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Transcript: Episode 1: Raukūmara Pae Maunga | Why Apu?

Kaikōrero	Kōrero and Timestamp (live link to kōrero)
Graeme Atkins Kaitiaki Taiao	**00:00:03** The slip behind me – sad to say that's pretty much the new normal inside Raukumara. The rocks are like Weetbix, you get the right amount of water on them, and it just turns into porridge and ends up in the creeks and ultimately down in the beach.
Te Rauhuia Ngata Kaimātaiao/Taiao Educator	**00:00:27** Climate change, extreme weather, and human impact are all major factors to the new environmental norm in Te Tairawhiti. Mai ngā maunga ki ngā moana, ka apu haere. Our whenua's being devoured, our riverbanks consumed, our moana left with the aftermath. He apu whenua, he apu tangata, this series explores the Why? **00:01:23** Raukumara Pae Maunga, 200,000 hectares of ngāhere shared between Ngāti Porou and Te Whanau a Apanui. Over the last 20 years, huge numbers in pests such as deer and possums has left the Raukumara on the brink of ecological collapse.
Wiremu Wharepapa Pae Maunga Engagement Team	**00:01:45** The Raukumara to us is the umbilical cord to our iwi that sustains us in nourishment. The Raukumara is there to feed us and take care of us.
Trudi Ngawhare Pae Maunga	**00:01:56** It's like a tāhuhu – the central nervous system. It feeds every system, and the rivers are like the toto – your blood – and the Raukumara feeds the health of that blood and filters it – you know that central nervous system that

	filters everything through your body. That's what the Raukumara would be to me.
Tui Warmenhoven Pae Maunga – Ngāti Porou Governance	**00:02:20** Its extremely significant because the interior of the Raukumara is what holds this whole landscape behind us together. So, the health of that landscape is the health of everything downstream.
Graeme Atkins	**00:02:38** In a landscape like Raukumara, in conservation circles its known as the Fjordland of the North, and that's got nothing to do with glaciers and fjords and everything, it's just similar to rain. 70% of the Raukumara has got a slope degree of 30 degrees or more.
Tui Warmenhoven	**00:02:58** And we come down to Te Ara Tipuna when our ancestors used to traverse through Raukumara from this side, over to Whanau ā Apanui, and from that side over here. There's the biodiversity, there's the forest itself, there's the identity of our people, and of course it's what's holding those deep mountain ranges together - is that ngāhere.
Brookyln Grace Pae Maunga Monitor	**00:03:28** What's in there, it's from bush to sea – the Raukumara Range – it doesn't just finish at our road, it finishes out there. So, what happens in there, it ends up out in our moana and down our awa and that, and that's coming from the Raukumara's. So, to me that's the heartbeat, the Raukumara Range is the heartbeat of Te Whanau ā Apanui and Ngāti Porou people. And if we're seeing carnage and all of that coming outside of it, then obviously for me there's something going on inside.

Graeme Atkins	**00:03:57** You know I've been doing this mahi for 30 years and over that time period watched the place go from the garden of Eden to the empty shell that it is now.
Te Rauhuia Ngata	**00:04:07** Saving the ngāhere from complete devastation is currently what iwi are facing. From the canopy, it's quite hard to see. But it's on the ground where the real damage is done. There's virtually no thick bush, no understory on the forest floor. **00:04:26** If you look at the history of the Raukumara, it tells the story of how pest numbers have increased. Introduction of deer and possums, farming, the impact of cyclone Bola, large-scale forestry, decrease in commercial deer operations, to the current Taiao crisis – a silent forest with no birdsong.
Tui Warmenhoven	**00:04:55** 30 years ago, I went into the Raukumara for the first time to follow Te Ara Tipuna – the trail that goes over to Ōmaiō – and the forest was so healthy, so bountiful, full of bird life, thick undergrowth we'd cut our way through. It was really quite a tough journey because the forest was wild and it was still intact. It's a lot different today. I went in and followed almost the same trail over a 6-day period. It was eerie, it was unrecognizable, because it was like it was one big pathway. **00:05:45** I remembered when I had taken turns to actually use machetes to cut our way through the bracken – there was none of that [this time]. But it was the quiet that was the most daunting and thought-provoking aspect - was the quiet – especially in the morning when the birds sing. There was

	virtually nothing, there might have been a faint bird in the distance.
Trudi Ngawhare	**00:06:20** It should be dark, it should be wet, and it should be absolutely dense. I shouldn't be able to walk through like I am. So, I should be smashing my way through. And then you'd see lots of little babies [trees] – thick, thick, thick mosses – mosses are really fabulous for holding in that water. So, this is an example of *not* what to look like. So, yeah still in the same 5 steps away from where we were and this is probably common what you see in Raukumara now that bed, dirt. Not good.
Te Rauhuia Ngata	**00:06:58** As mentioned, a lot of the ngāhere is hard to reach by foot. Kaitiaki Graeme Atkins has chopper-ed into the middle of the ranges for a closer inspection of the devastation.
Graeme Atkins	**00:07:10** We're in the Raukumara today, in the shadow of Whanokao – beautiful maunga. We're at the Oronui Hut situated on the banks of Oronui river which flows into the Taupaeroa, one of the main tributaries of the Waiapu awa. Haven't gone too far and already there's plenty to see so, so we can see what the deer have done. They're bark stripping all of these – there are all members of the coprosma whanau so this one here's manono. They pull the bark off because they're hungry and if they go right around the tree it ends up killing them. If you scan around you can see there's numerous examples of that going on. **00:07:57** A lot of people find it hard to make that connection with what deer have done as far as our bird populations are, but you can see down here where the deer can reach they've

	pulled all the bark off it so all the leaves are nibbled, and if they keep doing it, it will kill the tree. And so, you can see up in here all the ripening berries, and so that's kai for our manu. And so, if they take out all of these species, it leaves gaps in the year. **00:08:26** All those species that used to make up the understory provided year-round food. They all had their moment in the sun for about a month to six weeks, and then another species would start to fruit. This is the podocarp broadleaf forest and so podocarps are all your rimu, kahikatea, totara – that middle matai that stick out over the top – and the canopy out here consists of tawa as the main canopy species here. With it being a tawa canopy, tawa only has fruits on it around February, so they stay on the tree for about a month – big kai for our kereru. So, it shows you how crucial that understory was for providing birds with kai for the remainder of the year. **00:09:24** Even though this might look lush, this understory, you can see its dominated by silver ferns. The deer don't like eating it so it's just going to make that understory recovery a little bit harder. We're in amongst some tutu, tutu are really, really important in the scheme of things because they're a first colonizer of all the slips, and so we've got some really graphic examples of slips straight across the creek here. These tutu have been heavily browsed, many of them on their last legs, quite a few have already tipped over. So yeah, really important for healing our slips the old tutu. And they're a non-legume that fixes nitrogen, so they make the soil full of life for future forests so really, really important, you don't

	see any little ones and that's where the deer eat them - it's sad to see them looking like this. **00:10:25** So yeah this is what all the tutu used to look like. All of these ones out here, they should all be looking like that. The possums have eaten everything else – their favourite species – and they've been forced to eat the tutu. And so that's a sign that there's already been major damage or major changes done to this ngāhere. **00:10:55** If you look around, you can start to see the place is starting to fall to bits. And so, as all these slips contribute to the load coming down these creeks, they raise the bed, and then when that happens it just means it needs less water to make the river go wide. And so, when it leads to the base of the hill, gravity takes over basically – the hill falls down bringing all the trees with it. And so, this little creek behind me, it ends up adding a sediment load to the Waiapu.
Te Rauhuia Ngata	**00:11:30** But despite the dramatic demise of the understory, there are still signs that the Raukumara is holding on.
Graeme Atkins	**00:11:37** Oh here's one – a little fuller. Yeah so, these frogs are as old as New Zealand, they never swam here. Their closest whakapapa is to a frog species over in the Amazon, Brazil. We're so lucky to have them, and they're still here in the Raukumara. They're a really good indicator of exceptional water quality. They're only a Northern North Island species so you know a taonga that's still managing to cling on in here in Raukumara so very, very lucky.
Te Rauhuia Ngata	**00:12:11** So that's the current state of our ngāhere. In response to the devastation, Raukumara Pae Maunga was

	formed – an agreement between Ngāti Porou, Te Whanau a Apanui, and the Department of Conservation, to bring back and restore the mana and mauri of the Raukumara.
Ario Rewi Pae Maunga Comms & Engagement	**00:12:31** For the most part it's about bringing our whanau along on the journey of restoration, and a big part of that is restoring our people's connection with their tupuna ngāhere.
Tui Warmenhoven	**00:12:44** Its going to take a lot of work and a lot of commitment from all of our communities. But I think an important thing for us, for me as governance, is to be in a place where we're making decisions for ourselves because we have the solutions. And that is why we're doing what we're doing now. Because we finally said, "we've had enough, we're stepping in, and we're going to take over". And we don't mind doing it with the Department of Conservation, but we will definitely be in the lead.
Wiremu Wharepapa	**00:13:22** I've been a hunter for 50 years, so I know what it's like to live off the land. But I think there comes a time where we got to look in the mirror and say to ourselves "Well, we've taken more than our fair share, maybe it's time for us to give back because our ngāhere in Raukumara is just not holding together."
Trudi Ngawhare	**00:13:46** When you look at it its beautiful. Who would not want to protect what we love? You're not finding one or two deer, you're finding mobs of deer around here. So, [we've] got to act now.
Te Rauhuia Ngata	**00:14:04** Since the Raukumara Pae Maunga program started two years ago, kaimahi on both the Ngāti Porou and

	Apanui sides have been employed in a number of roles. From Taiao rangers to deer cullers, from monitoring and controlling pests to engaging with their local communities so everyone knows what's happening.
Sharon Wharepapa Pae Maunga Operations Supervisor	**00:14:25** Here's our aerial team flying out on their mission this morning. What we did last year is we established monitoring sites in each different areas here throughout the Raukumara so we could capture the data of presence and absence of the pests. So, our Opps teams went in, we flew into different areas, and we cut tracks, we marked them, we put out tunnels and things to be able to go back in and do a monitor. Those monitoring were in cards that were put out in wax tags and ink tags for rats to see how many rats we had in there and then wax tags for our possums. **00:15:07** What happened though was that our ink cards that was for rat monitoring actually got a smash by possums in a lot of these areas, as well as the rats, but that's how many possums were in there, the rats didn't even get a chance to get to them.
Peterboy Waitoa Pae Maunga Taiao Ranger	**00:15:22** I scoot around the bush trying to murder predators – DOC calls it taiao ranger. It freaked me out to see how bare it is underneath, and learning and knowing what all that means to the ecosystem as it comes down the creeks, runs off the hills, everything. It's not able to contain the rain that falls from the sky, it's just falling straight onto the Raukumara's which is falling straight into the rivers, which is causing slips because there's dead trees everywhere in that place. I'd like to see how many slips are in there ever since after that cyclone – there's heaps more in there.

Brookyln Grace	**00:16:10** So we do a lot of database collection, so we set traplines, marking, we do all sorts from water monitoring to 1080 monitoring, track clearing, and just a lot of mahi that involves data collection. I think coming from a trapping background and just seeing over the years that there is a climate change effect, it's sort of opened my eyes and having a better understanding of conservation, just trying to look at it different rather than from a trapping perspective, I've sort of shed more light into looking deeper and actually feeling what's going on with our whenua and our waterways and that. For me, it was having to partake in the mahi and actually ground myself into being able to look after our lands rather than just treading on it and doing it for an income.
Peeti Delamare Pae Maunga Monitor	**00:17:11** Yeah it looks like a horror movie in there. Just a mess.
Brookyln Grace	**00:17:17** I was one of those people too – I had only trapped in one area of the Raukumaras, and even then, I didn't really recognise it until I started seeing more and more damage with our Waiapu. And then that's when I sort of grounded myself and sh- I got to do something about it and start giving back rather than taking from.
Te Rauhuia Ngata	**00:17:39** A big part of the Pae Maunga team's mahi has been informing the community about the use of 1080 to eliminate the pests.
Graeme Atkins	**00:17:49** We have no options. We have to be doing something because the erosion happening here will just get worse. Where we live in the lower reaches of the Waiapu – we'll all have to abandon ship and move because all our best

	soil, the alluvial flats, where we all live are all getting buried over or washed out to sea. I think that's where the korero around the use of 1080 comes in because it's way too big a problem now trying to get on top of the old possums out here. And 1080 will provide this ngāhere with some much-needed respite – will give it a breathing space.
Ario Rewi	**00:18:36** I think it's fair to say that there is an expected level of resistance. For me, on my observations so far in the project is that the resistance is really born of fear – fear of what our people don't know. And because our people love this place, this is their home, they love it as much as we do, and they're fearful that 1080 could be poisoning their home and so very much valid fears for them to have and it's just about us being able to provide them with the information and the education so that they can become more comfortable and less fearful of 1080 as a tool to eradicate pests in our ngāhere.
Peterboy Waitoa	**00:19:17** Before I came into this space, I was anti-1080. That was through a lack of knowledge and knowing what the Raukumara needs because we don't have another tool to fix it up at the moment. Since I've started this job, it's made me realise that it needs a bit of medicine.
Wattie Goldsmith Pae Maunga Operations Manager	**00:19:42** I wanted to show you this area because this is something we want to show our people – why we're using 1080 – the steepness. And 70-75% of the Raukumara is more than 30 degrees, and this is why. This is one of the reasons why we've run a trap line through here, so we'll trap this area. But it's also to show our people why we're using 1080, and how steep it is in there, and the hazards that it creates, and

	we can't send people in there it's just too dangerous – and some of it's even steeper than this.
Tui Warmenhoven	00:20:13 Even if we had thousands of foot soldiers, we wouldn't be able to address the crisis in time. 1080 was the only option given the point of time we're in and given the state of the forest at this point in time.
Te Rauhuia Ngata	00:20:31 1080 has already been dropped on the Apanui side, with alarming numbers of possums already being found. The Ngāti Porou side is yet to start, due to the extreme weather conditions.
Wiremu Wharepapa	**00:20:48** So when the 1080 drop came along, we had massive numbers of possums. It's like a beaver's dam, it just broke. So, the first flood, it's like the dam just busted open. Now we got possums all over the beaches. So that was a bit of a hard one to swallow, so our immediate response was to clean the beaches up. I mean the numbers of possums that come out on the beaches were huge, we're talking numbers of up to 500-700 hundred possums. Unfortunately, we lost a few dogs through that as well, a few local dogs. We had all our signs out, but no one wanted to listen to the signs – it's a whole new thing. **00:21:39** It's not the nicest place to be when you have to turn up at somebody's doorstep and tell them that their dogs have passed on because they've eaten some possums that have come from the Raukumara with 1080 in them, standing there waiting for a smack in the nose – that's not the easiest job. But we're the frontlines, we've got to take the shots, and it is what it is. If I was asked to use 1080 again then I wouldn't hesitate. I'm so happy for our ngāhere. It was scary don't get

	me wrong it was scary, it's a first time for us, we're learning, and it was scary. But now I look in the hills and I know that the mauri can breathe.
Sharon Wharepapa	**00:22:30** I think with what happened with possums coming out after our first drop, out of the awa's and in mass, really, really tells that story of how many pests; how many possums there are actually in the Raukumara. To me, they're like kutus running around. We've gone back in since the first drop to do a couple of the post-monitoring, and the monitoring's come back with nothing. The mauri of that place has a chance now – and that's what our mahi is.
Trudi Ngawhare	**00:23:06** We're so grateful for Apanui, and we feel for them they had to go first. But they're just giving us all the learning, how to manage the post-mahi of this. Even DOC is learning as well, our DOC whanau have been in this for a long time and just to seeing the numbers that are coming out, how our rivers work – the way they've changed, the amount of water that comes out of the Raukumara.
Ario Rewi	**00:23:34** I think it's really important to share that the consideration of how we drop 1080, when we drop 1080, where we drop 1080 – it's probably the most frequented conversation on the project. And we want to make sure that we do that the right way, because the sustainability of restoration efforts really hangs on us being able to apply 1080 again in the future. So, we have been able to apply 1080 over a significant amount of ngāhere. We still have a significant amount of ngāhere to treat.
Te Rauhuia Ngata	**00:24:10** So while 1080 has been applied to the Apanui side, it's still yet to be applied to the Ngāti Porou side of the

	Ngahere. And that's due to all the severe weather that has impacted the coast recently.
Kane Stafford Epro, Predator Control	**00:24:33** Those challenges have delayed us, everything that we've seen here on the Coast and the resilience of the locals. It's been Gabriel, it's been some other storms and other events that have washed out our access roads to this load site, we're repeatedly repairing those. We first started looking at opportunities for delivering the bait over the Ranges back in about September-October last year, so it's been a long, long wait trying to find those perfect windows. What we're after is an opportunity to have a couple of really good days like today to deliver the bait with the helicopters safely and effectively. But then we also want to ensure that there's a nice fine period afterwards without any rainfall so that those baits have got the best opportunity to do the job that there there for which is targeting the possums. **00:25:11** This operation is targeting about 20,000 hectares. That operation was pre-fed about through 6 or 8 weeks ago we pre-fed that same area. 20,000 hectares is a pretty massive area, we're treating it with 4 kgs a hectare, so that's quite a high sewing rate and that's really important because there are so many pests out there – really high possum numbers, really high rat numbers. We need to assure we get that mix really right and that we're putting the right amount of bait out to target the right levels of pests. **00:25:40** Over the next period the kaimahi's from the Pae Maunga project will be spending a lot of time in the rivers and waterways monitoring those looking for carcasses and things like that to try and limit any downstream effects that might happen. We then look to the next weather window,

	and we start planning what the rest of the operation looks like.
Te Rauhuia Ngata	**00:25:58** So, with the Pae Maunga team on the ground, trekking and monitoring the application of 1080, things are looking up for the Raukumara.
Wiremu Wharepapa	**00:26:09** Since the 1080 drops, we've picked up a kiwi in the Houpoto on our cameras, that was exciting for our iwi. We've always known kiwis to be there, we've just never seen one on camera. And after 2-3 weeks after the 1080 drop its drinking the water, I mean how exciting is that. We've picked up whio in the Haparapara River – I mean nobody was talking about whio. We've got footage of these taonga species that are coming out, that are not getting chased by the stoats, that are not being chased by the rats. The takeaway is massive.
Peterboy Waitoa	**00:26:45** I do have hope because we're the first ones to actually put our best foot forward and to do the best that we can. And it's for our moko's and our tamariki's, hopefully that we can revive it, so they get to live it.
Mikaere Albert Pae Maunga Taiao Ranger	**00:27:05** I feel like our kaupapa has quite high hopes in what we are aiming on trying to do. For me it's looking like we're going to be in there for a long time.
Brookyln Grace	**00:27:20** Its giving back to our whenua, to our lands, because we've taken too much from them and pretty much given our land to beef and sheep to occupy it – they're not going to occupy it. So, it's up to us as kaitiaki and tangata whenua, we should be the ones that should be able to look after it and sustain it.

Graeme Atkins	**00:27:40** The dream for me is that, with the Raukumara, it was back healthy again, mauri restored, functioning as it should be, handling heavy rain and whatever the climate throws at it. And it's our own that are managing and doing the do that are getting all the knowledge back, that mātauranga about how this place used to tick.

Transcript: Episode 2: Te Awa o Waiapu | Why Apu?

Kaikōrero	Kōrero and Timestamp (live link to kōrero)
Tui Warmenhoven Ngāpuhi Researcher	00:00:14 The Waiapu catchment exhibits some of the worst erosion in the world, so that says it all. Where does it go? It goes down the river, out to sea.
Hilton Collier Pakihiroa Farms	00:00:27 Once upon a time we walked down into the river, we swim in beautiful swimming holes and then we climbed up out of the river to hop in our vehicles and leave and go home. Now we can almost drive straight across the Waiapu because there is so much build up from the erosion problem that's occurring in the headwaters.
Graeme Atkins Kaitiaki Taiao	00:00:46 The erosion is a cancer and if cancer isn't treated it doesn't go away, it gets worse.
Te Rauhuia Ngata Kaimātaiao/Taiao Educator	00:01:05 Climate change, extreme weather and human impact are all major factors to the new environmental norm in Te Tairawhiti. Mai ngā maunga, ki ngā moana, ka apu haere. Our whenua's being devoured, our riverbanks consumed, our moana left with the aftermath. He apu whenua he apu tangata, this series explores the Why? 00:01:51 Ko Hikurangi te maunga, ko Waiapu te awa, ko Ngāti Porou te iwi. [English: Hikurangi is the mountain. Waiapu is the river. Ngāti Porou is the tribe]. The Waiapu River is part of who we are. Waiapu te pito, te ewe, Waiapu kōkā huhua [English: The river of life, sustaining the needs of her people]. But in the last 30 years it has seen dramatic change due to the erosion problem here on

	the coast. Our whakapapa, much like the awa and its many tributaries, is intertwined.
Patrick Tangaere Waiapu Resident	00:02:16 Ko Waiapu te awa o Ngāti Porou whānui. Enā ko te korero tuku iho mai I te tau 1150. I ū mai nei te waka nukutere ā ki te mutua o Waiapu. E 200 tau I muri mai, ka tai mai te waka Horouta. A koe re ra te tīmatanga te iwi o Ngāti Porou. Nā koe ra, ko Waiapu te awa o te iwi. E nui hoki ngā korero mō te taniwha ne, ko Horowhatu te tai, ko Taho te tai. Ki ana te korero, I a tau I a tau, ka mate he tangata I te awa. [English: Waiapu is the main river for all of the Ngati Porou tribe. The story that was passed down from the year 1150, the Nukutere canoe entered the Waiapu river mouth 200 years after that, Horouta canoe arrived. That was the beginning of the Ngati Porou tribe. Waiapu is our tribe's river. There are many stories about taniwha, Horowhatu and Taho. According to the stories, someone died every year in the river]. 00:02:58 A tētahi tau, a kāhore tangata i mate, tau whai muri mai a pera nō, engari I te tau tuatoru, e toru rawa nga tāngata I mate I te awa. I te marama o Tīhema o te tau 1951, ka haere mai a Hōri Keeti te tohunga o Te Whānau a Apanui a haere mai e te karakiangia te awa nei e I a. E ka muri e i a ētahi o nga tangata o konei te ruirui tō wai, koi e whakahaere ana nga karakia. Ko tōku papa tetai, ka ki mei I a rātou e ruirui ana I te wai, he puehu e haere ana i puea rātou penei te kapuone. Ka mutu ngā karakia tana pō, ka tuhia rātou he raina I runga ki te kirikiri mā te rākau. [English: One year no one died and the following year was the same but on the third year three people died in the river. In December 1951, Hori Keeti, a tohunga from Te Whanau a Apanui came to bless the river. He took some people from here with him, to sprinkle the water while he blessed it, my dad was one of them. He said when they were sprinkling the water, dust arose in front of

	them like a cloud, when they finished for the night they drew a line in the sand with a stick]. 00:03:48 ā ka hoki anō te ata ka tīmata rātou I te wāhi e tuhia nei rātou te raina. Ka tīmata te ruirui, ka tīmata nō te puehu i te kapuone. Ka tae atu rātou ki te ngutuawa, ā, ka haere tonu te pueho ki te moana, ngungu mea tū, ka ngaro ki te moana. A, me te kōrero ano hoki mai I tērā wā, ki tēnei wā, ki te mate I te tangata I te awa, a he aituā no a rā tēnā. [English: When they went back in the morning they started where the line was drawn, they started sprinkling and the dust cloud arose again, when they got to the river mouth the cloud continued out to sea till it was no longer in sight, lost at sea. And so we say from that time till now, if someone dies in the river, it's only an accident].
Te Rauhuia Ngata	00:04:19 I takea mai a Waiapu I Te Raukumara. 130 kirometa te roa o tōna rere. Ko Mātā, ko Tapuaeroa, ōna koutou a matua.[English: The Waiapu begins in the Raukumara ranges and flows for about 130 kilometres. It's fed by two main tributaries the Tapuaeroa and Mātā rivers]. They merge into the Waiapu at the Rotokaitoku bridge, then they travel out into the moana at Rangitukia. The Waiapu was once very much our kapata kai, but the awa is in decline. As sediment rises, our ability to continue our kai gathering is fading – in danger of becoming a fond memory.
Ramari Nepia Waiapu Resident	00:04:57 The Waiapu Awa is a mess. It's a big difference from how it used to be. And I believe back in the day, right below the – they say kainanga but its kai-i-nanga hill – they used to have a lot of white bait, and people used to go there and fish for white bait back in the day, but nothing today.

Mateohorere Manuel Waiapu Resident	00:05:21 We used to sustain ourselves independently. Whānau used to come together and we used to fish out in these waters over here and we had no problems with the fish. All our recreational grounds and that was an important factor for our survival. Now we don't get all that fish over there. If you look in the back behind me over here it's full of driftwood. The debris that's floated down the Waiapu has really increased in the declining of our fish stocks.
Dallas Manuel Waiapu Resident	00:05:52 We were only kids when we went there. There was so much fishing and a lot of activities going on down there. And the kahawai was plentiful, and very abundant of kahawai coming up the mouth – you could see it in the waves.
Eruini Akena Tikapa Resident	00: 06:11 In my days, growing up the water was clear. And you could see the eels and then you just attack, plenty of eels. It wasn't just us, other family too.
Ramai Nepia	00:06:23 What we get today is a lot of dust and a mess. So we always dread the southerly wind because it blows the dust onto our homes onto our land. People get sick, people with Asthma. It's really unhealthy now.
Eruini Akena	00:06:40 The dust, well what else can you do? If the wind is blowing especially Westerly, you have to go inside because of the dust.
Ramai Nepia	00:06:51 Just feel for our people, with their land being taken away by the river overflowing.

Eruini Akena	00:07:03 We cannot do anything to that river. It's frustrating. That's our main area is the Waiapu River.
Te Rauhuia Ngata	00:07:25 That dust is the result of severe erosion over the last hundred years. Its estimated that our awa carries 35 million tonnes of sediment into the sea from a 1700 square kilometre catchment. That is the highest rate of river sedimentation in the world. 00:07:46 Ka ngahoro te whenua mai ngā huripari me ngā āwhā, ka pupuhi te awa, ka horo nga parenga. [English translation: As cliffs and valleys crumble due to cyclones and heavy rain, the river rises and widens and erodes the banks]. Ever Since the first settlers began clearing this area in the 1800's, erosion has accelerated. Before that, Māori only ever made small clearings in the floodplain forests for maara kai.
Mike Marden Geologist	00:08:07 We've got to go back to the late 1880s through to the 1920s when the early European settlers started clearing the native forest, the scientists, if you like, who were visiting this area, started to notice wholesale hillside collapse. Filling up the river systems, the transportation of the gravel from the headwater areas downstream. And nothing was seemingly done about it in terms of trying to change to land use back to a forestry cover until the 1960s.
Tui Warmenhoven	00:08:45 80% of the catchment was deforested. That's a huge percentage. So when you look at the old photographs, you can see everything started moving quite quickly, and so the geology and the climate here, together with the deforestation was just a recipe for disaster.

Hilton Collier	00:09:08 We've seen the Waiapu move from small-scale, slightly better than subsistence farming, operations to a situation where we've changed land use at scale. We've cleared the land, brought in pastoral farming, realised we had an erosion problem. We then brought in large scale forestry.
Te Rauhuia Ngata	00:09:27 The government did recognise that something needed to be done to protect the land and the rivers after so many trees were destroyed.
Mike Marden	00:09:37 And the commencement of a planting program that ran for about 28 years. They managed to forest 13,000 hectares I think. We started to see, shortly after the completion of the forest station, that the rivers started to change their behaviour.
Te Rauhuia Ngata	00:09:56 The most recent Cyclone Gabriel caused massive slips and slumps. Erosion on a huge and devastating scale. The last major cyclone before that was Cyclone Bola in 1988. I patua kinotia i Aotearoa whānui I tēnei āwhā, anea kau wana I Tai Rawhiti i tona riri. [English: One of the most damaging storms to hit Aotearoa, the east coast suffered its full force].
Mike Marden	00:10:19 The latter two days of Bola had serious downfalls and the intensity of rainfall increased. It was during that period that the soils obviously reached totals saturation and we got all the shallow landslides. The hillsides that fell down were basically the pastured hillslopes, whereas the forested hillslopes didn't fall down.

Te Rauhuia Ngata	00:10:42 After Bola, the Government responded with the East Coast Forestry Project. Its aim – to replant 60,000 hectares of severely eroded farming whenua over 28 years. The project fell short of that, planting 35,000 hectares in pines. But pines are not a permanent fix as they are harvested within a matter of decades.
Hilton Collier	00:11:08 After Cylcone Bola, a lot of forests were planted to protect and stabilise the land. Unfortunately, these have been in management regimes where they have been managed as production forests. So the most vulnerable lands haven't been treated in a way that mitigates the erosion, and we are now dealing with the aftermath of inappropriate land use which has extended for almost a century. And we have to acknowledge the consequences are large scale sedimentation, continual loss of land, and it really needs a rethink about our relationship with the land.
Mike Marden	00:11:47 So in those days they were allowed to plant pine trees all the way down to the streams edge. That's a lot of those areas particularly in the tertiary hill country [have] very steep slopes leading down to narrow stream channels. It's the landslides that have occurred during Hale and then Gabriel when you get these major cyclonic storms and you get the landslides on these steep slopes. It's the landslides, not the rain, that transports the woody debris into the stream. And that's why we're having these major slash problems.
Te Rauhuia Ngata	00:12:24 After clearing the whenua, planting commercial forests in the aftermath of the cyclones, ka mahue para heahea mātou I ngā riri atua. [English translation: We remain extremely vulnerable to the forces of nature]. The Waiapu is labelled one of the worst eroding rivers in the world. Its water quality rating is a D.

Mateohorere Manuel	00:12:46 When the wind blows in from the north wester it bubbles up everywhere. And then you've got the silt flying around creating dust. And it's falling on the houses where they're dependent on collecting water.
Graeme Atkins	00:13:01 You know the clocks winding back, I'm trying to get this fixed. 100% of the sediment comes from 5% of the catchment which are these gullies and there's like a thousand of them. And a lot of them are on the verge of becoming unfixable, untreatable.
Mike Marden	00:13:19 The other thing too is that we haven't seen the end of the effect of not only Hale and Gabriel, but also of the persistent rainfall that we've had over the last going on 7 months now. Hillsides are still falling down, the soil moisture content is so high in many places its right at ground level. We don't know which ones are going to fail and which ones are going to remain stable.
Te Rauhuia Ngata	00:13:47 For forty years, Graeme Atkins has monitored one of the major contributors to the Waiapu erosion issue.
Graeme Atkins	00:13:54 We're up the Wairongomai River, one of the main tributaries of the Tapuaeroa, which joins the Mātā river to become the Waiapu lower down. This was known locally as Barton's Gulley, or known locally as the Blue Slip. The Bartons were the last residents of this whare behind us, and were responsible for clearing this land. They cleared everything right to the watercourses they didn't leave in any riparian vegetation and so this is all mudstone country here behind us. All safe and sound under a heavy Native bush with all its interlocking roots and

	everything, but once that was all swept away and set on fire, they exposed this geology to where you get frequent heavy rainstorms, and we're pretty much living with the legacy of that. So I brought you us up through Bartons Gulley because it's the poster boy for eroding gullies and poor land use choices. 00:14:57 Its quite a sobering sight just watching this house slowly vanish under the sediment that's pouring out of this gully and I got no doubt that eventually it will be completely covered. The opportunity to fix this gully would have been 50-70 years ago, and so basically now it's what's known as untreatable. So, there's nothing going to stop that gully even though the surrounding land around it has been retired. So when you get something like 100 mm or 200mm of rain, that's a hell of a lot of weight on vulnerable land and so all these gullies that remain untreated, they have all got the potential to end up like this one here.
Hilton Collier	00:15:37 If I look around he Waiapu catchment, we reach into the back of Tokomaru Bay; Tolaga Bay, it's a very, very large catchment. While Barton's slip might be the largest by a long shot, there are other earth movements that are equally as significant. If I go into the back of the Mata, up around farms like Huerua into the back of Tauwhariparae, a lot of those hills are slipping, a lot of those river systems are building up as well. All that sediment will ultimately end up below us.
Te Rauhuia Ngata	00:16:09 Nō te 100 tau ki muri, tēnei raru nui. [English translation: It's a problem that started a 100 years ago]. It's got worse. And now we're faced with the hardest challenge, how to fix it and who's going to pay for it. In 2015, an agreement was signed between Ngāti Porou and the Gisborne District council. Hei whakarau ora anō I te hopunga wai o Waiapu, mai tēnei wā 100 tau ki mua.

	[English translation: To restore the health of the Waiapu catchment from this time going forward to the next 100 years].
Tui Warmenhoven	00:16:34 The Waiapu Catchment Plan is just dragging its feet, so MPI, GDC, Te Rūnanga Nui o Ngāti Porou on behalf of hapū, we are supposed to be all working together to get this catchment plan completed so that everybody knows how land will be used, how water will be used or not used, and how our people need to be at the centre of jobs, employment, and a long term plan of reafforestation of our whenua. It's kind of simple, but to the policy makers and decision makers, they're always looking for a way to continue exploiting.
Pia Pohatu Whakaata Māori Archives, 2006 [Video Excerpt]	00:17:21 New Zealand has the worst sediment in the Southern Hemisphere, Gisborne district has the worst sediment in New Zealand
Tui Warmenhoven	00:17:28 It's been 23 odd years that we've had extensive research always ongoing, there's research still going now. Scientists from all over the world have studied this catchment because of the erosion.
Pia Pohatu Ngati Porou Researcher	00:17:42 From that research, we had ammunition to fight for rights and interests in co-management and co-governance of our river.
Tui Waremenhoven	00:17:54 So our people are really aware now and our people want reafforested native. Almost every Ngāti Porou person that I've interviewed, when we talk about solutions, they always say we need to plant Natives.

Graeme Atkins	00:18:12 We've got a JMA with the Crown, MPI, the Conservation Department, and us – the Iwi, that was signed here at our marae I think it was back in 2012. Nothing's happening on the ground, I can't read a plan that 'this is how we're going to fix it'. I'm on that group that's trying to get it sorted, get something started, but nothing's happened in more than 6 months.
Pia Pohatu	00:18:38 There's a bit more behind the scenes work that has been done but hasn't been discussed just yet because of the change in personnel. It's not that no policies have been written, it's just that we're probably going to focus on things like gravel extraction, forestry, and erosion. The thing with erosion is that we're always going to be band D because we'll always fail in the sedimentation levels in our streams because of the erosion issue. That's something we're not quite sure how we address, because even if we set up a Band A target, the erosion issues that we've got optimistically would take a hundred years. It might be that we're never able to stem the erosion. Just for the purposes of this plan there's that sort of challenge.
Tui Waremenhoven	00:19:33 All the evidence is there. We just need to be resourced and we also need to regulate those current land users quite heavily, and maybe penalise also, so we're talking about that. The Mana Taiao Tairawhiti Work Group with Manu Caddie and Hera Ngata-Gibson – and there's quite a few of us – concertedly working and putting pressure on the government and on the council, we had the enquiry. Things like that we need the action to start now.
Te Rauhuia Ngata	00:20:12 Storms grow worse, erosion accelerates, and with it comes the greatest challenge of our times. He mahi tahi, e kite

	pēhea I te whakatika tō tātou whenua o tātou awa, a, e ora hoki ai ngā mahi a ngā tīpuna. [English translation: To work together and find the solutions to repairing the land, our river, and ensuring our traditions].
Pia Pohatu	00:20:32 A whole-of-Ngāti-Porou is not a tailored approach. For us to think one option or initiative like a silver bullet, it's proven it's not happening us - forestry was seen as that. A-Whole-of-Ngāti-Porou approach needs to involve the people and the communities that it affects – that's the constant part. And then you have to be flexible for where they think the solutions are.
Hilton Collier	00:21:00 Within the Pakihiroa Group, we have an erosion problem, we accept and acknowledge that. But we are also going through the process of rebalancing our land use. So we have areas that have been retired from farming, some of those areas are in pine trees, some of them are planted in other exotics and being allowed to regenerate to native species. And I think this is the long term solution that we use schemes like the Emissions Trading Scheme to fund our conversion of pastoral land back into trees, indigenous trees, to provide long term sustainability. I think we can have a landscape that allows us to be pastoral farmers, it should allow us to be foresters as well, but we need to recognise a lot of our fragile landscape needs to be protected. One of the things we need guidance on is where we can have sheep and cattle farming, where we can have safe production forests, and where we need a different type of land use activity to allow us to retire the land to mitigate the erosion problem.
Graeme Atkins	00:22:05 The dream for me is that we match the landscape up to the different land uses. So anything above a certain gradient or steepness just gets retired to let it go back to nature. Either

	assisted nature through providing jobs to people to speed that process up through planting and deer and goat control to speed that up and there's work. Training our own to get that mātauranga back, we know what this catchment needs, I'm confident that the experience to turn this around already exists here.
Mike Marden	00:22:45 So it all comes down to the haste at which things are addressed. If fully implemented for all the land that is at highest erosion risk were to be planted or allowed to reverted into manuka/kanuka, over time we would see less sediment entering into the river systems and going out to the ocean. We're not just talking about decades, we're talking about multiple decades maybe even a century, before we would start to see the effects.
Tui Waremenhoven	00:23:23 That's why the catchment plan is so important because it will actually lay out the plan into the future so everyone knows we can do and what we can't do. But that's only one piece, at the end of the day we still need the resourcing. To reafforest is not as easy as we think it is, especially if you got bare land already eroding. We need a major nursery, like social-enterprise-type nursery, where land owners can eco-source seeds, the nursery can grow the natives for the land owners. But on top of that we need education, we need courses, so that we know how to plant natives, look after the natives, and pest-control and all of that. It's very similar to the Rau Kumara. And so, I think we just have to look into our own pockets. I think the holding company, the Runanga, is quite capable of funding a massive nursery as a social enterprise so that our people can afford.
Pia Pohatu	00:24:26 My focus would also be on how are we going to design these programmes to deliver. Deliver in a way where we're building up our next two generations to not just do the mahi, but I want them

	to inform it, I want them to be inspired by it, and to take it places we never even thought to take it.
Ramari Nepia	00:24:50 For all our mokopuna and the next generations to have. So they can proudly say “ko Waiapu tō rātou awa” [English: Waiapu is their river]. A beautiful clean awa. As for now, ka whakamataku toku a hika “ko Waiapu tōku awa”, no te mea, paruparu katoa. [English: I’m quite scared to say Waiapu is my river because its all dirty]. It’s a spiritual thing to for our people, not just physically it’s spiritually part of us.
Te Rauhuia Ngata	00:25:19 Tika tonu tai a Nanny Ramari. Hoa ki tao o ki te Waiapu, tātara e maru ana. [English: You are so right nanny Ramari. Let us go to the Waiapu, where the rain cape provides shelter.]

Transcript: [Episode 3 (Part 1) – Ngā Rākau Horo | Why Apu?]

Kaikōrero	Kōrero and Timestamp (live link to kōrero)
Herata Ngata-Gibson Anaru Bay/Uawa Resident	**00:00:00** I've seen this place go from a very pristine healthy environment to just a real pirau, unhealthy place. Our waters aren't safe, our place isn't safe, we've got wood debris everywhere, and when the next rain comes it'll be all over our beaches again, on people's property again – and that's the norm for us.
Darren Mann Ernslaw One CEO	**00:00:22** We know that the community's hurting. I think it's about showing them that we're making the right decisions for the right reasons. I think there's absolutely a time to actually come together and actually talk about what that blueprint is for sustainable land use in Tairawhiti.
Te Rauhuia Ngata Kaimātaiao/Uawa Resident	**00:00:41** Climate change, extreme weather, and human impact are all major factors to the new environmental norm in Te Tairawhiti. Mai ngā maunga ki ngā moana, ka apu haere. Our Our whenua's being devoured, our riverbanks consumed, our moana left with the aftermath. He apu whenua he apu tangata, this series explores the Why? **00:01:24** When Cyclone Gabriel hit Tairawhiti, 1.4 million tonnes of wood debris flowed down our rivers, smashing our bridges, homes, whenua, infrastructure, and eventually ended up on our beaches. Rain anxiety is a real thing. He nui tonu ngā tangata ko pāngia ana e te manukanuka mō te marangai te take. Ko wai a kē ngā tangata, tino ohooho kia owhiti. He rite tonu ta rātou mātaki, te huarere. [English: Affecting people more than we

	realise. Locals have learnt to always be on their guard. Everyone constantly watches the weather]. **00:02:01** More than 200 farms were damages by wood debris as a result of Gabriel. We had 200 major road dropouts, and 77 bridges required slash removal. Kua hipa tētahi tau, kei te a tatou? [English: More than a year later, where are we at?]
Nedine Thatcher Swann Gisborne District Council CEO	**00:02:18** We had about $1b worth of damage occur to our region. $700m estimated to be in roading work repair. We got about $400m from government that went for things like woody debris, cleanup, roading investment, flood control, and buy outs from those properties that were identified as category 3. It's a small part of what we need for our region to truly heal, but we are grateful for the investment. Lots of work to be done.
Hera Ngata-Gibson Anaura Bay/Uawa Resident	**00:02:53** For a number of decades, and ill speak to this community here Uawa, we've been dealing with the issue of slash, namely Pine. The forestry industry likes to refer to it as 'wood debris', but at the end of the day the majority of that wood debris is definitely pine. And this community has been dealing with the impacts of that and the erosion that comes with it probably for the last 20-odd years. Those impacts are quite wide but at the end of the day the result is an increase in flooding, increase in wood debris affecting our infrastructure, on our beaches, making our place unsafe.
Manu Caddie Penu Resident	00:03:43 Just the sense of despair I think from even our regional leaders saying 'can't we get a break' – talking about massive projects trying to just keep roads open and things. So, I think the mental health aspect is huge and we haven't maybe recognized that enough yet. Because we say Coasties are resilient and things, and there's a bit of sort of pushback on that from some

	locals who like 'stop calling us resilient' you know it's really challenging times here and there'll be limits to people's resilience. And the same event can affect different people in different ways.
Wi Wharehinga Tokomaru Bay Resident	**00:04:25** I mean yeah, it's pretty out of it like every time I see a logging truck, I'm like 'grrr'. And it's no fires shot as the people that are actually driving the truck, but I always cringe at logging trucks seeing them on the road and I think to myself 'ugh' you know I mean yeah, 'ugh'.
Hera Ngata-Gibson	**00:04:52** The guys over here are cleaning up the stuff from the last big rain, they stockpile it here on what was supposed to be our rugby league field, and they're carting it away to deal with it. But soon as the next rain comes, this beach will be littered with pine debris again, and they'll be back to square naught. It's just shattering.
Graeme Atkins Tikapa Resident	**00:05:21** Yeah so, a big percentage of the wood along this beach is from the forestry industry. So yeah pines, so they're easier to tell, long and straight and they got the whirls where the branches have snapped off. So, they make up a big part of the composition of wood that ends up on this beach. There's also a lot of other trees that we use for erosion planting and that's all the poplars and willows. And that native timbers make up another fair proportion of the woods that end up on the beach.
Hera Ngata-Gibson	**00:05:53** People are already being displaced, already being forced from their homes. There's no fronting up, they don't own their sh**. I've heard them to say to people who are just dealing with the trauma of their land and homes being covered in silt, and the forestry representatives have just driven over a bridge that

	was littered with pine and saying, “oh the council guy hasn’t said whether the majority of its pine tree or not”. We’re pretty placid and peaceful people but everyone has a limit, and I’d say that line’s not too far away from people just taking matters into their own hands.
Wi Wharehinga	**00:06:33** We get some anxious, you know a little bit nervous. My wahine’s always saying “oh should we pack a bag”. We always got- we’ve got a generator, we’ve got all of this other stuff, we all try to sleep close together. Actually, when we know it’s raining, we usually put out cars up the top, leave our truck here, cuz if it rains, we can get out on the Hilux, you’ve gotta have a Hilux around here. Just those little things aye we prep now, I guess preparation is the key.
Hera Ngata-Gibson	**00:07:06** You know, people have to remember this is an industry that was forced on us. And yeah, many of our people I think we’re sucked into it, our people who have passed on. I know my whanau members who may have been pro-forestry back in the day, my father was a logger, he’s so anti-pine tree now it’s not funny. I think those who have made decisions pro-pine tree would think twice now. But I think the whole spin around the economic opportunities for this community, well the costs to this community far outweigh the economic benefit. **00:07:43** We can’t dive for our kai anymore. Our seafood beds that sustained us are pirau, they’re rotten, they’ve had it. The cupboards been closed down for a number of months now because of a biotoxin. High levels of toxin in the kai moana. I think in Tolaga it got up to something like 15-16 times higher than the safe limit, and that’s having an impact on our peeps. **00:08:11** We’ve all become weather experts fast. We’re all- we’re surviving. We’re not millionaires here, and so it’s just an ongoing

	battle that we're in for generations to come because many of us aren't going anywhere, this is our home. And whether it's by our choice or the choice of others on our behalf, we've certainty fudged it up – we've made a bloody mess. And people talk about being good kaitiaki and good Māori, aw that's bullshit. Its bullshit. Because you just have to look at this whole coast where we've done a poor job of being kaitiaki – of being Māori.
Te Rauhuia Ngata	**00:08:52** That's alright cuz. He nui tonu a tatou whanau kei roto I te ngāhere e mahi ana. I muri a Gabriel, e tauhuri kē ngā kamupene ki te whakatikatika. [English: Many of us also have whanau working within the forestry industry too. Post Gabrielle, forestry companies have been in clean up mode]. Searching for solutions to deal with highly erodible whenua. Ngāti Porou Forestry is a forestry management company owned by 38 individual land-owning blocks.
Daniel Williams Ngāti Porou Forests General Manager	**00:09:15** So the 38 forests that Ngāti Porou established, they are as far North as Tarere Pōhatu up near Te Araroa, they come right down to Mangatokerau, Tauwhariparai, and Uawa, and then we've got Mangatane out behind Mangatū forest in Māhaki whenua. Not only have things been extremely difficult since the cyclones, they've actually been difficult probably since the middle of 2021. It's a combination of our region's reliance on the Chinese log market. We've also had, a, significant other rainfall events during the last three years. But the climate's changing and we need to evolve with that. You know if we're transitioning away from production forestry and some of these highly sensitive soil areas, then how else can we benefit our shareholders; our landowners so that they can sustain their existence. **00:10:11** One of the biggest challenges we have in Tairawhiti is that we don't have a pulp and paper plant, so we've got no way of utilizing a lot of the material that's left after harvest. It could be

	anywhere from 5-10% of the total volume in the forest is left on site, unable to be utilized by the likes of a pulp and paper facility. So, what we have a situation is whereas companies harvest, what can be sold as log is being transported out of the forest, but what can't be sold in a log format is being left in the forest. And this is the material that is vulnerable when we get these heavy rainfall events. **00:10:50** What Ngāti Porou Forests is looking at is not necessarily mosaic planting, we're actually looking at change – removing exotics over time. What we're working on is trying to find the ultimate regime. We've got a research stream underway with Tane's Tree Trust who are looking at some of the native understory that exists within our forest, and what would be the best way to remove the exotics so that we can allow the native understory to flourish. **00:11:15** Planting natives ain't the only solution. Removing exotics or not replanting exotics along riparian strips – you're probably gonna see a lot of natural regeneration of native as it is. Certainly not having to plant is far more cost effective than having to plant, but where planting is required then certainly that is a solution that Ngāti Porou Forests is considering.
Te Rauhuia Ngata	**00:11:39** Kua noho ko te ngutuawa o Waiapu, hei huanui mō te pina, ka āhua tuki Tikapa ka u ki uta. [English: The river mouth of the Waiapu has become a highway for pine, ending up on Tikapa Beach]. Post cyclone Hale and Gabriel, an estimated 80,000 cubic meters of slash and woody debris covered both Tikapa and Port Awanui beaches.
Graeme Atkins	**00:11:57** Yeah so from the Ngutuawa which is probably about 5 or 6 k's that way, down to Port Awanui – this is probably about halfway – so yeah, 11 or 12 k's of beach and its just like this all

	the way, chock-a-block with wood, so yeah, this is a year in the making, all the wood hasn't gone anywhere it's just been bleached from the sun over the year. So, going back 5-6-7 years, you can see all the different storms that have been, and they leave their mark. From 2008 onwards was when they- all those Bola plantings they all got ripe at the same time basically, so 2008 the harvesting began inside the catchment and that's when we've started to get all this wood delivered to our beach. **00:12:55** Some years are worse than others. And that relates to the frequency of heavy rain events. They end up washing- big storms wash more wood basically, and that's what Gabriel was. These are pines, some of them have been lying in the rivers for a while and they've got um- you can see they look old, but there's a lot of other fresh logs that have washed down. So that's the issue, is that there's so many other logs that are lying in all the upper parts of the Waiapu catchment, we've seen them from the helicopter. And they're just waiting there till the right amount of rain falls and they end up being mobilized and washed to sea and then washed back up on our beach. So, never-ending struggle really. **00:13:48** Our poor whānau are really doing it hard. So, from the hay days where it was like every couple of minutes boom you'd just pass a logging truck, we've seen nothing on the roads at all over the last few weeks. And so, for people for people who have mortgaged themselves up to their eyeballs purchasing heavy machinery and paying mortgages and everything for your whanau, that's got to be hard. So, forestry will be here but I just don't – you know it'll always be here but I just don't think it's going to be on the scale that it was before all this bad weather hit us in 2018.
Te Rauhuia Ngata	**00:14:26** He hōhā te iwi kainga o Tikapa ki te takaroa o te tarake otaota, nōna tata nei, tahuri kē rātou ki te whakatika i tātahi. [English: annoyed with the lack of urgency to clean the beach,

	some local Tikapa residents recently took it upon themselves to clear the beach]. Starting a series of fires which ended up out of control – and that went viral – since then the cleanup has begun.
Graeme Atkins	**00:14:45** So yeah, progress. Look's a bloody mess at the moment but yeah, mother nature has a way of softening things, and so yeah, the beach will look beautiful again. First time in nearly three decades.
Te Rauhuia Ngata	**00:15:03** Ko Aratu Forests tētahi o ngā kai pupuri whenua ngāherehere rahi e 3 o te Tairawhiti. Ko nga mahi katoa kei roto tonu I te rohe. [English: Aratu Forests is one of the top 3 largest landowners of forestry on the coast. All its operations are local]. Established in the 80's, they have 35,000 hectares of land that they own, or, are in joint ventures with Māori landowners. Ko te maharahara nui o Aratu, ko ngā mahi ngāhere ā muri ake nei. [English: For Aratu, it's concerned about the future of forestry on the coast].
Neil Woods Aratu Forests Limited CEO	**00:15:33** We do and want to collaborate with all the experts that there are, but frankly, some of the challenges in front of us in terms of how you treat certain land areas is pretty daunting. I guess the terms and regulations that we're facing now, in my view, what they're looking to do is firstly pin all the blame of slash movement on harvesting operations. And in our experience in Gabriel, that is probably around less than 10% of the wood we saw move was from harvesting operations. What we saw more of was mid-rotation crop failures where large volumes of 12-13-14 year old trees had been planted and harvested once before – this is the second crop growing – that whole hillside let go. That

	ends up in the waterways and where we've seen it go. They should be limiting the amount of wood we leave on cutovers at time of harvest etc. etc. **00:16:27** One of the concerns I've got is slowing down harvesting which is one of the factors that will come out of rule changes potentially could make the problem worse. The trees will get bigger, they will get heavier, they will be still on the slopes. If we get a big storm the impacts of that in terms of ability to slip over is higher and the damage they'll do downstream is higher. So, ironically, slowing down harvests will actually potentially make the situation higher risk than what we've got today. **00:17:00** I guess now that the symptoms of climate change are being seen more frequently, we are seeing changes in the last couple years of our crop. So fungal diseases are higher, we're having wetter, warmer winters. We're looking at, if storms are going to cause erosion and hillside collapse, we're quite active in retiring areas within a tree length 50 meters of streams and rivers. Planting that in native or letting it revert. And I think that's the challenge, you know there's 120-130,000 hectares of plantation forestry on the coast. It's a massive land use challenge before you start to think about other land uses. We'll be experimental, some of which will unfortunately provide a legacy that, in the future people will wonder what we've done.

Transcript: Episode 3: Part 2 - Ngā Rākau Horo | Why Apu?

Kaikōrero	Kōrero and Timestamp (live link to kōrero)
Te Rauhuia Ngata Kaimataiao/Uawa Resident	00:00:00 Climate change, extreme weather, and human impact are all major factors to the new environmental norm in Te Tairawhiti. Mai ngā maunga ki nga moana, ka apu haere. Our whenua's being devoured, our riverbanks consumed, our moana left with the aftermath. He apu whenua he apu tangata, this series explores the Why? 00:00:50 I patua kino te Ākau o Tokomaru. I turakina te piriti ki tūranga, waihoki I tāihatia te 35 taera wā ke ki Te Puia. He māharahara nui te riu o Mangahauini, kei reira tētahi o te haukāinga e noho ana, a Wi Wharehinga me tōnā whānau e noho pata tana ki te awa o Mangahauini I raro tonu I tētahi horo nui. [English: Tokomaru Bay was hit hard, with the bridge to Gisborne wiped out, and state highway 35 to Te Puia blocked. A major concern was the Mangahauini slip. Local Wi Wharehinga and his whanau live right on the Mangaahauni river just underneath a major slip].
Wi Wharehinga Tokomaru Bay Resident	00:01:16 There was water everywhere, all around us. The river had burst its banks. And there were logs all over our grass. So our driveway, that was like covered in silt. And, like, it's just got grass, just in like the last couple of months it's sort of flattened out but that was silt under the house. There's still traces of silt under our whare. Those chickens are a result of Gabriel. You know there was no eggs at one time when Gabriel was around so we bought chickens and [are] self-sufficient now. 00:02:00 This is the mighty Mangahauini. So the river wraps around there, comes around and wraps around there. There's rākau all through there - it's not very nice anymore. But the

	water came through here it's like a powerful river. And we're talking about like trees like this – floating – like big pine trees floating down the river. It was pretty freaky because all you hear is like 'crack' 'bam' - the river being carved out. Obviously that's the 35 from the riverside – the big slip that's an impact from Gabriel, even from Hale. It's made the river wider now, the river was never this wide. 00:03:03 This is where we swim, where we rama tuna. But yeah, it's paru aye, the water's paru. And you know it'll be fine and it won't rain for days, but it's the silt, you can like see the silt. Soon as you put your foot in the water it just goes all murky. We don't really drink the water now we just buy bottled water. You know so much sediment and stuff in the water, from the line we're on a spring but that springs got too much silt in it I think. 00:03:43 You know I guess our tīpuna and our people before us thought they were making the right decisions for us, and they probably were at the time you know, but now we have to live with all the impacts of it. I think if we could change time I don't think they would've whakaae to the way we treat the environment and our taiao. I don't think the Mangahauini's ever going to be like how it used to be. We can still swim in it though, but you know its not like, yeah, it still feels sort of yucky, actually.
Te Rauhuia Ngata	00:04:22 Ko Ernslaw One Limited tētahi atu o ngā kamupene ngahere rahi I Te Tairāwhiti. [English: Ernslaw One Limited is also one of the bigger forestry companies on the coast]. They own 95,000 hectares of land across Aotearoa, 30,000 of that is right here in Tairawhiti.
Darren Mann Ernslaw One CEO	00:04:38 Ernslaw One's been operating in New Zealand for the past 34 years, and almost 30 of those have been in the Tairawhiti district. Where that sits is inland Te Puia in Mātā forest

	which is our most Northern Forest, and then down through the Tokomaru Bay blocks, inland Tolaga Bay, and then out into Moonlight in the South West. 00:05:02 We have weak geologies or highly erodible country within our estate. And what we want to do is apply a science-based approach to actually determine those that are the weakest and perhaps aren't appropriate for growing pine in the future. We've enlisted the help of Mike Marden and his geological expertise to help us with that. And once we've done that, we're then able to make some prudent decisions around harvesting and planting, or replanting. And that may not necessarily be another exotic species 00:05:35 And I actually wanted to take the opportunity to explain the difference between woody debris and slash. Slash is what we refer to as harvesting residue, its wood that's actually left over from a harvesting operation. So, on one side you got a post-harvesting operation where there is material delivered called slash, and on the other side you've got standing trees that have made their way down. They are both forms of woody debris, and this is– getting that understand is– will go some way in terms of us finding that ultimate solution for Tairāwhiti. 00:06:11 There are some improvements that we can do around slash management. But there's a bigger issue and its really about land use. So, if we have standing trees that aren't supporting themselves in heavy rainfall on some of those weaker geologies, then what is the sustainable land use solution for Tairāwhiti?
Te Rauhuia Ngata	00:06:31 He hōhā nō te iwi kāinga ki te whakatikatika, hoki atu hoki atu, ka kōpuni katoa rātou I raro I te maru o te Mana Taiao Tairāwhiti. Ka whakaritea te petihana I ā kina Te Pakirehua me nga Minita o te Whakamahi te Whenua. [English: Sick of cleaning up the ongoing situations, locals got together

	under the banner of Mana Taiao Tairawhiti, creating the petition which lead to the Ministerial Inquiry into Land Use].
Hera Ngata-Gibson Mana Taiao Tairawhiti	00:06:49 I guess the importance of Mana Taiao Tairawhiti – the big one is we're noisy, and we're not going away. Our people just got tired of being smashed by wood debris, and where we landed last year off the back of cyclone Hale, was– just felt we weren't being heard. And a group of residents from within Tairawhiti, many of us hau kāinga, put together a petition. And of course not long after Hale came, Gabriel, and really just opened everyone's eyes to the world we live in.
Manu Caddie Mana Taiao Tairawhiti	00:07:29 We had nearly 10,000 signatures within a couple of weeks and took that to a council meeting in January, and the night before, a young boy had been killed at Waikanae beach playing with in the water, in the shallows but with logs around and one had crushed him. And that really kind of set the scene for the presentation of the petition.
Rahette Stoltz Mayor of Gisborne [Video excerpt]	00:07:57 It's been a real community effort, we are here today to listen to you and make a plan on how we move forward together.
Manu Caddie	00:08:07 We had good support from council there and that was for this inquiry. It was to review the rules around land use in the region. And it was the start of working on a just transition plan – what does a transition from the land use that we've got to the land use that we need look like, and how do we look after workers and create jobs in that process. It wasn't just about forestry, it was about farming as well and what we've done to the region over successive generations.

Hera Ngata-Gibson	00:08:38 The exercise of [the] Mana Taiao submission where we had heaps of researchers, but the amount of documents and reports. Some of the stuff I read [just]made my blood boil some more anyway. The advice government's own scientists were giving them over, since the 80's, and just being ignored. It's just – aw boy, you just want to slap some people on the nose.
Manu Caddie	00:09:05 Part of the work that we did with Mana Taiao Tairawhiti was getting the rules changed locally and nationally, and that's been exciting to see and we're hoping that the kind of clear felling we've seen, like up the back of Tokomaru Bay where 4,000 hectares were clear felled all at the same time, will never happen again on the coast – that's just outrageous. And we've had these experts come from around the world recently to audit some of those forests and talking to us they said they've never seen anything as bad as what they've witnessed in Tairawhiti. This is the worst in the world in terms of the ecological and environmental issues and erosion but also the forestry practices and how poorly the forests – the plantations have been managed.
Te Rauhuia Ngata	00:09:50 And so, the Ministerial Inquiry into Land Use began, the honourable Aunty sis led the way.
Hekia Parata Chair of the Inquiry into Land Use	00:09:56 I was told that it was to be a short, sharp, 8-week inquiry – that it would really inform the government's decisions about where and what to invest as a result of storm damage and so forth. But of the 49 recommendations, they addressed the system failure in Ngāti Porou and across Turanga, and they made very practical recommendations about what should be

	done about that. From moving to a new planning regime – a mosaic approach. What will the whenua best respond to? What will the catchment of water be most capable of supporting? Whether in terms of slash and silt, land use, land inaccessibility for almost all the whenua Māori blocks in this area, the lack of consistent management of our rivers, of the Waiapu and Waipaoa, the infrastructure and its lack of resilience, and there is no redundancy. We don't have a default, when state highway 35 shuts, that's it, there is no other plan B that we can take. 00:11:00 And one of the criticisms we made in the report was the failure of leadership and governance by the Gisborne District Council. And we pointed out what those failures were, but we also said we recognise that this is a very depopulated area, it has very thin tax payer base, it's very complex land, it's a long a coastline–challenging coastline, and so forth. And we made practical recommendations about how those could be addressed. 00:11:28 Of the 49 recommendations, 4 were agreed to. So it was a pretty pathetic response to a very courageous, and practical, cut through report. And the thing to know about this is that it's urgent. It was urgent then, it's urgent now. And that wasn't an opinion that was factually evidentially supported by land care and other scientists who have told us unambivalently that we have got 5-10 years to rectify the system failures i.e. what you plant and where you plant, how you manage the rivers and streams and coastline, what kind of planning requirements there are and so forth. Otherwise we are very much at risk of wholesale land collapse as the Raukumara Ranges push the whenua towards the coast, and the coast encroaches. 00:12:26 The good news is that all those scientists have told us that we can remedy the situation. That the silt that's coming down, over half of it is because of untreated gullies. Before cyclone Gabriel, there was something like 1658 gullies, and if you think of those as open wounds on our whenua, then, just

	like hakihaki on the body, if they are treated and cared for they will heal themselves. That will stop the silt coming into the rivers. 00:12:58 We do have to change the way land use occurs. We do have to say that 30 year crop of pines that are up there already, how do those get safely brought down so they don't bring whole hillsides down with them. Now that's a discussion between forest owners and the Gisborne District Council – that discussion is happening now – I very much fear that it's really going to go to some sort of average agreement rather than being really courageous and saying "no its got to be brought down really safe". We recommended for instance really stringent rules around clear felling, and those had a very poor reaction, because, of course, forest owners have invested money in growing those Pines – that crop is just about ready – so telling them as our report did, well you should only be harvesting very small amounts at a time, adds expense to their industry -we understand that. Our view was "well you've been able to take trees out of here for the last however many years, and you are culpable in your practices, and we have to change those"
Te Rauhuia Ngata	00:14:10 Post the enquiry, the outrage to optimism report was released. Mō ngā pāpātanga me ngā putanga iho, he rerekē te uru pari a tēnā, a tēnā. [In terms of the outcomes and impacts, it's been a mixed bag of responses].
Manu Caddie	00:14:20 As a result of that there's been some changes to the rules at a local level so that's really encouraging, and at a national level before the election Labour changed the national environmental standards around plantation forestry, and tightened up on what can happen on erosion prone sites. So that's super encouraging. And it kind of shows that, if we leave it up to Government, change doesn't happen – it needs people

	on the ground to mobilize [and] get organized. It's not a silver bullet that's going to solve everything but those rules changing are a big deal for the industry and a big deal for the region.
Nedine Thatcher Swann Gisborne District Council CEO	00:14:59 There are a lot of aspects in the report that we can agree needed to change for our region. We supported Te Mana Taiao in their petition to Government to look at our issues that we had around woody debris. We do believe at the time of the report we were doing things such as our enforcement regime and stepping up and undertaking the plan change. Some of those while we worked with ministerial appointments were slowed down in the later part of the year. We're progressing to put in place the plan changes that are required to better ensure that we've got the right land use practices in the right place. Again we're doing this in partnership with iwi and the Crown to ensure we can collectively manage our region.
Daniel Williams Ngati Porou Forests General Manager	00:15:48 One of the recommendations from the enquiry was that the Government really needs to come in to region and help with the recovery. I can't emphasize that enough. It was actually the government who made the decisions around land use back in the 70s and 80s and incentivized land owners to plant these trees on our whenua, so it's only right now that the Government is actually coming and help funding the recovery.
Hera Ngata-Gibson	00:16:15 I feel for our local government, our local council. Yeah they haven't got things right sometimes, but they wear a lot of it. But central Government has a lot to answer for. They've sold us out, they've sold communities like ours out to people who don't even live in this country. Whether it's for production forest or whether it's for carbon bloody credits, they've committed us to unrealistic carbon targets.

Hekia Parata	00:16:48 After cyclone Bola in 1988, I was in Prime Minister David Lange's advisory group – I was his official that was sent up here to be a part of the negotiations of what should happen now, what should the government do – and forestry was absolutely seen as the biggest answer. How did we keep the land stable? How did we do it in a way that created jobs and economic employment? And it has created jobs, there are generations of forestry whanau at home where grandparents and great-grandparents and now their mokopuna are working in the forestry industry. However, there has to be a plan of safely moving out of that industry, or at least that kind of practice in the industry, and saying well what are our other options. 00:17:33 I guess the biggest shock to me was just how much is failing. 98% of indigenous biodiversity is no longer present in our whenua. So it is urgent to start replanting the plants that this whenua responds to.
Neil Woods Aratu Forests Limited CEO	00:17:49 The fact there was an enquiry was good and it needed to happen. The outcome of the enquiry, I think what its introduced actually is a huge amount of uncertainty, and that's probably the worrying thing now is what are the next steps if the uncertainty around the review and how people might interpret or use that to create a knee jerk reaction to some other things and assume that will be a gold-plated solution is the concern. So, it does drive away investor confidence the fact that this uncertainty exists about how much can we harvest, how much can we replant.
Graeme Atkins	00:18:27 One thing that's come of the outrage to optimism report was branches or wood that's up to 200 mm and greater is not allowed to be left on the slopes after harvest, so, they

	have to remove that size wood up, so that's one good thing. The issue with the council is that there's just so much of that harvesting work going on across the whole catchment that the policing of that is probably going to negate that. It's something, but yeah, how do you police that where harvesting companies are going to abide by that rule.
Manu Caddie	00:19:04 The issue of woody debris in waterways and in the beaches and in the marine environment, it doesn't address the issue of sediment and farming on erosion prone land. We felt like that was a big gap in the enquiry, so still looking for changes there, but its been encouraging to see councils around the country also looking at steep slopes and erosion prone areas and saying "actually guys, we've been doing this for 100 years, it's not working out so well and we need to tighten those rules further.
Neil Woods	00:19:35 There's been a series of meeting with council regulators, scientists, forestry companies, all in the same room trying to figure out what goes next, where the science sits to support the decisions, what other ideas people have. The forestry companies are also doing their own thing so I think it's in our interest to have a viable business so we will share that stuff pretty rapidly.
Nedine Thatcher Swann	00:19:57 Last year through Gabriel, we laid about 16 abatement notices to the companies, and we also put in place 2 enforcement orders which is to ask those companies – or to require those companies to clean up the area where we can see that there is woody debris that may be mobilized. And it's not a quick fix, it requires all of the community, the companies, our

	iwi, central Government, to all be engaged around trying to solve this problem for our region.

Transcript: Episode 3: Part 3 - Ngā Rākau Horo | Why Apu?

Kaikōrero	Kōrero and Timestamp (live link to kōrero)
Te Rauhuia Ngata Kaimātaiao/Uawa Resident	00:00:00 Climate change, extreme weather, and human impact are all major factors to the new environmental norm in Te Tairāwhiti. Mai ngā maunga ki ngā moana, ka apu haere. Our whenua's being devoured, our riverbanks consumed, our moana left with the aftermath. He apu whenua, he apu tangata, this series explores the Why? 00:00:50 I te tau kōtaha, he mahi nui tō te iwi kāinga, ngaherehere, ngā whānau, me te kaunihera, ki te whakatikatika. [English: Over the last year it's been a major clean up by locals, the community, forestry, and the council].
Nedine Thatcher Swann Gisborne District Council CEO	00:01:00 We got about $53 million dollars from government to help clean up our region. We estimated there's about 1.9 million tonnes, and we've managed to clean about 200,000 tonnes of woody debris from areas that may impact on our infrastructure and risk to life. It's a huge job, look I was around in 2018 when we had the Queen's Birthday floods in Uawa, and we knew then that there was a massive amount of woody debris in our mountainsides still waiting to come down. And through that, the council undertook seven successful prosecutions against the forestry companies for their poor practices around managing woody debris. 00:01:53 Fast forward to where we are now, Council's been working around plan change and identifying some of the most – so we have 3A overlay land which is the most severely erodible land, but there's a new classification that we're looking at which is 3B

	overlay land, and that's identifying areas that are susceptible to erosions and where we maybe want to revert and manage that land better.
Te Rauhuia Ngata	00:02:18 Rangitukia local, Chubb Rewi, is one of the former loggers helping with the large woody debris recovery. Koia te tāngata, e tārake ana I ngā o tōtō maha I taiapatia a Makarika, I muri I te huripari o Gabriel. [English: He's been cleaning up the huge amounts of debris that left Makarika cut off after Cyclone Gabrielle].
Chubb Rewi Rewi Haulage	00:02:41 We're here on Karewa road in Makarika, this is part of the Makarika Valley. We've started this particular area with the large woody debris recovery and our contract with Gisborne district council and iwi is to just recover, stack and burn. The guys that are in here at the moment, we were logging in Waipiro. After Garbiel, well actually Cyclone Hale first, we stopped our access in to Waipiro Bay, and then Gabriel, so all our equipment was stuck in the forest there for about 6-7 months before we could get it out. And then this mahi came up so we just repurposed our logging equipment to do this. 00:03:30 All this area was underwater, we just have to take the bigger stuff out and the small stuff hopefully will just rot away into the ground. The big challenge we're facing, is, when the trees have got the root balls on and they're half buried, then its massive to try and pull them out from being buried. You can see their whole stems – they haven't been processed logs, those were standing trees and they've just been washed down so that's the force that Gabriel had and it could wash out fully grown trees.

	00:04:05 When it came down to it, stacking and burning was the most economic method of doing anything with it. Apparently as long as we get it up to full temperature then it'll burn cleaner than anything else. And chipping – you just can't chip wood that big. To extract these out of the rivers, out of the waterways would have taken all of a couple of weeks. A lot of it was buried so the guys would put their grapples in, pull it up and then it's just whole trees at the end of it. When we first come in you couldn't see the gravity of how much there was, it wasn't until you actually started doing something and then it just was like an unending amount of trees that were all through – had been forced into the waterways. 00:04:56 This is probably a half a rugby field, just this one stack, and we're burning another stack that is probably twice the size. So the problem too is trying to burn those is they're still wet. Not everywhere is like this, this is probably quite a unique area in that the size of the wood. I actually thought we'd have this done in a month or two , but then weather conditions slow you down, but. we sort of need another few years of good dry weather. And like I say it's not only us, there's been a lot of harvesting contractors that have thrown the towel in – they've just had enough.
Te Rauhuia Ngata	00:05:43 Forestry companies know they must change their practices in highly eroded areas. Engari, he pēhea te wawe o kōruretanga? Kai te rere te wā, a, he tere ake te kimi I tō tātou rongoā. [English: but how quickly will this change come? Time is ticking faster than we have]. Is it mosaic planting? Is it planting the riverbeds with natives? Or, is it a full retreat from forestry? Kei hea ngā rongoā?
Nedine Thatcher Swann	00:06:08 We all need to move past blame, and actually take responsibility for what we can deliver.

Hera Ngata-Gibson Mana Taiao Tairāwhiti	00:06:17 The only thing that matters to this community is no more – no more pine. We continue to plant pine, we continue to commit future generations to this – in fact, worse than this. I mean just Gabriel alone has taken metres of whenua, and if this is the rate that our land is disappearing, our community, our school which is just here, is at risk. I'd say in 20 years, we'll be seriously thinking about "oh, we better relocate this community". People talk about rising sea levels, it's not rising sea levels its rising river beds and rising sea beds. So the wood debris settles on the sea bed, on the river bed, the silt settles on that, well obviously the water still has somewhere to go, so it comes and takes a bit more land.
Neil Woods Aratu Forests Limited CEO	00:07:07 Some will say "no pines anywhere on the hills and only native", but I think it's more transition. We're not going to walk away, we will transition some areas that we got to other economic uses, be it carbon, I mentioned biodiversity. We will retain some trees on some of the land we own. Some of the land we don't own but has trees on it and the landowners want to maintain trees on those so that's their decision. Some of the very high risk land, figuring out how we can manage that and potentially make a return off it or at least cover the costs of managing that, and where we can best grow trees and it's safe to do so.
Hekia Parata Chair of the Inquiry into Land Use	00:07:49 So having cleared it up though there does need to be funding and support for infrastructure for dealing with the aggradation in the bottom of the streams. You can see now where bridges where it used to be, someone told me the other day you could literally ride a horse under and you'd have to reach up really high to be able to touch the bottom strut of a bridge, now, you can actually just walk through with your head down because the aggradation – a word I learnt on the inquiry of how much the creek

	beds and river beds are now rising – which means - puts the bridges at risk because if there's nowhere either for the water to go or for those logs coming down, course they're going to start bashing into bridges and wrecking roads and fences and so on and so forth – so there has to be a next kind of step which is what kind of planning is going to be in place.
Darren Mann Ernslaw One CEO	00:08:46 I think that a partial retreat of forestry in our worst areas is an option, but we just need to be– apply that science-based approach to determine what those areas are.
Graeme Atkins Tikapa Resident	00:09:02 If you could keep all that wood waste on the slopes or on their properties – and you might be able to do it by having like 100 metre-wide riparian's on all the main creeks in their forests estates. So 50 metres on one side of the creek and if its planted natives or letting natives come through naturally so that they'll act as a buffer/barrier for when there's heavy rain events and this stuff here slides off the hills and its caught by big wide strips of native bush – that's probably something I reckon that they could do straight away.
Chubb Rewi	00:09:40 When the demand is high, everybody just throws everything at it. So soon as China starts putting the log prices up, every man and his dog will start trying to sell forest. And that's where the problem comes from. Rather than them controlling the whole industry and saying "no actually this is what we can do that's good for the economy, good for the environment" [and] manage it, rather than just flood the market every time the prices go up. Talking to some of the forest guys, under the new rules it would take them 75 years to harvest their forests, because they're only allowed to harvest a percentage of it.

Manu Caddie Penu Resident	00:10:26 We get a lot of push back from industry saying “oh the rules are too tough” or “we’re changing, just trust us”. But what we’re also seeing while they say that is more companies being prosecuted for breaching their already lax rules. So I’m not sure how they’re going to go once the rules tighten up, and a big risk is the rules get so tight that the companies just walk off the land and can’t make forestry viable in this region. But it’s also Crown encouraged pine to be planted, they subsidized it, they paid for it, then they sold those plantations off overseas – more than half of it – and so the Crown’s going to need to take responsibility for fixing what’s happened in this region.
Daniel Williams Ngati Porou Forests General Manager	00:11:08 We’ve been in the ETS now since 2012, collecting carbon credits to distributing carbon income to our land owners. There’s options around permanent forests that some of our land owners are seriously interested in, “well how about we just leave that forest and continue to get carbon so that we don’t expose our soil to those heavy rainfall events that are happening more frequently”. There are challenges around that, and we are working with companies who are actively transitioning forests. What transitioning forests means is slowly eliminating the exotics on site, not harvesting them, either poisoning them or waste thinning them, so that you allow the light wells to come in to allow the native understory to grow and hopefully flourish, and then you got a continuous tree cover without what we call in forestry a ‘window of vulnerability’ – when you harvest a face, and then until you can get effective tree cover back on that face can be several years, in that period if you get a high rainfall event then that land is likely to slip if it’s in a vulnerable geological area. 00:12:21 We’ve also been talking to the Runanga about their forests which have limited carbon opportunities, but they have opportunities around the biodiversity space and the ecosystem

	service credit space. What that also does as well it allows the landowners with those forests that may qualify for these credits, it diversifies their exposure away from the emission trading scheme alone – which is highly political.
Hekia Parata	00:12:50 We are likely to be I think at the front of making climate adaptation decisions, and that's why again I would commend the government to say "okay, lets trial things in this area because these communities are alive and alert to what the challenges are. We want to create the conditions where we can make different choices, and it is urgent. Our report says we've got 5-10 years".
Nedine Thatcher Swann	00:13:15 I think we're just trying to move on. We've got a lot of commitments that we need to deliver on. We've got roads that are still damaged, bridges that are still broken, a flood control scheme that is still in planning stage – so it's still early days. I think we're worried about what happens in the next weather event, but I know we're more prepared. The sun gives you a bit of respite, but its what's around the corner that really matters. And it's how we work together for our region to restore and heal ourselves, our whenua, our moana – that really matters, its actions that count.
Te Rauhuia Ngata	00:14:03 But the big question, pēhea te aho tō tātou kōkiri ngātahi? The government has given an extra $25 million towards the slash recovery – but that's just for the cleanup. He pēhea te āhua o tō tātou tirohanga whakamua?
Daniel Williams	00:14:19 Using the best science so that we don't repeat the mistakes we've made in the past. We learn from the lessons, because ultimately when you're putting a tree into the ground that's a very long-term decision.

Neil Woods	00:14:31 Without a viable industry employing the workers and the land managers, there's no one here to do the management and maintenance, you can't just let it go wild because it'll get full of goats and deer and possums and rats and everything else. So, you actually need to apply the appropriate managements techniques for the land at the time. So, that's the critical concern for me is that the people that are passionate about doing that get driven out of the business, out of the sector, and we lose that skill and passion to actually transition.
Hekia Parata	00:15:04 Together with community support that we might persuade this government that's really focused on being pragmatic, priority of good infrastructure and so forth, to use us; to work with us to not only turn our region around, but to showcase to other regions this works in these circumstances.
Hera Ngata-Gibson	00:15:26 Its harder when your blood is in this land because it's all we know as home, and so you really don't want to have to leave unless you're forced to. The impact that the forestry industry is having on our community is something that could very realistically force many of us hau kāinga off our land, away from our home, to go find new home, because its so unsafe here.

Transcript: Episode 4: Ngā Mate o te Taiao | Why Apu?

Kaikōrero	Kōrero and Timestamp (live link to kōrero)
Trash Koia Penu Resident	00:00:03 You know we always thought about climate change coming, but it's here, you know, kei kōnei ināia tonu nei, so we do have to respond – like we can't just be sitting around just talking about it because I come up the block every day and I see the changes constantly on a daily and weekly basis, so, it's real māharahara.
Gary Brierley Physical Geographer	00:00:28 Personally, I'm absolutely sick of the word resilient and resilience – I think it's just the wrong word. In many parts of the world now, communities are sick of being told they need to be more resilient – they are completely over it – Because that doesn't give any solutions to things that they didn't necessarily cause or create themselves. I actually think we need transformative change.
Heketerangi Tuwhakairiora Blacbee Ruatoria Local/Director of H Blackbee Contractors	00:00:52 Our bridges are the most important. You know, a bridge gets cut off over here, or another big slip comes down in the Mangahauini, we're all cut off. You know and the 35 is our main blood vein, for us, you know, both ways.
Te Rauhuia Ngata Kaimātaiao/Taiao Educator	00:01:09 Climate change, extreme weather, and human impact are all major factors to the new environmental norm in Te Tairawhiti. Mai ngā maunga ki ngā moana, ka apu haere. Our whenua's being devoured, our riverbanks consumed, our moana left with the

	aftermath. He apu whenua, he apu tangata, this series explores the Why? 00:01:58 Matai nuku, matai rangi, matai ki uta, matai ki tai. [English: Examine the land, observe the skies, scan the shores and examine the oceans]. This episode concentrates on climate change and the experts along with our communities' observations.
Cushla Tangaere-Manuel MP for Ikaroa-Rāwhiti	00:02:13 I think first of all its important that we acknowledge that climate change is a thing. Number one is acknowledging it, number two is supporting the expertise of the people who are making recommendations about how we can address it, and number three, I have to say whanau, is just being better citizens and thinking about our own actions in our own backyards.
Manu Caddie Mana Taiao Tairawhiti Spokesperson	00:02:35 We're facing a much-heightened sense of appreciation for the changing climate and weather extremes seems to be within the community which brings concerns, but I think it's better we're concerned than unconcerned about those things personally and we just need to find ways of accepting some of that, planning for those changes. And for some people that means that they leave the region, it's just too – they're too vulnerable in coming years and other people will dig in and survive and try to make the best of it.
Tarsh Koia	00:03:09 So what it essentially means to me is from the sea to the mountains we will strategize to not only survive but to thrive. To plan creatively and to act courageously. And that's what my tipuna have left as a blueprint; as a model.

Te Rauhuia Ngata	00:03:27 Tuku whakaheke, tuku whakaheke, tuku whakaheke. Local scientists and taiao experts have been busy as they track the current climate change indicators. Me te whakatau i te ahunga whakamua mō ngā tau e heke mai ana. [English: And to get the best advice in terms of future solutions].
Murry Cave GDC Principal Scientists	00:03:44 The overall things will be warmer, and we're going to have far more drought periods, but we're also going to have more extreme weather events. And so, for those extreme weather events, the amount of rainfall coming down on them will be greater than what we have been experiencing in the past, and to the extent where we have people talking about 1-in-100-year events, we're stopping talking about it in actual terms because it doesn't really mean anything anymore. When they do happen, the impacts will be greater. So, you actually got to then work on "okay, how can you mitigate those impacts?" And that is through just having better land use. 00:04:20 We've had four marae within the region classified as Category 3 in Gabriel, so that means that those marae's will end up being relocated somewhere safer. Rangatira marae, 2.6 meters of water through that marae and that's almost unbelievable. And, again, up in Uawa we have two there where those maraes just get flooded and the risk is too great in the future. So, that actually highlights another issue about longer term, you know, if weather changes like it is, are we going to have more marae that need to relocate over time? It's going to be a difficult issue that we're going to be facing I think within the next 5-10 years.
Graeme Atkins Kaitiaki Taiao	00:05:03 The silt is having a huge impact on our moana, you know it blocks the sunlight in the water columns, so, which means less sunlight hits the seaweeds and stuff. Less seaweed means less

	habitat for fish, less kai for fish, less refuges for small fish to hide. So yeah, just a general decline in sea life over the last 10 or 20 years. The changes have been pretty negative and so we keep an eye on populations of birds along our coastline, penguins, grey-faced petrels or ōi, on Whangaokeno and at Waimahuru, and monitor them, and they give us a broader picture of the wider – especially the marine in our rohe. 00:05:51 With the recent La niña, and the warmer oceans, a lot of the populations of birds have been doing it really hard, and not just the birds some of our marine mammals like our fur seals, we've noticed big die backs. And the young fur seals, and a lot of them are real emaciated. That's because the food that they normally eat because of the warmer sea temperatures, they go deeper or further out to sea.
Tui Warmenhoven Ngati Uepohatu, Hapu Lead, Mana Taiao Tairawhiti Spokesperson, Researcher, Greenpeace Chair	00:06:18 So, all the land erosion, all the woody debris that's coming down in a deluge during these extreme weather events that we've had multiple back-to-back events over the last 5 years, have impacted this area – this precious resource. A lot of our marae are on or around the coast, we get most of our kaimoana here which is paua, koura, those are our two main ones here, pupu, and then of course all our fishing happens here and around to the rocks there. So, these places are- they're hammered, completely thrashed. On the few times that we went out the summer just gone, very scarce the kai now. 00:07:07 Where you would normally find a paua or maybe a koura, you're finding a handful of twigs and pinecones, and everything's all matted up like little mini log jams under the ocean. But more alarming is the film, the sediment film, and the muddy, slippery, gooey, mess in that part of the rocky shore that's really the habitat

	for all our kai moana. So, I wonder what it's going to look like coming back and how long that's going to take.
Murry Cave	00:07:44 The amount of sediment that's come down and the impact that's actually having out in the ocean is the one piece of work – it hasn't been finished yet – its work done by Niwa, looking at what the inundation of sediment on the seabed is actually having on the fauna. And, the idea is over the next few while we'll actually get that analyzed so that we can actually work out what's the relationship between what we're seeing in the ocean, in the shallow ocean, and the impact on the fauna, and where it's all come from. What different land uses actually contributed the most for that impact out in the ocean.
Gary Brierley	00:08:19 Well for what I do as a landscape scientist, as a geomorphologist, part of my job is to understand how my rivers do what they do, how they adjust in the way that they do. So, the beauty of the East Coast is that each of the rivers has got its own soul – its got its own way of doing things. And working that out, right? How the geologic response and the climate response and the human response is so different in our different rivers. 00:08:47 So, we know climate change is coming, we know the reality of what it brings, but we're still stuck in response crisis management – never actually getting to coherent planning for what we could, should, ought to be doing, because the information base is there, both from science and from a local knowledge perspective, they're actually aligned remarkably well.
Te Rauhuia Ngata	00:09:11 Earlier this year, locals got together to acknowledge a year on from cyclone Gabriel.

Manu Caddie	00:09:22 We're here at the Ka Mua Ka Muri Resilience Research Symposium as an opportunity to bring together lots of local researchers who have been working on projects before, during, and after cyclone Garbiel, and to allow the community to see what kind of information, and findings, evidence, are available for them to use we go about advocating on behalf of the community for change amongst ourselves, within the region, and also to central government and perhaps even beyond overseas.
Tarsh Koia	00:10:02 So we're in this state of imbalance now, ko tītaha, and how do we get back into balance? Because Papatūānuku telling us "ka nui, he me whakarongo tatou".
Dana Kirkpatrick MP for East Coast	00:10:15 Gisborne finds itself in a difficult position and I don't need to explain this to some of you here, you'll be well aware of it. But the council has a low-rate payer base, high levels of deprivation in its population, and a below average median wage with enormous geographic challenges. And I take my hat off to the council for the decisions they made around cleaning up quickly and trying to provide some hope.
Orini Rokx-Taratu Tokomaru Bay Local	00:10:39 What happens when bridges collapse, roads are flooded or washed away, power is cut, and telecommunications are down for days or weeks at a time. We're looking for an insight into how the loss of connections impacted whanau and communities.
Cushla Tangaere-Manuel	00:10:55 We have been the fruit bowl of this country for so long, and we can be again. I think we're all at a juncture now where we appreciate, we know better now, it's time to do better. I know people

	are tired of hearing the korero “right tree, right place”, but that’s the reality of where we are.
Te Rauhuia Ngata	00:11:15 Ko te waipara tētahi āhuatanga nui e patu nei I tō tātou taiao, awa mai, moana mai. [English: Sediment is one of the biggest impacts currently affecting our environment, affecting our rivers and sea].
Kerry Hudson GDC Soil Conservation Team Leader	00:11:25 The issues we face here are a little unique. We’ve got very soft underlying geologies in Tairawhiti. We’ve got a lot of large sediment which is, you know, what is taken out of the river, that is filling the riverbed up, so it’s reducing the capacity of the river. As the capacity of the river declines it’s pushing the flow into the banks, and on some properties in the lower Waiapu, we are seeing large areas of, what is our best soils really, alluvial flats being captured by the river and that sediment that ends going down the river, if it’s not deposited in the river bed, its going out to sea and creating some real sediment issues in the moana.
Gary Brierley	00:12:13 Well because the ground has been so wet, smaller events are having a far greater impact than they would have done if it had been drier for a longer period before. So right now, the land is as vulnerable as it can be, because there’s so much exposed sediment that’s able to be moved, we’ve got so little cover on it, that we’re going to get more sediment being conveyed through to the bottom end of the river.
Kerry Hudson	00:12:40 Some of that buildup, the aggradation of material in the Tapuaeroa or particularly on the Waiapu is pretty much unprecedented. One of the aspects we need to get very, very clear going forward is, this rehabilitation of the Tairawhiti is going to have

	to be from the mountains right down to the sea. So, the work that's going on in the Raukumara's now in terms of pest control is absolutely essential to our future. We've had a buildup of feral animals in there over what is not that long a time but it's been devastating. As a result of losing the understory and gaps in the forest there we've had some devastating results and the initiatives taken by Graeme Atkins and the group of people he's involved with has built a momentum that really needs to carry on.
Murry Cave	00:13:30 If all these groups are collecting samples, and hopefully over time if the land use changes, we can see improvement in the river and that sampling that's going on – looking at sediment turbidity and those other things – we can see changes. And with eDNA we could hopefully start to see some of those freshwater mahinga kai species coming back in again, into the river system. But that land use change is a critical thing that has to really feed through in our rivers is where we need to monitor, and then over time see if the changes we make in the catchment actually are improving our rivers and actually leading to a better benefit and environmental health for the region.
Gary Brierley	00:14:13 So we need to be thinking about creating roughness back on the hill slopes and creating roughness back along river corridors. That's why this mosaic is the only kind of way we can think about going forward from here. And if we can create enough roughness in the channel systems, and enough riparian vegetation along them, then we reduce flooding hazards downstream. And so, I think, we've just got to look at these things in a slightly different way and learn to live with the river.
Te Rauhuia Ngata	00:14:44 Absolutely. Kei ngā awa ō nā ake mātauranga. Ko pāngia hoki te waipara i te kounga o te wai. [English: Every river is unique.

	Sediment has also had a huge effect on the quality of our water]. Bottled water has become the preferred option for many, because they're just not sure what's in our water or how safe it is to drink.
Graeme Atkins	00:15:00 That's quite a shock to me, and then even buying water from a tank, you know, from the tank supply – I think it's about $500 or $600 dollars a tank and so, yeah, big worry going forward into the future is how we sort all that out. It's a basic right, you know, fresh water – human right.
Murry Cave	00:15:21 Our water quality is rubbish. You have the rivers like the Waiapu, which for its size it's an international – global type thing it's actually quite a small river, but it has the biggest sediment load of any river at all. So that's really bizarre, as in it shouldn't be happening but it is. And it just really foes to show that if you work on the land and change it and you don't think about the consequences, the impact is felt downstream, and it is going to be felt for generations to come.
Graeme Atkins	00:15:54 It's a big one because yeah we can't – you know no more fresh water, you know declining eels, it's all going the wrong way. But that's what attracted me to this taiao mahi is that we can turn things around.
Te Rauhuia Ngata	00:16:08 One person who wears several environmental hats is Mere Tamanui. She's been monitoring the awa post cyclone Gabriel.
Mere Tamanui Uawa	00:16:18 Water monitoring our water way is really dear to my heart and to my whanau. It's our cultural spaces, our spaces of wellbeing, and as you can see here we were able to jump from bank to bank

Local/Environmental Protector	only about a few years ago. You can see the millions of cubic meters of silt and sediment that's been washed out to sea. Our mussels – it has been hugely affected by the deposited sediment in our awa, to the point where it's even shifted our saltwater wedge, which means shifting ecology. For us now it's looking at the recovery of that and what does that look like. 00:16:54 But in terms of climate change and more frequent adverse effects, it's going to be a struggle for recovery. Especially knowing their value – what that one mussel can filter one liter per hour – for us that's hugely important to maintaining the quality of our fresh water. To be able to filter out nutrients, extra nutrients, from farm runoffs, from forestry, from other land users, from roads. 00:17:22 So this is a clarity tube, and it measures in centimeters the distance that you can see underwater. Checking for the suspended sediment within water. Do this twice and get the average. So at the moment our clarity's reading 32 centimeters. We were getting measurements of 70-80, 90, sometimes even 100 a few years ago before the adverse effects started to happen in 2018. 00:17:53 With the temperature increasing, you can also provide unhealthy conditions for your fish. They only like temperatures under 20 degrees, anything 30 degrees and over is detrimental for our fish species. What goes up must come down, we found whitebait eggs, that's got to be a positive for us out of the cyclone recovery, so fish are coming back to recruit. What that looks like, we're not sure over time, every species is different. And the micro's to the macro's of our species. So, I liken our bugs in our awa to like the krill to the whale. So, once those bugs are affected, it'll change the species that are living in your area.
Te Rauhuia Ngata	00:18:46 Tō tātou ara matua, e ngākau nui te ana. Arā, te ara matua 35. Te ara rongonui puta nui i te motu. [English: Our beloved state highway, that we all know and love: State Highway 35]. But it's also been heavily impacted. Kua patua kinotia. Our journey up the coast

	is now longer, and it's always in the back of our minds: will the road be closed?
Kerry Hudson	00:19:07 We have a lot of damage to our roads, but most of them are on the best line we've got available, it's just that that line is the best of a lot of reasonably poor options. I really feel for people maintaining the roads. No sooner got through something, and it erodes again. A lot of people outside our region just don't understand, yeah, it's going to be a fact of life, we have this underlying geology that's not that friendly towards having structural soundness in our infrastructure, particularly our roads and our bridges. 00:19:39 If we could stabilize all the water ways and the adjoining land, you get the water control onto roads right up to speed and maintain it nicely, we would minimize the problem. But I think with the slopes we have here we are always going to have a bit of an issue.
Te Rauhuia Ngata	00:19:59 Heketerangi Tuwhakairiora Blackbee, AKA 'Boss', has been on the roads for nearly 20 years, and his father even longer.
Heketerangi Tuwhakairiora Blackbee	00:20:09 Our 35 is broken, we had a lot of ups and downs with our highway, but we're proud, we love our road, we love our highway, we drive it every day. We see Aunty and Uncle going to Gizzy to go and do their two-weekly shopping. And you know, there's ways of fixing things, and if we don't fix it we're going to hurt the whole coast. Our biggest hot spots at the moment [are] around riverbeds really. Riverbeds, the sea, and our bridges – our bridges are the most important. A bridge gets cut off over here, or another big slip comes down in the Mangahauini – we're all cut off.

	00:20:52 The fixing it part is real hard, trying to come up with good ways and better ways to fix things, and prevent – like preventional [sic] maintenance, with the rainfall – bigger rainfalls and stuff like that – we've been proactive when we've been changing out culverts, we've been putting in bigger culverts. We've been suggesting to put in scour protection [and] using different metals on our local roads so it gives it more grading cycle time, stuff like that. We do have to start adapting, and I think that's the way we have to be.
Te Rauhuia Ngata	00:21:29 Ehara I te mea, ko te waipara me ngā awa ana ke I patua kinotia. Ko ngā rākau taketake anō hoki. [English: It isn't just sediment and rivers that are in climate crisis, it's also our native trees]. Myrtle rust is a fungal disease transported by the wind, which is current affecting our myrtle species like manuka and pohutakawa. It's already eradicated the ramarama tree from the coast.
Graeme Atkins	00:21:53 Other regions of the country, myrtle rust slows down at this time of the year, but there's still the yellow pustules, which is the stage of myrtle rust where the spores can blow in the wind, there's still yellow pustules on the Pohutukawa planted around our maraes. With warmer temperatures forecasted in the future, our poor myrtle's aren't going to be get any rest from Myrtle rust and so, we've also noticed where I live, mosquitos – we never used to have to worry about mosquitos before when we were working outdoors and now, just over the last 2 or 3 years or 2 years, mosquitos are a constant problem now.
Murry Cave	00:22:29 The change in weather patterns means that's coming from overseas. The impacts in Gisborne Tairawhiti haven't been that great so far, but we're now getting to see it in pohutukawa and so, a bellwether species like that, if we lost pohutukawa where would we be? And so, those things that are really being driven by climate

	change and how the winds are changing, so both these things are blowing in from Australia or elsewhere and the impact that that has longer term. So, when we think about recloaking the whenua if you like which is the phrase often we're using, we're really having to think about how do we get rid of that other stuff which is stopping that recloaking from occurring.
Te Rauhuia Ngata	00:23:12 It's not only the myrtles that are at risk. Graeme Atkins has found another raru on the totara which is yet to be tested.
Graeme Atkins	00:23:22 We're here today to get some soil samples, some leaf samples. As you can see the totara don't look too healthy. This disease is totara leaf blight, it's a phytophthora, so a root pathogen, that gets in through the roots and works its way up the tree. So, over the nearly year since I first noticed these trees, I can see that the brown is creeping higher and higher up the trees. So, I don't think they like it. Our plants, our trees, are under stress, through either long hot dry spells, or the exact opposite long wet spells which is what we've just had over the previous 2 or 3 years or 5 years nearly. And so, it stresses the trees and it makes them a lot more vulnerable to new diseases or new pathogens and so, sad to see.
Te Rauhuia Ngata	00:24:17 Climate change hui are happening a lot now. Koe nei ngā hui ka kitea, ka ranga nōna kōrero āwhina a te hunga mōhio. [English: these symposiums are where locals can get expert advice]. Niwa scientists gathered at Hiruharama to share their latest mahi post-cyclones.
Joshu Mountjoy Strategy Manager for Oceans at Niwa	00:24:31 We're finding that in the near-shore environment there's a huge amount of mud sitting around in the water and on the seabed and affecting some of the reefs. We're seeing that some of the large

	seaweeds have actually died off and left behind their holdfast which is how they cling to the rocks. So that's not a great story, and we're trying to untangle that and, you know, talking to communities and to hapu. Our results also show though once you get further out into deeper water, so maybe 50-70 meters water depth, that's 10-20 kilometers off the coast, actually it's a really different story and the water is really clear, and things still look quite healthy. We're seeing large sponges and corals that lived for tens of years, and so, they're not really affected. And so, it really is a close to the coast situation.
Emily Lane Principal Scientist at Niwa	00:25:26 This is sort of a sea surface temperature, and anywhere you see that it's like yellow or red, that means the sea surface was warmer than it usually is in that place. And anywhere it's sort of blue colors, it was colder. But what with climate change and also the La Niña, we had what's called a marine heatwave, so basically it was stomping hot over this whole area. Because the thing is, cyclones feed on sea surface temperature, it's what gives it its energy and allows it to sort of keep having that energy as its moving south. So essentially, New Zealand's sitting there going "have at us", and yeah so that's sort of something to remember in the future. Long-term climate change is going to make flooding worse. Though flooding is a thing, sometimes you get sort of, you know, a decade or two of really bad flooding, and then it might be sort of not as bad for a while. And so, you know, it's like, there always were big floods, climate change will intensify that.
Josie McClutchie Local Researcher	00:26:38 Rain anxiety is when you get stressed out when you hear the rain, or you worry at night when you hear the rain. Just the sound of rain now can trigger intense stress and chronic anxiety. It's a thing globally now, definitely in Australia, like rain anxiety, climate fatigue are becoming big mental health issues for communities who are living and going through these extreme weather events.

Dana Kirkpatrick MP for East Coast	00:27:07 It's probably our biggest – one of our biggest issues, second only probably to the land use issue that we have. You know it was all very well, and rightly so, for people to learn that they can put their hand up and say, "I need some help", unfortunately the help wasn't there to help them and wasn't funded. So, our focus now is on how do we provide better funding for mental health support.
Josie McClutchie	00:27:32 I've been leading a community-led research project for the Ministry of Health, on the impacts on health and well-being in the community from, not just cyclone Gabriel, but all these other repeated extreme weather events. There is an increase in chronic mental health issues like never before. We're having to adapt now to just a whole new weather pattern and I think that causes another stress on the community, is knowing that things will never be like they were.
Prof. Holly Thorpe Local Researcher for the Ministry of Health	00:28:12 So there's that heaviness that is still here, but we've also seen communities coming together to support each other, and that's really hopeful. You know someone just asked us what's this research going to do, and that's a really important question, what is the role of research. We need commitment from outside agencies, from government, as well as within our own communities to keep the mahi going, because we know these events are going to happen more and more, and we know that the further up the coast you go, the further away from resources – these inequities that were already there are being exacerbated by these events so we need to stay focused on the long game.
Te Rauhuia Ngata	00:28:54 Which means we have to be solutions focused, planning for our future. Ko tīmatanga ā iwi ki te takatu, kei te kōrero tō tātou taiao ki a tātou anō, ko tā tātou, ko te mātai, te tirito, me te whakarongo. [English: For many that is well underway, our

	environment has shown us the signs, we need to observe, look for ourselves and listen].
Tarsh Koia – Penu Resident	00:29:15 I think that's what we've got to look at doing as a community, rather than just sitting back and awaiting for the government or the council to come and save us. Every pa, every community, land block, has to step up and show leadership in all our different kokoru.
Manu Caddie	00:29:38 There's lots of opportunity for innovation, and in some ways we're forced to innovate like what we're trying to do with an indigenous bioeconomy sort of how do we create new industry that's based around indigenous forests and organisms is driven by the fact that we can't keep doing what we've done in terms of the footprint of pasture and pine in the region. The rules are tightening up and just the economics of trying to farm on massively erosion prone land and trying to grow pine trees on massively erosion prone land is unviable going forward in many situations, so that sort of necessity is breeding invention and innovation.
Tui Warmenhoven	00:30:18 We have our own mātauranga of how to do things. Big landowners within Ngāti Porou, you know the haves and the haves nots, that sort of a thing, but as I say you start at a whanau level, whanau, marae, hapu – as long as we retain the sanctity of those parts of our social structures and not takahi them, or allow others to come in and impose themselves on us, is pretty hammered at the moment, because as is our whenua our wai, so are we. It's just like we are one in the same with those places and those things, so. And that's something that we need to remind ourselves of every time we make a decision to take one stone, to take one cup of water, to use anything that we do in our place and around Ngāti Porou, we have

	to change the way that we think, for our mokopuna - everyone's saying mokopuna decisions – like don't let that get tired. I think it's something that we need to wake up to everyday and say "mokopuna decisions" – even if you don't have kids, make a decision as if, you know, you knew you could see your mokopuna in front of you or sitting in a row smiling up at their nanny or their papa, saying "thank you for doing what you did when you did that".

Transcript: Why Apu Episode 5 - Ngā Rongoā – Solutions

Kaikōrero	Kōrero and Timestamp (live link to kōrero)
Hoana Forrester	00:00:06 I have faith in our iwi, our hapu. We are the solution to the problem. The clearer we see the problem, the sooner we'll find a solution because our whanau – we're can-doers man.
Tui Warmenhoven Reporua Local, Researcher, Mana Taiao Tairāwhiti Spokesperson	00:00:22 We got a big responsibility to hold it together. That's a spiritual responsibility as well because it's a wairua thing as well, because what our people out there see, impacts them. When they see our whenua going out to sea, when they see their urupā and their marae getting smashed and flooded – it impacts every single one of us who whakapapa.
Te Rauhuia Ngata Kaimātaiao/Taiao Educator	00:00:50 Climate change, extreme weather, and human impact are all major factors to the new environmental norm in Te Tairāwhiti. Mai ngā maunga ki nga moana, ka apu haere. Our whenua's being devoured, our riverbanks consumed, our moana left with the aftermath. He apu whenua, he apu tangata, this series explores the Why? 00:01:38 I roto I tēnei hōtaka, ko whakapoa ki ngā take o te taiao I Te Tairāwhiti. From the pest control in the Raukumara Ranges, to the erosion affecting our awa, along with the sediment, slash, woody debris, extreme weather, and heavy rainfall. Ko ta te waha ngā whakamutunga, he whai I te hunga kāinga e mahi ana I roto i te taiao. E kimi nei, pęhea te whakatika? Mana Taiao Tairāwhiti have been at the forefront of calling out the main offenders but also trying to find new pathways forward.

Tui Warmenhoven	00:02:14 Mana Taiao Tairāwhiti is about land use change – and dramatic, and we want that to happen through basically all of the plans that govern and regulate land use, water use, and basically human activity in Te Tairāwhiti. Our membership is from the Waiapu all the way to Muriwai, and that's where our focus is for land use change. But we don't want it to just be us, the iwi should be where we are, all Māori landowners should be – we should be all working under the same ethos, you know, is to stop taking and start putting back. And that's the price we have to pay. You can still have industry, but it won't be mass, it won't be mass primary industry, as I said we need to change from this industrial model to this more regenerative socially responsible social enterprise model – and it can be done.
Te Rauhuia Ngata	00:03:25 Members of Mana Taiao Tairāwhiti and Penu locals Tarsh Koia and Manu Caddie are looking at alternative ways to use the land, and they also live right next door to the pa, on Tasrh's whanau land at Totaranui. Kei muri te awa o Makatote e rere ana, ka pāngia kinotia te awa I te wā ka wai puku tia te whenua
Tarsh Koia Penu Resident	00:03:48 That's been, yea ka mau te weehi, like real freaky to see new gulleys and stuff form just by over a couple of months or even one big rainfall. I suppose for us as a block and pa, because we're small, just seeing what we can do on our small scale to tiaki te whenua nei, because we live here on the block and we see it.
Manu Caddie Penu Resident	00:04:18 Today we've got a bunch of, well, three plant scientists, ecologist, who look at ecosystems, and think about the options for the land. It doesn't seem to be any sort of service that's available to access technical support and advice and things, so it's been just sort of calling on who we know too, and when they're available to come and have a look and give some guidance on what the options

	are for the block. And if we can help sort of do little bits and pieces and see what works and what doesn't then others won't have to waste time and money making the same mistakes.
Meg Graeme – Ecologist, Tane's Tree Trust	00:04:59 I'm an ecologist, originally trained as a marine scientist but concerned with sediment and so interested in the whole catchment and working towards a healthy environment.
Suzanne Lambie Manaaki Whenua Landcare Research	00:05:13 I specialize in trees for mitigation of erosion as well as restoration of not only forest ecosystems but wetland ecosystems.
Paul Quinlan Tane's Tree Trust & Landscape Architect	00:05:22 I'm a trustee with Tane's Tree Trust. I'm particularly involved with the Northland Totara Working Group to try help how to go about healing the land and getting more native forest cover woven into the landscape.
Manu Caddie	00:05:40 So one of the strategies for example is cutting the kanuka branches when its seeding time and just laying them over the paddock and seeing how much of the seed takes and comes away because it provides a protection and things and others dropping seeds with seed bombs from drones and things and others, direct planting.
Meg Graeme	00:06:02 We're just looking for weeds that will sort of threaten the natural regeneration of the native species, so there's a mix of native here that's been browsed because it's quite a hearty species, but there's also things like the honeysuckle and that can really dominate. And then – if – because it's an early colonizer it's

	shading the land so you start to get the other native forest species coming up underneath as long as they're not browsed off.
Manu Caddie	00:06:27 Having clear land on this particular block is not sustainable because it's eroding fairly rapidly. So, the kanuka industry is one option, but karamu might be another, and fungi might be another, you know sort of exploring those options.
Paul Quinlan	00:06:45 So what about these forestry models, for example, that would be a continuous cover forestry model close to nature so the forest structure where you would be harvesting either single stems or small groups to avoid a clear-fell type situation but with opportunities to get cover and potentially some timber income means you got an increasing biodiversity, land use as well.
Manu Caddie	00:07:15 I think the owners would be open to that, but it would need to be well proven in this environment, so…
Paul Quinlan	00:07:25 …Preference be for native forest…
Manu Caddie	00:07:27 …Yeah given the blocks called Tōtaranui, that's sort of the vision, if totara could be found to grow here, so we got a few that we're going to plant. But I think more would say if there's some jobs involved then that's more important to give whanau some reason to be close to the land again.
Te Rauhuia Ngata	00:07:43 Renee Raroa is a Taiao researcher and a member of Mana Taiao Tairāwhiti. Kei Te Kautuku I rangi tukia te whenua o

	tōna whānau. Her whanau have experienced first-hand the change in land use.
Renee Raroa Project lead at Te Kautuku	00:07:58 Nau mai haere mai, this is Te Kautuku, just over 900 hectares. We've kind of been able to see the land intergenerationally, so it was sheep and beef farming, but about, I don't know, maybe 15 to 20 years ago most of the stock were taken off. There's still some stock roaming about, but the aspiration really is to get majority of the whenua regenerated back to a native cover.
Rangi Raroa Land Manager at Te Kautuku Station	00:08:27 This whole area here, stretching from here right back – well as far as the eye can see really – is reverting, which is why we've looked at - there's got to be another alternative to pastoral farming on this sort of land, it's not viable. So, we've struggled along but now we've got to look at something else with the weather the way it is, the erosion is getting worse, and so going into a biodiversity scheme is probably a better option.
Renee Raroa	00:08:59 Out this way, you know this was all farmed, and then we've got plantings of poplars, various variety of poplar, just different stands for stabilization. And then with the block over the back being our whenua rāhui I think the natural dispersal of seeds that have come over have started to regenerate this area.
Meg Graeme	00:09:21 What you've done is just taking stock off and just allowed the kanuka to get going and that's the important bit, the soil stabilization, but then you got to move on to the next step getting the biodiversity back.

Paul Quinlan	00:09:33 One option might be to explore whether those poplars can just remain and become that forest structure as a nurse for regenerating native forest, whether that's their function for the future
Rangi Raroa	00:09:48 We always wondered why doesn't native trees have something where we can get a return as far as carbon goes because that bush you can see there there's about, I don't know 200-300 odd acres of native bush that belong to this station, Te Kautuku.
Paul Quinlan	00:10:06 900 hectares is a lot of area to have without having some income from to help with the management of it, are there opportunities there?
Renee Raroa	00:10:17 I guess that's the thing that we are looking to explore here at Te Kautuku is what data can be collected on the regeneration and can there be an asset-isation of that data to create revenue streams. So that's kind of the yeah, an area that Te Kautuku is wanting to explore, and we've got Te Kautuku as a first pilot looking at what that might look like. And that's where the manuka honey has been really helpful, you can start the regeneration and manuka can help with part of that, and then when there's' been a downturn in the manuka season, you know these guys have pivoted to queen bee rearing so I suppose just being a bit flexible and looking for new ways to create income streams to work with the regeneration is what we're after.
Rangi Raroa	00:11:11 My dream now is for it all to go into biodiversity, providing of course there's some benefit not only to the land but to

	the landowners, otherwise we're going to just keep losing bits and pieces of it to the sea – out there.
Te Rauhuia Ngata	00:11:26 He kaupapa nui te whakatipu rākau taketake, I ngā whenua horo o Te Tairāwhiti. Everyone agrees we need to do it, but the question is how and who pays for it?
Graeme Atkins	00:11:40 There's probably in the nursery trade what they call like your standard or staple native trees that people always buy for restoration projects, and so that'll be all manukas, kanukas, karamu, koromiko, kohuhu, and then the bigger trees: totara, kahikatea. The best thing to do is copy what mother nature does so, once you know farming hasn't paid and then how kanuka and manuka spread across the landscape, that's our taiao saying "follow me". It's no good trying to plant karamu and koromiko and stuff straight back onto bare hillsides, just setting yourself up for a huge amount of work and probably a big fail. So yeah, copy what our taiao shows us what to do. 00:12:29 Another ray of light out there is our Ngāti Porou nursery that we're going to establish. And so, we've got a landscape that's in desperate need of millions of millions of trees, and so, a nursery is a good start. I think we're looking at about 6 hectares or something, so that should be big enough to pump about hundreds of thousands of trees. That'll be all our native trees and so we'll be able to employ locals to go around and collecting seeds from here, we want seeds that are from here, trees that are form here, they can handle the climate.
Te Rauhuia Ngata	00:13:06 Kei waho atu o Tūranga a Kees Weytmans e noho ana. He and his wife practice mosaic land use and have done so for the last 30 years. They run a forestry consulting business. Ko pōhiri atu rātou ki te hapori kia hanga atu ki tō rātou whenua.

Manu Caddie	00:13:23 Today is part of a national series that have been sponsored by Te Uru Rākau, part of the Ministry for Primary Industries, to help landowners look at what the alternatives are to pine and to pasture. So really, really good timing.
Kees Weytmans Knapdale Farm	00:13:39 First of all the issue is incredibly important and incredibly depressing. And on the other hand, I would like to let you know that it is never too late to start planting a tree. 30 years ago, just after Bola, on the whole place, 33 hectares, there were 25 trees, and we've replanted that, and it has helped the erosion. And here you can see it, how it is in planted form, and then we started harvesting small-scale in 2016, and we stopped harvesting in 2019, and this is now the regrowth. So, in a very short time you can make a difference – and it all starts with the soil. If you have good soil, you can grow demanding trees - trees that need a deep fertile soil. And if you have poor soils, or eroding soils, then your types of trees that you can grow is minimized.
Manu Caddie	00:15:01 In terms of Mana Taiao Tairāwhiti I guess we've had a lot to say about the problem of pine plantations on the East Coast and today was really about alternative species to pine. So, a good opportunity to explore some of the options in a real-world environment, trees that have been growing for 20-30 years, and quite a wide range of different species – mostly exotic, but also native as well.
Kees Weytmans	00:15:31 Part of our problem on the East Coast [is] people have been too profit driven whereby what you see here is a more holistic approach to our environment. And we have forestry, we have tree farming, we have livestock, we have a hospitality venue, and we

	prove accommodation. But none of those aspects rule our budget – we want to do the things that are good for the land and for the people and the animals and that is all related.
Manu Caddie	00:16:09 I was really interested to see some of the benefits and some of the risks of those different species for our environment here, and likewise on the block I guess where we live, Tōtaranui, the erosion and the efforts that we're making to curb that will require trees and we've got quite a lot of natives on there, and I guess there's a question about which other species would be good to have, and even some of the natives, where are they best grown? I think it's very timely, a day like today, given the issues that we're wrestling with across the region.
Te Rauhuia Ngata	00:16:45 Ko te myrtle rust tētahi riha e whakararu ana I a mātou. A fungal disease carried by the wind, and in the last three years its hit the coast hard. Te Whakapae Ururoa is a hapu response initiative from both Te Whānau a Apanui and Ngāti Porou to combat myrtle rust in Te Tairāwhiti.
Mere Tamanui Te Whakapae Ururoa	00:17:04 We're really determined to study the behavior and mitigate situations where we know it's more intense at different times of the year than it is in other times of the year, and what remedies we can use to either slow the rust or prevent the rust.
Ripeka Irwin Te Whakapae Ururoa	00:17:21 People that are interested in that component of the project you're most welcome to give me your email to be part of the conversation. I think our own people driving it is the way to go. We're the ones living here amongst what's going on in our communities.

Mere Vaka-McDonald Te Whakapae Ururoa	00:17:43 We're capturing data of what the myrtle rust is doing to our ngahere. And without that data we can't feed the scientists, feed them with data to develop solutions. We're the foot soldiers I suppose. So, all the data that's collected will eventually create a picture that we can draw information from, comparisons.
Hohepa Waenga Te Whakapae Ururoa	00:18:05 So we are looking for rākau that are resistant to the myrtle rust. So an area like we're in now, well for example the ramarama here, and let's say 90% of those ramarama have all got myrtle rust, but then you've got one really healthy ramarama right in the middle there that one could be the tree that's resistant to the myrtle rust, so we could, on the ground, gather cuttings from that particular rakau, that tree, that individual and then propagate them in a nursery so that we can replant that particular one back in the area so that there is some type of safeguarding.
Graeme Atkins	00:18:45 Theres a little bit of hope being pinned on rongoa Māori, because what we've noticed is that here in Tairāwhiti, especially on the East side, we literally have millions of kanuka on our hills around here. And no one's seen evidence of myrtle rust on the kanuka and kanuka is a native myrtle. And so, we're thinking that there's something in the kanuka that may be resistant to myrtle rust or this strain of myrtle rust. And so, at present we're doing spray trials to see if a kanuka hydrosol or an oil will be efficacy at slowing or halting or killing the myrtle rust. So yeah, there's a little glimmer of hope out there.
Te Rauhuia Ngata	00:19:27 Ko te kaunga o te wai, tētahi take nui ko a rake te Tairāwhiti. How do we restore and protect our awa from further

	buildup of sediment? Nō te ao Māori te momoa o turiki wai a Hoana Forrester rāua ko Horiata Raihana o te ākau o Tokomaru.
Horiata Raihana Arahanga Taiao	00:19:46 So our kaupapa at the moment through Arahanga Taiao is a pathway back to restoring the mana of the wai. We wanted to empower people to be a part of the decision making process because we seen a lot of people coming in from out of our region and making decisions that affect our hāpori, our community, without involving us, and its all stuff that we feel we could actually do – the information and that that they're gathering and nobody knows the state that they're in at the moment. So that's what prompted our ropu to find out why, or how, or what's going on with the awa, because if you don't know the state it's in at the moment, its hard to fix something that you don't know – or if it needs fixing or how well its doing. Are our taonga species in there still? Or things like that.
Hoana Forrester Arahanga Taiao	00:20:48 At the moment, our team is working with observations of our taiao which is quite interesting aye?
Horiata Raihana	00:20:57 Yes. It's a tool that we've lost. Some people have retained that knowledge in other areas. And it's a tool that our tīpuna would have used every single day of our lives
Hoana Forrester	00:21:08 What is the tool?
Horiata Raihana	00:21:10 So the tool is around reading your environment and noticing those changes within your taiao, and linking them to, for

	example, the māramataka and the moon phases within te mata o te māramataka. Pehea te ahua o te wai ki a kōrua? He pai te ahua o te wai?
Hoana Forrester	00:21:28 He aha atu? Paruparu? He Paruparu? Within our team, we each will observe a variety of things; it can be the activity of the birds, it could be presence of insects, it could be the types of clouds; high clouds, low cloud, they're moving south, east, they're heavy, they're dense, there's a breeze below but there's no clouds at the top; the dew on the grass; the kowhai trees' blossoms; even the sound of the waves crashing. So, if we don't see it, it didn't happen, well that's what our observations are. So, eventually we'll gather each other's observations, because we live in a variety of regions that they could actually be helpful to show indicators of what's happening at that time.
Horiata Raihana	00:22:25 So you build up a picture throughout the year and then as time goes on you've got reference points to reference back. So, in this māramataka, in this mata, the river was doing this, or the birds are doing this, the trees are changing.
Hoana Forrester	00:22:44 Yeah, we're trying to find out how mātauranga Māori tools will work coincided with science, because we will be doing a lot of water monitoring. Hopefully we'll be able to include the community in that process.
Horiata Raihana	00:23:00 So for our project, what success looks like to us is our nannies and their mokopunas going down to the awa in their takiwā and being able to gather relevant information that can contribute to the decision making processes of the community.

Hoana Forrester	00:23:16 And for us to be able to restore a small piece for a bit of hope might be these ones.
Horiata Raihana	00:23:25 For us, it's what's our awa going to be like for this one? This is our mokopuna.
Te Rauhuia Ngata	00:23:32 Koira te tumanako. When you're faced day to day with the impact of climate change, he mea nui te tumanako wai hoki he mea nui te mahi tahi. Ropu like Raukumara Pae Maunga and Te Whakapae Ururoa are focusing on education our community about the taiao changes and impacts, and that includes our tamariki.
Ario Rewi – Pae Maunga Comms & Engagement	00:23:53 What we really hope to achieve throughout the roadshow is to engage with our tamariki Ngāti Porou-wide to educate them, to provide advocacy for the Raukumara, and also to connect with other projects within Ngāti Porou who are doing incredible work in their own spaces of taiao restoration, and to bring our mahi to the children because at the end of the day everything that we're doing within our taiao mahi is for the coming generations.
Hoana Forrester Education & Training Co-ordinator – Raukumara Pae Maunga	00:24:36 Put it in their heads you know when they learn all their different things in STEM, technology, all those – everything that they learn in kura, maybe something will spark them to create some solutions, or even follow in a career path of the aerial culling or the monitoring crew and stuff like that. So, they're all going to just be part of the solution.

Graeme Atkins	00:25:17 I just think it relates perfectly to the solutions episode and the fact that it's a succession planning, getting those next generation of young people who are going to grow up caring about what we have around us, because if we don't care for it nobody else will, that's it, that's the cold hard truth.
Ario Rewi	00:25:45 From the beginning of the Why Apu series what you saw was a lot of the damage, and we've been through it – in the Tairāwhiti region we have really been through it. It's really impacted our climate here significantly, and out of that have come a whole lot of people who are super, super motivated to see some change in terms of the way we use our land, to see some real prioritization of our environment. And I think that this movement, this roadshow, has really brought those people to the fore, and its united them and said "we know what's happening in our region, we know that we're in big trouble, but we also know that if anyone's going to drive the solution to that problem it's going to be us, it's going to be those of us on the ground, those of us who live here and those of us who are motivated beyond all else to see a better Tairāwhiti in the future than what we've inherited."
Te Rauhuia Ngata	00:26:39 Tika tahau Ario, best people to help us are ourselves, ma tatou, mo tatou. Ka taupoki na tenei hotaka o 'Why Apu?' ki konei, heoi, ka haere tonu nga mahi a te ahi ka e ora ai te taiao, ma tatou tamariki a tatou mokopuna hoki. Hui te marama, he purapura ora.

Transcript: Downstream, Greenpeace 2023

Kaikōrero	Kōrero and Timestamp (live link to kōrero)
Tui Warmenhoven Ngāti Porou Researcher, Lawyer, Greenpeace Aotearoa Board Chair	00:00:04 I'm holding back the tears, I really am, because our beautiful whenua.
Bobbie Morice Ngāti Porou Business Owner	00:00:11 Our bridges, our infrastructure is just getting weakened and weakened and weakened till its gone
Maria Smith Ngāti Porou Radio Presenter	00:00:17 This is what we're left with, caused by farming, neglect, erosion
Tui Warmenhoven	00:00:37 Ko Hikurangi te maunga, ko Waiapu te awa, ko Ngāti Uepohatu me Ngāti Porou te iwi. Tokomaru Bay has been isolated since, well, for about four weeks now. At the end of the this road is the urupā where my nannies are buried. As you can see that's where the road used to be a month ago. It's the first time that I have been here physically, I've only seen it in film and pictures. Our poor whānau here, they're cut off. They're cut off from us, they're cut off from the rest of their whānau, they're cut off from the rest of Tairāwhiti because of this. We did not cause this, but we're the ones that are suffering for it.
Bobbie Morice	00:01:59 So when you hear rain now, it wakes you up, and I have to say there is moments of anxiety. Last night it rained, I think it must have been around 09:00 out here. My husband and I are watching TV, soon as it started, we could hear it on the roof, you stop. We looked out the window, waited a minute just to hear how hard it is.

Maria Smith	00:02:20 When it storms here, the usual and the normal outlets and where things usually would normally flood first, aren't. The floods are moving, that's telling us the taiao is moving, it's telling us that there's a shift, there's a change coming.
Tui Warmenhoven	00:02:39 It's something that's never going to go away in my lifetime. I'm going to be working on this, I'm going to be advocating, I'm going to be with the rest of my community, looking for solutions till the day I die.
Bobbie Morice	00:02:58 Water, just so much water. It came right around, and wiped out all those power poles. They couldn't even find them in the paddock – that's how full on it was. Water went straight over the bridge
Tui Warmenhoven	00:03:21 Our bridges have been down in my lifetime, but not like this.
Bobbie Morice	00:03:35 My husband and I have been in business since 2004, and we make the Ruatoria pies. Before cyclone Gabriel we were pumping out six and a half thousand a week pies. We rely on access to get our product out. Gabriel's just totally [come] along and just destroyed the roads.
Maria Smith	00:04:04 Nō reirā whānau, the sun is shining, not a cloud in the sky, get out there, whakapau werawera! Uhea ki a Papatūānuku, ki a Ranginui, mauriora tāku whānau. My father's European, but my mana whenua, mana tangata and mana atua come from my mother's side. 00:04:31 Ten feet from bank to bank. I think that's three football fields. And my Aunty went up there last week and she said, it just gets bigger and bigger.

Tui Warmenhoven	00:04:45 As the land is being stripped and eroding, so are we as a people, we're fighting to survive.
Maria Smith	00:04:56 The normal slips that usually occur regularly during wintertime are not those slips that are occurring regularly during wintertime are not those slips that are occurring – they're new ones, they're fresh.
Tui Warmenhoven	00:05:08 The land has moved in ways that we can only patch up. This scenario, what we're living with, is here to stay. They cleared 80% of the virgin forest. Our people went from forest people to farm people in a generation. Take the forest cover away, strip Papatūānuku, strip her korowai off her, lay her bare – and wham. And that's when it all started moving, after that clearance. 00:05:57 The landowners sold all the big farming blocks to forestry companies, carbon forest companies, and then it got changed into pine.
Maria Smith	00:06:11 [You] can see the pine trees, that's where we've gone to try to recover from the farming by planting trees. But, guessing it was the wrong type of tree.
Tui Warmenhoven	00:06:26 They are probably the worst tree for this landscape. So they prune the trees, everything just drops on the ground. They just leave it there. When it comes to harvest and when log-making, where does all the material go? In heavy rain events it moves with great force – just voracious. It smashes roads, it takes out landscapes, farmland, good land, land with bush on it, wetlands. Everything gets smashed. Plus climate. Put that layer over, put that layer on top and that's where it start's to get real and it starts to get scary for a lot of people.
Bobbie Morice	00:07:43 So we don't even need a cyclone now, doesn't need to have a name, [there] just needs to be a heavy rain.

	And then life stops again.
Tui Warmenhoven	00:07:51 At the beginning of the school year, my 13 year old, we set him up to go live with his grandmother in Gisborne so that he could attend Gisborne Boys High. So we're cut off. So he just texts me how much he misses me, and I need to go and see him because he's learnt real quickly about climate change. It's an innocent generation and this is the legacy that they've inherited. Not just here, throughout Aotearoa and the whole globe, it's those generations. What have we done? And what are we going to do now? To rectify this. 00:08:51 It's capitalism, that's what it is. I mean, we know there's only a few people getting rich on our plight. We know who they are, we know who the perpetuators are, and here in Aotearoa, they need to be reined in and they need to be basically deconstructed from the top down. There's definitely Fonterra, we already know that. And not enough people know, I believe, because if they did, they'd probably stop buying their products. But you know what? Over here you can't afford Fonterra's products. A block of one kg of cheese is $20. We know that they are the largest climate contributor – single – in the country, more than any other industry. How's that aye, cows.
Maria Smith	00:09:45 Everything has a purpose; everything has its own mauri. And we are supposed to be connected with our land. So, this is not only telling me what's happening to our land, it's also telling me what our people are doing to each other.
Tui Warmenhoven	00:10:00 The picture has been wrong for so long. Vulnerable, isolated, deprived communities such as ours – we're taking the brunt of it – because we've been here for a thousand years.

Bobbie Morice	00:10:14 Sits you on your bum and you realize, far out what the bloody hell is happening? How do we just go back to a simple life, grow our own kai? And I think maybe that's part of where we go. I hope it is.
Tui Warmenhoven	00:10:30 The beans there, we've got zucchinis, carrots, over here is all the parsleys and the lettuces. When the main road goes down, we have to actually revert back to self-sufficiency in so many ways.
Bobbie Morice	00:10:45 And I think this is pretty much telling us we are at the time of change. The landscape's changed, we as people need to follow with it.
Tui Warmenhoven	00:10:55 We just all have a part to play. Māori, non-Māori, doesn't matter who you are. You live here; you have a responsibility to this place. It's changed heaps. The urupā that I spoke of earlier where all my nannies are buried, my mother's grandmother, her mother and her, other, is just on that other side there. Just over here, where the township is. If you look at the bridge, you can see the buildup of the debris. You can't change overnight – land use like this. There has to be a transition. Our people, we have the solutions for ourselves, we just need to be resourced to make it happen. 00:11:48 We've just commenced the restoration of the Raukumara Forest, which is over 150,000 hectares. And that is our backbone. It's integral to our identity and existence here to restore that forest and to work back and to keep putting the forest back all the way down to Tangaroa. We 'were' forest people, and we will be Forest people again.