

[00:00:00] **Swathi:** I think the best part of living in Aberdeen is living by the sea. Do you like going to the beach, uh, Tamsin?

[00:00:10] **Tamsin:** I do, I love going to the beach. I've got two dogs and they absolutely adore jumping in the waves and running around the sand. I love to have a long walk and, like, pick up a coffee, especially down at, like, the Fittie end in Aberdeen, near the harbour.

[00:00:24] It's great. Even if it's windy and cold, it's still good.

[00:00:26] **Swathi:** Aww.

[00:00:28] **Tamsin:** What about you?

[00:00:29] **Swathi:** I love the Fittie village and I love watching dogs just having the best time of their life. So I think that's the best part of being there in the beach.

[00:00:37] **Tamsin:** That and being surrounded by so much nature.

[00:00:39] **Swathi:** I know. I'm also curious about what's happening under the sea. Like what's the world underneath like?

[00:00:46] **Professor Beth Scott:** Hello, my name is Beth Scott and I'm a Professor of Marine Ecology here at the University of Aberdeen.

[00:00:51] **Tamsin:** Welcome to Beyond Boundaries from the University of Aberdeen.

[00:00:54] **Swathi:** In this episode, we are diving beneath the waves and talking marine ecology with Professor Beth Scott.

[00:01:00] **Tamsin:** So, what's your specialty?

[00:01:02] **Professor Beth Scott:** My specialty is actually predator-prey interactions. Where do seabirds capture their fish and how do they do it? But I also then work on how do the ecosystem, marine ecosystems work. Uh, a lot of actually mathematical modelling on how do you know when the wind blows and things change and we get different types of plankton and how does that go all the way up through the food chain affecting fish and then birds and mammals?

[00:01:26] **Tamsin:** So what was your route into this? How did you end up in marine biology?

[00:01:30] **Professor Beth Scott:** I think I'm interested in marine biology because I grew up in the Pacific. I grew up in a tiny little island called Yap, near the Philippines. It's actually along the Marianas Trench. So one side of the island is the Marianas Trench.

[00:01:43] And I grew up every day, you know, walking back and forth from school and getting to swim in the oceans pretty much every day. And you'd open your eyes underwater and there'd just be all this colour on the reefs. And we'd play games with, when the tide would come in and out. It's quite dangerous because the tide would come in quite quickly.

[00:01:58] You'd go out right to the edge of the reef, look down the trench, and then race back as the tide came in because if you fell, you'd get cut on the corals and, and sharks would be coming in pretty quick after you. So it was this real sort of, you know, who could get out the farthest and back the quickest. I didn't realise that most kids didn't get that adventure. But then we moved to Canada, and I think I went out to visit Vancouver, uh, on the West Coast of Canada, and it's just beautiful. Again, Vancouver, you're right on the ocean. So I think I moved out there to do my undergrad and just, just fell in love and decided, yes, I'll be a marine biologist.

[00:02:31] Even though at the time everybody said, "Oh, that's great. So you're gonna drive cabs for a living", because there was just no jobs back then. But I persevered and somehow I'm here.

[00:02:50] **Tamsin:** So "marine ecosystem", is that just the like community in the sea, essentially?

[00:02:55] **Professor Beth Scott:** It is, yes. It's sort of like, um, when you think about on land and you realise that you've got grass that grows and then herbivores are eating that grass, things like sheep. And then us as humans come along and eat the sheep. But in the olden days, they would have been possibly other predators that came along and ate those sheep. And how those things all interact, that's what is considered an ecosystem. But ecosystems are also very much then affected by the weather. So how much rain and, and, and wind and sunshine there is, is how much grass you get. And it's pretty much the same for plankton.

[00:03:28] How windy it is and how sunny it is tells you how much plankton you have at the beginning of the food chain.

[00:03:34] **Swathi:** We all know how urgent the climate crisis is and why we need to transition to renewable energy resources as quickly as possible. Here in Aberdeen, we have recently seen a new offshore wind farm pop up on our horizon.

[00:03:47] But Aberdeen also has a gorgeous coastline and amazing marine wildlife. So do we need to find a balance between those things?

[00:03:54] **Professor Beth Scott:** Absolutely. Things are changing all the time because climate change is changing in the background very, very quickly. But climate change is happening, of course, at a global scale.

[00:04:03] And wind farms are going in locally where we have locally protected birds and mammals. And so we have to really look at the trade-off between, uh, what we do with the space in our oceans, knowing where to put wind farms is essentially, uh, what myself and my research group have been looking at for a long time, both in the fine scale, like just here, not there, or in the large scale, how much, how much wind energy extraction can we do?

[00:04:28] And it is super important because these things will be in for the next 25 to 30 years. And potentially if we find ways to just replace things quite quickly, they could be here, you know, for 50, 60 years, possibly even longer. So, we must understand this and we must also be pragmatic though, and know that we need to put these things in because climate change is coming along so fast and we've got to understand both climate change and the effect of marine renewables.

[00:04:54] **Tamsin:** What are some of the potential negative effects of marine renewables like wind turbines?

[00:04:59] **Professor Beth Scott:** Well, one of the big problems when wind farms go in is the amount of noise it is to actually put the turbines in. Isn't great for the environment to have all that noise. And what they did here is they used actually information and knowledge from the oil and gas industry on something called, um, suction bucket, uh, uh, approach.

[00:05:17] By putting more water into the sand, you make it quite loose and gravity sucks down large things into the sand without making any noise. So

actually people in Aberdeen woke up every morning with another turbine base in with no banging, no noise at all.

[00:05:31] **Tamsin:** It's incredible how they're recycling old techniques to do new things, especially when it comes to renewables, transitioning the oil and gas industry into something that can last a longer time.

[00:05:42] It's, it's mind blowing actually how they can repurpose that technology in a way that's going to benefit us.

[00:05:48] **Professor Beth Scott:** Some of the risks of siting wind farms are the fact that, um, where we put the pole in, where, where the structure goes in, most people think that's going to be a good thing because a lot of things will grow on it.

[00:05:59] And that's quite true. In the southern North Sea, where they've been in for 10, 15 years, there is higher biodiversity, i. e. there are more species because you now have structure where you didn't have structure before. Um, and that's great, but it is changing then that environment, and say here in Aberdeen, we don't have a reef system.

[00:06:17] These are often talked about as reef systems. We have a very sandy gravelly bottom where herring spawn. We don't have a reef system and now we do have a bit of a reef system. So understanding actually bringing that, um, new environment in is really important. And then they're in a place where we did look a lot at the birds and what's happening here and put them in, uh, locations that avoided any aspects with birds. But they also have done a huge amount of work putting radar out on to look actually at birds and whether there's bird strike at all. And so far we've had several students come through and look at this radar information, and we haven't seen a single bird strike.

[00:06:54] **Swathi:** I'm just wondering, what does it mean by "bird strike"?

[00:06:56] **Tamsin:** It literally means when the birds hit the structures and get hurt.

[00:07:00] **Professor Beth Scott:** The other thing is the actual extraction of energy. People think, well, the wind just keeps blowing. But to make wind energy, you are extracting energy out of the wind. And that wind would have gone on and done something ecological, i. e. mixed the top of the oceans.

[00:07:15] And oceans need to mix to make plankton. So that base of the food chain we were talking about, you need mixing because everybody understands if the pond is sitting there stagnant, there's no wind, then it gets pretty slimy pretty quickly, right? Not very edible plankton. So the good types of plankton like it, the wind mixing the oceans.

[00:07:36] And so there is a problem of putting these in the wrong areas where already climate change might be dampening down the winds that, that wind farms are also taking energy out. So think of, so the big wind farm that just went in down the road here, called Seagreen, is a two gigawatt wind farm. Two gigawatts is one nuclear plant.

[00:07:56] That's a lot of energy. So all that wind energy didn't go into the oceans. It went into moving the turbines were taking that energy out and that has then now gone into powering homes. So we'd have to look at those trade-offs. What happens when you change mixing? Because mixing is the most important thing in the marine world. Mixing and sunlight are what drive our oceans.

[00:08:19] **Swathi:** I never thought about that, that having wind farms would have such an impact on the ocean. Like I didn't know anything about mixing or how important that is for keeping the oceans moving.

[00:08:29] **Tamsin:** It's not something I've ever thought of, that there's a trade off between there being that wild wind and it being taken away from the resource?

[00:08:37] Because in your head, especially in Aberdeen, it's windy. You don't think that the wind is then, the energy from that wind is being taken to be used for something else. You kind of just think it's, it's wind, it's always there.

[00:08:50] **Swathi:** Absolutely.

[00:08:56] **Tamsin:** Obviously, when you put these turbines into places and you're looking at where you situate them, is there ever a point where you do have to just say, "Well, we do have to risk that marine life to put it there, but we'll be risking it no matter where we put it"? Like, is there some sort of balance you have to come to?

[00:09:13] **Professor Beth Scott:** There are many laws out there and there are a lot of "thou shalt not" laws that involve, it's called the Habitat Directives and the Bird Directives. Um, and I do a lot of teaching on that, explaining where they

came about. So they, they actually, all these laws came about in the seventies after the book, the Silent Spring.

[00:09:30] And we got what's called environmental impact assessments. And in there then are actual laws that where you have protected species, like a lot of seabirds and mammals, you cannot disturb them. You cannot kill them. So there is a huge amount of work out there trying to figure out, when you see birds flying around a wind farm, which colony did they come from? Because some colonies are protected colonies, and therefore those animals are protected. So, yes, there's a huge amount of information that, that needs to be brought in, um, but there are laws in place, and the developers are very, very aware of all this. Some of the engineers, not quite so aware of all of these laws.

[00:10:08] And so, actually, I found that really quite fruitful, talking to engineers, uh, and getting them aware that there are things you just cannot do, um, and that take a, take a think about all the animals that are out there you're about to put a structure in the water in front of.

[00:10:22] **Swathi:** So it's always a question of compromise, isn't it? Like trading off pros against cons?

[00:10:27] **Professor Beth Scott:** Trade-offs is the big word. But to do trade-offs, you need information, and you need information that you have certainty in. And this is the problem, is we're certain of some things and not of others. So we're very certain of climate change, but exactly how it's going to play out, we're not that certain.

[00:10:43] So what exactly is going to change? We're very certain that a good way to deal with climate change is offshore renewables. But again, they have a lot of unknowns, as we've just said about, about what could be happening. So actually the, the science of trade-offs, that's a whole 'nother science that, I work with a lot of social scientists.

[00:11:01] And a lot of my students have been involved then in figuring out ways to look at trade-offs mathematically, uh, uh, looking at different models, um, that we've built to be able to do that and, and bring in climate change, but also talking to people. Lots and lots of what we call participatory science, where you bring in all of knowledgeable people, I, we call them stakeholders, but it's just anybody who is interested and knowledgeable and comes in and, and can sit and talk about the trade-offs because essentially the oceans belong to us, actually, laws are different for the oceans. Land, everybody owns a little pocket of land.

[00:11:35] But the oceans belong to us. And especially international waters, um, yes, they are, don't owned by anybody. They are international. And so it's quite different. So talking about trade-offs is really, really difficult. And I think as a scientist, it's been one of the most challenging things. And I found that in a lot of projects, we've had honours projects, master's projects.

[00:11:55] Students have looked at trade-offs and written essays and talked about, well, we've got to be pragmatic. And we've got to make decisions and we will never have all of the information. And as a scientist, that's really hard, because you just want more information, but we learn "no". And I think as students, we have debates about what's the right way to go about it.

[00:12:15] Ecosystem management: very complex thing to do. One species at a time management: sounds a lot easier, but in the long run, because every other species is interacting with it, actually difficult. So we have lots of lovely debates that way in our classes. And I find students find that then really eye-opening as to what the trade-offs really are in, in terms of level of knowledge and therefore the decisions have to be made.

[00:12:42] **Swathi:** Just to recall, I remember Beth mentioned something about the turbines that have like a limited lifespan?

[00:12:47] **Tamsin:** It's probably about 30 years, maybe 60 at most.

[00:12:50] **Swathi:** Right. So what happens when they need to be taken out again?

[00:12:53] **Professor Beth Scott:** So decommissioning is a big issue and we have the National Decommissioning Centre here in Aberdeen that's doing some fantastic work on that.

[00:13:00] We really need to think about that because if lots of things are growing on these things and then all of a sudden we take them all out, it will also have shocks to the system. So there's a lot of big programs looking at what are these effects and there's so much work to be done there because we really just don't know what's going to happen.

[00:13:17] We can look at the oil and gas industry where their structures have been there for a long time, but they're out in deeper areas and they are allowed to clean them off and leave the stuff in situ, as it's called. The laws are different for renewables. They're not allowed to leave them in the oceans, they're going to have to clean them off every once in a while.

[00:13:36] Um, what are we going to do with all that? Even that, I know we have a wonderfully interesting project here about possibly taking the growth on those things and putting it into organic farms and using that as fertilisers, potentially. Uh, we've also had workshops on the fact that lots of things will grow on these wind farms.

[00:13:54] And so we said, "if you want to, uh, know your enemy, grow your enemy". So, the idea is you would put things on that you want to grow that you can then harvest, so it becomes a sustainable harvest that way. So, this idea of co-location within wind farms, lots of people here at the university working on things like that.

[00:14:15] **Tamsin:** So, you mentioned the, the marine ecosystem being things above the water as well as under the water. So, what's the, the full picture there? What interesting projects have been coming lately?

[00:14:25] **Professor Beth Scott:** Well, like I say, one of the amazing projects we had with a master's student was one where she got to look through about five months worth of radar data and she did an amazing job.

[00:14:37] And what we saw was, indeed, you could predict when birds were more likely to be at the wind farm. And it has to do with the time of the tides. And because she did such a great job, she was immediately hired by the company that is running that. And she's now actually two years in, rose up in that company and is now one of the senior managers.

[00:14:56] **Swathi:** Another thing that's exciting about this whole field is just how much there is still to learn and how much it's still being discovered.

[00:15:03] **Professor Beth Scott:** Absolutely. There's so much in the marine world we don't know. I was highly involved with the marine protected areas about 12 years ago. There were big projects to come and decide where to put marine protected areas.

[00:15:14] We're just now talking about the management measures for those marine protected areas. It's taken a long time to think about exactly, we knew which spots on the map we should protect, but exactly then how the protection should go. Can wind farms be in the same spot as marine protected areas? Can certain types of fishing be in the same spots as marine protect-, we don't know, because we don't know how the oceans work.



[00:15:37] And there's so much now, we have all kinds of new instrumentation that we can put in the water that my group is working with, that's brand new that we can put in and leave for a long time and look at how fish and diving birds and plankton, how all these things are behaving all at the same time, along with the physics about what's changing, about the mixing of the winds and how the tides are working.

[00:16:00] We can do all of that now at the same time. We never could do that before. These are brand new instruments. The next generation of marine biologists will have such fantastic data to work with.

[00:16:10] **Tamsin:** That's incredible. So the development of technology is helping what you do, and you're constantly learning and teaching the next generation at the same time.

[00:16:19] It's just an ongoing cycle, really.

[00:16:21] **Professor Beth Scott:** Absolutely, and this interdisciplinary approaches to how to go about learning what's going on. So I'm very much involved in something called Supergen Offshore Renewable Energies, and that's a big group of us working with engineers. So I'm the one ecologist working with nine academic engineers who are designing the wind farms of the future, and all the students working with them helping to design how do the cables look like?

[00:16:42] Can we have cables in our oceans that don't touch the sea floor? Because if we touch the sea floor, we might kill a lot of invertebrates, like those beautiful sea pens that you see on BBC Blue Planet, right? We have technologies now that can ratchet in cabling and so that it doesn't have to sweep across the seafloors.

[00:17:02] That would, in one beat, get away most of the problems we have with, uh, some of the effects of wind farms. So working directly with the engineers. Being able to explain what a marine ecosystem is, how it functions now, but also what we don't understand and what they need to be careful of when they're designing wind farms.

[00:17:20] Working together, it's just been absolutely brilliant. It's been such a privilege to work with all of these people. But what we're realising, yeah, we're scratching the surface of how to do this and how to do it well.

[00:17:30] **Tamsin:** I think being up here, we hear a lot about them protecting the seabed and the seafloor and how they're going to take down all the, oil rigs and things like that.

[00:17:39] So for them to be putting things up and then thinking already about taking them down again and the impact that'll have and yeah, trying to mitigate their own impact on the ecosystems. It's nice to see that they are thinking of all aspects of it and not just, "We can put this in here now, let's do it and just shove it in and see what happens". Like it is all planned.

[00:18:03] **Swathi:** Absolutely. I mean, I just have a big smile on my face when I just hear that. It's so much respect to the earth and the oceans.

[00:18:16] **Tamsin:** So even though you're a professor at the university, you're still learning as well.

[00:18:20] **Professor Beth Scott:** Always. That's why scientists are scientists. We love asking questions. We love saying "why?". We were the little kids that went, "why, why, why?", and it drove our parents absolutely mad. And we just don't stop. And a lot of us, I would say, yes, are a bit obsessed.

[00:18:35] You have to be, you really love your subject so much. You want to know more, more, more, but you also realise, yeah, that you want to teach. You want to let other people know what it is that you're learning. And even my own kids, when they were small, were so tired of, they'd say, "Oh, mother, are you calling us over to look at something no one else has ever seen before?"

[00:18:56] But it is, it's so exciting to learn something new. When you've gathered all this data together, done some analysis and realise, you know, something now that nobody else in the world knows and you're the first one and then you know what you can do with that information and how this information will help policy, will help people understand you know, where to put wind farms, or perhaps where to put MPAs and why to do that.

[00:19:18] So it's really, really gratifying and I recommend anybody who has that "why, why, why?" in their guts to, to think about being a scientist.

[00:19:31] **Swathi:** So before we finish up this episode, so what's the future of marine ecology? What will the next generation of marine scientists be working on?

[00:19:38] **Professor Beth Scott:** So what's going to happen in the near future is there are lot of people around the globe, including a really good friend of mine, we did our PhDs together, Anya Waite, who's the head of Ocean Frontiers in Canada that we're setting up these huge programs around the world where we're putting in a lot more instrumentation in our oceans to collect long-term data, sort of looking up from the bottom of the oceans up through the whole oceans.

[00:20:00] Also, of course, using our satellites, um, with better sensors on them, and finding ways to tag animals that now I think a lot of people have seen on shows where you get this information back from animal tags and what animals have been doing. Putting that data together, we will really start to understand a lot more about where animals go every day of the year rather than just sort of where they go to go spawning and things like that.

[00:20:25] There are so many things we don't understand about just say simple things like herring that we think we should have known for years and we should know their migration strategies. And we have some big projects going on right now using types of information. Hopefully very soon we will know where they should be every day of the year so we can really start to predict which areas at which times possibly lots of birds and mammals are going to try to come and feed on them.

[00:20:48] So, you know, potentially with wind farms and some of the effects on birds, especially of the wind farms moving, there could be just time windows where we turn them off for a week or a day and that cut down any possibility of collision. And, and then as soon as that big mass of fish is gone and the birds and mammals are gone, we can turn them back on again.

[00:21:07] **Tamsin:** And what does all this really mean for anyone that's looking to become a marine ecologist?

[00:21:11] **Professor Beth Scott:** It is a brilliant time to be a marine ecologist. Absolutely brilliant. Because like I said, we know so little actually, as we dig in about uh, what, how our oceans actually function, how ecosystems function. We know so little.

[00:21:25] And now we have this instrumentation we can use to gather the types of stuff we couldn't possibly dream of a, a few years ago. And we're going to use our oceans now a bit like we use our land, with all of these wind farms going in and many other things will start to happen in our oceans, I think. They, they will become a lot like land.

[00:21:43] We've got to use them in a far better way than, than we did with land, in a more sensible, strategic and sustainable way.

[00:21:50] **Tamsin:** So then Aberdeen's a great place for people to study this because you have this on your doorstep.

[00:21:55] **Professor Beth Scott:** Absolutely. There is so much to do here. The coastlines, you can just basically walk out of the university and walk down to the beach.

[00:22:02] And you've got coastlines, you've got, um, seals and seabirds. And in fact, a couple of years ago, we had two humpback whales that, that spent a great amount of time not far from Aberdeen. So in terms of wildlife and especially marine wildlife, Aberdeen, North East Scotland, Northern Scotland is just an amazing place to come.

[00:22:22] **Tamsin:** So I'm from Aberdeen and I've been on walks around the coast many times and seen dolphins and puffins and all sorts, but what about these tour boats that go out? Do you look into what impact they sometimes have on the marine ecosystems on our coasts?

[00:22:36] **Professor Beth Scott:** There have been some studies on that. And, and basically, yes, of course, they have an impact and a lot of it is just the noise that's created.

[00:22:44] And therefore what happens is the animals maybe have to move away from where they were successfully fishing. And what we've seen is that yeah, if, if sort of more than once an hour things get disturbed, there will be a negative effect. They won't get as much food. And down the line, that could be quite severe, that basically say a dolphin aborts its foetus because it doesn't have enough food. You, you just see the population going down, right? But you don't see why, unless you've really studied them hard. And that's what some of our colleagues have studied.

[00:23:12] **Tamsin:** But if these tours are done responsibly, we can still enjoy the wildlife?

[00:23:16] **Professor Beth Scott:** Oh, absolutely. The best way to, to like, especially going to things like Chanonry Point, where you can stand and just from shore, see these bottlenose dolphins trying to catch their prey. It's, it's quite amazing. Yes.

[00:23:29] **Tamsin:** Chanonry Point is beautiful. You stand on this very edge near a lighthouse and you've got a view of the coastline in front of you.

[00:23:36] It kind of looks a bit like a river, but it's where the river joins the sea, I think. And there's such big pods of dolphins come, I've seen maybe about 12 at one point and they're leaping in the air. They're actually like putting on a show for you. It's one of the most beautiful, incredible, most wild way to see wildlife that I've ever encountered.

[00:23:58] **Swathi:** That's sounding really amazing. I really want to visit this place.

[00:24:01] **Professor Beth Scott:** And yeah, done responsibly, of course. And there's kayaking, which I do myself along the coast here. But you just know that, yes, even kayaking, you potentially can disturb animals. So it's being really respectful, keeping your distance away from seal colonies and stuff, and just enjoying what you can, you know, uh, with binoculars and things like that.

[00:24:20] It, the coastline is so amazing. I've been on so many kayaking trips here and just had, randy grey seals getting a little too close to my kayak and this sort of thing where, yeah, those are big animals. Um, but also the bird cliffs here are amazing, coming at the right time. And you can see, you know, your, uh, gannets and fulmars and kittiwakes and guillemots and, and, uh, razorbills and black guillemots, but puffins, everybody wants to see the puffins.

[00:24:51] And there they are, these tiny little gorgeous things, but there they are right in front of you. So easy to see. It's just Aberdeenshire and the whole North East of Scotland is an amazing place.

[00:25:01] **Tamsin:** It's an incredible advert for Aberdeen and somebody who wants to study marine science to come here then.

[00:25:05] **Swathi:** So the location is obviously ideal for anyone interested in marine ecology, and there are lots of people here doing fascinating work.

[00:25:12] But can students get hands on experience if they study at Aberdeen?

[00:25:16] **Professor Beth Scott:** I am dyslexic, I am severely dyslexic. So I stayed away from all the courses where you have to learn the species names, right, because I'm just going to fail. But where I learned is, is on a field courses where you could pick up the animal and, and give, you know, repeat its name,

repeat, repeat, repeat, repeat its name, and, and then learn, you know, what these things were.

[00:25:35] And we do have courses, there are wonderful field courses that, uh, undergrad students can take where you will actually go to seaside areas, be able to start to identify all of the flora and fauna that are on these beaches. Um, you'll get to go out in, uh, Zodiacs.

[00:25:54] **Tamsin:** A Zodiac's a tiny boat.

[00:25:56] **Professor Beth Scott:** And, and look at dolphins and then also use all the instrumentation that we use for listening for dolphins.

[00:26:03] Uh, it's called passive acoustic instruments so that you can hear the clicks and, and of dolphins and understand when they might be just talking to each other or, uh, buzzes when they might actually be, be feeding. And there's going to be opportunities in your second year and your third year to take these field courses.

[00:26:20] There are lots of projects we've had as honours and as master's projects that are actually also policy based. And so you get to go out and you get to count things in the field. We have a wonderful place called Cromarty where you get to go out and look at seals and, and dolphins. But also a lot of students then have taken that information and have used it to talk to policy makers.

[00:26:41] We have in Aberdeen here quite a lot of the policy makers in the JNCC, the Joint Nature Conservation Committee. We also have NatureScot here in town. We also have SEPA and we have the Marine Directorate, which is one of the two large marine institutes in the UK, all here in Aberdeen. In fact, a lot of them are in the same building or across the street from each other.

[00:27:04] **Swathi:** So the message is, if you want to study marine biology or related subjects, there's nowhere better than Aberdeen, an enormous hub of marine tech, activity and ecology work.

[00:27:14] **Tamsin:** That's a cracking note to end this episode of Beyond Boundaries. Thanks to Professor Beth Scott for sharing all that passion and enthusiasm.

[00:27:21] And thanks to you for listening. If you want to join the Boundary Breakers, you can come along to one of our open days and see our historic campus.

[00:27:28] **Swathi:** You can also download our digital prospectus at [www.abdn.ac.uk](http://www.abdn.ac.uk)

[00:27:34] **Tamsin:** And to hear more from us, check out the rest of the podcast. Each episode discusses the groundbreaking research from one of Aberdeen's academics.