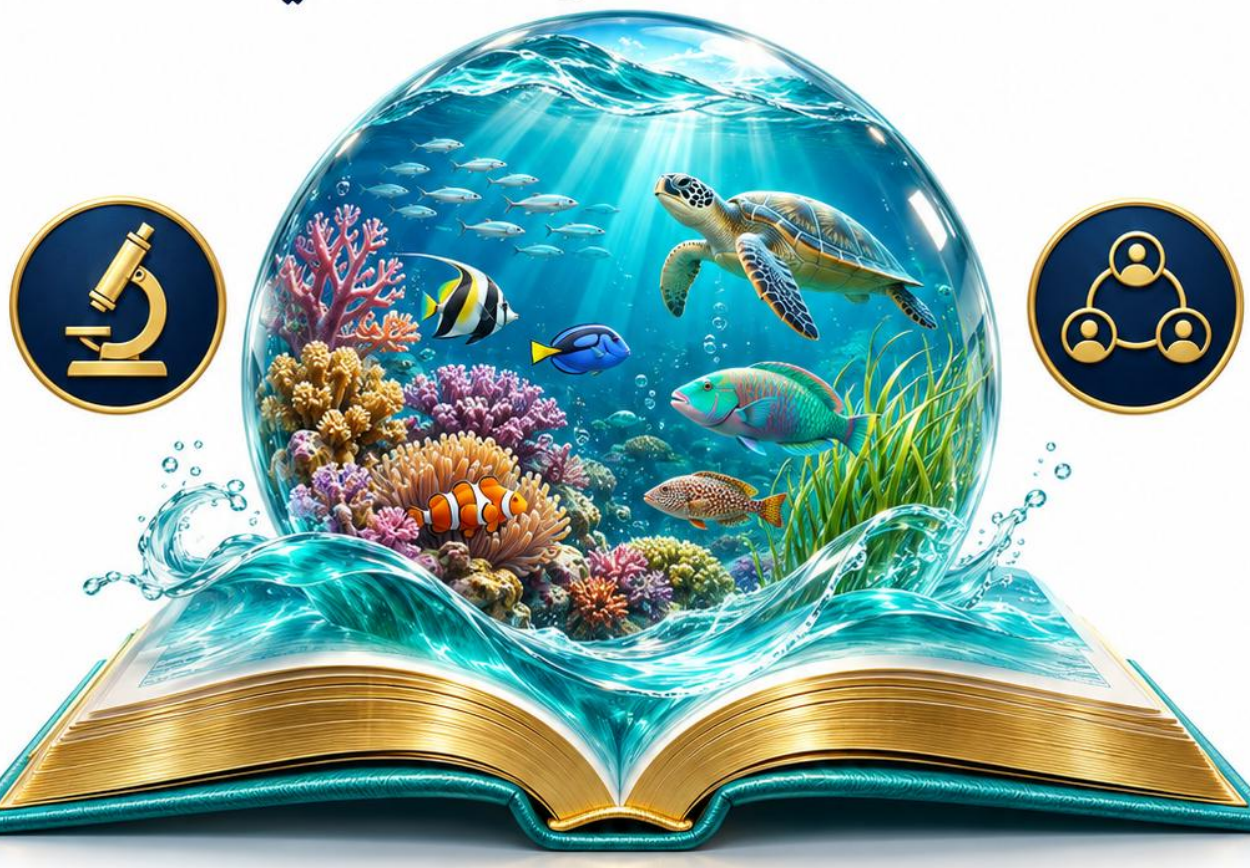
14 LIFE BELOW WATER

14.3.3

Research and Partnerships for Marine Ecosystem and Biodiversity Conservation

البحوث والشراكات للحفاظ على النظم البيئية البحريـة والتنـوع البيولوجي



2024–2025

Institutional commitment and research overview
التوجه المؤسسي ونظرة عامة على البحث العلمي

Port Said University advances marine ecosystem and biodiversity conservation through scientific research, funded interdisciplinary projects and field-oriented environmental assessment. Research at the Faculty of Science and collaborating departments addresses coral reef resilience, sensitive wetland habitats, fish biodiversity, coastal pollution, marine species health and sustainable resource use.

تسهم جامعة بورسعيد في حماية النظم البيئية البحرية والتنوع البيولوجي من خلال البحث العلمي والمشروعات البحثية الممولة والتقييمات البيئية الميدانية .وتتناول أبحاث كلية العلوم والجهات البحثية المتعاونة مرونة الشعاب المرجانية، والموائل الرطبة الحساسة، والتنوع ،السمكي، والتلوث الساحلي، وصحة الأنواع البحرية .والاستخدام المستدام للموارد

The 2024–2025 SciVal dataset includes 60 publications classified under SDG 14. This report prioritizes research directly concerning marine habitats, threatened organisms, biodiversity monitoring and anthropogenic pressures, while presenting aquaculture and circular-water technology research as complementary contributions.

للفترة 2024–2025 عدد 60 منشورًا SciVal يضم ملف مصنفًا ضمن الهدف الرابع عشر .ويركز هذا التقرير على الأبحاث المرتبطة مباشرة بالموائل البحرية والكائنات الحساسة ورصد التنوع البيولوجي والضغوط البشرية، مع عرض أبحاث الاستزراع المائي وتقنيات معالجة المياه .والاقتصاد الدائري بوصفها إسهامات مكملة

Strategic research directions
محاور البحث العلمي ذات الأولوية

1. Threatened ecosystems: coral reefs and their bleaching sensitivity.
2. Protected coastal wetlands: Ashtoum El-Gamil and Red Sea island habitats.
3. Aquatic fauna: fish assemblages, noncommercial catch, giant clams and marine parasites.

.النظم المهددة :الشعاب المرجانية وحساسيتها للابيضاض

الموائل الساحلية المحمية :أشتوم الجميل والجزر البحرية .بالبحر الأحمر

الكائنات المائية :تجمعات الأسماك والمصيد غير التجاري .والمحار العملاق والطفيليات البحرية

الضغوط البيئية :المعادن الثقيلة والنشاط الإشعاعى .والملوثات وتغير خط الساحل

4. Environmental pressures: trace metals, radioactivity, pollutants and shoreline change. 5. Technology and sustainable resource use: remediation, marine-waste recovery and aquaculture health.	التقنيات والاستخدام المستدام :المعالجة البيئية واستعادة المخلفات البحرية وصحة الاستزراع المائي.

Funded initiative: Coral reef sensitivity to bleaching on the Egyptian Red Sea coast
المشروع الممول :تقييم حساسية الشعاب المرجانية للابيضاض على الساحل المصري للبحر الأحمر

Port Said University participates in an Academy of Scientific Research and Technology-funded initiative to investigate coral sensitivity to heat stress and bleaching. The project design integrates field reef surveys, temperature-controlled experiments, molecular characterization of coral-associated microorganisms, and long-term remotely sensed environmental observations. Its purpose is to identify vulnerable species and locations and strengthen evidence for targeted reef conservation.	تشارك جامعة بورسعيد في مشروع ممول من أكاديمية البحث العلمي والتكنولوجيا لدراسة حساسية الشعاب المرجانية للإجهاد الحراري والابيضاض .ويجمع تصميم المشروع بين المسوحات الميدانية للشعاب، والتجارب المعملية المضبوطة حراريًا، والتحليل الجزيئي للكائنات الدقيقة المصاحبة للمرجان، وتحليل السجلات البيئية طويلة الأمد المستمدة من الاستشعار عن بعد؛ لتحديد الأنواع والمناطق الأكثر تعرضًا للمخاطر ودعم أولويات الحماية.
Planned research measures include coral recruitment, photosynthetic performance, relative abundance of thermally tolerant coral species, herbivorous fish biomass and sea-surface temperature. The project page describes planned activities and a proposed coral-bleaching taskforce; restoration outcomes or completed field interventions are not attributed to it without separate implementation records. DOI / Source: Project link / رابط المشروع: https://psu.edu.eg/coral-reef/ | Funding / جهة	تشمل مؤشرات التقييم المخططة تجدد المستعمرات المرجانية، وكفاءة البناء الضوئي، ونسب الأنواع المتحملة للحرارة، والكتلة الحيوية للأسماك العاشبة، ودرجة حرارة سطح البحر .ويتناول المشروع خطة بحثية لتطوير قاعدة معلومات الحفظ والتنبؤ بأحداث الابيضاض، مع الاستفادة من البيانات الميدانية والجينية والمناخية. رابط المشروع: Project link / DOI / المصدر: https://psu.edu.eg/coral-reef/ | Funding / جهة التمويل: Academy of Scientific Research and Technology (ASRT) — Port Said University project listing. | Additional project register /

التمويل: Academy of Scientific Research and Technology (ASRT) — Port Said University project listing. | Additional project register / سجل المشروعات الممولة: https://beta.psu.edu.eg/research-projects/	سجل المشروعات الممولة: https://beta.psu.edu.eg/research-projects/

Field-oriented research on protected habitats, biodiversity and threatened species
الأبحاث الميدانية لحماية الموائل والتنوع البيولوجي والأنواع الحساسة

2025 | Assessment of Some Heavy Metals in Ashtum El-Gamil Wetland, Northen-East of the Nile Delta Coast

Assesses heavy-metal exposure in a protected coastal wetland near Port Said and supports identifying environmental pressures on wetland habitats.

DOI / Source: Reference / المرجع: Egyptian Journal of Aquatic Biology and Fisheries | DOI: 10.21608/EJABF.2025.446986 | https://doi.org/10.21608/EJABF.2025.446986

2025 | Assessment of Noncommercial Catch Caught by the Beach Seine Operating in the Southern Mediterranean Sea off Port Said, Egypt

Examines noncommercial catch from beach-seine fishing off Port Said, providing data relevant to biodiversity protection and reducing unintended fishing pressure.

DOI / Source: Reference / المرجع: Egyptian Journal of Aquatic Biology and Fisheries | DOI: 10.21608/ejabf.2025.422267.6546 | https://doi.org/10.21608/ejabf.2025.422267.6546

2025 | Temporal and Spatial Variation in Some Heavy Metals Levels in Water, Sediment and Bivalve in the Mediterranean Sea

Tracks spatial and temporal heavy-metal levels in seawater, sediment and bivalves, supporting assessment of pollution pathways and exposure of marine organisms.

DOI / Source: Reference / المرجع: Egyptian Journal of Aquatic Biology and Fisheries | DOI: 10.21608/ejabf.2025.426547.6637 | https://doi.org/10.21608/ejabf.2025.426547.6637

2024 | Diversity and Abundance of the Commercial Fish at Some Coastal Coral Reef Bays in Marsa Alam, Red Sea, Egypt

Documents species diversity and abundance in Red Sea coral-reef bays, providing biodiversity baselines relevant to ecosystem conservation.

DOI / Source: Reference / المرجع: Journal of King Abdulaziz University, Marine Science | DOI: 10.4197/Mar.34-1.1 | https://doi.org/10.4197/Mar.34-1.1

2024 | Zooxanthellae Densities within the Fluted Giant Clam Tridacna squamosa (Lamarck, 1819) from the Southern Coast of Egypt's Red Sea

Studies zooxanthellae densities within the fluted giant clam in the Red Sea, informing understanding of a sensitive species and its symbiotic relationships.

DOI / Source: Reference / المرجع: Egyptian Journal of Aquatic Biology and Fisheries | DOI: 10.21608/ejabf.2024.392222 | https://doi.org/10.21608/ejabf.2024.392222

2024 | Coral black band disease in Indonesia: An overview

Reviews coral black band disease and associated threats, contributing to scientific knowledge of reef-health pressures; it is a review, not a documented intervention.

DOI / Source: Reference / المرجع: Egyptian Journal of Aquatic Research | DOI: 10.1016/j.ejar.2024.03.005 | https://doi.org/10.1016/j.ejar.2024.03.005

2024 | Assessing the ecological and health risks associated with heavy metal pollution levels in sediments of Big Giftun and Abu Minqar Islands, East Hurghada, Red Sea, Egypt

Analyzes heavy-metal contamination and ecological risks in marine-island sediments, providing pollution evidence relevant to habitat management.

DOI / Source: Reference / المرجع: Marine Pollution Bulletin | DOI: 10.1016/j.marpolbul.2023.115930 | https://doi.org/10.1016/j.marpolbul.2023.115930

2024 | Assessing the Heavy Metals in Surface Sediments of Wadi El-Gemal Island, Red Sea, Egypt: Pollution Levels, Sources, and Associated Risks

Evaluates contamination sources and associated risks in Red Sea island sediments, supporting environmental monitoring and conservation priorities.

DOI / Source: Reference / المرجع: Water, Air, and Soil Pollution | DOI: 10.1007/s11270-024-07273-4 | https://doi.org/10.1007/s11270-024-07273-4

2025 | Assessment of Radioactivity and Heavy Metal Pollution Levels in the Coastal Sediments in the Red Sea Region of Sharm El Luli, Egypt

Assesses radioactivity and heavy metals in coastal sediment, providing evidence for assessing ecological stressors in a sensitive Red Sea area.

DOI / Source: Reference / المرجع: Water, Air, and Soil Pollution | DOI: 10.1007/s11270-025-07962-8 | https://doi.org/10.1007/s11270-025-07962-8

2025 | Assessing the radioactive properties and environmental risks of Hankorab sediments on the Red Sea coast

Examines sediment radioactivity and environmental risk on the Red Sea coast, informing baseline assessments for sensitive coastal settings.

DOI / Source: Reference / المرجع: Environmental Earth Sciences | DOI: 10.1007/s12665-025-12418-7 | https://doi.org/10.1007/s12665-025-12418-7

2025 | Metal contamination and radiological risk assessment in the coastal zone of Wadi Ghadir outlet, Red Sea, Egypt

Assesses metal pollution and radiological risk in a coastal outlet, supporting identification of contamination stressors in marine systems.

DOI / Source: Reference / المرجع: Frontiers in Environmental Science | DOI: 10.3389/fenvs.2025.1667069 | https://doi.org/10.3389/fenvs.2025.1667069

2025 | Heavy metal contamination and assessment of radioactivity in coastal sediments: a case study from the El Qulaan area, southern Red Sea, Egypt

Analyzes heavy-metal contamination and radioactivity in southern Red Sea sediments, supporting protection-oriented environmental assessments.

DOI / Source: Reference / المرجع: Frontiers in Environmental Science | DOI: 10.3389/fenvs.2025.1676645 | https://doi.org/10.3389/fenvs.2025.1676645

2024 | MORPHOLOGICAL AND MOLECULAR COMPARISON OF AREOLATE GROUPER (Epinephelus areolatus) FROM SAUDI ARABIA AND INDONESIA

Uses morphological and molecular comparisons of areolate grouper populations, supporting species-identification and comparative biodiversity knowledge.

DOI / Source: Reference / المرجع: Jurnal Ilmu dan Teknologi Kelautan Tropis | DOI: 10.29244/jitkt.v16i2.57410 | https://doi.org/10.29244/jitkt.v16i2.57410

2025 | Biochemical and histopathological insights into different helminth infections in Saurida undosquamis with new host record of Ligula intestinalis

Investigates parasite-associated histopathology in a marine fish and records host information, expanding knowledge of wild aquatic-animal health.

DOI / Source: Reference / المرجع: Open Veterinary Journal | DOI: 10.5455/OVJ.2025.v15.i12.10 | https://doi.org/10.5455/OVJ.2025.v15.i12.10

Coastal protection technologies and recovery of environmental resources
تقنيات الحماية الساحلية واستعادة الموارد البيئية

2025 | Benchmarking shoreline prediction models over multi-decadal timescales

Benchmarks shoreline prediction methods across long periods. This supports coastal-risk modelling but is methodological rather than a site-specific ecosystem restoration project.

DOI / Source: Reference / المرجع: Communications Earth and Environment | DOI: 10.1038/s43247-025-02550-4 | https://doi.org/10.1038/s43247-025-02550-4

2025 | Sustainable biopolymer-based materials for oil spill remediation: artificial intelligence integration and technoeconomic insights - A review

Reviews sustainable biopolymer-based oil-spill remediation technologies and their feasibility, relevant to reducing marine habitat damage.

DOI / Source: Reference / المرجع: International Journal of Biological Macromolecules | DOI: 10.1016/j.ijbiomac.2025.148310 | https://doi.org/10.1016/j.ijbiomac.2025.148310

2025 | Development of sustainable biogenic marine waste-based composite for phosphate ions recovery and subsequent biogas production

Develops a marine-waste-derived composite for phosphate recovery and biogas production, with potential relevance to pollution reduction and resource recovery.

DOI / Source: Reference / المرجع: Biomass and Bioenergy | DOI: 10.1016/j.biombioe.2025.107819 | https://doi.org/10.1016/j.biombioe.2025.107819

2024 | Dual valorization of coastal biowastes for tetracycline remediation and biomethane production: A composite assisted anaerobic digestion

Investigates coastal-waste-based materials for antibiotic removal and biomethane production, supporting pollution prevention and circular use of marine resources.

DOI / Source: Reference / المرجع: Journal of Hazardous Materials | DOI: 10.1016/j.jhazmat.2023.133143 | https://doi.org/10.1016/j.jhazmat.2023.133143

Complementary research: sustainable aquaculture and aquatic-animal health
الأبحاث المكملة :الاستزراع المائي المستدام وصحة الكائنات المائية

Research on fish and shrimp nutrition, disease resistance, probiotics and sustainable aquaculture expands scientific knowledge of aquatic-animal health and potentially supports less wasteful production systems. These studies are presented alongside ecosystem-conservation research without equating farm productivity improvements with restoration of wild habitats.

2024 — Nano-selenium impacts on growth performance, digestive enzymes, antioxidant, immune resistance and histopathological scores of Nile tilapia, Oreochromis niloticus against Aspergillus flavus infection DOI: 10.1007/s10499-023-01230-4

2025 — Effects of dietary Spirulina platensis supplementation on growth performance, whole body composition, antioxidant activity, histological alterations, and resistance to Vibrio parahaemolyticus in Pacific white shrimp, Litopenaeus vannamei DOI: 10.1016/j.aqrep.2024.102606

2024 — Protective effects of Chlorella vulgaris as a feed additive on growth performance, immunity, histopathology, and disease resistance against Vibrio parahaemolyticus in the Pacific white shrimp DOI: 10.1007/s10499-023-01298-y

2024 — Dietary multi-strains Bacillus spp. enhanced growth performance, blood metabolites, digestive tissues histology, gene expression of Oreochromis niloticus, and resistance to Aspergillus flavus infection DOI: 10.1007/s10499-024-01502-7

2024 — The regulatory effects of water probiotic supplementation on the blood physiology, reproductive performance, and its related genes in Red Tilapia (Oreochromis niloticus X O. mossambicus) DOI: 10.1186/s12917-024-04190-w

2024 — Dietary Pediococcus acidilactici improved the growth performance, feed utilization, gut microbiota, and disease resistance against Fusarium solani in Pacific white shrimp, Litopenaeus vannamei DOI: 10.1007/s10499-023-01318-x

2025 — Dietary supplementation with fermented prebiotics and probiotics can increase growth, immunity, and histological alterations in Pacific whiteleg shrimp (Litopenaeus vannamei) challenged with Vibrio parahaemolyticus DOI: 10.1007/s10499-024-01704-z

2025 — The efficacy of dietary commercial probiotic (Bacillus subtilis) on growth performance, hemato-biochemical response, and histological status of red tilapia (Oreochromis sp.) DOI: 10.1080/10454438.2024.2338595

2025 — Pumpkin seed oil-loaded chitosan nanoparticles enhance growth, digestive enzymes, and immune response in whiteleg shrimp (Litopenaeus vannamei): Impacts on histopathology and survival against Vibrio parahaemolyticus DOI: 10.1016/j.aqrep.2024.102599

2025 — The effects of nano-selenium and/or vitamin C on the growth performance, blood health, organ histology, molecular alterations, and disease resistance of Nile tilapia (Oreochromis niloticus) against Saprolegnia ferax DOI: 10.1007/s10499-024-01760-5

2025 — Evaluating the Growth Performance of Nile and Red Tilapia and Its Influence on Morphological Growth and Yield of Intercropped Wheat and Sugar Beet Under a Biosaline Integrated Aquaculture–Agriculture System DOI: 10.3390/plants14091346

2025 — Dietary mixtures of Bacillus spp. modulates intestinal morphology, resistance to Vibrio parahaemolyticus, response of immune-antioxidant genes, and growth of Dicentrarchus labrax DOI: 10.1016/j.aqrep.2025.102930

2025 — Influences of parasitic stress on the health condition of African Catfish (Clarias gariepinus): Biochemical and histopathological alterations DOI: 10.1016/j.molbiopara.2025.111677

Previous research foundations and institutional partnerships
الخبرات البحثية السابقة والشراكات المؤسسية

Earlier University studies examined seagrass-associated organisms, coastal water quality and shoreline change; they provide historical scientific foundations for monitoring and protecting marine habitats. The University also contributes to multidisciplinary research partnerships and publishes research outputs with authors affiliated to other universities and research institutions.

DOI / Source: Earlier university research collection / أبحاث الجامعة السابقة: https://psu.edu.eg/wp-content/uploads/2025/11/SDG-14.3.3.pdf

تناولت دراسات سابقة للجامعة الكائنات المصاحبة لمروج الأعشاب البحرية، وجودة المياه الساحلية، وتغير خطوط الشواطئ؛ وهي تشكل أساسًا معرفيًا لرصد الموائل البحرية وحمايتها .كما تسهم الجامعة في التعاون البحثي متعدد التخصصات مع جامعات ومؤسسات علمية أخرى من خلال مشروعات ممولة وأبحاث مشتركة.

المصدر / DOI: Earlier university research collection / أبحاث الجامعة السابقة: https://psu.edu.eg/wp-content/uploads/2025/11/SDG-14.3.3.pdf

Research applications and sustainable conservation outcomes
التطبيقات البحثية وأثرها في توجيه الحماية المستدامة

The research portfolio provides location-specific information on coastal pollution pressures, biodiversity distribution, fishing bycatch and vulnerable reef organisms. These findings can support conservation planning, environmental monitoring priorities and more informed resource management. University research strengthens the scientific basis for protecting existing marine systems and identifying areas requiring future restoration, alongside additional partnerships to translate findings into implemented interventions.

توفر الحافظة البحثية معلومات مكانية عن الضغوط التلوثية الساحلية، وتوزيع التنوع البيولوجي، والمصيد غير المستهدف، والكائنات الحساسة بالشعاب المرجانية. وتدعم هذه النتائج تخطيط الحماية، وتوجيه أولويات الرصد البيئي، وإدارة الموارد على أسس علمية، وتحديد المناطق التي قد تحتاج إلى أعمال استعادة مستقبلية بالتعاون مع الجهات المختصة.

Continuity of marine ecosystem research: 2023 scientific foundations
استمرارية البحث البيئي البحري :الأسس العلمية لعام 2023

Research carried out in 2023 laid a scientific foundation for the 2024–2025 portfolio through work on seagrass-meadow biodiversity, drainage-water quality along the Mediterranean, coastal aquifers under human pressure, and shoreline change in Port Said. These earlier publications are retained as background research and are not included in the 60-publication SciVal count for 2024–2025.

أسهمت أبحاث جامعة بورسعيد المنشورة في 2023 في توفير أساس علمي للبحوث اللاحقة من خلال دراسة التنوع البيولوجي في مروج الأعشاب البحرية، وجودة مياه المصارف بالبحر المتوسط، وتأثر الخزانات الساحلية بالأنشطة البشرية، وتغير خط الساحل ببورسعيد .وتُعرض هذه الدراسات ضمن الرصيد البحثي السابق، ولا تدخل في عدد منشورات SciVal 2025–2024 للفترة الستين.

2023 | Polychaetes Associated with Seagrass Meadows Posidonia oceanica

Examines organisms inhabiting Posidonia seagrass meadows, contributing to understanding of sensitive marine-habitat biodiversity.

DOI / Source: DOI: 10.21608/ejabf.2023.294936 | https://doi.org/10.21608/ejabf.2023.294936

2023 | Water Quality and Bacteriological Assessment of Mediterranean Drains

Examines coastal drainage-water quality and bacterial indicators relevant to stresses on Mediterranean aquatic habitats.

DOI / Source: DOI: 10.21608/ejabf.2023.327965 | https://doi.org/10.21608/ejabf.2023.327965

2023 | Mapping the Impacts of Anthropogenic Activities on the Coastal Aquifer (Port Said)

Maps human pressures affecting a coastal aquifer in Port Said, supporting environmental monitoring and sustainable coastal management.

DOI / Source: DOI: 10.3389/feart.2023.1204742 | https://doi.org/10.3389/feart.2023.1204742

2023 | Digital Shoreline Analysis – Port Said

Analyses shoreline dynamics in Port Said, informing coastal-change monitoring and habitat-protection planning.

DOI / Source: DOI: 10.1016/j.ejar.2023.08.001 | https://doi.org/10.1016/j.ejar.2023.08.001

2023 | Reproductive performance of red tilapia broodfish

Investigates sustainable breeding of aquaculture fish as a complementary aquatic-species-management topic.

DOI / Source: DOI: 10.1155/2023/5596619 | https://doi.org/10.1155/2023/5596619

2023 | Biofloc-based probiotic isolates in shrimp

Studies beneficial microorganisms in shrimp production systems as complementary aquaculture research.

DOI / Source: DOI: 10.3390/w15163010 | https://doi.org/10.3390/w15163010

Additional research from 2022 and 2024 | Previous scientific portfolio
دراسات إضافية من عامي 2022 و2024 ضمن الرصيد البحثي السابق

The earlier portfolio includes research published in 2022 and 2024, retained as historical background and not presented as new 2025 outputs.

يتضمن الرصيد العلمي السابق دراسات منشورة في عامي 2022 و2024، وهي جزء من الخلفية البحثية ولا تُعرض باعتبارها إنتاجًا جديدًا لعام 2025.

2022 | Studying the tidal-induced water circulation pattern within EL-Burullus fishing harbor, Egypt, using CMS-PTM numerical modeling

Published in Marine Environmental Research, Vol. 180 (2022), Article 105726. Authors: Mahmoud Sharaan, Ahmed A. Lebleb, Medhat M. H. ElZahar and Moheb Iskander. The study models tidal circulation and water renewal within the El-Burullus fishing harbor and informs coastal water-quality management.

DOI / Source: Reference / المرجع: DOI: 10.1016/j.marenvres.2022.105726 (published 2022)

2024 | Probiotics in Pacific white shrimp

Supports research into health and production resilience of farmed shrimp.

DOI / Source: Reference / 10.1007: المرجع/s10499-023-01298-y

2024 | Strengthening growth, digestion, body composition, haemato-biochemical indices, gene expression, and resistance to Fusarium oxysporum infection and histological structure in Oreochromis niloticus by using fructooligosaccharides and β-1,3 glucan mixture

Aquaculture International 32 (2024), 7487–7508. DOI 10.1007/s10499-024-01526-z. Research on a fructooligosaccharide/β-1,3-glucan dietary mixture and Nile tilapia physiology and infection resistance. This is complementary aquaculture research rather than evidence of habitat restoration.

DOI / Source: Reference / 10.1007: المرجع/s10499-024-01526-z

Research continuity and scientific project portfolio
استمرارية المشروعات والبحوث العلمية

The same Academy of Scientific Research and Technology-funded coral-reef bleaching project remains the flagship funded initiative in this consolidated portfolio. The 2024–2025 SciVal entries complement earlier research on giant clams, coral diseases, seagrass-associated organisms, fish diversity, protected wetlands and Red Sea islands, with no double-counting of publications across periods.

DOI / Source: Funded project / المشروع الممول: https://psu.edu.eg/coral-reef/ | Previous university publication portfolio / الرصيد البحثي السابق: https://psu.edu.eg/wp-content/uploads/2025/11/SDG-14.3.3.pdf

يظل مشروع تقييم حساسية الشعاب المرجانية للابيضاض الممول من أكاديمية البحث العلمي والتكنولوجيا المشروع البحثي المحوري في هذه الحافظة الموحدة .وتتكامل معه لعامي 2024–2025 ودراسات الرصيد SciVal أبحاث السابق عن المحار العملاق وأمراض الشعاب والأحياء المصاحبة للأعشاب البحرية والتنوع السمكي والمناطق الرطبة المحمية وجزر البحر الأحمر، دون تكرار احتساب المنشورات بين الفترات.

المشروع الممول / DOI: Funded project / المصدر: https://psu.edu.eg/coral-reef/ | Previous university publication portfolio / الرصيد البحثي السابق: https://psu.edu.eg/wp-content/uploads/2025/11/SDG-14.3.3.pdf

Conservation and restoration pathways | Research contributions
مسارات الحفظ والاستعادة البيئية |الإسهامات البحثية

Port Said University’s coral-reef bleaching project integrates planned field surveys, controlled heat-stress experiments, molecular analyses and remotely sensed environmental

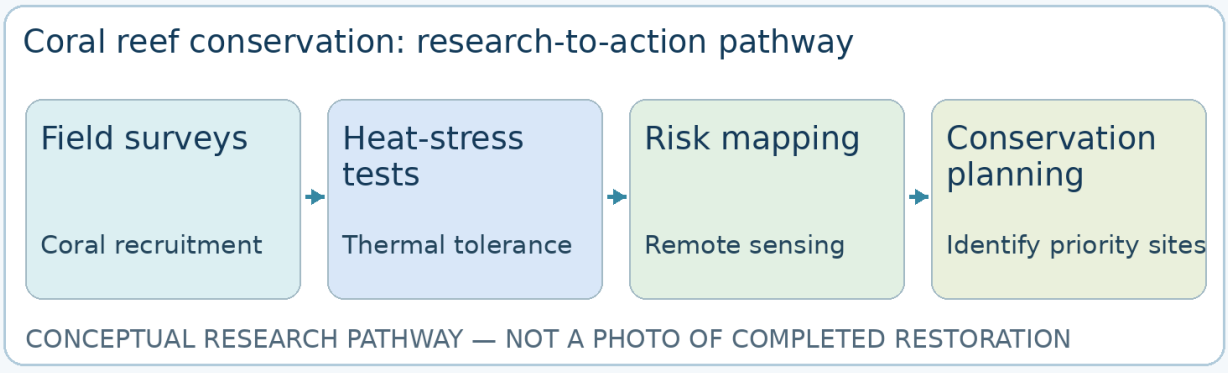
يجمع مشروع جامعة بورسعيد الخاص بتقييم حساسية الشعاب المرجانية للابيضاض بين المسوحات الحقلية المخطط لها، وتجارب الإجهاد الحراري، والتحليلات

time series. Its research design supports identifying thermally vulnerable reef sites, understanding species resilience, and developing a scientific baseline for selecting conservation priorities. The university also investigates protected wetlands, coastal pollution, marine fish diversity and habitat pressures through its 2024–2025 research portfolio.

.الجزيئية، وسلاسل البيانات البيئية المستشعرة عن بعد ويسهم التصميم البحثي في تحديد مواقع الشعاب المعرضة للمخاطر الحرارية، وفهم مرونة الأنواع، وتوفير خط أساس علمي لتحديد أولويات الحفظ .كما تتناول الأبحاث ،المنشورة خلال 2024–2025 المناطق الرطبة المحمية والتلوث الساحلي، والتنوع السمكي والضغوط المؤثرة في .الموائل البحرية

The pathway from scientific evidence to ecological restoration involves: (1) diagnosing habitat threats; (2) selecting priority sites and target species; (3) designing interventions such as pollution reduction, habitat rehabilitation or regulated use; and (4) verifying effectiveness through repeated monitoring. The available project description establishes a research and conservation framework, not a verified completed coral-transplantation or habitat-expansion programme.

يتضمن الانتقال من البحث العلمي إلى الاستعادة البيئية أربع خطوات مترابطة) :1 (تشخيص أخطار الموائل،)2 (تحديد المواقع والأنواع ذات الأولوية،)3 (تصميم إجراءات مثل ،خفض الملوثات أو تأهيل الموائل أو تنظيم الاستخدام و)4 (متابعة النتائج ببرامج رصد متكررة .وتقدم صفحة المشروع إطارًا علميًا للحفظ والتقييم، دون أن تتضمن ما يكفي لإثبات تنفيذ عملية مكتملة لنقل المرجان أو توسيع .الموائل خلال الفترة المرجعية



Research applications for threatened and sensitive ecosystems
التطبيقات البحثية المرتبطة بالنظم البيئية المهددة والحساسة

The 2025 assessment of heavy metals in Ashtum El-Gamil wetland supports identification of pollution pressures on a protected wetland near Port Said. Research on noncommercial catch in beach-seine fishing supports assessment of incidental ecological pressure. Red Sea studies of coral disease, giant clams, fish assemblages and sediment contaminants contribute to habitat health baselines and environmental risk prioritization. These research outcomes can inform future preservation, restoration planning and biodiversity monitoring.

يساعد تقييم المعادن الثقيلة في محمية أشتوم الجميل لعام 2025 على تحديد ضغوط التلوث في منطقة رطبة محمية بالقرب من بورسعيد .وتدعم دراسة المصيد غير التجاري في الصيد بالشباك الشاطئية تقييم الضغوط العرضية على الكائنات المائية .كما تسهم دراسات أمراض المرجان والمحار العملاق والتجمعات السمكية وملوثات الرواسب في البحر الأحمر في إنشاء خطوط أساس لصحة الموائل وتحديد أولويات المخاطر البيئية؛ وهي معارف قابلة للتوظيف في خطط الحماية والاستعادة والرصد اللاحق.

