Abstract No : 263

Coastal and marine policy, science and policy integration

Assessing Pollutant Risk To The Great Barrier Reef

Jane Waterhouse [1], Jon Brodie [1,2] and Jeffery Maynard [3]

(1) James Cook University, 4811 Townsville, Australia
Telephone: +61409053367 Email: jane.waterhouse@jcu.edu.au
(2) Telephone: +61747816435 Email: jon.brodie@jcu.edu.au
(3) Maynard Marine, 55555 Wilmington, United States of America
Telephone: +61409053367 Email: maynardmarine@gmail.com

The iconic Great Barrier Reef (GBR) in Australia faces increasing pressure from human activities and has considerable ecological, cultural, social and economic values. Substantial evidence exists that links the degradation of GBR ecosystems, including reduction in coral cover, to declining water quality in the GBR. The loads of suspended sediment, nutrients and pesticides (‘pollutants’) discharged to the Great Barrier Reef (GBR) from agricultural and urban development has increased greatly in the last 150 years. The pollutants disperse offshore during summer high flow events and pose variable threats to valuable GBR ecosystems including coral reefs and seagrass meadows. We analysed the differential risk of pollutants to management regions within the GBR, and ranked them using a relative assessment technique. The relative risk was calculated for each habitat (seagrass and coral reefs) in each management region and was estimated from the habitat area observed or modeled as being exposed to the exceedance of defined pollutant thresholds. The analysis then attempted to attribute relative risk back to individual rivers through the assessment of end of catchment pollutant loads, and ultimately to individual land uses within the river catchments. The assessment showed distinct differences between the management regions in terms of potential impact from each pollutant. Coupled with information on catchment management and social and economic data, the results are being used to inform future investment priorities for farm management practices in the catchment area that contribute to reducing pollutant runoff to the GBR.