

1998 - 2001 'Research for Healthy Australian Estuaries'



Marine Botany group photo



Marine Botany research



Sea Wanderer II



Marine Botany laboratory



Moreton Bay Research Station

The Marine Botany group developed a larger profile with the addition of Dr Norm Duke, organising national (Australian Coral Reef Society) and international (Riversymposium, Transdisciplinary Approaches to Ecosystem Health) conferences, teaching more undergraduates at all levels, collaborating with contacts established in the Moreton Bay Study to obtain funding and set up a Cooperative Research Centre for Coastal Zone, Estuary and Waterway Management.

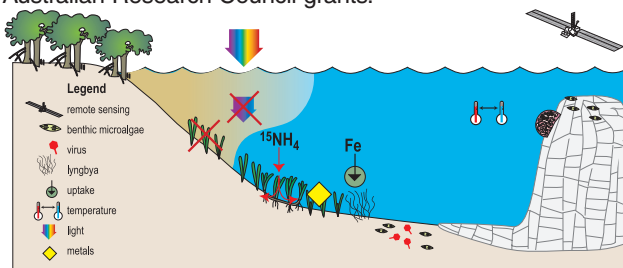
A new laboratory/office complex was constructed in Hines Building which included mass spectrometers and gas chromatographs, and UQ obtained a purpose-built research vessel (Sea Wanderer II) and constructed a new facility constructed at Stradbroke Island (Moreton Bay Research Station and Study Centre). The communications program expanded to include media interviews, books, posters, environmental report cards and web sites.

Research expanded from a beginning in seagrass ecophysiology to include virtually all types of marine flora and the bioindicator program evolved into an ecosystem health assessment program.



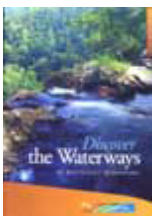
Marine Botany research

A wide diversity of marine flora including seagrasses, mangroves, coral, macroalgae, benthic microalgae, phytoplankton, bacteria and viruses were studied. Key findings include elucidating that prolonged light deprivation causes seagrass declines, establishing a link between dissolved iron and proliferation of the toxic cyanobacterium *Lyngbya*, discovery of ubiquitous, abundant and productive benthic microalgae living cryptically in tropical sediments which can be assessed using remote sensing techniques, establishing links between eutrophication, marine viruses and benthic microalgal populations, determining that cold water bleaching, like warm water bleaching, can be important for coral survival. Drs Judy O'Neil, Tim Carruthers and Norm Duke led the *Lyngbya*, benthic microalgal and mangrove studies, respectively. Ben Longstaff, Paul Bird and Niki Thomas conducted their PhD research while Catherine Collier, Joelle Prange, Chris Roelfsema, Ian Hewson, Andrew Watkinson, Tracy Saxby and Simon Albert conducted their Honours research. Overseas visitors, Mara Wolkenhauer, Rachel Foster, Carrie Miller, conducted research for their various degrees. Marine botany research was funded through Australian Research Council grants.



Outputs

Diversity of marine botanical investigations conducted by Marine Botany researchers.



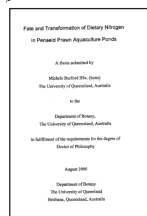
General interest reading



General interest posters



Scientific papers



PhD & Honours theses



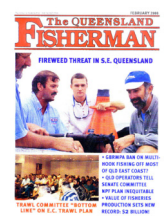
Technical newsletters



Training video



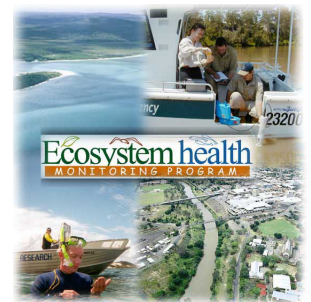
International meetings



Media exposure

Ecosystem Health Assessment

The assessment of ecosystem health was approached through a series of investigations in urban, agriculture and aquaculture dominated ecosystems. Key applications include establishing links between agricultural runoff of nutrients and toxicants into coastal waters, differentiating intense but localised effects of urban and aquaculture runoff from diffuse and widespread agricultural runoff, and developing approaches for integrating ecosystem health indicators into condition assessments for Australian estuaries. Drs Adrian Jones and Ange Grice developed the Ecosystem Health Monitoring Program and Michele Burford, David Haynes, Simon Costanzo and Kath Chaston conducted their PhD research. Ecosystem health assessment studies were funded through the Cooperative Research Centre (CRC) for Aquaculture, Estuary and Waterway Management, Great Barrier Reef Marine Park Authority, National Land & Water Resources Audit.



www.healthywaterways.env.qld.gov.au



Assessment of Australia's estuaries
www.nlwra.gov.au