



Ep 9 – Aquavan

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Catchment Convos with Thriving Southland. Your link to Southland catchment groups and their impactful projects. Each episode we'll dive into grassroots effort by local farmers and communities that are driving change and sustainability in our regions. Listen in for inspiring stories and insight. Real people, real change, the Southland way.

Rachael Halder: Welcome back to Catchment Convos, the podcast where we dive into the work of passionate people driving change in our catchments and communities. Today we're taking things underwater. Well, almost. We're talking about the Aquavan, a mobile marine science experience that travels through Southland, Otago and Canterbury, connecting communities to the link between river health and our coastal environments.

This specially designed van brings marine critters, touch pools, and hands on science tools helping students and communities understand the impact of what [00:01:00] happens upstream on the ocean. Joining me, and to chat about this awesome initiative, are two fantastic guests. My fellow Catchment Coordinator at Thriving Southland, Sarah Thorne, who's been working alongside communities to strengthen connections between land and water, and had many great sessions with the Aquavan. So she's a seasoned pro and our guest of honor today is Dr. Sally Carson, director of the New Zealand Marine Studies Center. Sally leads marine science education initiatives, including the Marine Metered Squared Project, and has just completed her PhD in education, exploring marine environmental monitoring and Citizen Science. She's a driving force behind connecting communities with marine research. And somehow, in between all of that, she's also written two field guides to New Zealand's marine environment. So she's a pro. We'll be talking today about why projects like the Aquavan matter, how hands on learning can inspire [00:02:00] action, and what we can all do to protect our waterways from our rivers to our coasts.

So let's dive in.



So today we are talking about the AquaVan. Sally, can you talk us through, literally and practically, what is the Aquavan?

Dr Sally Carson: So the Aquavan is a unique resource. It's, been put together through, the University of Otago, the Department of Marine Science. And it's a marine animal and plant transporter, basically.

So it's, a Ford van that has been equipped with a recirculating seawater system. So we've got tanks, we've got seawater, we've got chillers, we've got, air supply so we can transport marine plants and animals to other locations. It was developed specifically for research and teaching at the university level so when the scientists are out collecting, they can bring their animals back to the marine lab in natural [00:03:00] conditions or bring them into teaching spaces and keep them alive and healthy. But when it's not being used for research and teaching at the tertiary level, we're using it for community engagement. So we can take marine animals and plants up river catchments to inland areas and educate the community and schools about the marine environment. For students that maybe don't have easy access to the coast, these marine species act as ambassadors for why we should be looking after our rivers and our streams, because of course all our waterways are connected, so that water drains down into the sea.

And if you think about the whole idea of mountains to sea we need to look after what's happening in land if we're going to look after our marine critters.

Rachael Halder: That does sound incredible. I'm visualizing an aqua sort of marine version of the Harold bus.

Dr Sally Carson: It's interesting. The kids don't go into the bus. So the van is [00:04:00] specifically for the animals and plants. And when we arrive at a community hall or a school, we actually unload, special tanks, touch tanks that we fill with seawater and we transfer the animals and plants into those tanks and wheel them into the, to the school hall, for example.

And we've got lots of other resources around that. So it's a whole program that gets unloaded from the van that we, rotate, the school kids through these different activity stations.



Sarah Thorne: I was going to say, you're quite right, Rachel, because it's a bit like Finding Nemo, and the kids are fascinated to see the outside of the van, and it's all bright and colourful.

And though they don't go inside, they love peeking into the back doors just to see how the animals are moved.

Dr Sally Carson: And it's really important to talk about, what do these animals need to survive? So we talk about things like we don't feed the animals because then they're going to poo and that's not good for the recirculating water.

And we have to oxygenate it we have to keep it at the right salinity and we have to keep it at the right temperature so we need to know what [00:05:00] temperature of the ocean is and we have to mimic those conditions as much as we can.

Sarah Thorne: The kids are taught to treat the animals with respect as well. The students are very aware of that when they're holding them and seeing them and touching them. And that's lovely to see as well because hopefully they take that back to the seashore too.

Rachael Halder: So Sarah, you've been lucky enough to be involved in a few Aquavan projects and a few sessions when the Aquavans come south to Southland in the different catchments. Can you give a little bit of an overview of what a session with the Aquavan might look like?

Sarah Thorne: Oh definitely. Uh, the kids We'll say the students love it, and the catchment groups and the communities love it too. Because the kids, the students come along and they get to be hands on scientists for two hours. They come in and they learn about a catchment and, how the rivers interact with the estuary and the sea.

The star of the show, I think, is the touch tank. They, just like, who doesn't like looking in a rock pool? Every person I know on the planet loves [00:06:00] looking into the rock pool. They do scientific experiments. They go around and look at the sediment and how it increases, how it might affect the animals and what survival mechanisms they have.



We do periwinkle racing to help with that one. They see how the crabs have different adaptations, and they're fascinated by that. Not all crabs are alike. They get to see how they have different fibres and maybe carry their homes on their backs. And I think one of my favorite parts at the very end where we had this lovely catchment model with a river winding through it in towns and mountains, and they're given cockle shells in their wee groups, and they've got to decide how they want to spend their cockle shell money.

And not only Is it about where do they decide to focus? Is it the rivers? Is it the farms? Is it the towns? Is it the sea? But it's also how they do it. Does one person take over the group and decide how they're going to spend it? Do they divide it up equally amongst themselves and do a democracy? So they're learning so much else. They're learning about science and communicating and social [00:07:00] structures and governments. And they just Fizz with it. They just buzz throughout the whole two hours and they're just all chattery and happy and then they leave the room and they drag their families back in the evening for the community sessions.

Dr Sally Carson: I, I would say it's a great way to, measure the impact of the student learning by watching them when they bring their parents back in the evening for the community session and listen to their interpretation of these different stations and explaining it to their parents. It's really a great way to, to see what they've retained or what they've walked away with from the earlier session with the school.

Rachael Halder: So going into sort of the wider conversation, Sally, how does the Aquavan and this estuary conversation fit into, the big water quality conversation that we have very much forefront of today?

Dr Sally Carson: Well, as I said, all our waterways are interconnected. So what happens inland obviously has, an impact on the coastal [00:08:00] environment. And, you know, we want kids to think more broadly about the environment, not just their little patch of river or stream. And that's why it's wonderful in terms of having a group of schools that are working on the Aquavan program, because they see their collective effort, that, yes, they might look after their patch or their area of the river and their paddocks and but also it's really important that they understand that downstream and upstream is equally as important to look



after, that water quality. I think it's a really good opportunity as well to highlight the good things that are happening. In terms of improving farming practices, and water quality that's happening in land so it's a way of sharing that knowledge and understanding with the students as well about the good things are happening and where we can also be improving. [00:09:00] And ultimately it affects our coastal environment. I'll never forget going to an A& P show with the aqua van, and it wasn't till the end of the day when we got the aqua van stuck in the mud and all the farmers came out with the ropes and the trucks and were wonderful and helping us pull it, pull it out but it was the conversations that we had as we were you know, kind of watching this all unfold.

And I, and I stood next to a farmer who said to me that, he'd been really worried about the stream on his farm property, but never once had he thought about the ocean. And so the Aquavan provides, that connection, that visual, makes people aware of the wider environment.

Rachael Halder: So Sarah, Thriving Southland catchment groups. How does that all interconnect with the Aquavan?

Sarah Thorne: The catchment groups loved the idea of the Aquavan. When they heard about it the first time, I think I've been involved three or four times now, [00:10:00] and they got it straight away. They totally understood that, and they're passionate about this, that what they do on the land, you know, affects our rivers, our streams, which then affects the estuary and the coast. And they're really conscious of this. And they're all family members. They have kids and grandkids at the local schools. So they are 100 percent behind it. They are really keen for their local schools to go. Uh, I think this time we've got 14 schools and about 240 students. We ran it for three weeks a few years ago and got 21 schools with over almost 1400 students.

They, they love coming along and being part of the evening sessions. And when we haven't got it booked in for the year, the groups always say, when's it coming back? When can we help again? When can we be part of it? So I'm always trying to work with Sally to bring it back.

Dr Sally Carson: And it's really wonderful to have the Catchment Group members involved in the teaching of the program. You know, we [00:11:00]



know about the, marine animals, but it's the catchment groups that know what's happening on the ground in their area. So they add a lot of value to the program.

Sarah Thorne: And you're right, by them coming along, they, we've got four education kits that we developed last time the Aquavan was here.

And one is how healthy is your stream, there's a how healthy is your estuary, a native plant one, and an animal pest one. And once the groups have been along and helped out one of these, they're like, Oh, I should do that with a school. We should go and do a stream walk and look at the macro invertebrates and see how healthy it is, or what can we do? Can we donate some plants? Can we help them grow them? So it fires off a whole pile of other cool activities.

Dr Sally Carson: That's right. And we're really keen that the Aquavan not be a one off experience. We want teachers, to grab a hold of the experience and extend it into the classroom and then link up with what's happening in their local community where we want to really encourage environmental action.

And it's hard often for the teacher to, come up with a [00:12:00] project on her own, but all these communities have fantastic projects that are going on in terms of riparian planting for example, and it's a great opportunity for the schools to engage with catchment groups, and support, and work together.

Sarah Thorne: And it's a whole lot of local agencies as well. I mean, this time Environment Southland had been at the forefront and have led this, you know, the Aquavan coming back to Southland. We also try and team up with the Multicultural Food Festival, which is Sunrise Rotary and Invercargill City Council. And that was four and a half thousand people going to the ILT Stadium Southland, they're walking through the foyer, past the Aquavan and all these other local agencies that try and look after water quality in Southland.

Dr Sally Carson: And it's wonderful to team up with that Multicultural Food Festival because often when you're running environmental events, you get the people that are already engaged and already know about catchments and water quality and impact.



But often on, these wider community events, it's a chance to engage with people that may not [00:13:00] necessarily have come to an environmental event, and you get to share your message about how to better look after your waterways.

Rachael Halder: The Aquavan has proved time and time again to be the most amazing, engaging tool that like you said, has just linked so many different dots together.

And we are lucky here in Southland that we do have so many beautiful coastal estuaries. So lots of people can relate quite quickly to it. Just thinking about some of the past sessions you guys have been a part of. Can you share with us maybe some of your favorite bits or maybe some favorite little tips that you've heard from little kids that have, come out with some great statements or some learnings.

Sally, did you want to go first?

Dr Sally Carson: Well, I guess I've already told my favorite one about the farmer. But I remember too, when a little girl commenting about one of the, the freshwater fish that she had learned only lived in her catchment, and [00:14:00] she was so excited. She'd been working with one of the catchment groups and then she'd come over to the touch tank station and all of a sudden she wanted to know what was unique to New Zealand, what was unique to the area. I was quite struck because this young girl all of a sudden realized that some of these animals were unique to her. Her space, her place and understanding that made her really want to look after them a little bit more.

Rachael Halder: That is cool, isn't it? And Sarah, a favourite for you?

Sarah Thorne: I have two, I guess. I really love it when the Play Doh comes out, which is something we tend to do in the community session. And the kids have all the different colours and they've got to build their own catchment. But, oh my goodness, the amount of remodeling that goes on, and the discussions, and the weight, and the surface, and what they've missed out, and how it's not the right size, and they get so into it, and at the end of the night, you've got this amazing mountains to sea, with sometimes quite random bits on that they found



really special. [00:15:00] Like dogs the size of elephants and all sorts. Uh, and then also we had this cool model called the EnviroScape and it's a plastic model out of like mountains to sea and you've got cars and you talk about rubbish blowing out of bins and maybe a bit of an oil leak and , you have this squeeze bottle and it's the rain and so, you set it up and then the rain happens and it all washes off into the sea.

But, um, we had to do an extra couple of squeezes for Southland sometimes because, you know, we can have quite a bit of rain in the winter and the kids think that's fantastic and there's like a cloud at the end of the bottle.

Rachael Halder: That hands on learning does just make it so practical and so engaging.

So Sally, the future of Aquavan, is there anything in the pipeline that, you guys are really excited about?

Dr Sally Carson: Well, I guess, one thing that I really like is, the groups that engage in the aqua van, that we can get them out to the coast, out to the estuary, so that, you know, all these groups are doing riparian planting. Why are they doing it? And I think it's [00:16:00] really important that the kids understand the value. And so getting onto the estuary and doing, a seashore survey, what we call marine meter squared. And as Sarah said, the catchment groups have a kit that will help schools do that, and that's a really simple way to assess the health of the estuary over time.

So I think as much as we can, getting these groups that are involved in the AquaVan to also go out and look at the coast later on, through school camps or coming up to Dunedin out to the Marine Lab. So to continue the learning, we've got lots of opportunities. We've got lots of resources for schools to, further that learning in the classroom.

So repeat engagement, I guess, is really important to us and that field work, and seeing, New Zealand's fantastic environment and seeing that connection. I remember the first time we went to Southland and we went up the Maitai River and we went from the estuary, right up, to the mountains and visited schools all along the [00:17:00] way.



But I was really struck with the fact that I saw that change from the coast to the mountains, but the students didn't. So I think it's really important we get them down to the coast as well.

Rachael Halder: We encourage everybody to head along to an Aquavan session when it is in your area. But if someone was really passionate about getting the Aquavan down Sally, it's as simple as having a chat to you and seeing, if it fits in and how often can you guys venture out of Portobello to come south.

Dr Sally Carson: Well, it does take some planning, so the more advance notice we have, the better.

Rachael Halder: But you guys are available to visit if they can arrange it at Portobello as well, can't they?

Dr Sally Carson: That's right. Yeah.

Rachael Halder: And Sarah, did you have any sort of final things you wanted to mention about the Aquavan?

Sarah Thorne: It's just so exciting and so fun, and for students to be hands on scientists for two hours, it's actually amazing to watch and be part of. And I've been speechless at the end when sometimes [00:18:00] they've done us the honour of doing a haka to thank us.

It's really blown me away, but just all the excitement and stuff makes it worthwhile every time. And I would, I just love bringing it back down. Let's keep on doing it. Such good program, such good initiative, Sally. You've been fabulous with it.

Dr Sally Carson: Well, I guess one of the really positive outcomes for us is working in collaboration with catchment groups, with Environment Southland, with Southland in general, the community and we couldn't do this on our own. So we just love the opportunity to work in partnership.



Rachael Halder: That is so cool. And I can totally hear the passion between the two of you as well. So the Aquavan does come down to Southland. Timings and sessions are varied, but if you just check in with your schools, your catchment groups. If it is something you want to see in your part of the catchment, just sing out to your local coordinator and we will see what we can do. But thank you very much for your [00:19:00] time, Sally. Thank you, Sarah. It's been lovely to have you both. And we can't wait to see the next Aquavan session play out and hear all the learnings that our awesome communities get from it.

And that's a wrap for another episode of Catchment Convo, brought to you by Thriving Southland. A big thanks to our guests for being a part of the conversation on today's episode, and for you guys for tuning in. We appreciate your support. Don't forget to like, subscribe, and follow us wherever you get your podcast from so you can stay up to date with all the latest episodes as they're released.

For more information on this episode, check out the show notes or head to the Thriving Southland website where you can also learn more about the awesome work happening across the catchment groups here in Southland. And if you've got a project or an idea you wanna share, don't be shy. Reach out. So until next time, keep up the good work out there on the land and as always, stay connected and keep driving those changes for a thriving Southland. [00:20:00]