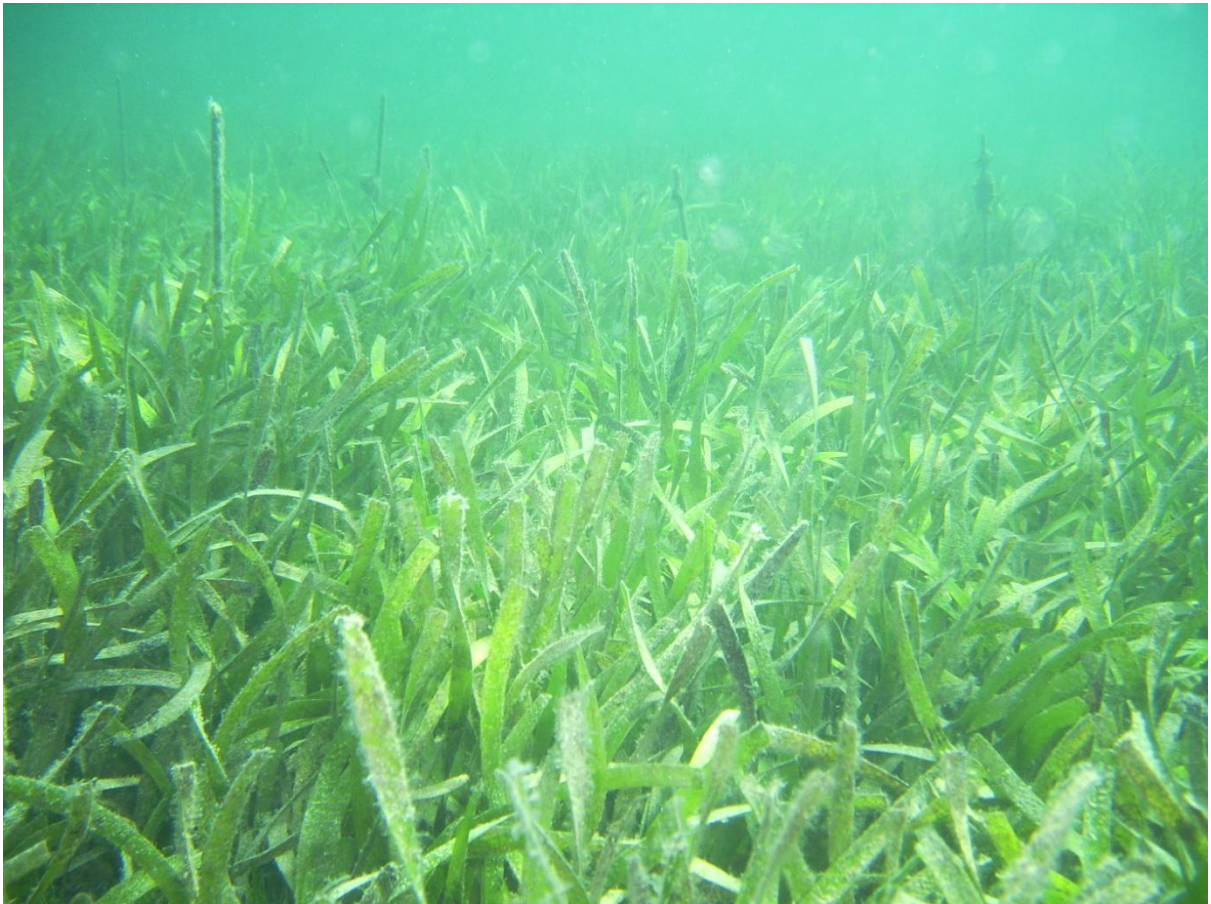


**Assessing Ecosystem Recovery in Transplanted  
*Posidonia australis* at Southern Flats, Cockburn Sound**



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## **Declaration**

This thesis is an account of my own research and has not been previously published or submitted at any tertiary institution, except for where acknowledgement has been made in the text.

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## Abstract

Following on from the large scale loss of seagrass in Cockburn Sound and extensive transplanting of *Posidonia australis* which had taken place on Southern Flats, assessment of the recovery of the seagrass benthic infauna ecosystems was undertaken. Samples from the outer, middle and centre edge zones of four different density transplant plots (1 m, 0.5 m, 0.25 m and 0.125 m spacing) located within a larger transplantation meadow were compared against two natural meadows and a bare sand site. Four years after transplantation the 0.25 and 0.125 m Plots had shoot densities comparable to those of the natural seagrass sites with a two-way ANOVA revealing significant effects of site and edge zone on the seagrass shoot density. Total infauna abundance and infauna assemblages within the 0.25 and 0.125 m Plots had reached equivalent level to the natural meadows but not at the 1 and 0.5 m Plots. A two-way ANOVA showed a significant difference in the total infauna abundance between the different sites but no significant edge effect was detected. Eusiridae, Solecurtidae, Diogenidae, Columbellidae, Fissurellidae, Oweniidae and Ischnochitonidae were found to occur in the two natural meadows and in the 0.25 and 0.125 m Plots and may be climax or K-species indicating the recovery of the transplanted seagrass to natural levels. The transplanted seagrass was also found to support small numbers of pipefish, seahorses and a sea lion. From this study it can be seen that the shoot densities and infauna abundances and assemblages of the 0.25 and 0.125 m Plots have reached levels comparable the nearby natural meadows and that those of the 1 and 0.5 m Plots are likely to reach comparable level another in one to two years.

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