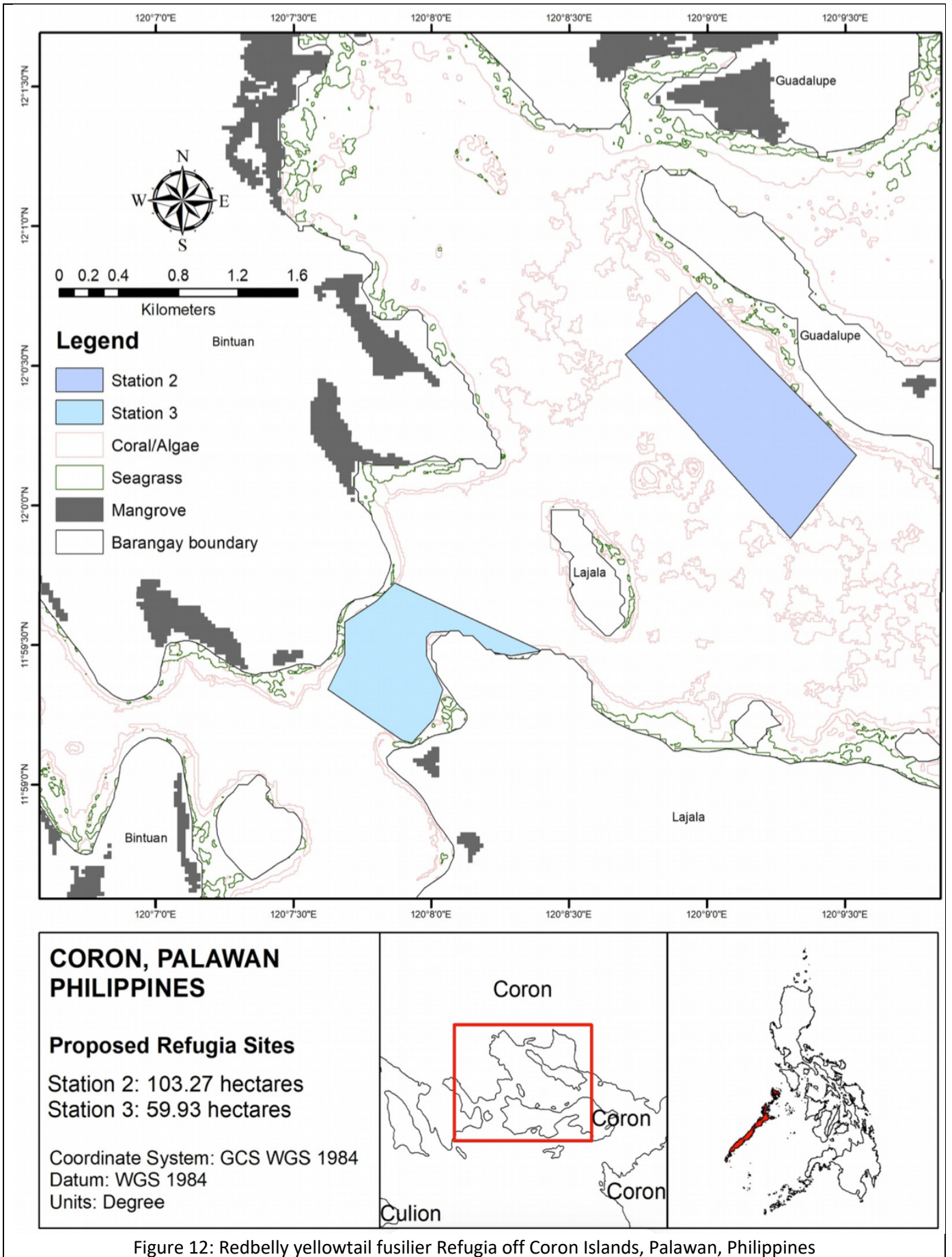


Figure 11: One-stripe fusilier Refugia in Masinloc coastal area, Zambales, Philippines





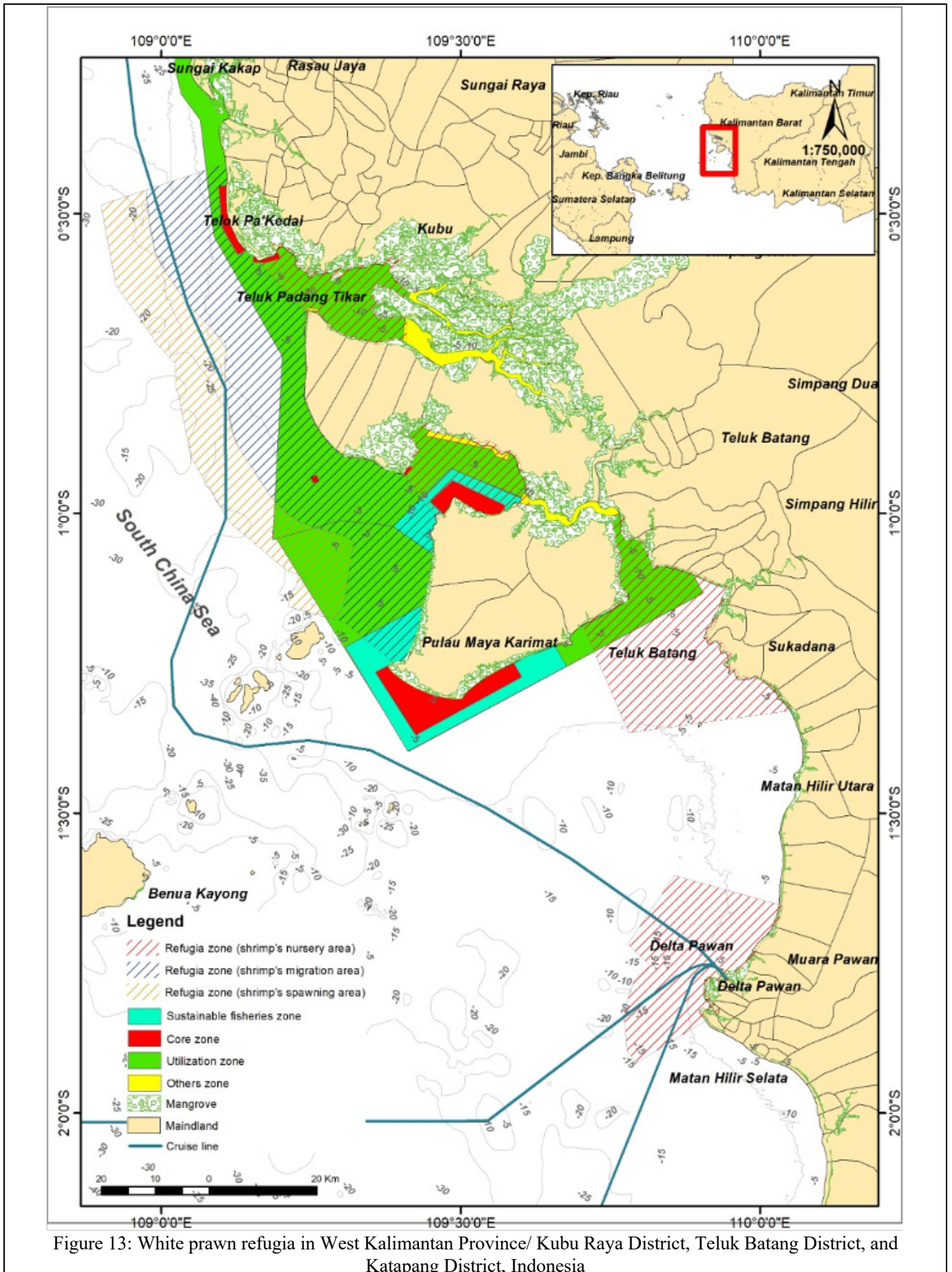


Figure 13: White prawn refugia in West Kalimantan Province/ Kubu Raya District, Teluk Batang District, and Katapang District, Indonesia

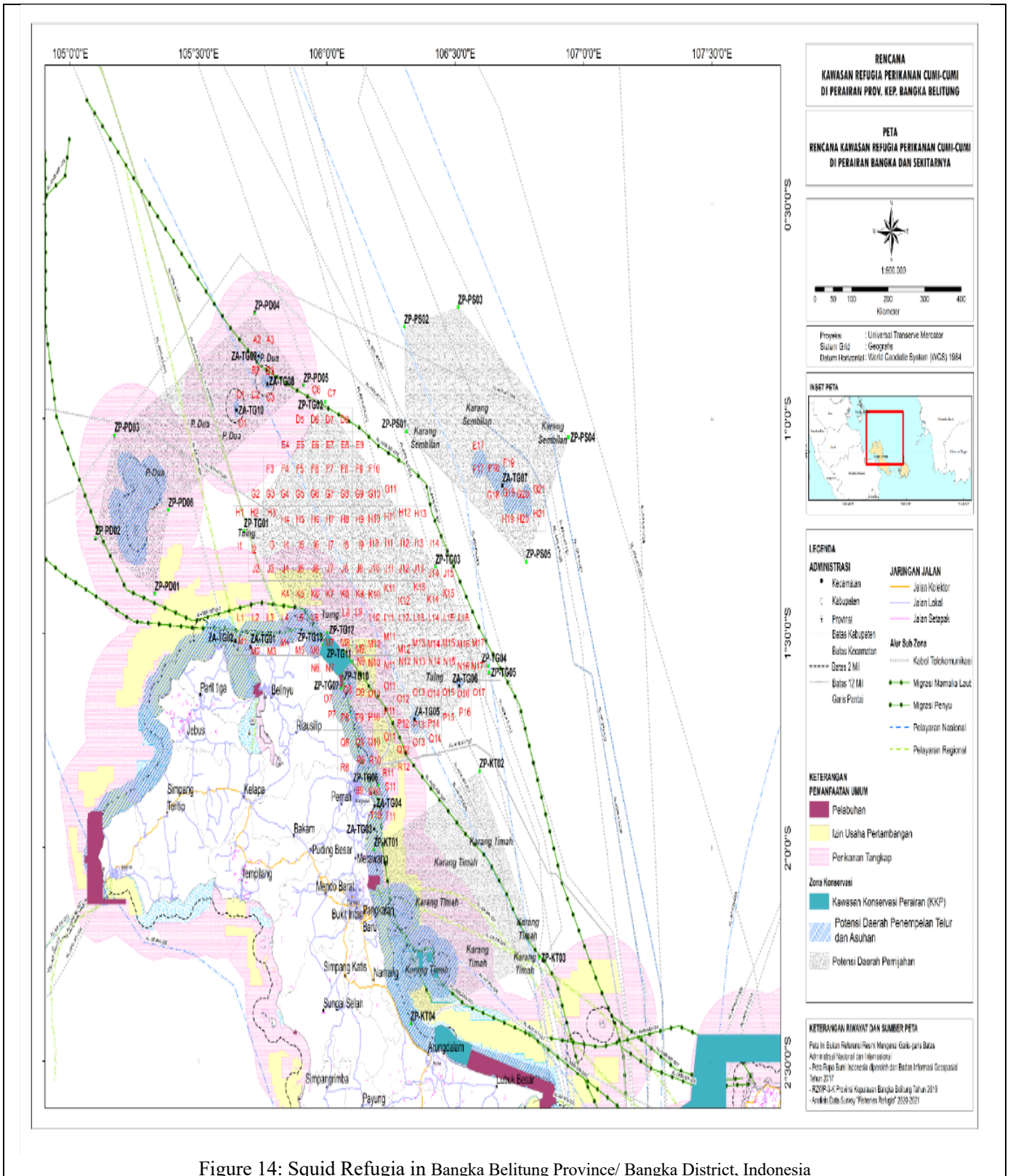


Figure 14: Squid Refugia in Bangka Belitung Province/ Bangka District, Indonesia





Figure 15: Blue swimming crab in east coast of Phu Quoc Island, Kien Giang Province, Viet Nam



Figure 16: Subcrenata ark clam Refugia in Coastal area of Lagi – Binh Thuan, Viet Nam

