A vanishing future

Eyes focused on the horizon, Joseph Daniel is off in search of a specific type of treasure that washes up on the shoreline.

Despite the cloudy day, he winds down the window, letting the salty ocean breeze flow into the car.

He pulls up and opens the door, letting in a black housefly.

While there's money to be made down at the nearby beach, Joseph doesn't appear to be in a rush, as he listens along to the car radio.

As the number of reports about kelp disappearing grows, kelpers on one Australian island are fighting to keep their industry alive.

By April McLennan / triple j Hack

- Topic:Agriculture

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Clambering over jagged rocks along the coastline, Joseph finds a weighty piece of bull kelp spat out by the ocean.

Grabbing it with his hands, he drags the kelp further up the beach to dry land.

"I kelp, which is a funny little job. There's not many places in the world where people do it," he tells triple j hack.

"It's where you collect seaweed off the beach, and get paid for it pretty well.

"It's pretty good, at times you can make a fair bit of money.

"The thing is, you might make a thousand dollars one day, and then not make a cent for a couple of weeks, so it's very on and off."

The majority of the bull kelp, or Durvillaea potatorum, harvested on the island is collected for alginate extraction.

Its uses are seemingly endless, from producing gels and pastes, to shampoos and even salad dressing.

For Joseph, kelping is a great gig.

"You're your own boss, so you've got no-one telling you what to do," he says.

"And you get to be at the beach all day."

Kelpers are prohibited from diving into the ocean to cut the seaweed from its home on the ocean floor.

Only the thick brown bull kelp the ocean has cast onto the shore can be collected by kelpers.

"When there's not lots of it, you just hand pull it up and let it dry on the beach and then collect it later on," Joseph says.

"When there's lots of it, you've got a trailer or a truck, with a big tray that holds a lot of kelp.

"There's a winch and a cable with ropes connected to the end of it, and you tie each piece of kelp to the rope, about eight or 10, and winch it all up."

Loaded into the truck or trailer, the seaweed is transported to a nearby kelp factory.

For two weeks, the sun-drenched and wind-blown kelp air-dries on steel racks before being processed and exported to Norway.

Joseph says in recent years, there's been less kelp washing ashore.

He worries about what that could mean for the future.

"You can see a huge difference just when you go free diving for fish, in places where there used to be kelp everywhere, and covering the rocks," he says.

"Now it's bare, it's like a forest that's been cut down.

"There use to be 50 full-time kelpers, and now there's probably five or six.

"No-one really knows why … everyone has their own theory."

Home to nearly 1,600 people, King Island is the type of place where nothing stays a secret for long.

Through casual conversations, the concerns of the kelpers are widely shared.

It wasn't long until word reached Debbi Delaney, a PhD candidate with the Institute for Marine and Antarctic Studies (IMAS) at the University of Tasmania.

Debbi's lived on the island for more than 20 years.

"I hear living here that there's a great deal of concern and the number of carters that used to be here working actively within industry, say in the 80s and even early 2000s, now has significantly declined," she says.

"I guess a light bulb went off in me and I thought, 'I could do that research. I could look at the impacts of climate change in that context'.

"What does it mean to a community like ours?

"To a small, remote community where these sorts of income sources are important."

Debbi explains that in the late 80s, a researcher dived deep under the choppy waves to the ocean floor to observe the bull kelp.

Surveying the seaweed, he noted the amount and other metrics such as length and weight.

As part of her research, Debbi hopes to have honours students re-dive the same area and survey the bull kelp to compare the data.

"Historically, most of the investment has gone to coral reefs, and clearly they're important as well," she says.

"But we're increasingly understanding the temperate reefs and kelps have got a vital role to play in our ecosystem and we need to learn more."

A main focus of Debbi's research is to determine what a decline in bull kelp could mean for both the community and ocean.

While she hopes to have these answers in a few years, for the moment she is left with a lot of questions.

"Does it mean economically that [the bull kelp] has to relocate to another locality? If so, what does that mean for the King Island community?"

"Are there pockets of cold water where we can actually do some restorative activities?

"What does it mean for the future … we just don't know at this point."

Inside the laboratory, an assortment of beakers and plastic tubs bubble away.

They are filled with baby bull kelp specimens.

Watching over the experiment with a keen eye is Jeff Wright, associate professor in seaweed biology at IMAS.

"We're focused on developing the methods to bring bull kelp into cultivation, so to bring it into aquaculture," he says.

"We can make lots of little babies but now we're working on growing those babies bigger.

"We've got some tanks here set up where we're trying to optimise the conditions for the baby bull kelp to grow larger.

He has also heard reports that King Island's bull kelp population isn't as "abundant as it once was".

Alongside the ongoing research to understand what might be causing the reported decline, Professor Wright is also growing bull kelp in the lab.

"We've done a bunch of things related to developing what are called the hatchery methods," he says.

"The hatchery methods for seaweed are the methods that you use in the lab to generate the babies of the seaweed, which can then be taken for grow out.

"Which in the case of kelp, is taking them out into a marine farm in the ocean and growing them into larger individuals that can then be harvested.

"We have several hundred meters of rope set up, and we take the baby kelp that are grown in the lab and we transplant them onto those ropes that are out in the field."

Similar to Debbi, Professor Wright also has a lot of questions that he's hoping their research can answer in years to come.

"If we're getting less bull kelp washing up, does that mean there's actually less bull kelp in the populations on the rock?, he asks.

"Or does it just mean that the bull kelp is getting washed somewhere else?

"There's a number of things we don't know that would be really important to know, in terms of managing bull kelp and maintaining the industry on King Island."

Back on the rugged coastline of King Island, Joseph perseveres, scouring the coastline for ocean-cast kelp.

Despite his cheeky grin and playful temperament as he goes about his work, the seemingly vanishing kelp has left Joseph with a feeling of deep sadness.

Credits

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