



University of Essex

About Essex

Our team is based at the University of Essex which is one of the leading research-intensive universities in the UK. The School of Biological Sciences is the largest science department in the University with over 50 teaching and academic staff. The quality of research in the School has been confirmed in the 2014 Research Excellence Framework (REF) where two-thirds of our research was rated as 'world leading' or 'internationally excellent'.

Our staff have expertise in the areas of marine biology, environmental microbiology, plant productivity and photosynthesis, bioimaging, biophysics, biochemistry, bio-organic chemistry, and cell/molecular biology. This broad-based structure provides for a strong multidisciplinary environment involving collaboration between marine biologists, environmental scientists, molecular biologists and ecologists providing additional scope to develop technology and innovative approaches to problems. We also have colleagues from other departments who we work with to provide a pool of expertise that crosses disciplines.

Get in Touch

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Tropical Marine Environmental Services



Murchie EH, Lawson TJ. Exp Bot 2013 Oct64(13):983-98. by permission of Oxford University Press.

Who we are

As members of the Coral Reef Research Unit we are a dedicated team of researchers and educators who have international expertise in delivering high level research, education, training and consultancy across the world's tropical seas. We are supported by advanced technologies and bespoke laboratories within the UK that we use to underpin field-based research and training activities.

Who we work with

We work across the centres of scientific excellence within the School of Biological Sciences and other departments within the University of Essex for governments, NGOs, consultancy firms, and industry with interests in the assessment, protection and restoration of tropical ecosystems from coral reefs, through to seagrass, mangrove and near-shore fisheries. We have expertise in field campaigns, expedition planning and logistics which enables us to act effectively and efficiently in remote locations. We have the flexibility to add value to existing projects as well as planning, coordinating, delivering and reporting on large scale projects that benefit the conservation of tropical ecosystems and sustainable development of dependent communities.



Reef Environmental Assessment Services

We have a great deal of experience in undertaking reef assessment on reefs of the Indo-Pacific, Red Sea and Caribbean. We are able to apply a genes to ecosystem approach and have technologies to accurately assess the biodiversity and productivity of tropical marine systems. Specifically we have expertise and provide services in:

- Indo-Pacific and Caribbean coral and fish identification
- Fish biomass assessment: stereo-videography
- Environmental characterisation
- Impact assessment and pollution monitoring
- Coral productivity and recruitment
- Coral bleaching and disease assessment
- Coral reef long term monitoring programmes
- Rapid environmental assessment
- Modelling carbonate budget
- Genetic analysis



Mitigation and Development

We have been involved with a number of projects that are aimed at reducing the impact of coastal development (eg dredging, port development) or enhance the biodiversity and biomass of degraded habitats. Our activities use a cross-disciplinary approach to protect short and long-term biodiversity, habitat integrity and ecosystem function but also to protect or stimulate community development. Specifically we are activity involved with:

- Coral transplantation and relocation planning
- Artificial reef formation and habitat reconstruction
- Coral larval recruitment and artificial enhancement schemes
- Conservation management and spatial planning
- Social-Economic assessment
- Community engagement and development
- Participatory approaches and governance

Ecosystem Assessment

We fully recognise the connected nature or tropical marine ecosystem biology. Our activities focus on coastal fringe ecosystems including terrestrial systems, intertidal, shallow sub-tidal and near shore marine environments. We have experience and expertise in:

- Terrestrial pollution and impacts on coastal ecosystems
- Coastal development and implications for coastal ecosystems
- Integrated coastal zone management
- Seagrass biodiversity and productivity
- Mangrove biodiversity and productivity
- Ecosystem restoration: reef, seagrass and mangrove transplantation
- Habitat mapping and GIS
- Physiological performance and assessment: from individuals to ecosystems
- Fisheries ecology and productivity

Training & Capacity Development

We fully recognise that the long term sustainability of biodiversity, productivity and health of tropical marine ecosystems is dependent on local as well as international knowledge, skills and human resources. As educators offering undergraduate and postgraduate degrees in marine biology and university field courses, we have a great deal of experience in delivering education, and training programmes. Through past projects and in collaboration with international as well as local partners we have designed and implemented capacity developing programmes in Southeast Asia, Africa and Central America. We are able to provide training in:

- Reef taxonomy and biodiversity
- Monitoring and assessment techniques
- Environmental impact assessment
- Social-economic assessment
- Corporate Social Responsibility
- Stakeholder participation and community engagement
- Research skills: theory and applied including statistical analysis
- Science communication: oral and written
- Expedition planning



Ways to work with us

We currently work in several countries across the world's centre of marine biodiversity including in Indonesia, Seychelles, Cayman Islands, Bahamas, Honduras, Egypt and Bahrain. We work with local communities and regional as well as national governments. Partners include international corporates, NGOs, consultancy firms and Industry and many other scientific and research institutes across the world.

There are a number of ways our scientists can work with partners. The exact model depends both on the project and business. There are a number of government funded schemes available to support collaborative research projects. These include student internships, collaborative PhD studentships, programmes such as Knowledge Transfer Partnerships and funding for collaborative research & development projects. We are able to provide services directly as contract research and consultancy.

