DUGONG, OTTER & SEAHORSE HABITAT STUDY

1.0 INTRODUCTION

1.1 Pelabuhan Tanjung Pelepas (PTP) is Malaysia's most advance container terminal strategically located at the confluence of the main east – west shipping lane. PTP is situated on the eastern side of the mouth of Pulai River in South West Johor and a naturally sheltered deep water port.

1.2 There are many developments and other projects at Tanjung Pelepas Port Water Limit. Thus, Johor Port Authority (JPA) conducting a research aims to determine, map and preserve the natural habitats in the area. Based on the experience of the villagers, the key habitats in the determined area are the habitats of Dugongs, Otters and Seahorses. These animals have been seen in the area but no specific study had previously been conducted.

1.3 Therefore, JPA wants the study will be pioneering information on Dugong, Otter and Seahorse mapping and presence in this area. Credible and verifiable information will be collected that can be used for species and habitat conservation and protection. The study will gather scientific knowledge to protect the natural heritage of the area and will ensure that the development and expansion of PTP will not impact these habitats.

1.4 The area of the research covers Pulau Merambong, Beting Tanjung Kupang and Beting Tanjung Adang at Tanjung Pelepas Port Water Limit. This study was conducted for 3 years from 2018 to 2021.

2.0 RELEVANT UN SUSTAINABLE DEVELOPMENT GOALS (SDG)

2.1 For this study, we have determine that is was under 5 relevant UN SDGs as below :

1.	SDG 3 : Good Health and Well - Being	The local community around our port area depend on the coastal waters for their traditional livelihoods. This research has ensured that the local community are partners in our efforts for long – term sustainability. It allows us to work with them to improve the conditions of their homes and natural habitats that they depend on for food and income. Our work has helped us become a part of the community so that we can all work together for a long-term inclusivity and sustainability.

2.	SDG 4 : Quality Education	This study provides environmental and sustainability education for local community youth, empowering them with the skills to monitor and care for their habitat, working together with JPA and the port to identify important areas for conservation, as well as the report any potential environmental problem that arise in the area. This research ensured that future generations around our port area have the skills and knowledge to work with JPA and the port to care and protect their environment.
3.	SDG 8 : Decent Work & Economic Growth	This research project promotes sustained inclusive and sustainable economic growth, productive employment and decent work for all – JPA, the port and other companies in this area. On the other hand, this research helps to promote beneficial and sustainable tourism as this area are rich with marine biodiversity, flora and fauna for our educational tourism.
4.	SDG 14 : Life Below Water	This research project provided funding for the local community to document and research their marine and coastal areas, with support of marine scientist, so that we have credible data related to the marine biodiversity in our port area and a scientific baseline of the flora and fauna that needs to be protected. In this way, Johor Port Authority (JPA), the port and the community work together to mitigate any problems that may arise from port expansion work, as well as find a way to ensure that development and operations are sustainable.
5.	SDG 15 : Life On Land	This research project also enabled local youth to map the coastal mangroves, especially those within the port area so that JPA and the port can use the information to identify areas that are vital to conservation including endangered and endemic species. We now know how many mangrove species we have, as well as the fauna that depend on it. It recognises that true sustainability around our port zones have to be

		holistic and include areas on land, to the coasts, to sea – the habitats cannot be studied or protected silos. Hence these many facets of our work are interconnected and important. We also included in this programme mangrove replanting, as well waste collection for immediate repair and preservation of the area and are in conversations between port and community for a long – term waste recycling and reuse project on our land.

3.0 SUMMARY OF REPORT FOR DUGONG STUDY

3.1 This project was to document dugong feeding trails al all the Seagrass Meadows in this area. It was necessary to study and map feeding trails in all the Seagrass Meadow and not just the want nearest to our port (PTP) only as Dugongs have a wide feeding range. The research showed that Dugongs rotated between 3 intertidal sites to feed and were also frequently spotted by fisherman in subtidal Seagrass areas not far from the port.

3.2 The research indicates 12 Seagrass species in the area as details below:

Species at Pulau Merambong	Species at Beting Tanjung Kupang	Species at Beting Tanjung Adang
Enhalus Acoraides	Enhalus Acoraides	Enhalus Acoraides
Halophila Ovalis	Thalasia Hemprichii	Thalasia Hemprichii
Halodule Spinulosa	Halophila Ovalis	Halophila Ovalis
Thalasia Hemprichii	Cymodocea Serrulata	Syringodium Isoetifolium
	Cymodocea Rotundata	Cymodocea Serrulata
	Halophila Spinulosa	Cymodocea Rotundata
		Halodule Uninervis
		Halodule Pinifolia

		Halophila Spinulosa

4.0 RELATED PICTURES FROM THE RESEARCH FOR DUGONG STUDY

Research Area	
Dugong	


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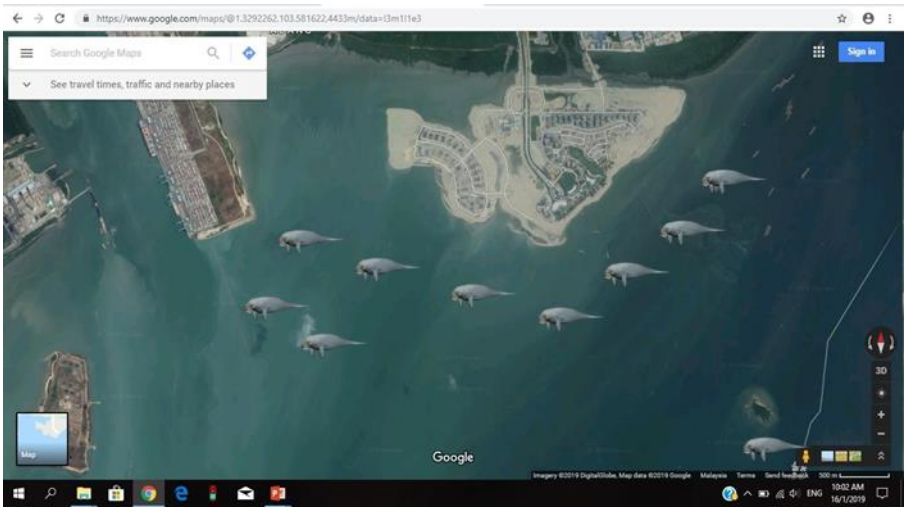
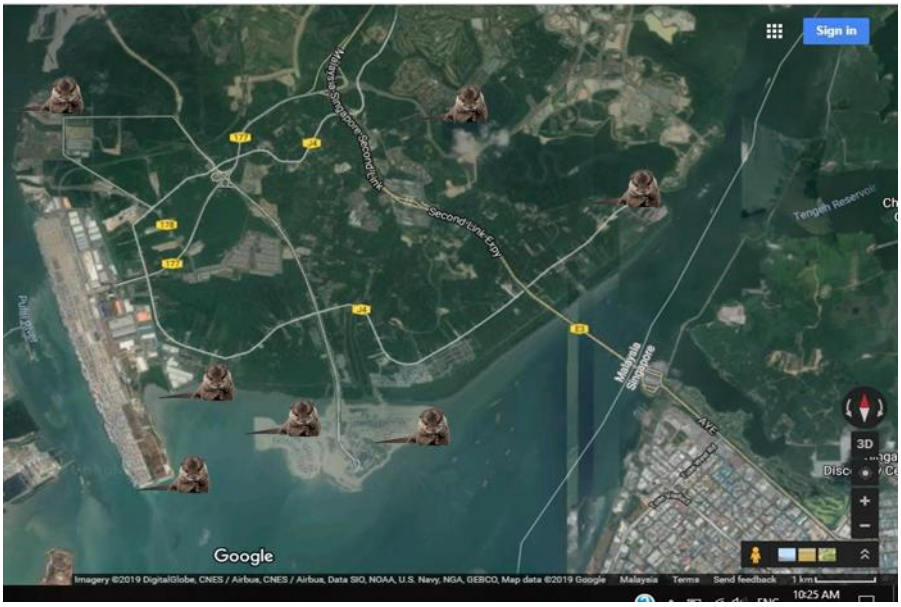
YAMAHA

Dugong sightings map based on community reports	 

Dugong feeding location and trails (Seagrass Meadow)	  

5.0 SUMMARY OF REPORT FOR OTTER STUDY

5.1 The study of Otters is pioneering work in Mukim Tanjung Kupang. In order to ensure that the Otter Study methodology was feasible, the research was initially done on Otters around a fisherman jetty at Sungai Che Manan, Pendas, where there is a known population of Otters. Once the methodology was proven valid, the work then transferred to the mangrove areas around the port.

5.2 From the initial study at the jetty, the research found several Smooth coated Otter families using the mangroves closets to the port (PTP) and a new family member at the area near Second Link Bridge.

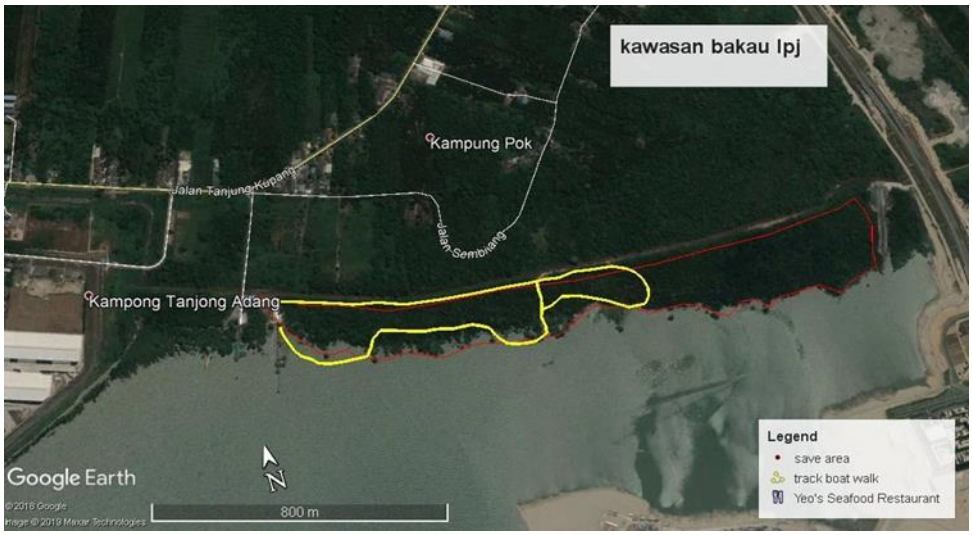
5.3 Part of the Otter study requirements was the mapping of the mangrove habitats that they use. However, this requirement was extended into a detailed mapping of the mangrove area near the port.

5.4 10 species of Mangrove was found in the research areas as details below :

1. Rhizophora Apiculata
2. Rhizophora Mucronata
3. Bruguiera Cylindrica
4. Bruguiera Gymnorgiza
5. Ceriops Sp
6. Nyoa Fluc=ticans
7. Sonneratia Alba
8. Xylocarpus Granatum (*the expensive mangrove*)
9. Avicennia Rumphiania (*the endemic species)*
10. Bruguiera Hainesii

6.0 RELATED PICTURES FROM THE RESEARCH FOR OTTER STUDY

Otter and their behaviour observation	  

Otter Location	
Mangrove Area	 


Sungai Perpal
Kawasan lembu
Hutan berpaya
30-70 m length
T1: 70m
T2: 60m
T3: 50m
T4: 60m
T5: 50m
T6: 40m
T7: 60m
T8: 30m
T9: 40m
T10: 50m
T11: 80m
T12: 100m
T13: 70m
Mangrove transect
1.3 km wide
Sungai Perpal
Pengkalan Pok
200 m length
T17: 200m

	
Mangrove Tree Planting	

7.0 SUMMARY OF REPORT FOR SEAHORSE STUDY

7.1 Seahorse research has been conducted in Mukim Tanjung Kupang by one scientist before, but there has been no update on population status and numbers since 2010. This study is also novel in its use and incorporation of local knowledge and observations, especially by fisherman.

7.2 In situ guidance on this study by Dr. Serina Rahman from Kelab Alami as well as the local fisherman (who were once Seahorse collectors, and could hence teach the youth how to make the necessary tools to collect the seahorses for tagging). These fishermen no longer collect Seahorse for sale and prevent anyone else from colleting them too.

7.3 3 species has been identified during the research;

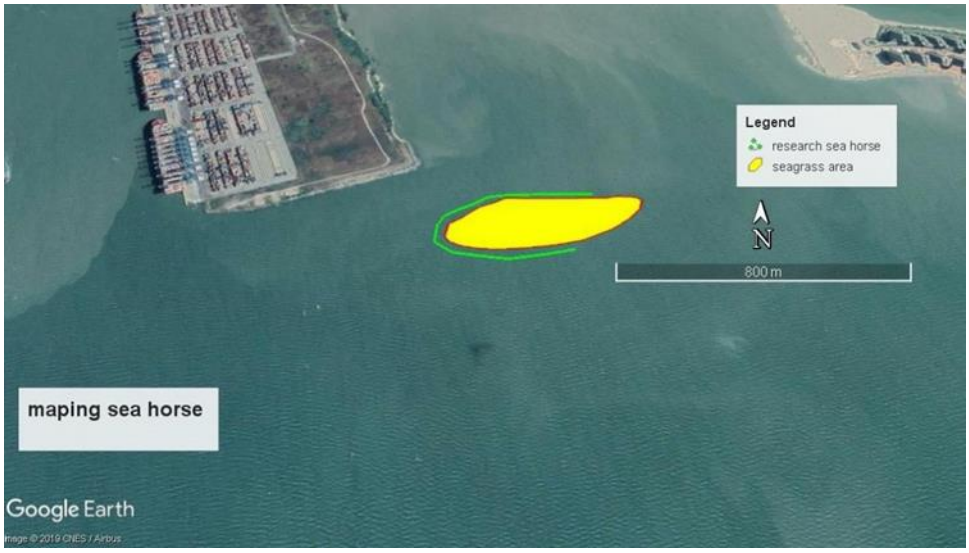
1. Hippocampus Kuda (Yellow Seahorse)

2. Hippocampus Spinossimus Sp.

3. Hippocampus Trimaculatus Sp.

8.0 RELATED PICTURES FROM THE RESEARCH FOR SEAHORSE STUDY

Seahorse and their behaviour observation	  

Seahorse Mapping Area	
Eqiupment to catch the Seahorse for tagging (*called Sondong*)	

9.0 PICTURES OF OTHER HABITATS, FLORA AND FAUNA

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