

Assessing water quality of community defined land use scenarios for the Douglas Shire, North Queensland

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The Douglas Shire promotes as the only place in the world where two World Heritage Areas meet – the Great Barrier Reef (GBR) and the Wet Tropics of Far North Queensland. Over 80% of the Shire's land area is World Heritage listed. On the remaining 20% economic pressures on primary industries coupled with development pressures to subdivide agricultural land for urban expansion provide a challenge not only for local people living in the Shire, but also for planners and natural resource managers who have a responsibility to implement the Reef Water Quality Protection Plan (Reefplan). The purpose of the Reefplan is to develop actions, mechanisms and partnerships to halt and reverse the decline in the quality of water flowing in the GBR lagoon. This paper summarises the results of six land use and management scenarios that were developed with the local community in the Douglas Shire. The scenarios were digitised into a Geographic Information Systems (GIS), visualised with maps and simulated images, and also used as input into the Sediment River Network Model (SedNET) and Annual Nutrient Export (ANNEX) model to assess and compare the water quality outcomes of the current situation with the community developed scenarios for the future.