RUTS | SDG 2025

SDG 14

LIFE BELOW WATER

14 LIFE BELOW WATER

Conserve and sustainably use the oceans, seas and marine resources for sustainable development



https://sdgs.rmutsv.ac.th/evidence-2025/sdgs-14

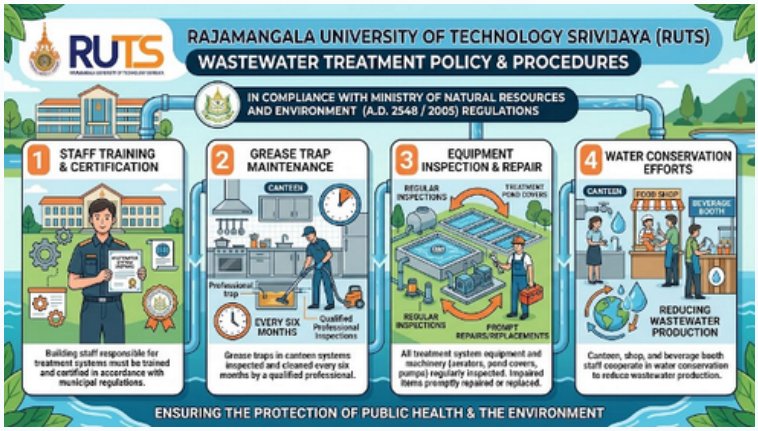
Sustainable Marine Resource Management and Institutional Practices

Rajamangala University of Technology Srivijaya (RUTS) promotes the protection of aquatic ecosystems through institutional environmental policies, wastewater management, and marine pollution reduction. The university's wastewater management approach incorporates relevant environmental regulations, regular inspections, and nature-based treatment methods. At Trang Campus, wastewater treatment systems utilise aquatic and terrestrial plants, including cattails, sedges, pandan, and vetiver grass. These systems incorporate natural processes into wastewater treatment and support environmentally responsible campus operations.





The university also promotes plastic waste and marine debris reduction through its Marine Debris Reduction Action Plan 2025, covering January to December 2025. The plan focuses on reducing single-use plastics and encouraging responsible resource consumption among students, personnel, and campus businesses. Supporting activities include environmental exhibitions, educational materials, and practical learning opportunities addressing the impacts of plastic pollution on aquatic ecosystems.







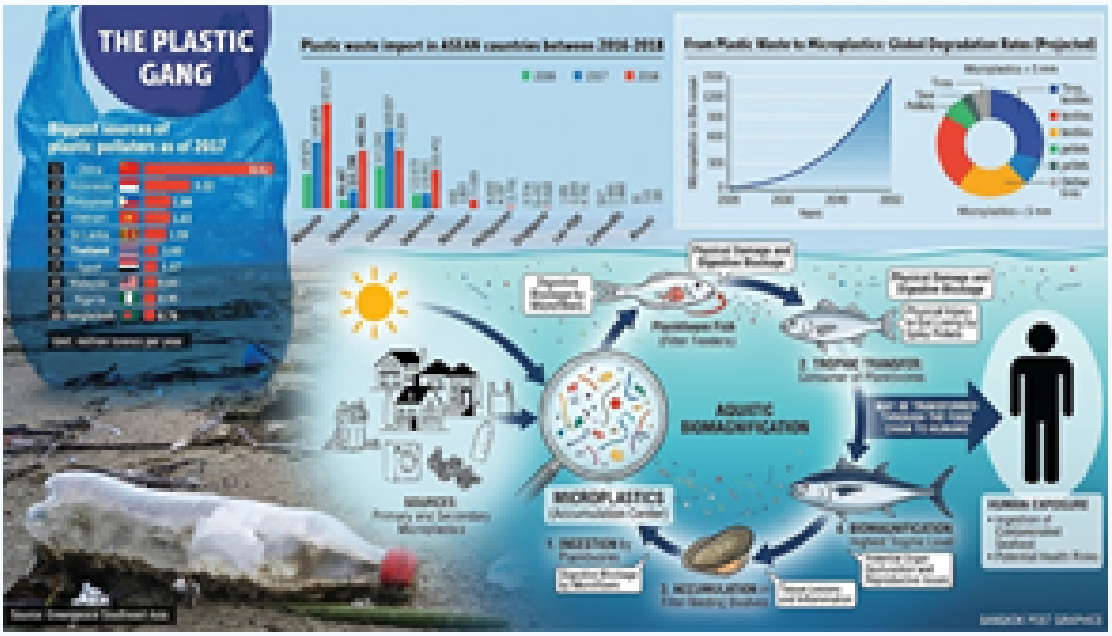


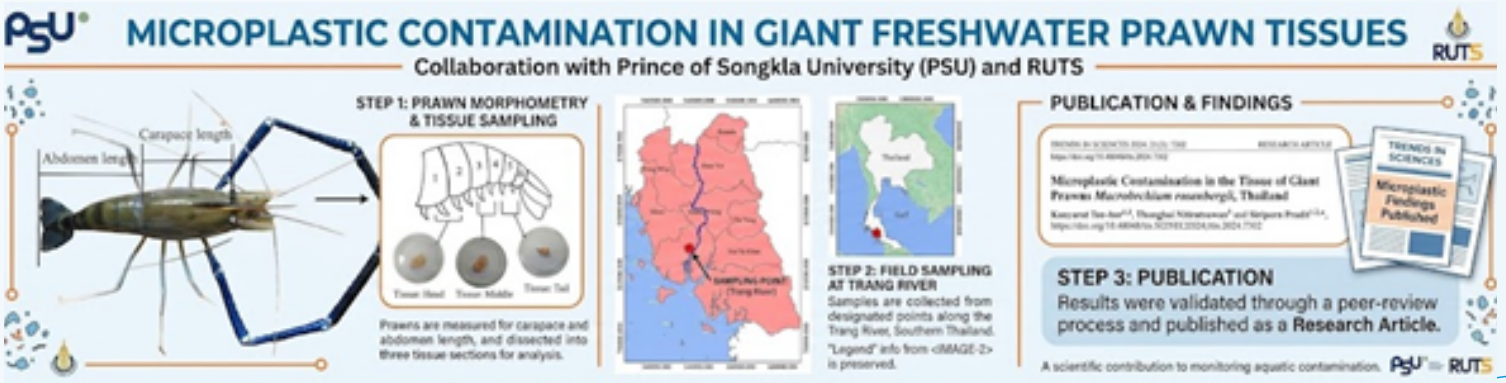




Research and Innovation for Marine and Aquatic Ecosystem Conservation

RUTS advances marine conservation through scientific research, environmental monitoring, and technological innovation. Established in 2021 at the Natural Resources and Environment Institute, Trang Campus, the Microplastic Monitoring Laboratory uses a BRUKER LUMOS II FTIR Microscope to identify and analyse microplastics in aquatic organisms, aquatic plants, and fisheries products. The laboratory provides analytical services to external organisations at THB 800 per sample. Research collaboration with Prince of Songkla University has also examined microplastic contamination in giant freshwater prawns from the Trang River, resulting in publication in an international academic journal.



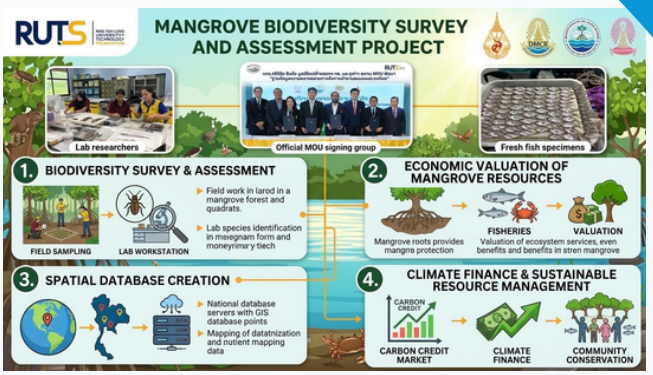


In October 2025, RUTS initiated collaboration with the Mae Fah Luang Foundation under Royal Patronage, the Department of Marine and Coastal Resources, and Chulalongkorn University on mangrove biodiversity assessment and ecosystem economic valuation. The proposed pilot work in Trang Province focuses on developing a geographic information system (GIS) database, assessing mangrove ecosystem services, and exploring climate-finance mechanisms. This collaboration provides a framework for integrating biodiversity research with future conservation planning.

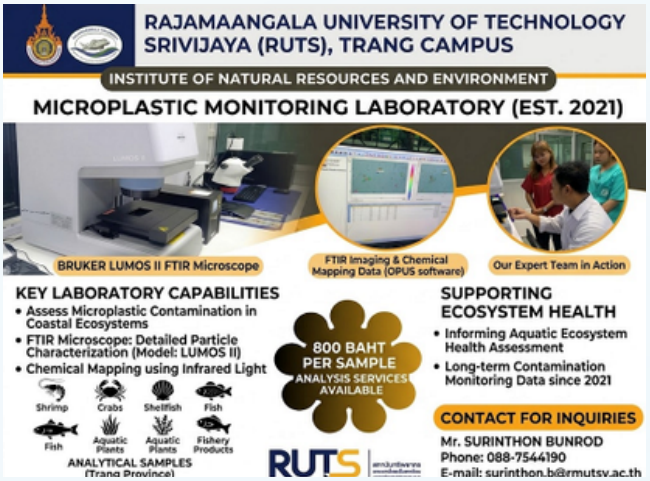


The university also develops water-monitoring technologies for the Songkhla Lake Basin. IoT-based systems monitor water quality and salinity, transmitting data at two-hour intervals and providing notifications through the LINE application. These systems support access to environmental information for water-use planning and responses to saltwater intrusion. Related research extends to flood-monitoring applications in the Na Thom Canal Basin, Khuan Khanun District, Phatthalung Province.











Marine Conservation Outreach and Community Engagement

RUTS collaborates with government agencies, fisheries organisations, private-sector partners, and coastal communities to promote sustainable marine resource management. Established in 2018, the Crab Bank Project has expanded to 77 learning centres and crab banks across 54 communities in nine districts of Trang, Satun, and Krabi Provinces. Participating fishers deposit egg-bearing female blue swimming crabs in holding tanks until their eggs hatch, allowing larvae to be released into natural waters. The approach supports community participation in fisheries conservation while enabling fishers to obtain income from female crabs after spawning. The project received a national public-sector excellence award in 2025.







The Faculty of Science and Technology of Fisheries also transfers oyster aquaculture technologies to coastal communities in Trang Province. Its Oyster Research Unit provides training on hatchery-based oyster seed production and pond cultivation to communities including Hat Sai Khao, Ban Bang Khang Khao, and Ban Thung Thong. These activities aim to reduce dependence on naturally collected oyster seed and strengthen local aquaculture livelihoods.



In November 2025, RUTS participated in the "PUMPUI SEA OF SMILES" seagrass restoration initiative with Kuang Pei San Food Products Public Company Limited and the Trang Small-Scale Fishers Association. At Laem Sai Beach, Trang Province, the project established bamboo protective enclosures in seagrass areas to support habitat recovery and protect dugong feeding grounds. The activity also included the release of 100,000 banana shrimp and 50 egg-bearing female blue swimming crabs into natural waters.

From 25 to 27 June 2025, RUTS collaborated with the Department of Marine and Coastal Resources and the Marine Science Association of Thailand to organise the 8th Marine Science Conference in Trang Province. Under the theme "Science, Technology and Innovation for a Changing Ocean," the conference brought together researchers, conservationists, fishers, and government representatives. Discussions addressed overfishing, illegal, unreported and unregulated (IUU) fishing, destructive fishing practices, seagrass degradation, dugong conservation, and the interconnected challenges of climate change, biodiversity loss, and pollution.





Marine Environmental Education and Experiential Learning

RUTS integrates marine conservation into educational activities involving aquatic biodiversity, coastal habitats, environmental monitoring, and marine pollution. The university has developed virtual reality (VR) educational media comparing healthy underwater ecosystems with marine environments affected by waste contamination. These materials have been presented through outreach exhibitions at schools in Sikao District, Trang Province. Complementary activities include exhibitions featuring artwork created from marine debris and workshops transforming discarded materials into keychains and other products, encouraging young learners to understand marine pollution and responsible waste management.

Experiential learning extends to specialised scientific facilities. The Natural Resources and Environment Institute provides opportunities for veterinary and fisheries students to gain practical experience in microplastic analysis using FTIR microscopy. Students also learn about aquatic animal health, post-mortem examination procedures, and the handling of marine animal specimens through activities associated with the Rajamangala Trang Aquatic Animal Hospital. These experiences connect academic learning with scientific techniques relevant to marine conservation.

Public environmental education is further supported through Trang Aquarium, which provides exhibitions on aquatic animals, aquatic plants, freshwater ecosystems, and aquascaping. The facility serves students, visitors, and the general public by presenting aquatic biodiversity and conservation-related knowledge in an accessible learning environment.







