

Ocean Innovations

By Rose Hyde

On the East coast of Tasmania, known as The Bay of Fires, the Kelp Forests were dying, so I decided to do something about it. I was only 17 though, so what could I do? Well this is a story about what I did do. I became a Marine Scientist, hoping to grow a kelp that would survive in warmer waters.

I walk into the lab. The team are hunched over the middle bench testing and fiddling with something. I take a closer look and see what they are doing. They are fiddling with a sample of Laminaria kelp. We have spent ages genetically engineering this with a Tasmanian kelp. I come in the huddle and instruct them a little further. I'm actually really excited today because we are going to plant the Kelp on the artificial reef this afternoon. I spent a lot of time making that reef, using recycled plastics coated in a special paint so the micro-plastics can't be released. The lab is not far from the Bay of Fires where we will do our first plantation of the kelp in the ocean.

The mini bus has all the scuba gear, kelp samples and all the other gear packed. The artificial reef is too big so it is coming there in a truck. I think back, and I remember thinking *"I wish I could do something about it!"* it was a long time ago, but now it is going to happen.

The drive from our lab to the Bay of Fires takes 40 minutes, so for 40 minutes I sat there thinking of all the things that could go wrong. When we arrived, we took all the gear down to the jetty in a cart and the boat we hired was scheduled to pick us up in half an hour.

One of the biologist's thick glasses nearly fell off his nose as the boat crashes through the waves. He steadies them, or tries to, only to pull them right off, almost dropping them in to the water. The boat throws an anchor down 500 meters off a beautiful beach, Honeymoon Corner, according to the driver. The reef is strapped to the roof of the boat and it takes me and two others to take it down. We lower it into the water on two thick cables. I get dressed into scuba gear while someone fiddles with a camera.

Someone will stay on the boat and use the camera to instruct us, although we have masks, the camera is a lot clearer. The boat driver attaches a heavy tank to my back and once we are ready the team and I jump into the water.

We lower the reef to the ocean floor and swim down to it. I carefully take the kelp samples from someone and swim to the reef with the samples. I sit the little plastic bags on the reef and gesture for the team to take one each. We carefully plant the kelp on the artificial reef, taking care not to place it in a spot with shade, because kelp photosynthesizes.

The team and I drag our saturated bodies, and take off our tanks and masks. We take turns at looking through the camera. All the samples are in a good place, sunny and out of the current.

When we get back to the shore we get changed and pack away the gear. The boat driver drops us off and he is now taking a boat load of tourists to go dolphin-watching.

One of the scientists I worked with, a marine biologist, drives us all back to the lab. We let the gear dry and grab our stuff from the lab. Its seven o'clock now so we should be heading home. When I get home, I hear a strangely familiar rumble. I look out the window. Big black clouds are rolling in. A storm is coming. Oh no! The kelp will be ripped up! Will the kelp survive? If not, it'll be a test but they're only seedlings so it's unlikely... if a wave doesn't smash them, then the debris will. *Damn.* Well, we will just have to re-plant it.

We pack up and rush into the mini bus, to the Bay of Fires. Another hire-boat takes us back to where we planted the kelp. I was first in the water, wondering what happened to the kelp. As soon as I see it, I am shocked. The kelp looks untouched. Then I am so happy! I have created a kelp that can survive a *thunderstorm!* And it also seems to have grown overnight. The original kelp, giant kelp can grow up to 35cm in 24 hours. This one has only grown 2.5cm when we measure it but the fact that it is growing means it most likely *will* survive in these waters! And it did...

Two years later:

The Daily Examiner

Marine Scientist Amie Brown has just been awarded the 'Ocean Innovations Science award' because of her outstanding work in re-growing the kelp forests of the east coast of Tasmania. Brown says "If you can't save something, remake it." And that is exactly what she did with the kelp forests. This year the last kelp forest planted approximately one mile off Picnic Beach. Brown encourages us to enjoy diving in her work but not to disturb it.

-Article by Alice Liner

-The End-

5 science factors:

- 1) Inhabitants of kelp forests: an ecosystem of sponge garden, fur seals, crayfish, weedy sea dragons and countless species of fish.
- 2) Genetic engineering: taking the more heat resistant type of Laminaria Kelp, our kelp scientist genetically engineers the Tasmanian kelp and the Laminaria kelp to plant a new kelp forest.
- 3) What kelp needs to grow: Kelp take nutrients from the water but they also photosynthesize.
- 4) Why the kelp is dying: global warming has taken effect on lots of things in our world including our kelp forests. My story is about how we can fix that.
- 5) Food chain: the food chain of the kelp forests includes, a network of bacteria, algae (including kelp), fish and seals.

References:

- <https://www.theguardian.com/environment/ng-interactive/2020/feb/24/the-dead-sea-tasmanias-underwater-forests-disappearing-in-our-lifetime>
- https://en.wikipedia.org/wiki/Kelp_forest
- <https://oceana.org/marine-life/corals-and-other-invertebrates/giant-kelp>
- The Hidden Forrest by Jeanie Baker