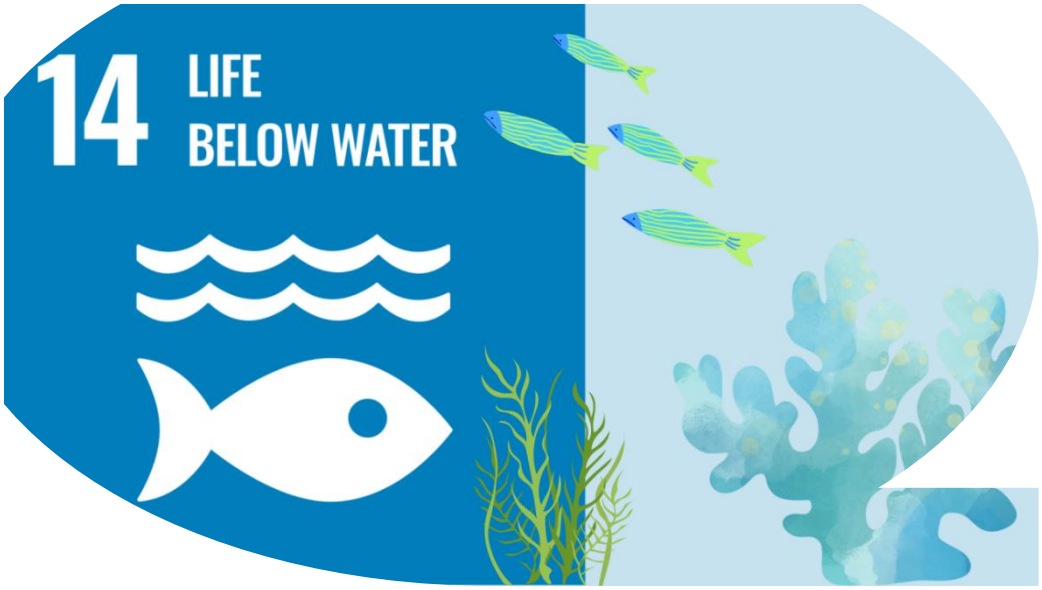
أبحاث حماية النظم البيئية البحرية والتنوع البيولوجي

2024 – 2023



Marine Ecosystem and Biodiversity Conservation Research

2023 – 2024

In line with Port Said University's commitment to advancing scientific research that supports marine environmental protection and biodiversity conservation, the Faculty of Science continues to play a pivotal role through its distinguished scientific output in aquatic ecosystem studies, natural resource sustainability, and the protection of endangered species.

The research published in recent years (2023–2024) demonstrates the university's capacity to contribute directly to **SDG 14.3.3**, which focuses on conserving, expanding, and safeguarding existing ecosystems—particularly those facing ecological threats. These contributions are evident in specialized studies on seagrass habitats, coral reef health, coastal water quality, and assessments of anthropogenic impacts on marine and coastal zones.

This scientific production reflects effective collaboration between researchers and relevant sectors, providing direct support for sustainable practices aimed at protecting sensitive ecosystems through applied, targeted, and policy-relevant research.

The table below highlights the key studies that provide **direct contributions** to this criterion, followed by an additional set of **indirectly relevant studies**—including the aquaculture and aquatic health research that was translated in the previous section—given their role in reducing pressure on natural fisheries and supporting sustainable aquatic food systems.

"List of Research Outputs Demonstrating Direct Contribution to SDG 14.3.3: Protection, Restoration, and Biodiversity Enhancement of Marine and Coastal Ecosystems"

No.	Research Title	Year	DOI	Relevance to SDG 14.3.3	Reason for Classification
1	Zooxanthellae Densities within the Fluted Giant Clam *Tridacna squamosa*	2024	10.21608/ejabf.2024.392222	**Direct**	Study of an endangered marine organism (Giant Clam)
2	Polychaetes Associated with Seagrass Meadows *Posidonia oceanica*	2023	10.21608/ejabf.2023.294936	**Direct**	Addresses sensitive seagrass ecosystems
3	Diversity and Abundance of Commercial Fish at Coral Reef Bays	2024	10.4197/Mar.34-1.1	**Direct**	Study of biodiversity in coral reef ecosystems
4	Coral Black Band Disease in Indonesia: An Overview	2024	10.1016/j.ejar.2024.03.005	**Direct**	Addresses diseases threatening coral reefs
5	Heavy Metals in Big Giftun & Abu Minqar Islands	2024	10.1016/j.marpolbul.2023.115930	**Direct**	Pollution assessment and its impact on marine island habitats
6	Heavy Metals in Wadi El-Gemal Island	2024	10.1007/s11270-024-07273-4	**Direct**	Protecting Red Sea island ecosystems

7	Water Quality and Bacteriological Assessment of Mediterranean Drains	2023	10.21608/ejabf.2023.327965	**Direct**	Coastal water quality and its impact on marine organisms
8	Mapping the Impacts of Anthropogenic Activities on the Coastal Aquifer (Port Said)	2023	10.3389/feart.2023.1204742	**Direct**	Impact of human activities on coastal ecosystems
9	Digital Shoreline Analysis – Port Said	2023	10.1016/j.ejar.2023.08.001	**Direct**	Coastal protection and shoreline change monitoring
10	Tidal-Induced Circulation in El-Burullus Harbor	2024	—	**Direct**	Study of water circulation and protection of coastal habitats

"Research Outputs Indirectly Supporting Marine Ecosystem Sustainability and SDG 14.3.3 through Enhancing Aquatic Species Health and Sustainable Aquaculture"

No.	Research Title	Year	DOI	Relevance	Justification
1	Nano-selenium impacts on Nile tilapia	2024	10.1007/s10499-023-01230-4	Indirect	Supports fish health and reduces pressure on natural fisheries
2	Multi-strains *Bacillus* spp. for improving fish immunity	2024	10.1007/s10499-024-01502-7	Indirect	Enhances fish health and supports sustainable aquaculture
3	Effects of curcumin on red tilapia	2024	10.1007/s10499-024-01500-9	Indirect	Improves aquaculture productivity
4	Vitamin E & selenium nanoparticles in Nile tilapia	2024	10.1016/j.aqrep.2024.102514	Indirect	Relates to sustainable aquatic food production
5	Fructooligosaccharides & β-glucan mixture in Nile tilapia	2024	10.1007/s10499-024-01526-z	Indirect	Enhances fish quality and physiological resilience
6	Dietary mannan-oligosaccharides in hybrid tilapia	2024	10.1016/j.aquaculture.2023.740453	Indirect	Supports species health and aquaculture sustainability

7	Probiotic water supplementation for Nile tilapia	2024	10.1186/s12917-024-04190-w	Indirect	Reduces dependence on overfishing by supporting aquaculture systems
8	Reproductive performance of red tilapia broodfish	2023	10.1155/2023/5596619	Indirect	Contributes to species conservation and sustainable breeding programs
9	Probiotics in Pacific white shrimp	2024	10.1007/s10499-023-01298-y	Indirect	Enhances sustainability of shrimp farming
10	Biofloc-based probiotic isolates in shrimp	2023	10.3390/w15163010	Indirect	Supports the resilience of aquatic food-production ecosystems