



Climate Change Mitigation: Potential of seagrass towards offsetting CO₂ emissions



UMT's World Oceans Week 2022

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A Story of Perseverance: From Felda Settler Orphan to Doctorate

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Science-Policy Interface in Action

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There is currently a paucity of information how much blue carbon is stored in and sequestered by Southeast Asian (SEA) seagrass meadows. The IOC Sub-Commission for the Western Pacific (WESTPAC) working group, with the key seagrass researchers from Malaysia, Philippines, Thailand, Viet Nam, India, Myanmar and Indonesia have reported how much carbon can be stored in seagrass meadows and their sequestration potential in the countries of Southeast Asia including the Andaman and Nicobar Islands of India.

Although the coastal and marine habitats along the SEA countries contain diverse seagrass species and can store huge amounts of organic carbon, the loss of seagrass meadows will trigger remineralization in the sediment, which will CO2 emissions. We are currently losing 2.82% seagrass cover per year in SEA. If this rate of decline continues, researchers predicted, there will be no seagrass meadows by 2060 in this region.

Dr. Mohammad Shawkat Hossain, Lecturer, INOS, UMT shared location and carbon estimates information found along the coasts in Malaysia. This regional research is led by Excellence Center for Biodiversity of Peninsular Thailand (Prince of Songkla University). This world-first study revealed total organic carbon stored in seagrass biomass and sediment of SEA is 5 times higher than previously recorded for the Indo-Pacific. Malaysia has higher in mixed than monospecific seagrass meadows, with profoundly large-sized Enhalus acoroides that enhanced ability to store more carbon than other species.

"Because of wide the range of variations in meadow size, coupled with disturbances, current carbon storage is 198 – 19 Mg ha-1," Dr. Shawkat said. He continued, "since Malaysia is still in the list of least amounts of annual blue carbon loss among SEA countries, relevant stakeholders should take the necessary actions to address sustainable management and conservation of seagrass meadows, and include it in the national policies and agendas, realising their potential for climate mitigation".

The study has been published in the Science of the Total

Environment (https://www.sciencedirect.com/science/article/abs/pii/ S0048969721019288).

"Regional networking and mapping the blue economy sources will help researchers, managers and conservationists to identify threats and develop strategies as naturebased solution to protect coastal and marine habitats which is critical for mitigating climate change," Dr. Shawkat said.

Highlights:

- Seagrass ecosystems in Southeast Asia can store large amounts of organic carbon.
- Blue carbon in seagrass can contribute towards offsetting countries' CO2 emission.

• Under current loss rate all meadows will disappear by 2060 and emit plenty of CO2.

• Current meadows have high potential to contribute CO2 reduction goal by 2030.

Written by: Mohammad Shawkat Hossain





Director's Note : MOVING FORWARD, MAKING IMPACT

ENVISIONING 2022 : MAKING PURPOSEFUL IMPACT One of the greatest challenges for scientists are to break the barriers that stands between science and the general public. Started in 2013, World Ocean Week (WOW) has been on of INOS long term initiatives to enhance public engagement across a varitey of stakeholders. WOW2022 retains this similar spirit, to raise awareness among people about the "impact of human actions on the ocean".

All of our research groups are fully committed in contributing to our scientific community with better understanding of the ocean, but most importantly we always find a better way to interact and create an ocean-oriented society that will improve the way we interact with the ocean.





PURPOSEFUL IMPACT

Envision Marine Future

INOS will play a bigger role for the next 10 years, with the spirit of the Ocean Decade. We will march forward, solving problems and making the oceans better, by engaging those around us.



UMT's World Oceans Week 2022

Written by: Azida binti Abdullah

At INOS, we are passionate about enhancing our national ocean literacy within our society. Our long-term mission is to empower local communities, especially the youngest generation, on the significance of our ocean in our daily life.

UMT's World Oceans Week 2022 (WOW 2022) celebration has been an annual UMT event since 2013 in conjunction with World Oceans Day, celebrated worldwide on June 8th.

The celebration of WOW 2022 is a manifestation of UMT's support for UNESCO's annual World Oceans Day campaign, in conveying and taking a role in providing global awareness at the local level on the importance of sustaining our marine resources. With the theme of "Revitalization: Collective Action for the Ocean", WOW 2022 was implemented with various activities to raise community awareness and joint hands with UMT experts in protecting the environment and instilling enthusiasm to conserve and protect marine biodiversity jointly.

WOW 2022 is also one of UMT's social responsibility efforts to jointly increase marine environment awareness among local communities in safeguarding the importance of ocean resources. Directly, these efforts promote UMT's niche area, marine science and aquatic resources, and position UMT as a leading university in marine studies. It is hoped that UMT could also convey the message of preserving and appreciating marine resources in daily life.





RRC@INOS Open Day : Discover A World Under the Sea

Written by: Izwandy Idris

The South China Sea Repository and Reference Centre (RRC), INOS, in collaboration with the Faculty of Science and Marine Environment, Sustainable Ocean Alliance (SOA), USA, and UNIQLO Malaysia, has organised RRC@INOS Open Day with the theme 'Discover A World Under the Sea: Stories from the South China Sea' from 12th until 16th June 2022. This program was formulated as part of the World Ocean Week (WOW) 2022 celebration by UMT. The overarching goal, theme, or aim of RRC@INOS Open Day is to disseminate information on the natural wealth of the ocean, and subsequently inculcate appreciation, interest, and awareness of protecting Malaysia's underwater ecosystem. This is in lieu with the RRC main objectives to complete the inquiry, discovery and learning processes related to the marine environment.

The open day's main activity was the INOS Research Gallery exhibition. Apart from the current exhibits, ten additional information stations were set up by students of Biological Systematics of Marine Organisms and assisted by the RRC Volunteers. Most of the students' exhibitions focused on Malaysia's marine species. The exhibition received an overwhelming response from the audience. More than 3000 students from 21 schools across Terengganu visited the gallery within five days, which was two folds more than the expectation of the RRC. Visitors were amazed at the diversity of marine organisms in Malaysian waters, reflected by the response to the engagement done by UMT students and volunteers. Apart from the exhibition, the RRC@INOS Open Day also included virtual SOA talks by SOA representatives around the globe, INOS Seminar Series on natural history repositories, treasure hunt, and quizzes.

The success of the RRC@Open Day 2022 indicates the positive future of marine conservation in Malaysia. More younger Malaysians are aware of the marine ecosystem, threats, and their contribution to minimising the impacts.



A Story of Perseverance:

From Felda Settler Orphan to Doctorate

Written by: Siti Tafzilmeriam binti Sheikh Abdul Kadir

Nurulafifah Yahya, a 34-year-old from Felda Maokil, Johor, who studied marine science at Institute Oceanography and Environment (INOS), Universiti Malaysia Terengganu, has become the first woman from Felda Maokil in history to earn a doctorate.

It was a double joy for Nurulafifah when she and her younger sister Nurul Ezzah both graduated with Nurul Ezzah achieving her bachelor's degree in tourism management.

It was a day to be remembered for two siblings who all received their scrolls upon graduating from Universiti Malaysia Terengganu (UMT) at the university's 19th Convocation Ceremony on March 20 and 21, 2022.

"Words of encouragement from our mother became the main driving force for our success and we obtained our PhD's and Bachelor's degree at the same convocation. "This is indeed a sweet memory for the rest of the family and me."

"My mother's perseverance in bringing us up after my father's death was our inspiration to achieve excellence in our studies, to change family's fate." "Mom always encouraged us to study to the highest level possible," said Nurulafifah, who received MyBrain15 (MyMaster and MyPhD) sponsorship from the Higher Education Ministry.

A JOURNEY FULL OF OBSTACLES

I am the second child of six siblings. I am the daughter of a Felda settler who lives in Felda Maokil, Labis. My father passed away when I was 11 years old. My mother is a full-time housewife. After my father passed away, my mother also did not work because we were still small. Furthermore, my youngest brother was only 7 months old then, and he was diagnosed with a 'heart hole' after a series of high fevers after my father passed away. Therefore, my mother needs to go to the Segamat Hospital and National Heart Institute for his regular check-up. Life as a child of Felda settler back then is not as pleasant as it is now. We felt the hardships and struggles of living especially during inflation. Luckily, we live in Felda and can make a debt at D'Mart Felda to get food and basic needs.

THE INSPIRATION TO BE SUCCESSFUL

I want to be an example and inspiration to my sisters to pursue their ambitions. As a fully educated student in a day school in the Felda area, I want to prove that I can succeed like my other friends who get a better opportunity. We can do it if we are determined to do so. When starting my studies at the postgraduate level, I want to do research that benefits the community and the country. I want to be someone who contributes something to others.

THE QUOTES FOR SUCCESS IN LIFE

Determination. Persistence. Perseverance. For postgraduate study, I always tell myself this special quote "FINISH WHAT YOU STARTED".



Nurulafifah Yahya (left) and her sister Nurul Ezzah (right) in graduation costumes posing with their beloved mom at the 19th UMT convocation ceremony.



Conducted a macrobenthos study while participating in Scientific Voyage Sampling Expedition in the waters of Kelantan and Terengganu with researchers from the Institute of Oceanography and Environment (INOS).





INOS Seminar Series



Ocean Mapping & Geospatial (OMG)

OMG aiming to create an in-depth understanding of seafloor habitats, morphology and the dynamic processes

influencing the seafloor. They develop novel tools and techniques to achieve this aim through collaborative effort between experts, industrial partners, and technology makers. This strength enables them to undertake and becoming a key player in habitat mapping projects in Malaysia. Scan the QR code for the recorded seminar video.



LINK

JUST IN CASE YOU MISSED IT

Don't worry if you missed out on our seminar series, you can watch the recordings!



RECORDING LINK HERE

Marine Endangered Species (MES)

Want to know about research on the Marine Endangered Species in Malaysia? These majestic and iconic marine organisms face a lot of threats, yet research and conservation efforts on them are not for the faint hearts too. Scan the QR code for the recorded seminar video.





RECORDING LINK HERE

Science-Policy Interface in Action



On 14th June 2022, UMT has been appointed the 1st university as a strategic partner to the 2nd National Coastal Physical Plan (RFZPPN-2). This appointment acknowledges our expertise in coastal and marine environment, while allowing us to facilitate in RFZPPN-2's implementation through Science-Policy Interface by translating scientific findings into actionable plans and innovative solutions. Thank you PLANMalaysia and the Ministry of Housing and Local Government for the trust given.





The full RFZPPN-2 documents can be downloaded from the link below: https://www.planmalaysia.gov.my/index.php/en/rancangan-fizikal-zon-pesisiranpantai-negara-2

As a Strategic Partner, UMT will also be the 1st university to assist in drafting, adopting and implementing Marine Spatial Planning (MSP) in Malaysia together with Kuala Terengganu City Council. Kuala Terengganu-Kuala Nerus MSP, which is a joint project with Fujian Institute for Sustainable Oceans, Xiamen University through international funding, will be the pilot MSP project in Peninsular Malaysia to address multiple use conflicts while transforming the city into a sustainable coastal city.



Apart from that, UMT's appointment would also allow our innovations address multiple threats to the coastal and marine environment as innovative solutions created from years of scientific explorations and experiments.

Written by: Wan Izatul Asma binti Wan Talaat



Student name: LUA WEI YIEN

Degree: Master

Thesis Title: Application of Marine Spatial Planning in Setiu Wetland As nn Environmentally Sensitive Area and Natural Habitat For Oysters, Crassostrea (Magallana) Bilineata

Date: 18 May 2022

CONGRATULATIONS TO INOS POSTGRADUATES ON PASSING VIVA!

Student name: MOHD NASIR BIN MOHAMAD

Degree: Master

Thesis Title: A Screening Approach for the Correction of Distortion in UAV Data for Coral Community Mapping

Date: 11 May 2022





Professorial Talk Series

Just in case you missed it

Don't worry if you missed out on our seminar series, you can watch the recordings!

The Professorial Talk Series is an initiative by PPBI UMT to showcase the diverse range of research undertaken at the university and highlight the academic endeavours of the professorial staff. The talk also is part of the university's efforts in disseminating knowledge through free public talks to the wider community.

Talk title: The future of Coral Reef Ecosystem in Malaysia

By Profesor Dr Zainudin Bachok, Institut Oseanografi Dan Sekitaran (INOS), UMT Moderatored by: Profesor Madya Dr. Faridah Mohamad

Capaian rakaman; https://youtu.be/fbQwA7uj2A4



TOMSY2022 | THE 3RD TROPICAL OCEAN AND MARINE SCIENCES SYMPOSIUM



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Ocean Research for a Sustainable Future

The 3rd Tropical Ocean and Marine Sciences International Symposium (TOMSY2022) is a biannually scientific event hosted by The Institute of Oceanography and Environment (INOS), Universiti Malaysia Terengganu.

This symposium aims to bring together leading academic scientists, researchers, and research scholars to exchange and share their experiences and research results about all aspects

The 3rd Tropical Ocean and Ma- of ocean and marine sciences, rine Sciences International Sym- especially in the tropical areas.

With the theme "Ocean Research for a Sustainable Future", the organizing committee are pleased to invite you to participate in TOMSY2022 which will be held through hybrid on 06 and 07 November 2022.

The scientific programme includes keynote, invited and oral presentations.

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