

Dynamics of a tropical deepwater seagrass community during a major dredging campaign

Taylor, H.A.^{1*}, M.A. Rasheed¹, T.L. Sankey¹ and S.A. McKenna¹

¹Northern Fisheries Centre Department of Primary Industries and Fisheries, Cairns QLD 4870

Helen.Taylor@dpi.qld.gov.au

A research and monitoring program was established to examine the potential impacts of a large scale capital dredging program on a tropical deepwater seagrass community between December 2005 and June 2008. The aims of the monitoring program were to fill gaps in our understanding of the dynamics of tropical deepwater seagrass habitats, their roles in fisheries productivity and their resilience and capacity for recovery from disturbance associated with dredging. While the dynamics of shallow coastal seagrasses in the region have been the subject of many studies little was previously known about the low density deepwater seagrass habitat that typified the study area. Results of the study revealed that these deepwater meadows had a high natural seasonal and inter-annual variability. Seasonality was substantially different to neighbouring shallow seagrass communities with a winter peak in abundance declining in spring before losing all above-ground biomass during summer months. Turbidity associated with dredging inhibited seagrass recruitment but there was evidence of seagrass recovery 12 months after the completion of dredging activity. Implications of the study for managing impacts to deepwater seagrass communities and differences in response to shallow coastal seagrasses are discussed.