Habitat enhancement approaches within the Swan-Canning Estuary using Living SeaWalls technologies.

Lucy Arrowsmith [1], Josh Baker [2] and Kerry Trayler [1]

[1] Rivers and Estuaries Science, Department of Biodiversity, Conservation and Attractions, 17 Dick Perry Avenue, Kensington, WA, 6151

[2] Ocean Ecology, Severnside Park, Epney, Gloucester GL2 7LN

The Swan-Canning Estuary (SCE) in Western Australia has undergone heavy modification along its shorelines. Due to ongoing erosion risk, single-purpose coastal infrastructures like seawalls, have been used to protect the shorelines, but often remove complex intertidal systems. As existing modifications in the SCE reach the end of their intended lifespan, and new structures are built, the potential to integrate eco-engineered technologies could be an alternative resource to reduce erosion, whilst promoting biodiversity. Using ego-engineered structures from Living SeaWalls, we aimed to evaluate the effectiveness of five styles of habitat panels in enhancing biodiversity and increasing habitat coverage in the SCE compared to pre-existing seawall infrastructure. We found the habitat panels had a higher species richness and abundance in comparison to the pre-existing seawall at two of the three sites in East Fremantle. We also found that the 'rockpool' habitat panels had the highest rate of species richness, abundance and diversity in comparison to the other four panel types. The installation of these panels is the first to happen in WA, and our results aim to provide evidence that ego-engineered structures are more valuable at promoting biodiversity than a blank sea wall, and should be considered when installing new hard-engineered structures.