

Transcript

00:00:03:18

James Shooter

I've just arrived in Ardfern on the west coast of Scotland. It's 9:00 in the morning, but there's not yet much light. We're closing in on the shortest day of the year. There's December drizzle falling down, and the sky above is a particularly unspectacular shade of gray. I did see a barn owl, though, perched on the roadside fence. Probably the only upside of leaving the house at 5 a.m.

Moments like that can really lift the spirits on days like today. My friend Jack says there's always a reason to go outside. A mantra my wife and I try to live by. And glimpsing that pearly White owl reaffirms it. Now, when I first got in touch with Seawilding, I had great plans for this podcast. I envisaged squeezing into a wetsuit, dipping beneath the waves and seeing this important marine ecosystem for myself.

That was in September. It's now December, and just looking at the sea is making me feel cold. I might just add a few splashes when I come to the edit and hope none of you notice.

I've travelled 3 hours down the notorious winding roads of the West. Nursing the coastline as it ebbs and flows, following the dramatic peninsulas and sea lochs that frequent this part of Scotland.

Think, Norwegian fjords though, with more potholes on the roads. I know this area fairly well. It hosts one of my favourite nature reserves, a tiny fragment of temperate rainforest, a lush ecosystem dripping with diversity. But I'm not here to see the forests, at least not those found on land. It's marine forests I'm here to find out about today.

Whilst I'm well versed in Scotland's terrestrial rewilding story, my knowledge of what goes on beneath the waves is a different kettle of fish. I couldn't start my trip to the continent without paying these guys a visit. It's a story of carbon capturing seagrass, water filtering oysters and the community that have come together to restore both.

I'm James Shooter, host of the Rewild podcast, and this is Seawilding.

00:02:22:08

James Shooter

What is this contraption?

Philip Price

The Green is going to save the world.

James Shooter

This is amazing. What is it? Just a trailer?

Philip Price

Just a trailer yea. Hi there!

00:02:34:08

James Shooter

Cycling up the hill towards me is Phillip Price, a talented wildlife photographer and friend of mine who now works for Scottish Marine Rewilding Charity, Seawilding. Phillip's always been a huge advocate for sustainability. And he's recently swapped his car for an electric pedal bike and custom-made trailer. It looks a bit rickety to me, but he tells me he churned through around six and a half thousand kilometres a year transporting everything from boxes of oysters to his paying photography clients, that are strapped to the back. It's an alfresco experience. Whatever the load.

00:03:10:02

Philip Price

Never seen an otter in that stretch before. I usually see them up here.

00:03:14:10

James Shooter

On the bike, a white-tailed eagle and an otter.

00:03:15:18

Philip Price

And then a sparrowhawk comes out in front of me, getting mopped by a buzzard.

00:03:19:09

James Shooter

I don't believe you.

00:03:20:13

Philip Price

I couldn't believe it either. That was so funny. I thought you are going to be so mad.

James Shooter

I am, of course!

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James Shooter

The art of slowing down - an impressive haul for a ten-minute cycle. But the coastline here holds many treasures. And whilst driving ahead, I picked up a party of common Eider rafting in the bay, along with the red breasted merganser, diving for fish and a nosy grey seal watching me closely with this big puppy dog eyes.

00:03:44:22

Philip Price

If you're feeling adventurous, it's touch and go, so it's how adventurous you feel. It's safe, it's just going to be a bit splashy as I've got a tiny wee boat.

James Shooter

I always like a plan that says: You can go, it is safe!

Philip Price

I mean you will die. You might have it wet.

00:03:58:20

James Shooter

Phillip's walking me down to meet Danny Renton, the CEO and founder of Seawilding. We walked to his seaside bothy; a basic building traditionally built as a shelter for estate workers.

00:04:12:14

Philip Price

He's just got a wood burning stove with a back burner.

00:04:17:19

Danny Renton

It's a mitten in here. I fired it up last night. It's got hot water

James Shooter

Oh, amazing!

00:04:21:07

James Shooter

Danny's been renovating the dilapidated bothy. Not least by putting a roof on it. He's been living here for two years now and only just managed to get hot water. It's a small space, but it's been made really cozy with a big, beautiful stove, mezzanine floor and exposed copper pipes running up the walls. It's the kind of place city dwellers might pay hundreds a night for when they fancy a quirky retreat in the countryside.

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James Shooter

He and the local community of Ardfern straddle the shoreline of Loch Craig Neish in Argyll.

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Danny Renton

As a community, we're very interested in the Sealochs here and the health and the biodiversity, of the Sealoch and in living memory that biodiversity has really declined. And this Sealoch is typical of any Sealoch in the West Coast. It's got aquaculture in here. It's got a very busy marina. It's got some farms, a lot of nitrate runoff. So, it's got all those, sort of, negative drivers.

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James Shooter

When deciding on how to give something back to the waters that have provided so many invaluable resources, the community identified two priority Marine features they could do something about: native oysters and seagrass meadows, specifically the European Flat Oyster (*Ostrea edulis*) and Common eelgrass (*Zostera marina*).

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Danny Renton

Most marine conservation is about campaigning to stop things from leaving things alone. And you don't really get listened to, to be honest, especially as a community. So, we thought: Let's get into the water and start doing something beneficial.

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James Shooter

This is what really excites me about rewilding. It avoids focusing too much on trying to stop a negative. It's about being proactive and positive and creating something beneficial for the environment. And I find it even more empowering when a community comes together and decides to take it on themselves. Danny's connection to the sea involves a childhood of summers spent on Tyree, the most westerly isle of the Inner Hebrides of Scotland.

He spent two and a half months with this family, fishing in an old wooden boat. They'd catch halibut, whiting, cod and lobsters, just a mile offshore. But in his lifetime, as with much of the natural world, the abundance and diversity of life has all but disappeared.

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Danny Renton

In the 1980s, that the Scottish Bank was then dredged. All that local fishery disappeared. And that was for local people. And I've seen that all the way around the West Coast, I'm a sailor, so I see that as well. And so, my interest in what we're doing here is really informed by my own awareness that the biodiversity is gone and no one's really talking about it.

We talk about the claps and fish stocks. We talk about the fact there are no trawlers in Oban anymore, they're just scallop dredges and there's some creel boats. And we and we talk about the fact that, you know, that white fish stocks are now commercially extinct, but no one is really talking about how to change it. And that's what I was really interested in about.

And from community level, we wanted to look at our own water body and say, what can we do here?

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James Shooter

One of the problems with the sea is that for most people, life beneath the waves is out of sight, out of mind. Most people would notice the forest felt close to their home, whereas few would see the tell-tale signs of the seabed in distress.

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Danny Renton

But if you talk to some of the old divers here and those people in their seventies who've been diving here since the 1960s, they would say that the west coast of Scotland used to look like the Red Sea. Maybe not as colourful, but certainly in terms of biodiversity.

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James Shooter

And so whilst I suppose it's really sad that that has happened in such a short space of time, actually for the restoration point of view, it's quite important to still have that human connection of people that are still around, you know, actual memories that people can say to you, look, I was there 50, 60 years ago and I know that this was different.

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Danny Renton

It's really important. And over recent months, we've been interviewing people who have been here for many years of their life and who've had a connection with the sea. And we were talking to a 90-year-old the other day, who was talking about going out during the war in wooden boats just at the head of the loch and to ring net cuddy, which is that sort of young, pollock, saithe, that sort of thing. And he was saying the challenge was not to sink the boat, when you came back, there was so many fish. He talks about looking out over the side of the boat and seeing shells of herring. And he said it was like it was like a concept of infinity, the glittering of the water he said he'd never seen so many fish, you could almost walk on the water.

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James Shooter

Historical accounts offer an insight into the scale of what we've lost. These native oysters were food for the masses and their abundance in Scottish Seas meant an entire industry was built on the back of them. Throughout the 17th and 18th centuries, these molluscs were sold as simple bar snacks. I'm not sure I fancy the idea of a hangover after a night of ale and oysters, but each to their own.

In the 1790s, as many as 30 million were harvested a year from the Firth of Forth just outside of Edinburgh. By 1882, the Edinburgh Oyster haul was down to just 55,000. A decade later, and it was just 1200. In 1957, the famous oyster population that fed the residents of Scotland's capital were declared locally extinct. Here in Loch Craig Nish, the empty shells from a bygone era still scatter the shoreline, shining a light on this important food source for the coastal communities of the past.

The oysters you now see being enjoyed by fancier folk in the champagne bowls of Edinburgh Airport are actually Pacific Rock oysters - *Magallana Gigas*. These are non-native to Scotland and were originally introduced to farm, but they have escaped captivity in numerous places and are now considered invasive. They grow fast and are fairly indestructible.

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Danny Renton

One of the reasons why it's allowed to happen is that, the understanding is they don't spawn, they don't breed in temperatures beneath around 22 to 23 degrees. But with climate change, the problem is in the southwest of England, down in Cornwall, places like that, they are breeding and they are now sort of taking over ecosystems and habitats.

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James Shooter

Oysters are a true ecosystem engineer. Now, they might not be as cute as a beaver or as iconic as a wolf, but for the seabed, oysters are the heroes. The first service they provide is water filtration.

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Danny Renton

And it's said that the North Sea had these dense oyster beds that went for miles and miles and miles. And I've heard that the North Sea was once blue as opposed to the pea green that is now and that's due to the filtration capacities of the oysters.

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James Shooter

A single adult oyster can filter around 200 litres a day. Now, imagine what those 30 million oysters were doing for the waters around Edinburgh. In fact, you don't have to imagine. A quick calculation tells us they had the ability to clean 6 billion litres a day.

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Danny Renton

The second thing about them is if you get a native oyster bed, it's a complex 3D habitat with native oysters piled on top of each other. You might get 100 oysters in one square meter. And you can imagine what that's like, all the nooks and crannies. So, then you get all that other marine life moving in and coexisting with the native oysters.

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Danny Renton

And certainly, we put down around 300,000 on the seabed so far, and we put them down in large numbers on top of each other. And you go back to those sites now and snorkel around them. There's lots going on. It's exciting.

00:11:41:13

James Shooter

These underwater cities also have the potential to store carbon. The complex structures act as a filter and draw down organic carbon from the water column and trap it in the sediment left undisturbed, these reefs can act as important marine carbon sinks. This

species has remained virtually unchanged for at least 10 million years. So, you would have thought they'd be pretty good at surviving yet they've all but disappeared.

As with most things, it's down to human pressure. If you get people picking at a population over many, many years, the recruitment can't keep up. Simply put, the animal can't reproduce fast enough to replenish healthy stocks.

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Danny Renton

The other thing is, mechanical disturbance - dredging, for example. They were dredged in the Firth of Forth. They were dredged in the North Sea. So, basically those populations were wiped out. And the other thing is disease. There's a parasite called Bonamia, which is, I believe, came from the continent. Oysters have always been moved around and it came from there.

It's been around for, you know, for decades. And we don't have it here in Loch Craignish, but there are other places in the West Coast that do have it. And you can get mass mortality events as a result of those sort of things.

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James Shooter

Many parts of our marine ecosystems aren't functioning as they should. Overexploitation has been an ongoing threat with fishing technologies becoming increasingly efficient. This efficiency has sadly led to devastating consequences for populations of fish, crustacean and mollusc alike.

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Danny Renton

We need to look to places like Norway that have managed it really well, where you can go off in your boat and you can catch a cod and a halibut within sight of the shore with your own rod and say, How did you do it? Now let's try and do that here and that means everybody working together to say: let's manage low impact fishing, sustainable fishing. Let's give things a chance to recover so that in 10-20 years, there's more opportunity for everybody.

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James Shooter

Closer to home, another Scottish coastal community has proved the positive effects of leaving an area of seabed alone, after 13 years of campaigning. Scotland's first no take zone was established in 2008 on the Isle of Arran. It may have been small at just over two and a half square kilometres, but the results are hard to argue with. In just over a decade, researchers have found that the size, fertility and abundance of lobsters and scallops are significantly better within the no take zone and seabed biodiversity has increased by 50%.

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James Shooter

This benefits not just the wildlife, but creates jobs in a more sustainable fishing industry, helped along by recovering stocks spilling out from the protected area.

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Danny Renton

I personally don't believe that we should be dredging for scallops within meters of the shoreline. There's a marine protected area down in Loch Fine, just, you know, half an hour away. The other day I was down there watching a bottom trawler within meters of the shore in a marine protected area, dragging the bottom and up comes a lot of seaweed.

That should not be allowed. It's just a name. It's a paper park. Only 4 to 5% of those marine protected areas are actually protected against destructive fishing, which is what I've been talking about. The rest is just a free for all. So, it's nonsense. And we should stop pedalling this nonsense. There is talk in the future of highly protected marine areas. That's exciting. It's 10% of the Scottish waters will be highly protected marine areas.

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James Shooter

I do find it hard to accept the premise of highly marine protected areas. They sound great, but surely there wouldn't be a need for highly marine protected areas if marine protected areas were properly protected in the first place. There are still relic populations of native oysters in Scotland, but the locations are kept secret for obvious reasons. Baseline surveys by Seawilding found a population of around 200 in their local loch.

Whilst they may be breeding a little, there is not enough activity for this population to be considered self-sustaining or better yet – increasing. Over millions of years oysters have developed a fascinating life cycle that's evolved to take advantage of the natural rhythms of mother nature. First of all, they are protandric, meaning they have the nifty ability of being able to change sex from male to female as they mature.

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James Shooter

The males released their sperm into the water column on a neat tide, a moderate tide that allows it to float around for longer to find a female that will take it in. After fertilization, the females release the larvae on a spring tide where the gravitational pull of the sun is added to that of the moon, making for a more extreme tide. This allows the larvae to disperse a long way before they settle. They have just one chance to identify a suitable site using their Biswal thread. Strong silky fibres that superglue them to the substrate. Reproduction can be quite prolific if there are enough sexually mature oysters left in a population. Whilst numbers are low, Seawilding is bypassing the pressures of the wild by controlling this process in captivity.

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Danny Renton

So, the hatchery has our brood stock and some small oysters that we've managed to get from this loch and from Loch Melfort. They're tested for disease in advance. And so, all the biosecurity protocols are there, and they have around 80 of them. And they get them to breed using a combination of temperature and algae, and they're very good at it.

And then the challenge is, once the larvae is released, then to get it to grow and all that's done in the hatchery.

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James Shooter

When the oysters are received from the hatchery, they're five months old, weigh a gram, they're just ten millimetres in size. They're then taken to mature over the summer months in floating cages where they can binge feed on phytoplankton whilst avoiding the risk of being predated by crabs or starfish. By the time they're done, they've packed on another nine grams in weight and are ready to be cast out onto the seabed.

Having seen pictures of thousands of oysters being thrown back into the sea, I was half hoping that it would be an easier reintroduction process than terrestrial examples. But Danny tells me otherwise.

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Danny Renton

You can take a scallop dredge within meters of shore here and destroy an ecosystem that's been here for thousands of years. But if you want to then try and restore some elements of that ecosystem, it will take you months and months and months of permissions and licensing and consent.

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James Shooter

Whilst the legislation for species translocations is there for good reason to avoid such issues as the spreading of disease, you would hope that it would be as easy to get permission to fix a piece of nature as it was to break it in the first place. It's my humble opinion that we need to massively reduce the red tape required for nature restoration.

Yes, we need to do it right, but as the old saying goes, we shouldn't let perfect be the enemy of good.

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Danny Renton

Well, so far, we reckon around 40% of surviving on the seabed, which is good, which is really good. But the ultimate measure of success is that we want to see them spatting and recruiting and becoming self-sustaining. We're only in year three. We have yet to see lots of young oysters hanging onto shell, but that's really as a function of age. This year they should be beginning to breed. We'd like also to be able to swim through the water and say: Oh, we're seeing other species in numbers, probably as a result of what we've been doing. We also want to be working with all the stakeholders under the umbrella of a demonstration research marine protected area to form a new type of

management for this sort of thing where the community is completely involved, where biodiversity and the health of the sea loch is absolutely paramount.

But we also have lots of new green jobs as a result of it. Sustainable fishing and lots of exciting jobs which are rooted in this whole experiment.

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James Shooter

I'm meeting back up with Philip now as he had a plan to squeeze me into his tiny little rowing boat so I could see the oyster nursery for myself. Thankfully, it's a little too choppy for that. So, we've upgraded to Seawilding's Electric Boat instead. It takes us 20 minutes to get around the bay with the motor, so I can only imagine I would have been here for around three days if we'd been rowing to the site instead.

The small islands we passed still boast significant numbers of hazel and oak, two species that make up the temperate rainforest that should cover much more of this part of Scotland. I picture them adorned in that vibrant spring green or autumnal orange. But there's still beauty in the naked winter structure. As we reach the nursery, we slowly track between two lines of floats, the only hint from the surface that anything is going on here. A young cormorant is using one as a perch to rest between fishing trips. Watching us carefully to see what we're up to. Philip leans over the side and holds out the first cage. Where the young oysters are working their magic.

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Philip Price

You get, like, little fish hanging out here. These are the oysters. This is why this is so amazing. Look at the shell on that. You see they have keel worms. That's a baby Saddle Oyster. They get barnacles on them; you get all sorts.

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James Shooter

So basically a mini ecosystem.

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Philip Price

That's before they've even done anything else. So, these are probably the size of the inner part of your hand, and they're probably two years old or something, maybe two and a half years old. They grew really well here.

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James Shooter

What are these long worms? Keel worms?

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Philip Price

Yes, there's a little worm, little red worms in there. And they just deposit the carbon as a kind of protection. It's like another type of shell really.

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James Shooter

There's probably more life in this little basket of oysters than I've seen all morning on the land, and these are just a few handfuls floating in the water column. Imagine what an entire reef could hold. It really puts in perspective the abundance of life we're missing and could bring back. We cruise away from the oysters and over a mosaic of light and dark patches in the waters beneath the darker areas are the fragments of seagrass that remain in the sea loch.

This is the second focus area for sea wilding and how Philip initially got involved in this charity. He started out as a volunteer on the Oyster Project. But when funding became available to do a pilot project on seagrass, he was employed part time to work on the collection and processing of seed. Fast forward two years and Philip is now working full time across both the seagrass and oyster restoration work.

So why does seagrass need attention? A recent study found that over 90% has disappeared from UK waters in the last century or two.

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Philip Price

And a lot of that would have been people walking through this weedy stuff and going: Oh, that's a bit horrible, let's get rid of that.

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James Shooter

Philip admits to me that he probably used to be one of those people who wants their feet entangled by some slimy green stuff whilst enjoying a leisurely swim.

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Philip Price

And then I had my first snorkel experience in seagrass and, oh, my word, it is the best way I can describe it. If you can imagine your favourite, most beautiful spring or summer's day with a wildflower meadow at its very best. So, there's flowers, there's bees, there is butterflies everywhere and then somehow you get to float across the top of that. That's what a seagrass meadow looks like. And to be able to float across the sea anemones and there's peacock worms, which are these incredible flower-like red animals. There is fish everywhere, there're crabs crawling across the canopy of the of the seagrass. It's like nothing else we have in Scotland.

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James Shooter

Where these marine meadows used to be, now only muddy sediment remains. It should be said that this isn't totally invaluable. Things like goby and crabs are perfectly happy there. But when you put seagrass back, a raft of life returns.

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Philip Price

We found it's almost doubling the biodiversity by putting seagrass in. And what other islands do you get? Well, you get, all your young juvenile fish coming in because it's a great habitat for them to feed and hide in. You get tiny little snails crawling up the seagrass, little whelks, and things like that. You get shellfish, we found scallops in the seagrass.

It's a good protection for them. It means they don't get washed away and they can just embed themselves there. You get dogfish in there, hunting all the other small fish. We found dogfish just two days ago in the seagrass and you get crabs eating the seed and cleaning the little whelks off the seagrass. They quite literally climb up the seagrass and eat all the food out of there.

So, it's a really like a forest. It's essentially going from a field to a forest.

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James Shooter

Greater pipe fish are also found here. These bony, elongated fish have mimicked the grasses' characteristics to blend in perfectly with the blades erupting from the seabed. Imagine the amount of seagrass that must once have existed to encourage a species to evolve to look exactly like it for protection. The creme de la creme of inhabitants, though, might be their cousin, the seahorse. Both short snouted and long snouted seahorses can be found amongst the underwater meadows of the south coast of England and Wales. Perhaps one day they will find their way up to these waters too, thanks to a newly established corridor of habitat, flanking the entire west coast of the country. Now, that's an exciting thought.

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Philip Price

We know pollution does hamper seagrass growth and can also weaken it enough that you get wasting diseases as well. So that will certainly play a part. While most seagrass isn't in a depth where you get dredging and trawling, when dredges and trawlers come past, they create plumes of silt. That silt settles on the seagrass and if that's happening a lot, that can stifle the growth to the point where it becomes weak and gets diseases again and can die off.

So that's another reason in many places around the coastline, probably not so much here, but when people would walk down to the beach, they wouldn't want this weedy stuff around that was a barrier between them and swimming. So then it would all get dredged out to make the beaches cleaner and little did we know how amazing this habitat was back then.

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James Shooter

So, some of our poorest qualities in the UK, our kind of desperation for neatness is partly to explain the loss.

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Philip Price

That's a very good point, actually.

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James Shooter

And I suppose it's not even like mowing your lawn to within an inch of its life. It's actually ripping that turf out and chucking it away.

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Philip Price

Yeah. It is that need to kind of control stuff. The picture is universally bad around Europe and Scotland, and I would say Europe are ahead of us in that restoration process. And I would also say Europe's attitude is ahead of us. And that's quite important because in Europe it's a "crack on" "let's do this" attitude. Whereas here it's a little bit more: yeah, we need to crack on, but let's do a bit of science and let's check this out and let's make sure the genetics are okay and well, let's make sure we have all the regulations so we can't do it that way because the regulators say we can't. Whereas in Europe, it's much more: We want a seagrass bed, so let's do it!

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James Shooter

I have constant arguments with myself around this, because I know that things need to be done right, of course they do, you need the science to back it up. But my God, we're slow, aren't we? You know, I think one of the best phrases around this kind of stuff is: "Studying the subject to death." Whilst we're all trying to research it and see the very best, most perfect way of saving something, well, it's gone by the time we figured out the perfect way.

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Philip Price

Yeah, but I think you've hit the nail on the head there. If we want to do things perfectly, we should have started 30 years ago.

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James Shooter

Seagrass is one of those habitats. We really don't want to be delaying saving. The meadows act as a nursery ground for commercial fish species, such as herring and cod. The shoals of juvenile fish that would frequent the safety of seagrass, are now suffering in abundance as adults.

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Philip Price

Those commercial species have gone. If you look at the catch records, once we started opening up and damaging our seabed within the three nautical mil, the barrier that we used to have, once we opened that up and they started damaging the seabed and those nursery areas, all those commercial species crashed. So, you know, 25, 30 years ago

we'd be catching thousands of tonnes of cod, thousands of tonnes of whiting, thousand tonnes of herring. That's all gone now.

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James Shooter

The three-mile limit was in place for almost a century and protected many of Scotland's inshore seas from harmful bottom trawling. The ban was lifted in 1984, however, once again allowing trawlers into the nursery grounds. A study for the Scottish Government suggested reimposing the ban, could create of a two and a half thousand jobs and at least an extra billion pounds of additional income over the next two decades, thanks to recovering fish stocks. We now know the fish aren't coming back, in part because the seagrass is gone. But why isn't the seagrass coming back?

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Philip Price

So, a lot of rewilding happens naturally. Like if you stop grazing a field, eventually you're going to get trees coming back up. The problem with a lot of the things in the ocean is we've gone too far. So that critical mass that you need to be able to allow those species to expand like seagrass, like oysters, we've gone below that critical mass now.

So, when the seagrass grows and chucks its seed out, there's just not enough seed to counter the predation on the seed, we think. And also, the meadows are so small that most of the seed just lies in the meadow just around the edges. So, there's not an opportunity for that massive seed to cover great areas and keep that seagrass growing out.

Whereas if you had hundreds of hectares of seagrass, the amount of seed in the environment would have been astronomical and some of that would have survived, some of that would have become plants and some of that would have grown into new meadows.

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James Shooter

Just like the oyster beds. Seagrass meadows have an incredible ability to store carbon up to 35 times faster than rainforests. The restoration of these underwater ecosystems has one tiny disadvantage over similar efforts on land. You can't breathe while you're doing it, at least not unaided. Getting enough people trained to snorkel and scuba dive to collect seed creates a bottleneck in the system. This means the landscape scale restoration required is much harder to achieve.

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Philip Price

And we're also looking at growing the grass in land-based nurseries because then you become more equivalent to a land-based growing project because you can then breathe the air again, you don't have to go underwater. So, it just makes everything a lot quicker and cheaper and easier. So, if we can crack that and we think we can, because there's other people around the world also trying to solve a lot of the problems you get with it, then landscape scale should be possible.

What we're doing is, at the moment we're using our main method, which is the collecting seed and bagging method. And so basically what we do is, in the summer when the seagrass is seeding, we go snorkelling at the moment and we swim around and we literally take off the stems that have the seed on them, put them in bags, and then they get taken to our boat shed where we've got tanks and they get put in the tanks and they're sat there for a couple of months to allow the seed to drop off because if we let the seed drop off while it's in the ocean, we won't be able to collect it, because then it disappears. Then we can Hoover the seeds out of the tank through a kind of panning process. And then we're left with a bag of seeds. Those bags of seeds, then get split up into groups of 50. 50 seeds go into an individual hessian sack, there's a little bit of sand in there to weight it down. That hessian sack then gets tied and put back into the ocean and that's the protection. And that allows us to kind of spread the seed out as well.

00:31:16:04

James Shooter

Off on the shores of Loch, Craignish, plans are already underway to grow plants from seed in controlled circumstances. Both natural and artificial sea waters are being trialed to weigh up the advantages of local conditions versus closed systems where disease has no chance of getting in. Once this is figured out it is hoped seagrass restoration will be allowed to progress at a much bigger scale.

It's exciting to see marine rewilding exploring new ground and searching for innovation in its fight for wilder seas. This particular work has only moved forward thanks to the buy in from the local community and their absolute dedication to the local environment.

00:31:53:02

Philip Price

There was a general feeling within the community that things weren't quite right in the sea. You know, the land is very obvious. We know there's no wolves because there are no wolves, but you don't know what's under the water and if you see the odd dolphin, is that good, is that bad? Should it be hundreds of dolphins, or should there be one dolphin? You know, we just don't know.

But there was a general feeling that the things people used to see just weren't here anymore. And the minute you start to think like that, then the obvious next step is what can we do about it? And that's really what drove the community to get involved. And as a result, yeah, there's loads of things people get involved with. And the easiest thing is, we do these oyster release days, which is a kind of community get together with cake and coffee and then everyone grabs a bag of oysters, goes down at low tide and chucks oysters in. And that means, you know, you're genuinely part of the rewilding story doing

that. You're getting your hands dirty; you're chucking these oysters into the water and then going back, in a year's time, you'll hopefully see oyster reefs there.

00:32:47:16

James Shooter

And surely the best reintroductions are the ones where you can get coffee and cake at the same time.

00:32:50:22

Philip Price

Exactly. Yeah, we might move on to barbecue and beers, hopefully at one point, but we're not quite there yet.

00:32:55:15

James Shooter

The optimist in me thinks it's absolutely wonderful the community has come together and taken ownership of the situation and are just getting on with the job. Yet the pessimist, it me couldn't help to think it's because they felt they had to. The people that arguably should be doing it, the government, aren't. So, I was thrilled to hear from Philip that this isn't the case. In fact, 80% of the seagrass operations are funded through government grants.

00:33:19:16

Philip Price

We do complain about legislation and regulation that's kind of stymied us a bit and that needs to be addressed and particularly from the marine Scotland perspective. But what's really reassuring is that the Scottish Government is starting to put its money where its mouth is. There's the Nature restoration fund, there's another fund called SMITH that's coming out.

So, they are putting money up for this now, which is superb. The capacity for people to deliver on that is where the problem is. And that's why we need to start paying for people as well as projects. Why are we doing this? What's the what's the overall objective? My personal objective is, I want to swim, like I said before, I want to swim for half an hour to an hour and still be in the seagrass meadow that wasn't there before. That's when I know we're doing a good job and I want to be able to do that in multiple locations around Scotland. I also want to be able to swim around the kind of Shengli Beach and be weaving in and out of many, many oysters with the abundance of fish and the abundance of cleaning that those animals are doing, so that the water is crystal clear out those bits and see even 3D structures that are starting to get created with multiple layers of oysters.

00:34:30:15

James Shooter

If you look at Scotland's terrestrial ecosystems, we're far behind the curve when it comes to rewilding in the rest of Europe, we're an island nation and any species we want to return to these lands has to be a conscious decision with a long, drawn out

process before it can even be attempted. We may no longer have lynx, bears or wolves roaming the glens anymore, but we do have the wolves of the sea.

The Shetland Islands are fast becoming one of the best places on the continent to see Orca, drawn to the bounty of blubbery seals. They are the second largest fish in the world. The basking shark congregates in the summer months around the Inner Hebridean islands of Col and Tyree, and even humpback whales are being seen more frequently from the shores of Dunbar and Aberdeen in the east. With over 800 islands and 18,000 kilometres of coastline, Scotland has the potential to be a world leader for looking after its marine environment. Orcas are one thing, but if you mistreat the building blocks of the ecosystem, the big stuff won't stick around for long and seemingly neither with the smaller stuff. It really feels like we're on the cusp of an exponential increase in the return of seagrass meadows and native oyster beds. Thanks to the passionate people or organisations like Seawilding.

But it needs investment to bring in the results and legislation that protects the groundwork being done. Once the metrics of carbon are figured out, no doubt there will be a rush in the restoration of seagrass for the emerging offsetting market to utilize. And how much longer we'll be able to ignore the water filtering power of oysters working on mass? Both habitats having the added bonus of housing masses of young fish.

I hope Philip realises his dream of swimming over continue a stretch of oyster beds and seagrass meadows with all the life they bring. It sounds like a magical place to swim. Perhaps on my return I'll even join him, as long as that return is in June, July or August. Definitely not December.

I hope you enjoyed listening to episode two of the Rewild podcast. A truly fascinating tale from the marine world. You never look the same way at an oyster again.

Thanks to Danny Renton and Phillip Price of Seawilding for speaking with me on the shores of Loch Craignish. The music was by Andre O'Donnell, a beluga lagoon, and the artwork was created by Gemma Shooter. Seawilding is a member of the European Rewilding Network, a collection of ground-breaking initiatives across the continent, brought together by Rewilding Europe, as part of a broader rewilding movement. This is an organization making rewilding happen through positive action on the ground.

Next month, we're leaving Scotland behind for our first episode from the continent. Join us for a behind the scenes look at the newest landscape in Rewilding Europe's portfolio - Iberian Highlands. Catch you next time!