



Where I work Cayne Layton

Photographed by
Craig Johnson.

Here, I'm diving in one of 28 large artificial reefs at Maria Island, about halfway up the east coast of Tasmania. We built them out of metal framing and concrete paving stones spread across 1.5 hectares, and transplanted common kelp (*Ecklonia radiata*), a type of seaweed that grows to about one metre, into the reefs.

We made industrial-sized rubber bands from old car tyres to gently secure the mini-kelps to the reef. Then we monitored the kelp forests over two years to study how they persist over generations and how they respond to climate-change stresses.

Many species began moving in within a few weeks: seaweeds, invertebrates such as lobsters, oysters and octopus, fishes and other animals. It attracted hundreds of species – even some that we know little about.

As a postdoctoral researcher at the Institute for Marine and Antarctic Studies in Hobart, Australia, I work with Indigenous Tasmanian groups to enhance my Western knowledge. For example, the maireener snail (*Phasianotrochus irisodontes*), which lives

on kelp, is almost unknown in the scientific literature. But elder Indigenous women in Tasmania know about the snails' seasonality, diet and habitat because they collect their shells to make beautiful necklaces.

The area of the kelp-forest patch affects its health. Baby kelp settle inside large patches, and big reefs become self-sustaining. Below a size of 4 square metres, the babies stop settling, and the kelp forest fragments.

Kelp forests have all the benefits that terrestrial forests do – they help to filter and clean coastal waters, provide habitat, support fisheries and protect from erosion. They also suck up carbon, but the jury is still out on using them for carbon sequestration.

They create an extremely tranquil, meditative environment to be floating in. The light filters through the canopy just like with a stained-glass window. You are effectively flying through the forest.

Cayne Layton is a marine ecologist at the Institute for Marine and Antarctic Studies in Hobart, Australia. **Interview by Kendall Powell.**