

EnviroSOUTH

Spring 2024

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environment
SOUTHLAND
REGIONAL COUNCIL

Te Taiao Tonga

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EnvirosOUTH

Envirosouth is published three times a year by Environment Southland. It is delivered to every mailbox in the region. We welcome your comments on anything published in this magazine.

ISSN 2537-8902 (Print)
ISSN 2537-8910 (Online)

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Cover

Axel Deans at the Bioblitz event in Tuatapere in February.

Printed on environmentally responsible paper using Elemental Chlorine Free (ECF) pulp sourced from sustainable and legally harvested farmed trees and manufactured under the strict ISO14001 Environmental Management System.



Getting people's views is so helpful to our decision making.

We have recently adopted our 2024-2034 Long-term Plan, which sets out our work programmes and budgets.

In the lead up we consulted with the community on our proposal to invest in flood protection to improve community resilience, plus other matters. At the same time, we proposed a change to the way we rate.

We did extensive consultation and received a record number of submissions that told us while people agreed with improved flood protection, they wanted us to spend less and move more slowly.

So now we are going to use reserves to help fund flood protection and will move to capital value rating over the next two years.

This is democracy in action, and I extend my thanks to everyone who participated. You have made a difference.

Nicol Horrell, chairman, Environment Southland



We've recently completed five flood protection projects.

This has increased the level of flood protection for people, property and infrastructure in Murihiku Southland.

The projects were flood protection and stop bank upgrades in Mātaura, Gore, Wyndham, and Waihōpai Invercargill and Waiau River flood damage remediation.

They were co-funded by Environment Southland and Government's Kānoa Regional Economic Development and Investment Unit, which allowed us to complete these projects much sooner than we could have managed on our own.

A sixth project – construction of a new fish-friendly pump station on Stead Street – is expected to be finished and opened in August.

We have a stop bank network spanning more than 500km that has served its communities well to date, but the increasing intensity and frequency of weather events mean it needs to be maintained and strengthened.

Wilma Falconer, chief executive, Environment Southland

Environment Southland

A thriving Southland – te taurikura o Murihiku



Students from Thornbury School and Heddon Bush School during the Waste Free Wanda module.

Students putting waste in its place

The future of the environment is in great hands if Thornbury School's recent waste reduction hui is anything to go by.

Earlier this year, students were joined by their counterparts from Heddon Bush School to immerse themselves in a range of workshops that explored waste reduction concepts and the impact waste can have on the environment.

While passion and enthusiasm shone through as students moved through each module, so did the strong knowledge the two schools share.

Increasing that base knowledge is one outcome of the hui, but there are also many more flow-on effects.

Thornbury School principal Kay Teviotdale says one of them is the transfer of that knowledge from the students to their parents and older generations.

"Our students are really aware of what rubbish is meant to go where," Kay says.

"We started with having bins in our classrooms to match those that go out for collection.

"The kids are all really mindful of what goes where and what can be recycled and kept out of landfill.

"I know when they come to my office, they are quick to point out if there is something in the wrong place.

"I know they are the same at home too and keep their parents on their toes."

Hearing that feedback is music to the ears of Environment Southland's Enviroschools team, who facilitated the school's waste reduction hui.

The event aimed to educate students on changes that have been made to New Zealand's waste management systems, while they also learn about the impacts waste can have on the environment, with the aim that the knowledge will be shared with each student's family.

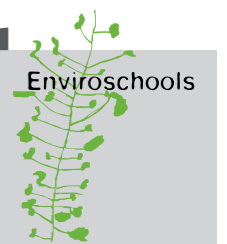
A wide range of waste reduction concepts were covered, including the reuse and repurposing of textiles, exploration of the impacts microplastics can have on waterways and native fish species, as well as a wider look at the hopes and aspirations students have in the waste space.

Southern educator and singer-songwriter Anna van Riel also shared messages about swapping single use items for reusable ones through her interactive show as Waste Free Wanda.

Students delved into each topic through practical and interactive learning experiences.

"The kids really enjoyed their day, learning more about all of the everyday things that can impact the environment," Kay says.

"Each of the stations were hands-on and the kids really enjoy that interactive learning experience.



Enviroschools is a nationwide programme. In Southland, it is delivered by Environment Southland in partnership with Kindergartens South, and supported with funding from Toimata Foundation, Environment Southland, Southland and Gore District Councils and Invercargill City Council.

"The Enviroschools programme has been really great for our school.

"For us, it's not something extra that's put on top of the school curriculum."

"We try to make it part of our everyday activities.

"Whether it's recycling or it's just what we do."

Thornbury School's waste reduction hui was designed by Southland regional co-ordinator of the Enviroschools programme, Josh Sullivan and implemented with the support of Environment Southland and Wastenet Southland.



▲ Hauroko Valley Primary School students Harold Marikit and Axel Deans at the Bioblitz event in Tuatapere in February.



▲ Maurice and Isobel Green.

Going batty in Tuatapere

What started out as a joke about possibly having bats for neighbours has turned into a reality for Tuatapere couple Maurice and Isobel Green.

As a part of Tuatapere Bioblitz in February, Environment Southland biodiversity officer Catriona Gower organised a full day of events for the community to learn more about the rich diversity of organisms (the birds, bats, insects, spiders, fish and fungi) that share their home.

Bioblitz is a scientific race against time to count as many different species in a specified area as possible, in this case, Tuatapere on 28 February, where members of the public recorded more than 240 different species.

Ahead of the day Council staff provided education on pest animals to the school children and even put up a bat detector on a retired farmer's section – that farmer was Maurice Green.

As members of the local Lions Club, Maurice and Isobel became involved in the organisation of Bioblitz.

The Tuatapere District Lions Club also put out the offer to remove pest plants from residents' sections – an offer that still stands.

One thing led to another and Maurice and Catriona got chatting about biodiversity.

"I was joking to her about bats because I couldn't see there being bats here but she said she'd put the detector up on my section and see. You wouldn't believe it when she came back and said there were bats," he says.

A recording device hanging on a tree in the back garden picked up the sound of the critically endangered long-tailed bat (*Chalinolobus tuberculatus*) foraging for insects.

It was a surprising revelation for the couple, who moved to their current home in 2008, since they had never seen the creatures of the night on their 1.2 acre residential property before.

"Anybody that I've talked to about it says 'oh, I've never seen a bat!,'" Isobel says.

"It started off as a joke and ended up as a reality," Maurice says.

The Tuatapere area is not lacking in diversity and the Greens appreciate being able to look out on their own patch of paradise, even more so now that they know they have some special visitors from time to time.

"If it goes, it's gone, especially the native bush. I'd hate to see it ever disappear. If that went so would all the native birds etcetera, because they rely on it," Maurice says.

When asked to find about all the animals in the Tuatapere area, Catriona decided installing eight of the automatic detectors near where bats might forage would be a good idea as there was a variety of potential habitat for them to be spending time in.

While there was such a wide range of organisms spotted, including the endemic weta the green Maotoweta virescens, and the araliad plume moth (*Pterophorus monospilalis*) most people had one thing on their mind.

"I was very excited that everybody found so many different insects and everyone was super excited about the spiders but I gather everybody else was excited to discover that there's bats flying about their area because they weren't aware of them. It's a beautiful forest so I'm not at all surprised we found amazing species."

Long-tailed bats were common throughout New Zealand in the 1800s but a combination of clearance and logging of lowland forests, clearance of trees for urban expansion and agricultural intensification and predation by introduced species all contributed to them becoming a threatened species.

"It is exciting to find evidence of bats in the area because Tuatapere has historically had a lot of logging. There's quite a lot of weeds and pests, and there isn't extensive pest control, so the bat population that is there has hung on."

As an indicator species that sits at the top of the food chain, bats need healthy

waterways, full of indigenous wetland marginal plants and with them the insects which live on them and in the water in order to thrive.

The evidence of bats was not a complete surprise to Catriona, with an older record from Te Waewae Bay indicating the presence of the native mammal.

"The most limiting factor is the lack of pest animal control which can easily mean populations are wiped out without anyone being aware they were even there."

While the discovery of bats was an exciting one, there were many more discoveries on the actual Bioblitz day, mostly of the creepy-crawly variant as invertebrates stole the spotlight.

Children from both Waiiau Area School and Hauroko Valley Primary School proved to be keen observers as they adventured around their area spotting different organisms.

"This kind of event gets the community to take pride in what they have around them and see what they're sharing their area with, in hopes they will be inspired to take care of it for the future," Catriona says.

Along with Environment Southland staff, helpers for the day included members of the Southland Bird Club, the Waiiau Trust, arachnologist James Crofts-Bennett, University of Otago PhD student Elizabeth Franklin, herpatologist Carey Knox, and naturalist Lloyd Esler.

"To maintain what we've got I'd encourage more pest control. If we have more people going out and just doing a little bit, they don't have to do masses. People can join community groups if they want to and if they have a question all they need to do is ask. They need to go out and celebrate it, go out and have some nature walks and do some bird spotting."

If you are a Tuatapere resident in need of a hand removing pest plants from your property get in contact with your local Lions Club.

The Tuatapere Reserve Pest Control Group, which help conserve the Domain, welcome new members. Contact tuipestcontrolgroup@gmail.com for more information.



Photo credit Colin O'Donnell

▲ *Chalinolobus tuberculatus* (long-tailed bat).

Wintering 'poster boy' walking the talk on Riverton dairy farm

Good practice isn't the only thing you'll find if you visit Luke Templeton's Riverton dairy farm.

Luke is no stranger to publicity through his many accomplishments in the farming industry, but he has been thrust further into the spotlight starring in a series of videos discussing the finer points of wintering cows in Southland.

▼ Luke Templeton.

He's just as comfortable as a media frontman or showcasing his farm as part of a catchment group wintering tour, as he is in the dairy shed when discussing the use of portable troughs and planning for wet weather events, on camera.

The results and feedback have been positive, though Luke admits his friends have taken full advantage of him being elevated to the unofficial position of dairy farming's poster boy.

"For six years now I have been part of the DairyNZ farm environment leaders programme," Luke says.

"I have been the Southland chair for about five years and I have got to meet a lot of the DairyNZ staff."

"One of those guys said they were going to do some winter educational videos, and asked whether I would be available.

"My friends find it a great joke to print it out and put it on their fridge."

"It has been two winters now where I have been DairyNZ's wintering poster boy. But the flipside is, I can definitely tell across Southland over the past four years that practices have improved."

Given he is promoting good environmental practices, it is no surprise that Luke is passionate about the farming industry.

"We were fairly confident that we were doing things right before we went and did the videos, so I asked a few trusted people around me to have a drive around and see what they thought."

It was a really constructive exercise getting honest feedback from farming colleagues, he says.

Luke's great-great grandfather bought 2000 acres in the region in 1911.

The family are now in their sixth generation in the area, with the recent addition of Luke and his wife Jen's daughter, Isla.

You won't just find a regular dairy farm when visiting the family's 260ha property.

There is a 105-year-old working flax mill, complete with its own museum. The mill, maintained by The Templeton Flax Mill Heritage Trust, is the only working flax mill left in the country.

With Foveaux Strait as one of the farm boundaries and whitebaiters and eelers keen to access streams on the farm, there are no shortage of visitors.

This means Luke is used to having his operation in the eyes of the public.

So, showing off the farm and his wintering practices is hardly a step in a different direction.

"We have the public coming through to use the beach entrance quite a lot. It has been in our head for a long time that we can't screen ourselves off and hide away."

The theory has always been to be as good as they can be and keep trying to think of ways they can improve, Luke says.

"That has actually been quite exciting for us."

Though Luke is the front man for wintering, he believes the opposite approach is best.

By getting together and talking about their practices and challenges, the sharing of knowledge helps farmers develop new ideas and new skills, he says.

"I am part of a catchment group out our way that is coming up to our sixth or seventh wintering tour that we do every year. It is a fairly social way to have a look at a few farms.

"It has been a really good way to bring people out and discuss what works and what makes things better.

"I am reasonably passionate about this stuff and this tour was a reaction to some of the negative stuff that has been out there, if I am being honest."

As far as putting his ideas into practice, Luke believes planning is a key element for a successful winter ahead, while also being adaptable.

"For us it is the pre-planning, which is key.

"We start putting baleage on crop in summer, so you have got to think about where could be wet in six or eight months' time.

"Being well pre-planned, you are really grateful for that when you get to winter.

"Having a plan about what the paddock might look like at the start and then being prepared to change if things aren't up to your standards."

Luke's advice for dairy farmers on winter grazing practices can be found on the DairyNZ website and social channels.

Winter grazing rules

For winter grazing in 2024, there are both local and national rules in play.

Environment Southland has been taking a pragmatic approach to compliance during the 2024 season. This means responding to winter grazing complaints as a priority and following our standard investigation process. The outcome of any investigations is dependent on the level of environmental impact.

This season our focus has been on ensuring there are adequate buffers in place between crop and waterways and that critical source areas remain uncultivated and ungrazed.

The Government has indicated it will be repealing its winter grazing rules and it looks likely they could be removed by the 2025 winter grazing season.

However, rules for winter grazing activities will remain in place under the Southland Water and Land Plan. This is consistent with the Government's indication that winter grazing should be managed at a regional level.

It's important to be up to speed with the rules when planning cultivation. See our website for more information on winter grazing (crop) and pasture-based rules for the 2025 season.



Southland newbie cuts well-worn teeth at Bluecliffs

After more than two decades of helping communities around the world in times of war and to recover from disasters, Adrian Humphries is now living his new dream right here in Southland.

▼ Adrian Humphries and Southland District Council Mayor Rob Scott look back on the Bluecliffs response.



Late in 2023 Adrian joined the Southland District Council as group manager regulatory services.

“When the job came up at the end of last year, I moved down as quick as I could,” Adrian says.

With his extensive experience in supporting communities, Adrian was asked to step in to support the Bluecliffs community following a state of emergency, which was declared in the area in February.

Southland District Mayor Rob Scott declared the state of emergency in response to erosion on Bluecliffs Beach

Road following a storm that put homes and an old community dump at risk of falling into the sea.

Adrian is well versed in supporting communities after emergencies, having joined the medical corps of the British Army at the age of 16.

He trained as a combat medic and eventually as an environmental health officer, serving in countries across the world.

“As an environmental health professional, my job was dealing with disease outbreak, preventing disease outbreak, making sure water supplies were safe, getting rid of waste, making sure the food was safe to eat – so all the stuff that keeps people well.”

In the early 2000s, Adrian and his first wife spent time travelling around New Zealand in a camper and they fell in love with the country.

So, when it came time to take the next step in his career, he knew New Zealand was where he wanted to be.

The couple applied for residency and six years later they became locals.

Adrian took on roles as regulatory manager at Ashburton District Council and then Tasman District Council, the latter being where he continued to nurture his passion for supporting communities to recover after natural disasters.

“My career with the armed forces set me up well for a move into emergency management,” Adrian says.

In emergency management there are distinct phases – the response – as a disaster is unfolding and immediately



▲ Aerial view of Bluecliffs.

after; and recovery – helping people and communities get back on their feet once the initial disaster has passed.

“I did all the courses required to work in a response, but I gravitated towards the recovery side,” says Adrian.

Over the decade or so he worked at Tasman, he got plenty of experience due to cyclones, floods and earthquakes. “We used to get an annual disaster-type event in Tasman.

He highlights three key things that make or break a response and then a recovery.

“Everybody wants to know more; people want to know what’s happening and how they’re going to be affected.

“So, honest, clear, straight-forward, understandable communication has got to be your number one priority.”

Secondly, Adrian says one of the biggest threats to a response and recovery is the rumour mill or the conspiracies.

“You need to give people the truth, be honest, and give it from day one. The key is to trap the rumours early and dispel them.

“One of the most successful things I’ve done in many responses has been to physically go out and talk to people.

“I would ask lots of questions and listen to their ideas for solutions. I’d be clear that a lot of those ‘Plan As’ weren’t going to be possible.

“We’d have a conversation and somewhere around Plan J you get something you can assist with.”

Adrian’s third key learning is that the best recovery phases happen when the people

responsible for recovery are involved from day one of the disaster.

“That helps confirm the relationships in the community. If you’ve been in the community from day one, if you’ve formed those links and people know who you are, if you’ve identified your local champions then you’re halfway there.

“You can advocate for the community, and you can connect people with the right agencies and organisations.

“The most successful recoveries I’ve been involved in have been ones where we’ve been able to lean on our experienced people to maintain those really good networks that are set up with the likes of Fire and Emergency New Zealand, Police, Red Cross, Hoto Hone St John, Iwi, that sort of thing,” Adrian says.

Unfortunately, due to timing and illness, Adrian couldn’t be involved in the initial phase of the Bluecliffs response, but he stepped in as recovery manager for Emergency Management Southland following the end of the state of emergency declaration.

Emergency Management Southland is a shared service with the four councils in Southland – Environment Southland, Southland District, Gore District and Invercargill City Councils.

From Adrian’s perspective, the response at Bluecliffs was like any other response.

“You do what you think is right at the time. You get stuck in, and you support people as best you can. The controllers did very well. They evacuated people when they thought there was a risk, and they kept people reasonably well informed.

“The dump site was cleared, which is great. Now people are looking for what happens next.

“The thing about recovery – it’s not just about the money, but it’s all about the money.

“That’s one of the biggest challenges at Bluecliffs, and for many coastal communities around Southland and around New Zealand – all the options cost massive amounts of money,” Adrian says.

“You do what you think is right at the time. You get stuck in, and you support people as best you can”

ADRIAN HUMPHRIES

In his regular day job, Adrian oversees the environmental health, legal and compliance, building assurance and resource consents teams at Southland District Council.

It’s a role that keeps him busy, but he’s delighted that he gets to work with good people, committed to Southland and keen to do a good job.

And he’s keen to keep his finger on the pulse when it comes to emergency management.

“Now that I’ve been here for a few months and cut my teeth, I’m hoping that I’ll be able to work with the rest of the civil defence community here and be ready for the next one.”



Community feedback leads to change

After six weeks of consultation, a record 330 submissions, three hearing days and three deliberations meetings, Environment Southland's Long-term Plan has taken shape.

In late March, Council went out to the community with a key consultation proposal focused on significant investment in flood protection to improve community resilience. A proposal to change the way catchment rates are collected was also on the table.



▲ One of many conversations over the six weeks of consultation, at South Alive.

One of the prominent themes emerging from submissions was the affordability of the proposed flood protection investment during a cost-of-living crisis and rural downturn.

Where is the line between what is essential and what is a nice to have? This was the question submitter Dave Riddell posed to councillors in his submission around affordability.

Or to put it another way as some submitters did, how much risk are we prepared to accept as a community?

Several people spoke about needing more time to digest the proposals, something that resonated with councillors.

Conversations around the proposal to shift to capital value catchment rating were wide ranging from submitters worried about large capital investments they had made for environmental reasons to people who fully supported the idea of spreading the costs of flood protection more evenly across ratepayers.

People overwhelmingly supported the idea of continuing to invest in our region's flood protection to help "keep our arteries running as one submitter put it, in reference to helping to ensure roads remain open during floods

Working with catchment groups on small scale interventions, such as the use of sediment traps, was a popular call.

Some submitters queried whether there was too much reliance on modelling and potential central government funding. Environment Southland highlighted the need for accurate catchment modelling to be able to better assess flood risk.

Making room for rivers and not losing momentum around biodiversity projects when government funding runs out were on submitter, Brian Rance's, mind.

Sue Allison, from Groundswell Western Southland told councillors that people were stressed and businesses would pass on rates' rises through price rises. Her colleague, Chantel Marshall presented a petition signed by 950 people asking to delay the plan for 12 months and calling on councillors to find savings in the budget.

In response to submissions, Councillor Jeremy McPhail questioned whether the proposals were "too much of an overload" and Chairman Nicol Horrell talked about a phased approach.

Nightcaps resident Ron Baxter spoke passionately about people on the poverty line and the need to advocate for Southland with central government.

Other submitters asked whether changing to a capital value rating basis is fair across the board, and whether reserves could be used to fund more of the proposed work.



▲ Tamariki enjoy the tuna/eels and drain game at the Murihiku Marae community day.

Another theme was the need for Environment Southland to keep operating costs down.

Liam Calder implored Environment Southland to consider youth – a call that has been heeded with councillors agreeing to look into a youth mechanism within council.

In response to feedback received in the 330 submissions, the Council has reduced its proposed \$2.3m investment in flood protection to \$1.17m in 2024-2025 by using reserves rather than rates, as well as changing the timing of some of the work. This allowed councillors to substantially reduce forecast rates rises. They also decided to transition towards a new rating model over the next two years.

Environment Southland chairman Nicol Horrell says planning and delivering long-term flood resilience is a core part of the regional council's work to help keep communities as safe as possible ahead of time, but how to pay for that is the question.

"The reserves are there for a rainy day, and the community is telling us it's raining," he says.

The average annual total rates increase has decreased from the initial proposed 23% to 12.6%. This means for a \$450,000 property the impact would be \$34 per annum, or 67c a week.

There was community support for ongoing flood protection in the region, but there were also suggestions around how much and how fast work should happen.

"We were hugely encouraged to receive a record number of submissions for a Long-term Plan. We've taken the time needed to listen, understand and respond to people's thoughts and concerns.

"Affordability issues were front of mind for councillors during deliberations and we have found savings and efficiencies across the organisation, while ensuring the Council's statutory obligations continue to be met," Nicol says.

Among the many words of wisdom shared with the Council, submitter Jenny Campbell offered a Whakatauki: "Titiro whakamuri, kōkiri whakamua - Look back and reflect so you can move forward."

Key decisions made by Council include:

- The funding of the flood protection operating expenditure with \$2.34m of lease area reserves to reduce the impact on rates over four years, as consulted on with Catchment Liaison Committees.
- There will be a two-year transition to a capital value rating system and there will be further consultation during 2024-2025 on whether there is a local rate or regional rate to fund river management programmes.
- The use of \$1.38m over four years from biosecurity and land sustainability surpluses to fund their ongoing work programmes and offset rates.
- The flood protection capital works programme from 2027-2028 onwards is indicative, and will only progress subject to detailed planning being undertaken, government funding being available, and further consultation with the community.

The 2024-2034 Long-term plan was scheduled to be formally adopted in July.

Find out more at: www.es.govt.nz/ltp

The regeneration game

Behind every overnight success is 20 years hard work they say, but in the case of Roslyn Downs, it's closer to 60.

Due picturesque rolling hills fenced to contours, where bellbirds trill from the treetops.

The Glencoe property which won Environment Southland's water quality and biodiversity award at the Southland Ballance Farm Environment Awards earlier this year, has been farmed by three generations of the Miller family, each critical to its commercial and environmental success.

Chris Miller bought the 149ha farm at its heart in 1960. When he stepped out in 2020, it had grown to 1034ha which he was proud to leave in the capable hands of his sons, Jason and Quentin, and grandson Andrew.

The family succession very almost didn't happen at all. The sudden reversal in government policy and farm financing that saw many neighbouring farmers forced off their land in the 1980s very early ended the Millers' dreams as well.

Jason and Quentin were encouraged to follow their own agricultural paths on leaving school while their parents knuckled down to save the farm. It worked. Just. The brothers returned to Roslyn Downs as second-generation partners in the 1990s.

"It is pretty tough going at the moment for a lot of people. If you have seen it before, it gives you that perspective that you do come out the other side," Quentin says.

The farming mantra of the 1970s-80s had been about productivity per hectare. Farmers were incentivised to drain swamps and clear bush. Much of what needed to be done on Roslyn Downs was to undo what earlier generations had seen as progress.

"When we came into the business, we started seeing that our biggest liability was 10km of waterways, none of them were fenced," Jason says.

Without stock disturbance the 46ha riparian land, today awaiting native planting, grows fewer pest plants than in pasture.

"Marginal land will never wash its face, it's always trying to revert," Quentin says.

Where the first-generation investment did stand the test of time was genetics – the Coopdale sheep (a blend of Coopworth and Perendale) set the farm up for the future and supported a transition from the stock-per-hectare mindset into a profit-per-animal business model.

"It's better for the animals, the balance sheet and the environment," Andrew says.

The trio enter awards, not to win but to rub shoulders with and be inspired by the other entrants.

"There are a lot of good stories in farming that we need to hear more about," Jason says.



▲ (From left): Jason, Quentin and Andrew Miller of Roslyn Downs that won the Regional Supreme Winner at the Southland Ballance Farm Environment Awards, the Ballance Agri-Nutrients Soil Management Award, Hill Labs Agri-Science Award, Rabobank Agri-Business Management Award, NZFET Innovation Award, the Environment Southland Water Quality and Biodiversity Award.



▲ Gaynor and Chris Miller on the doorstep of Roslyn Downs before their retirement in 2020. Chris Miller died in 2023 and is survived by Gaynor, three children, eight grandchildren, three great-grandchildren and a thriving 1063ha farm.

Sensors reveal the bite of winter air

NIWA is conducting research for Environment Southland to track air pollution across the Gore airshed using a network of sensors.

Twenty-eight sensors have been placed on power poles across the town in a grid pattern to monitor pollutants PM10 and PM2.5. The monitors went up at the end of April and were due down at the end of June.

The monitors record the levels of particles in the air (mainly woodsmoke from home heating) continuously, sending data to the cloud every 15 minutes.

Environment Southland air and terrestrial sciences team leader Dr Nick Talbot said this work would help the Council understand how relevant the current monitoring site on Main Street, Gore is.

"This type of data is really important in helping us to support our community in making changes to improve our air quality. Poor air quality can cause significant health impacts and if we all work together to improve it, we can all breathe easier."

Similar research has been conducted in Invercargill but the two airsheds have a lot of differences, including the terrain, elevation and reliance on multifuel burners, Nick says.

"These sensors are set to run continuously for two months to help ascertain spatial variability in air pollutants across the Gore airshed. Essentially, that means identifying what areas have the highest concentration and what areas have the lowest concentration."

The current monitoring site did not record an exceedance from 2021 through to 2023 during the winter air quality monitoring season, which runs from 1 May to 30 September.

"That site only covers one area, how relevant is that to the rest of Gore? We believe there may be areas around Gore that might be exceeding or at least have higher

concentrations of particulates. I think we need to understand whether or not we need another air quality monitoring site simply because it's quite hilly in Gore so one site might not provide a true representation of peak concentrations."

The monitoring will also be able to shed a light on how long the dispersal of pollutants takes across Gore.

NIWA principal scientist – air quality Dr Ian Longley and his team are also conducting air monitoring in five Gore homes and at Māruawai College's Junior Campus.

"This monitoring helps us to understand how much polluted air from outdoors gets into the air of a range of homes. This research has previously shown that polluted air can get trapped inside homes which are too tightly sealed. Whereas opening doors and windows would prevent this, it's not something people tend to want to do in the middle of winter."

Alongside this, NIWA is also trialling portable air filtration devices in these homes to see how effective they are in terms of both cleaning the air, and whether householders are happy to have these machines in their homes, Ian says.

"Early indications are that they are very effective and can make a substantial difference, especially for people who are particularly sensitive to the effects of polluted air such as those with respiratory conditions. Although we are testing in only a small number of homes for now, the goal is to do more in the future."

"Ultimately, though, the real solution is to prevent the pollution being caused in the first place. This study is aimed at helping people in Gore and towns like it to understand the issue of air quality and to have some evidence around what the solutions might be."



▲ Nick Talbot installing a new sensor in Gore.

Good ventilation is a surprisingly effective way to improve their air quality in their homes, Ian says.

Many factors contribute to polluting the air in our homes—cooking, heating, candles, and smoking are amongst the most common.

"If the air is clean outside, opening windows or doors briefly can refresh the air. Kitchen extractor fans are very useful. Portable air filtration units are widely available and our testing shows they can be very effective."

However, the most positive impact comes from avoiding creating pollution in the first place.

"Heating with electricity, where it is possible, is ideal for air quality. If you only have a wood-burning appliance, making sure you burn only dry seasoned wood makes a huge difference."

"Keeping your chimney cleaned also helps. If you have the chance to upgrade your wood or coal heater make sure you check out the wide range of clean heat options available."

LOANS AND FUNDING

Banks - Some banks are offering low/no interest loans to help make homes warmer and drier. Ask your bank if help is available.

ECCA - The Warmer Kiwi Homes programme offers funding towards heat pumps, efficient wood burners, efficient pellet burners and ceiling and underfloor insulation for low-income home owners. Find out more at: www.eeca.govt.nz/co-funding-and-support/products/warmer-kiwi-homes-programme/

Building connections for a better environment



▲ Jason Herrick - Federated Farmers President

Environmentalist and farmer aren't words you might think always go together, but that's how newly elected Southland Federated Farmers president Jason Herrick sees himself.

With his tenure as president just underway, Jason's focus is on building local relationships with a range of agencies including Environment Southland and improving the public's perception of farming.

"We're only as good as the bottom five per cent in everybody's eyes. That's where a lot of the narrative has come from. If everyone thinks all farmers are the same as the bottom five per cent, then we're all pretty bad.

"Ninety-five per cent of farmers are actually doing a really good job and are bigger environmentalists than what the environmentalists are. Without the environment what have we got?"

Jason and his wife Sandy have been in farming for the past 27 years both in Canterbury and in Southland. But with four children who aren't interested in taking over a family farm, they decided to change tack and for the last 10 years they've been managing Murray Creek Farm, a 415 hectare dairy farm in northern Southland.

Over that time, they have created improvements in water quality in Murray Creek, restored wetland areas, planted and fenced around 70 per cent of their waterways and formed a water users group to improve the North Range Aquifer.

"Without the environment what have we got?"

JASON HERRICK

"One of the biggest success stories on this place, in particular, is the water," Jason says.

When they first moved to Murray Creek Farm, the North Range Aquifer was a diminishing aquifer, meaning the water

level was continuing to decrease because the water extraction exceeded the level of recharge in the aquifer for some years.

"We formed a water users group between the three properties that have water take consents on the aquifer.

"We sat down and had discussions about water takes, what we could and couldn't manage. We re-did our consent applications and put it all together as a water users group."

The new consents have parameters that restrict irrigation before certain dates. Readings are taken and that monitoring determines the allocation of water for the year.

"For the first three years of our consent, we had 75 per cent of our water allocation every year. Then the following four years after that we've had 100 per cent of our water allocation because the aquifer has rebounded. We've looked after it and it's now artesian again."

With the property being partly hill country, there are lots of waterways and most of these are fenced and strategically planted or the long grasses are left to help filter sediment and other contaminants before they reach the waterways.

Jason's familiar with what's in his creeks. He regularly gets out and does a bit of digging around in the creeks – especially when they dry up in summer.

"We do see a lot in the pools and culverts and they're absolutely chocker. If there are any trout or eels stuck in there, I transport them back to the river.

"We house freshwater Koura, eels, galaxiids. You name it, they're here. It's quite a healthy stream.

"You know your waterways are in pretty good health when you've got that sort of stuff."

One of Jason's other passion projects has been the restoration of a wetland area.

"There was a water hole in the middle of a 13 hectare paddock that would never dry up. It was just mud and because it was in

the middle of the paddock, it was hard to fence off from the animals.

"Every time we went in there the whole herd was in it. It's a natural behaviour for animals to gravitate to that stuff. They love wallowing and they love playing in the mud. I ended up subdividing and changing quite a few things so I could fence it off."

That area has now been planted and fenced, and Jason is now trying to source a special plant, a rush called Raupo, so he can re-introduce the Australasian Bittern (Matuku-hūrepo).

"It hasn't been in northern Southland for 30-odd years," Jason says.

"It's a very elusive bird, it does not like to be seen. It needs rushes to hide in, and I'm sourcing the particular plant it likes now.

"When the wetland does fill up with water, it's amazing. It's got no connection to a waterway, but the groundwater fills it, and eels end up in there."

While these projects have been labours of love for Jason, the negative perception of farming, combined with his own health and wellness challenges led to him seriously considering walking away from farming altogether.

"I'd had enough of the direction. It felt like farmers were being really targeted, for the last six years in particular. But it had started before that, previous governments had started the waves of regulation and control.

Finding a community and a positive mindset change through Weight Loss Coaching Works has been a major game changer for Jason.

"I'm listening to better content on how to block out that negative input and navigate difficult situations. I've learned lots of new strategies like habit stacking and time blocking, and now I'm not so busy being busy anymore, I'm busy achieving what I set out to do on a daily basis.

"And having my health back again – that was huge for me."

After several health scares between 2020 and 2023, Jason's journey has now led him to training for half marathons.

"I firmly believe that physical health and mental health go hand in hand, and that has been the turnaround for me."

And with the change in government, Jason sees a more positive direction for the farming community.

Jason's hoping this means he can put more of his focus on local challenges rather than advocacy to central Government.

"My main goal for my three-year term for Federated Farmers is to get a better connection between farmers and authorities, that they can work better together.

"It's so much easier working alongside somebody than being told what to do. We all need to be encouraging people along and empowering them to do the job.

"That's where my focus is. To try and get people to come along for the ride."



Jason is a spokesperson for Whatever with Wiggy Charitable Trust, founded by Craig 'Wiggy' Wiggins. Through the Trust's campaign 'Lean on a Gate', they aim to empower community connections to build stronger people through a community support network in regions across New Zealand.

You can 'Talk to a Mate' or become a supporter of the charity through their website:

www.leanonagate.co.nz

New mapping tools helping navigate the region's future

Glenda Darling looks at LiDAR as one of the building blocks helping us navigate the way forward in a changing world.

Along with husband Mat, she has a passion for bringing people's surroundings closer to them by transforming complex data into clear maps telling more in-depth regional landscape stories.

The couple operate Black Dog Geospatial in Invercargill, and are among the many businesses, organisations and individuals benefitting from regional investment in LiDAR (light detection and ranging)

modelling for Southland, which offers substantial benefits, as the region plans for the future.

"Now we've got a really accurate representation of what the ground surface looks like through tools like LiDAR, so we can do a whole lot more," Glenda says.

LiDAR refers to an airborne remote sensing method that uses pulsed laser to measure variable distances to the earth, generating a precise, three-dimensional layer of the earth's surface and features. High quality information is an important foundation for decision-making and LiDAR provides critical data that can be used to map and model changes to the environment.

Previous elevation maps only had contours down to 8m, whereas LiDAR has allowed us to zoom right down to 1m in rural areas and up to 20cm contours in some urban areas.

Glenda says a good example of the benefits LiDAR offers is its use in modelling floods, where it was easy to measure a peak but not so easy to measure the volume of water. LiDAR allows people to measure volumes much more accurately by being able to see a 3D image of the bottom of the river.

The mapping technology is helping us visualise our region in new ways to assist with more informed decision-making.

It can be very helpful for making decisions about residential and commercial development, renewable energy generation and managing things like on-farm nutrients and precision forestry spraying.

This data is useful across the likes of surveying, engineering, construction, communication, and archaeology.

"LiDAR can also be a more than useful tool for farmers to make quick decisions on farm, such as where to put a fence", Glenda says.

There are also conversations happening with insurance companies, which are interested in high quality data as they continuously monitor market risk.

"Having highly accurate information can work both ways, because with more accurate knowledge comes more certainty," she says.

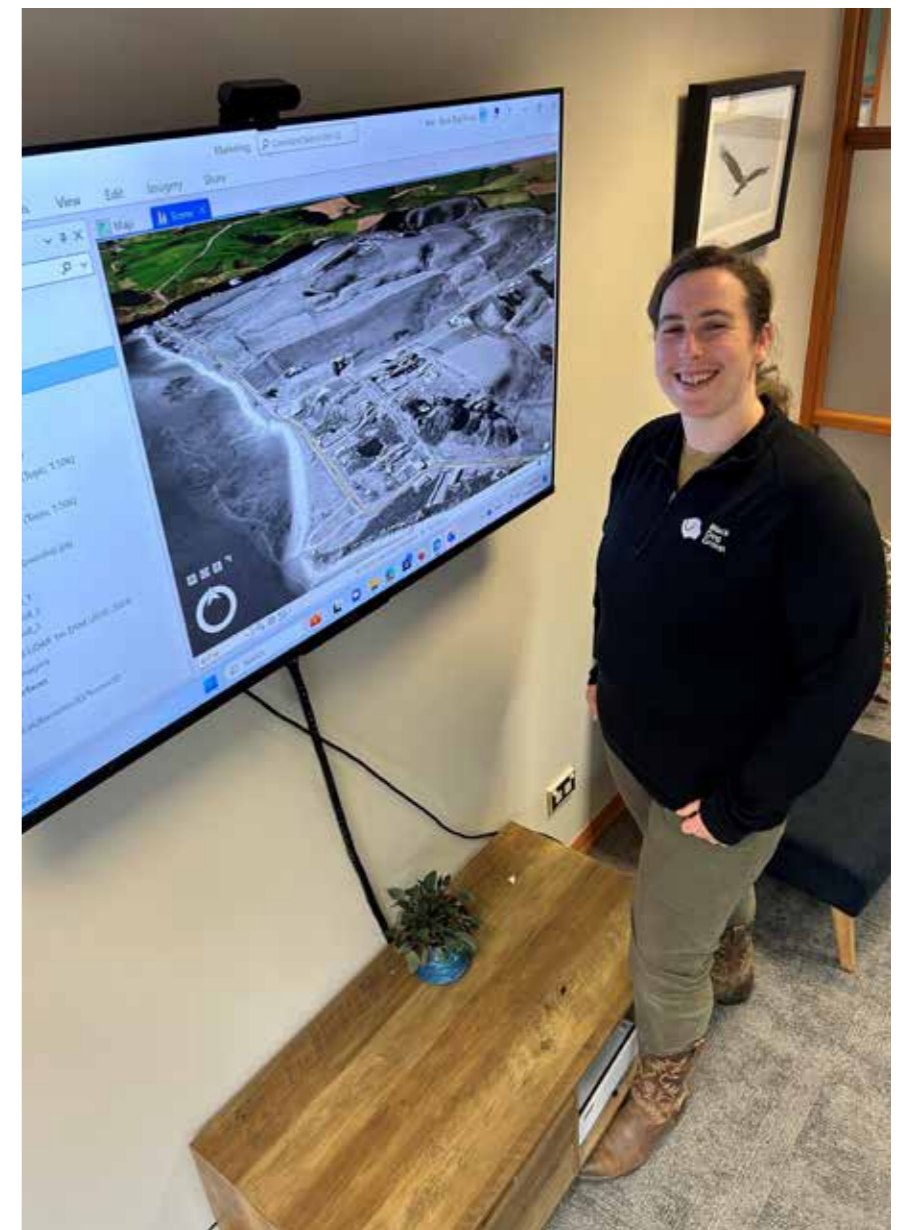
Mat says interest in LiDAR and the wider field of Geographic Information Systems (GIS) has seen the Southern Institute of Technology introduce a night class for people wanting advanced practical training on using GIS.

"Having highly accurate information can work both ways, because with more accurate knowledge comes more certainty"

GLENDA DARLING

"There's people who are doing it for professional development capacity, so across industries and councils, but you're also seeing people from DOC, rūnanga and even a geography teacher enrolling," he says.

Great South GM Strategic Projects Steve Canny says they are routinely using LiDAR for a wide range of purposes as it gives more confidence in project decision-making and more certainty around managing risk.



▲ Glenda Darling checks out a 1983 image of Fortrose that has been overlaid with elevation data.



▲ A closer look at the LiDAR technology - map showing Fortrose area.

Environment Southland GIS team leader Geoff Welch says the vast majority of Southland, excluding the National Parks, has been LiDAR mapped.

"LiDAR data will greatly improve council projects such as hazard planning, policy, compliance, community advice, farm mapping and management plans, as well as understanding landscape change and hydrological processes such as stream flow estimation and catchment size."

He's encouraging people to check out the LiDAR maps on the Environment Southland natural hazards portal.

"You can even check what the view will be from a location where you want to build a new house," he says.

Check out the Natural Hazards Portal here:

www.es.govt.nz/natural-hazards-portal

Updates



Climate resilience projects

We have completed upgrades to stop banks in Invercargill, along the Waihōpai River, and in Wyndham. The work significantly increases the level of flood protection for people, homes and critical infrastructure.

The Waihōpai River's true left stop bank stretching 3.1km between Ohai Rail Line Crossing to Stead Street has been widened and raised and rip rap rock has been installed.

The existing stop bank network in Wyndham has been upgraded to address a range of potential risk factors, including seepage, instability, and a 90-metre gap in the network at Ferry Street.

These projects are among five recently completed Resilient River Communities initiatives co-funded by Environment Southland and the Government's Kānoa – Regional Economic Development & Investment Unit.

To find out more, go to www.es.govt.nz/climate-resilience-programme

FEES AND CHARGES SCHEDULE



Annual consent charges

Councillors recently approved the 2024/25 Fees and Charges Schedule.

Fees for the current year have been adjusted to reflect the actual monitoring costs of consent conditions, something Environment Southland has not reviewed for some years.

As a result, some of our 4,000 consent holders who were previously being undercharged may be notice an increase in annual fees.

Anyone who may struggle to pay their annual fee on time should contact our finance team to talk about their options on 0800 768 845.



Proposed Regional Climate Change Strategy

A hearing panel made up of representatives of the Regional Climate Change Working Group, comprising the four Southland councils and Te Ao Mārama, heard submissions on the proposed Regional Climate Change Strategy in May and deliberated in June on suggested changes.

Each partner is taking it back to their own agencies for consideration for adoption. The proposed Regional Climate Change Strategy attracted 60 submissions. It was endorsed by all councils for consultation in early 2024.

A summary of submissions, as well as full copies of submissions is available at www.es.govt.nz/environment/climate-change

The governance-level regional climate change working group was established in February 2023 and met several times throughout 2023 to develop the proposed strategy.

Time to think about...

SEPTEMBER

RABBITS – It's the start of another breeding season for the rabbit population. Carry out rabbit control now before the young rabbits start appearing. For more information, visit www.pesthub.es.govt.nz

POSSUMS – With spring growth, these pests are on the move to look for food sources, so it's a good time to undertake possum control. Several control methods can help landowners manage these pests. For more information, visit www.pesthub.es.govt.nz

GORSE AND BROOM – We're asking Southlanders to be good neighbours and remove all gorse and broom within 10 metres of their property boundary. Good neighbour rules also apply to ragwort and nodding thistle. There are a range of control options. Check our Southland Pest Hub or call the biosecurity team for advice.

BOATING – It's time to get ready for the summer boating season. Here are some simple, but important things you can check off your list before you head out on the water:

- Service your boat regularly
- Check safety equipment, including; VHF radio, flares, charged batteries, working bilge pumps etc
- Check your lifejackets for fit and condition and replace any that are no longer suitable
- Brush up on your boating safety rules, regulations and ski protocols
- Consider your skipper responsibilities

CLEAN VESSEL PASS – Before loading your boat and gear to head into Fiordland's beautiful waters, ensure you have a current Clean Vessel Pass. The simplest way to apply for a new Clean Vessel Pass, or renew an existing pass, is through the Environment Southland website www.es.govt.nz.

OCTOBER

MUSTELIDS AND RATS – With the start of bird breeding season, it's essential to get good control of ferrets, stoats and weasels (mustelids) and rats before they start preying on nests and vulnerable young. There are a variety of traps out there, so give our biosecurity team a call for advice or visit www.pesthub.es.govt.nz

CHECK, CLEAN, DRY – Get your tackles ready – fishing season starts on 1 October. If you're moving between waterways across the region, be sure to CHECK, CLEAN, DRY any gear that comes into contact with water. Help to protect your favourite waterways this summer.

NOVEMBER

FIREWOOD – Now's the perfect time to sort your firewood supplies for next winter. Visit www.BreatheEasySouthland.co.nz for a list of Good Wood approved suppliers.

FARM WASTE – Running a farm can produce many different kinds of waste. Following winter grazing, farmers have lots of bale wrap to manage. It's important to have a plan for dealing with your on-farm waste to avoid burying or burning it. There are several disposal options through recycling contractors. Visit www.es.govt.nz/environment/pollution-and-waste/farm-waste-for-management-solutions.

To learn more about pest animals and weeds in Southland, including control advice and the latest rules, visit our online Southland Pest Hub at www.pesthub.es.govt.nz or call the biosecurity team on 0800 76 88 45.

On the farm



By **JOSEPHINE STEWART**
Land sustainability officer

Farm Environmental Management Plans have been part of Southland's approach to improve water quality for many years. While the Government is reviewing national regulations, farm plans are still part of our regional plan and Southland farmers will need one.

To help you get started, Environment Southland has resources available at no additional cost. These include:

- Expertise from the land sustainability team on farm planning and assessing landscape risks
- Farm plan developer guidance with all the key information you'll need to get started
- Maps and advice that are specific to your property.

The developer guidance provides a step-by-step guide to farm planning in Southland. It will enable individuals to get underway with creating their own farm plan from scratch or modify their existing plan to meet Southland requirements. Of course, land sustainability officers can help at every step. We encourage farmers to look to the future and make a start on farm planning now.

Cultivation rules in the Southland Water and Land Plan have been updated, and you'll need to consider these this year if you're renewing, or establishing pasture or forage crop. It's important to manage your cultivation activities to minimise the risk of soil erosion. Soil is a valuable farm resource and if lost can have negative impacts on water quality and farm productivity.

If you would like support with farm planning or meeting the new cultivation regulations, please give our land sustainability team a call on 0800 76 88 45. We're keen to help.

Out in the field



▲ Biosecurity officer Mike Hargraves (left) leads a bird watching tour as part of New Zealand Garden Bird Survey week. Environment Southland jointly hosted two community events with staff from the Invercargill City Library to support the annual survey which contributes to bird research in New Zealand further afield.



▲ Hedgehope School, Heddon Bush School and Thornbury School students discuss pest management control with education advisor Jane Tagomoa. The schools gathered at Thornbury Bush's treasured reserve site known as "The Donut" to work on pest control plans to protect its native species and magnificent biodiversity.



▲ Environment Southland councillors gather for discussions on their field trip in the Waiau catchment earlier this year. The trip included visits to the Te Wae Wae Lagoon whitebait habitat enhancement by the Waiau Fisheries and Wildlife Habitat Enhancement Trust, as well as to the restoration of land at Te Kōawa Tūroa o Takitimu by the Waiau Mahika Kai Trust.



▲ Environment Southland's catchment integration team chatted to farmers at Thriving Southland's Agritech and Innovation Field Day earlier this year. Held at the Southern Field Days site, the field day showcased advances in technology and practices in the agricultural sector.