



ESG Insights

November Focus: Exciting Environmental Projects This Week, WN44: Tasmania's 'Super Kelp' Forests

- *Since the 1960s, Tasmania's once expansive kelp forests have declined by more than 90 percent*
- *Dr Layton has made it his mission to restore the 130 feet tall ocean forests that once blossomed along the coast of Tasmania*
- *The global seaweed (macroalgae) cultivation market was valued at US\$16.7 billion in 2020 and is projected to reach US\$30.2 billion by 2025, recording a CAGR of 12.6% during the forecast period*

OVERVIEW

Tasmania's bays once proliferated with giant kelp forests so thick that fishermen had to cut a channel for their fishing boats to pass through. Now, not a single kelp algae can be found in the bays, which extend to the size of 10 – 20 football fields. Regional warming has been identified as the culprit, having extended the waters of the warmer East Australian Current into the Tasman Sea, starving the kelp of the cool, nutrient-rich waters they need to thrive. As a result, entire kelp forests have been wiped out. The warmer waters have also boosted the local urchin population, which feed on kelp, compounding their destruction. The sudden disappearance of the giant kelp forests has seen them listed by the Australian Government as an endangered marine community – the first such listing for a marine community in Australia.

OUTLOOK

Dr. Cayne Layton, a postdoctoral research fellow at the *Institute for Marine and Antarctic Studies* at the *University of Tasmania*, and his team have made it their mission to restore the flora and fauna of Tasmania's seas. Through a combination of natural and artificial selection, by searching out the surviving kelp patches and cultivating them in a laboratory before returning them back to their natural habitat, they hope to regrow a more climate-resilient kelp population. In other parts of the world, other kelp restoration projects are tackling different threats, from *The Bay Foundation* hand-clearing predatory urchins in California, to "Help Our Kelp", a kelp restoration plan along the southern Sussex coast in the United Kingdom.

OPPORTUNITY

The research to locate and culture warm-tolerant giant kelp varieties has the potential to be undertaken for commercial use, such as developing a giant kelp mariculture industry in Tasmania. Kelp farming already occurs in Europe and parts of Asia, where harvested kelp is used in products ranging from nutraceuticals and pharmaceuticals, to animal feed and cosmetics. Additionally, giant kelp forests play a huge role in protecting the environment: they serve as buffers for coastlines against the effects of storm surges and sea level rise; they purify the surrounding seawater by absorbing excess nutrients, and they also absorb carbon dioxide, which can help regulate ocean acidity and provide a healthy environment for the hundreds of marine species dwelling among them. In Tasmania, kelp forests support endemic species, such as the leafy seadragon, as well as commercial fisheries, including rock lobster and abalone, together worth US\$133 million (A\$180 million) statewide annually. Furthermore, *GlobeNewswire* estimated the global seaweed cultivation market size to be valued at US\$16.7 billion in 2020, and projects that figure to almost double to US\$30.2 billion by 2025.