

EnvirosOUTH

Autumn 2024

Looking back

Remembering the 1984 floods

Page 6

Community reaping rewards

Bluff Hill's restoration

Page 10



environment
SOUTHLAND
REGIONAL COUNCIL

Te Taiao Tonga

Contents

Bronze Reflection for Myross Bush	3
Environmental achievement celebrated	4
Remembering the 1984 floods	6
Lessons from 1984 floods	8
Bluff Hill's restoration	10
Investing in Southland	12
Invercargill-made nets to support tuna at Stead Street Pump Station	13
Water testing shines a light on groundwater drinking supplies	14
Undaria control vital for protection of Rakiura	16
Updates	18
On the farm	19
Out and About	20

EnvirosOUTH

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Cover

◀ Divers survey the coastline of Rakiura/Stewart Island.

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Winter will soon be biting, and it's at this time of year that many of us feel the effects of poor air quality.

We know that those with respiratory conditions, young children and the elderly can be susceptible to smoke from home burners, and you may even notice it while you're out for an evening walk on a winter night.

As well as regular monitoring, we support the voluntary Good Wood scheme which promotes trusted suppliers of dry wood. We know through your feedback that this is a valuable and reassuring programme for purchasing your wood supplies.

We'll improve air quality by increasing everyone's understanding of the things that impact it. We promote how to get the most out of your burner and there are a range of tips and advice on our website, along with the latest monitoring results – go to www.breatheasysouthland.co.nz.

Wilma Falconer, chief executive, Environment Southland



Improving flood protection and how we share the cost are matters we are consulting on right now.

These proposals are for the 2024-2034 Long-term Plan and they follow thorough debate about ongoing investment in flood protection and options for sharing the cost with all ratepayers.

Flood protection infrastructure provides protection to people, property and critical infrastructure like roads, utilities and telecommunications – important to our way of life and regional economy – something we all benefit from.

The Council wants to position Southland to reduce the impacts, and recover quickly from, the inevitable floods that will come our way.

We want to know what you think of our proposals and are keen to listen to your feedback, so please go to our website or pick up a copy of the consultation document to find out more.

Nicol Horrell, chairman, Environment Southland

Environment Southland

A thriving Southland – te taurikura o Murihiku



▲ Tamariki from Myross Bush School, Environment Southland and Invercargill City councillors, and Enviroschools educators celebrate during the Bronze Reflection.

Environmental inspiration leads to Bronze Reflection for Myross Bush

Myross Bush School students' environmental exploration has been recognised with an Enviroschools Bronze Reflection as the school embraces its local whenua.

Students and Enviroschools programme co-ordinator Amy Polascheck presented their work to Environment Southland councillors earlier this year.

And it is fair to say councillors were impressed by the wide range of environmental work the tamariki (children) are undertaking.

The outstanding progress, which was also on show at Myross Bush School's Bronze Reflection celebration, included removing saplings from nearby Kerr Bush, establishing paper recycling processes, a food waste collection, maintaining a thriving worm farm, tunnel house and vege plots, as well as a bee-friendly garden.

The Enviroschools programme offers three key learning stages – Bronze, Silver and Green-Gold, each involving student-led reflection.

Amy says the buy-in from the whole school has been at the heart of the environmental gains at Myross Bush School.

"We have a culture driven by all of our students contributing to our projects."

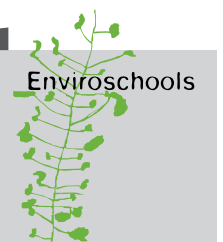
Part of the inspiration behind Myross Bush's initiatives came on a walk through Kerr Bush when the students discovered a mighty kahikitea tree.

The discovery motivated the tamariki to create their own ngahere (forest) on the edge of the school grounds.

The school's Envirogroup gathered to design the ngahere before community members helped to clear a planting area and pathways, as well as a pou whenua (special entrance way).

An opening was held to celebrate the establishment of the ngahere and now Myross Bush School has a lineup of goals to continue their environmental progress.

These include further development and weed control at their ngahere, plastics recycling and a composting initiative.



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.

"Whether it is working on our ngahere or any of our work, it has just become part of our school culture and it's what we do," Amy says.

At Environment Southland, they presented their environmental work to the Strategy and Policy Committee.

Councillors commended the Myross Bush School pupils on their achievements and their presentation.

"There is so much more work to be done, and we work on the philosophy that as one class leaves and goes off to high school, another comes in and continues the work," Amy says.



▲ Under Sarah Bynevelt's leadership, the entire Sanford Bluff processing team is involved in supporting environmental and sustainability outcomes.



▲ Sarah Bynevelt (left), winner of the Individual Environmental Action or Leadership Award with Jordan Todd (ANZ).

2024 Environment Southland Community Awards

Nominations for the 2024 Environment Southland Community Awards will open on Monday, 3 June. Seven different award categories cater for a range of environmental projects and actions being undertaken by individuals, community groups, businesses, farmers and students. The winning entries will receive cash prizes courtesy of our valued sponsors. All nominees will be invited to attend the awards dinner to be held on Thursday, 17 October, at the Ascot Park Hotel, Invercargill, where the winners will be announced.

For more information on this year's awards, check out www.es.govt.nz/awards24

Community awards a great opportunity to celebrate environmental achievement

Sarah Bynevelt says entering the Environment Southland Community Awards is a terrific opportunity to reflect on achievements and hear about other inspiring environmental work happening in the region.

Sarah, Sanford Bluff site manager, was the winner of the Individual Environmental Action or Leadership Award sponsored by ANZ at the 2023 awards.

"I found it a really great process and for me as a manager, as we don't often stop and reflect on all the things we do that people contribute to," she says.

Every year, many community groups, schools, businesses and farmers are taking action to make a significant difference to the Southland environment. Environment Southland recognises and celebrates those unsung heroes in the community who are taking a leading role in the environmental space through the awards.

Sarah has led the transformation of Sanford's Bluff processing facility into a

high-performing, proud, sustainability powerhouse. She has focused on reducing waste and plastic use through clever recycling that benefits the community, using every part of every fish so nothing goes to waste and inspiring her team and community to make sustainability a priority. She also led the commissioning and installation of a new processing line to make work easier for her employees among other initiatives.

"It was a real treat and a pleasure to have the councillors who judge the awards come and visit, to see where we work, and their genuine interest in what we do."

She says it was fantastic seeing other award nominees being recognised for doing what they're passionate about – and the awards ceremony was an enjoyable way to see and celebrate all the positive work going on.

"The awards night was excellent. It was cool to see so many different initiatives being celebrated."

Sarah says she's received a lot of positive feedback from the aquaculture industry from the awards, with people reaching out to Sanford to chat about some of the initiatives the team are undertaking.

Fellow 2023 finalists and past award winners Omaui Landcare Charitable Trust are bringing birdsong back to the picturesque coastal location.

Chairman John Collins says the awards are a wonderful opportunity for groups doing environmental work to get their names out there.

"It's about supporting the cause too and it's good for the morale of volunteers," he says.

The Trust was formed in 2013 by a group of Omaui residents who were concerned with the declining health of the native bush and wildlife in the area. They started trapping possums and 10 years on are holding the fort against a range of predator species.

It's important for environmental efforts to be publicised which helps with education and funding efforts as well, John says.

"The rewards are there for everyone to see and hear with flocks of kererū, tūi and even the occasional kākārīki visiting."



▲ Omaui Landcare Charitable Trust members, (left to right) Amy Morrison, John Collins, Malcolm Loan and John Stone.

► 1984 SOUTHLAND FLOODS - 40 YEAR ANNIVERSARY

Remembering the 1984 floods

Late January marked the 40th anniversary of 1984 Southland floods – a pivotal event in the region’s history, and a reminder of the importance of maintaining and investing in flood infrastructure.

The 1984 Southland floods saw thousands of people evacuated from their homes under a state of emergency in Invercargill, Otautau and Tuatapere, thousands of stock lost, and almost 1000 buildings damaged.

Environment Southland chairman Nicol Horrell said the event was the catalyst for the extensive flood protection construction, and upgrades that have buffered us from more severe flood impacts for several decades.

However, with flooding an ever-present risk, it was more crucial than ever to

maintain and improve flood protection schemes that protect people, property and livelihoods, Nicol says.

The floods in 2020 and 2023 were another reminder of how important it was to maintain and invest in Murihiku Southland’s flood protection network.

“Environment Southland has been working on Government-co-funded climate resilience projects to upgrade some of the flood protection network, to help ensure towns in our region are more resilient to the challenges of a changing climate.”

These projects, and others including the development of a 30-year Infrastructure Strategy, will build greater resiliency in the face of climate change for our communities and critical infrastructure, Nicol says.

Further investment is needed now and for the future because parts of our flood protection network are at least 30 years old, and more frequent and intense weather events are forecast to continue with our changing climate, putting it under pressure. This investment is a priority for our Long-term Plan, which we’ll be consulting on soon.

Flooding is one of the most common natural hazards in Southland and it is important to be prepared.

Following the 2020 Mataura floods, a 600 m section of river bank along the Mataura township, which was identified as at risk of erosion, was strengthened. This was in addition to the climate resilience programme Environment Southland is engaged in across several projects to help ensure towns in our region are more resilient for the future.

To minimise the impact of floods, Emergency Management Southland recommends people visit the cdsouthland.nz website.

This website provides information on what to do before, during, and after a flood.

Residents can also use Southland’s Natural Hazards Portal on the Environment Southland website to determine the flood risk level in their area.

Read about a couple of Southlanders’ memories of the 1984 floods on Page 8.

- Looking north up King Street, Otautau towards the railway station.
- Aparima floodwaters at Fairfax.
- Waihōpai River at Woodlands Township Bridge.



▲ North Road looking north from Waihōpai River, Invercargill

► 1984 SOUTHLAND FLOODS - 40 YEAR ANNIVERSARY

Lessons from 1984 Southland flood still relevant today

Catriona Flynn remembers watching water creep towards her Invercargill home – but just half an hour later she was being shepherded on to a bus as houses flooded.

It was summer 1984, and then 16-year-old Catriona and a friend had been walking home in preparation for a Friday night sleepover. Her parents were planning to have friends over.

Heavy rain had fallen across Southland on Thursday night but on Friday the sun was out, and some were even planning evening barbecues.

But by early afternoon it was clear the weekend was going to entail something entirely different, as rivers burst their banks and floodwaters advanced across parts of the city.

“You could just see the water creeping up Douglas St. We would have lifted hardly anything out of our house, maybe a few bits and pieces, and mum couldn’t swim.”

“By the time we came out about 20 minutes later, the water was coming in. Dad had to piggyback mum because the water was up to our knees, and moving up to our thighs.”

A bus had been diverted and was picking up people in the Grasmere area, taking them to Collingwood Intermediate.

“That bus got there really quick, I was only home 20 to 30 minutes and the water started coming in. Some people were on their roofs.”

Catriona and her family stayed with family overnight in Otatara, which wasn’t cut off at that stage, then got the use of a house in Bainfield Rd through her mum’s work, where they stayed until September.

Their house had sunk and had to be lifted and re-piled, while inside it was a mess, Catriona says.

“The water had gone three quarters of the way up the wall, and everything was caked in this silty river mud.”

The army had gone through and emptied fridges and freezers, and they piled everything else out on the street to be taken away, she said.

“It was stressful. I lost a lot of personal belongings. We lost all our family photos. Literally we lost everything and had to start from scratch, again.”

Eight months later they were able to return home, and Catriona remembers how resilient her parents were.



▲ Invercargill Airport.

“I don’t think about it a lot now, but I think we were lucky because we had the other house so life continued on relatively normal for us, we weren’t living in the rebuild.”

She does think about the chaos and effects on people’s lives during more recent flooding and storm events.

“I think it’s really important we have the flood protection to safeguard people’s houses and incomes. The reality is, we live on a flood plain, so we need it.”

Jayne McAllister was a meat inspector at Alliance Lorneville in 1984 and remembers needing to leave work early at about lunchtime on the Friday to try to get back to her Ness St house in Invercargill.

She ended up at her mother-in-law’s home on the higher part of Salford St and recalls being surprised at sewage and stormwater pumping out on to the front lawn.

As an Emergency Management Southland community advisor in 2020, Jayne says the smell of flooded homes in Gore brought back memories of 1984 – when people were horrified at the aftermath.

“It was that wet for a long time, saturated wood smell.”

Working with people in 2020, she saw the stresses and strains people were experiencing.

“You realise how important pets are for people, especially for people who live on their own.”

People less affected by floods can tend to forget very, very quickly, and can let things slide, which is why the ‘be prepared’ message is so important, Jayne says.

People who are prepared and have a plan are more organised and can be less stressed when an event occurs, Jayne says.

Southland Civil Defence Emergency Management Group chairperson Neville Cook was the police liaison to Civil Defence in 1984.

He recalls biking in to the Civil Defence headquarters about 1.30am Friday morning and spending the day helping to co-ordinate the response.

Official records show 84.8mm of rain fell over 18 hours, and a rainfall recorder at Invercargill Airport showed a 134mm of rain fell there in the 24 hours to 9am on Friday, 27 January. The previous daily maximum was 73mm.

Neville says the jet boat club was organised to help with rescuing people from flooding homes, with many worried about their pets.

A police car parked on Bay Road was submerged within 10 minutes as the waters rose on the Friday. North Road, from the

bridge all the way along to about where Environment Southland is now, was under water, he says.

Meanwhile, farmers were trying to deal with stock standing in flood water, and ensuring the safety of people was the priority.

“The community came together and supported each other, but the floods had a big effect on people and property.”

Neville points out that even if you are not flooded, you may lose power and internet and the ability to travel, and supply lines for the likes of groceries could be cut off.

He reiterates the message around the need for further investment in flood protection as it is ageing, and more frequent and intense weather events are putting it under heightened pressure.

“Having a plan, supplies and staying connected is crucial.”

More information on that can be found on the www.cdsouthland.nz website.



▲ Waihōpai River downstream to Grasmere.



▲ Reflecting on the 1984 floods: Hugh Armstrong (left), Catriona Flynn (right) and their mother Evelyn Armstrong.

Trust and its community reaping rewards from Bluff Hill's restoration

Bluffies are getting an extra special welcome when they make their way back into their hometown.

A chorus of songbirds has only been getting louder as the Bluff Hill Motupohue Environmental Trust has made a range of environmental gains during the past decade and a half.

The past year has been busy for the trust, which was formed in 2008 by Bluff

residents concerned about the restoration of the natural environment on Motupohue.

Possums, wilding pines and gorse have been in the Trust's sights, says David Swann, project leader since 2021.

With many pesky possums and pest plants out of the way, the hill has been able to flourish, creating a vibrant home for many songbirds.

"We have been controlling predators at Bluff Hill Motupohue since 2008," David says.

"But the northern faces of the hill were never able to be tackled.

"The Jobs For Nature programme has allowed us to do that and the progress has been stunning.

"Removing a large amount of gorse has enabled native plants to flourish and more native birds have started inhabiting the hill."

It is not only gorse that is being significantly contained at Bluff Hill Motupohue, wilding pines are being tackled too.

"Wilding pines are the biggest challenge we face at Motupohue," David says.

"Native birds can't live in a pine forest. There is nothing for them to eat.

"With funding from the Ministry of Primary Industries and Invercargill City Council, we were able to clear a huge number of wilding pines.

"While that got rid of the bulk of them, their seeds are still in the ground and ready to go.

"So, we are continuing to mop up the residual pines.

"But if we can keep tackling the pines that have cones and stop them from reproducing, we will eventually win that battle."

Possum control is at the heart of the continued environmental gains at Bluff Hill Motupohue.

"Each possum is eating 1-2kg of native vegetation every night, so about 1000 hectares of Bluff Hill, that is a phenomenal amount being removed if you don't control possums.

"The trouble is they eat the new growth and possums kill big native trees."

A major thinning of the possum populations allows new native growth to come through and for species like rātā to establish much more successfully.

Part of the credit for those new natives appearing goes to the Trust's investment in technically-savvy traps.

"Gone are the days when you put out a few manual traps," David says.

"We have invested heavily in automatic traps. They sit there on long-life battery and have enough lure in them to last six months between visits.

"A manual trap costs around \$50 and if we are lucky it might kill 10 possums in a year.



▲ With the help of corporate and individual volunteers, 20,000 plants were planted last September.

"The automatic trap costs \$400 but it will kill as many as 40 animals in that time, and not only possums but rats and other pests."

Though the Trust is leading community-focused work for environmental good, it is not always straightforward.

Removing macrocarpa trees from Bluff Hill is a recent example of this.

"We have a strong social licence to operate and as a community trust it is up to us to do the right thing – we have to respect our side of that bargain," David says.

"We just did a major clearance of macrocarpa which are a seed source for wilding pines.

"We did have members of the community ask why we were taking these trees out and we had to explain the long-term good and short-term pain.

"But the locals loved the fact they can see the difference it has made to the natives coming through and the birdsong that can be heard."

With the trust on a roll and making strong gains, they certainly don't want them to stop.

Securing funding will be vital in maintaining the momentum.

"We need to find quarter of a million dollars a year and that is a large part of my job, to engage with the various funders," David says.

"It is a tough time because a lot of community funding sources are being directed to social funding needs.

"But we have been really fortunate to have some really great partnerships.

"Trees That Count are an outstanding national charity that do a lot of amazing work across the country.

"We are also very fortunate to have strong support from Invercargill City Council and Environment Southland."

Find out more about the progress at Bluff Hill Motupohue by visiting www.motupohue.nz

▼ A successful planting day on Bluff Hill during Conservation Week in 2022.





Investing in Southland

2024-2034 Long-term Plan consultation

Southland has four main river systems – Mataura, Ōreti, Aparima, Waiau – and flooding is our most likely natural hazard.

The reason most Southlanders do not experience the full impact of floods is due to flood protection infrastructure networks.

These networks are designed and built to engineering specifications to provide protection to people, property, livelihoods and critical infrastructure such as roads, telecommunications utilities and the airport, which support our regional economy (GDP of \$7.3b). For these reasons, we all benefit from flood protection whether we live near a river or not.

Environment Southland's flood protection network is now 30+ years old and this coupled with a changing climate of more frequent, severe and enduring weather is putting it under pressure and, over time, may reduce the level of protection it provides.

In developing its 2024 Long-term Plan, the Council is seeking your feedback on a proposal to:

1. Increase investment in flood protection in an ongoing way
2. Share the cost of improved flood protection and payment of debt for flood protection by spreading the cost across all ratepayers, which would impact the way we rate.

Find out more in our 2024-2034 Long-term Plan consultation document available on our website www.es.govt.nz, at local libraries or from our office 220 North Road, phone 0800 76 88 45, email service@es.govt.nz. Other supporting documents and policies are also available on our website.

Consultation opened 28 March 2024 and closes 5pm, 6 May 2024.

Flood protection

Environment Southland's flood protection infrastructure network comprises dams, tidal gates, pump stations, drainage networks, spillways and 500+ kilometres of stop banks in river catchments across the region.

- Aparima** 84km
- Mataura** 106km
- Waiau** (including Te Anau) 37km
- Ōreti** (including Makarewa and Invercargill) 288km



Waihōpai River Dam, Invercargill

Invercargill-made nets to support tuna at Stead Street Pump Station

For more than four and a half decades, Invercargill resident Ross Campbell has been the 'go-to' custom net maker for catching tuna (eel).

Ross' nets have been sought after by commercial and recreational fishers nationwide.

These days the nets are more commonly used for tuna monitoring and 'trap and transfer' programmes, where eels are safely guided through areas where their migration is obstructed by human-made structures such as dams, weirs, and other barriers in rivers.

When the new Stead Street Pump Station is fully commissioned this year, it will be Ross' handiwork, by way of two sizeable custom-made tuna nets, that enable the monitoring of fish after they have passed through the station's new twin Archimedes screw pumps.

The monitoring, which is a condition of the new pump station's resource consent, will offer extra assurance that the new fish-friendly pumps provide safe passage, even for large tuna.

Ross turned his hand to eel fishing in the late 1960s after working for Motor Specialties in Invercargill for five years.

From there, his journey to becoming a tuna net specialist began.

"I didn't even know what they (eels) were when I first went to catch them," Ross says.

"My father worked with a Dutch man at the Grand Hotel, who used to fish for eels in the Aparima.

"The money was good and listening to him, my ears pricked up."

Ross fished on the Mataura, Ōreti, Aparima and Waiau rivers and made his own nets from the very beginning.

"I'd seen other eel nets and wanted to build my own," Ross says.

"My first ones were pretty rubbish, but I just kept going.

"Most of the nets at that time were quite large, so you couldn't work very many at once.

"So, I made small nets, built my own 10 ft jet boat, and went from there."

Ross isn't out of the water these days, but the demand for his nets keeps him busy.

"I retired from fishing seven years ago and thought I'd make a few nets part-time.

"But it's been pretty much full-time from day one.

"I'm probably busier making nets than when I was catching eels. It's flat-out."

Over the past three years, Ross has seen a steady increase in demand for custom nets for tuna monitoring and trap and transfers from all around the country.

Among the orders are the nets for the Stead Street Pump Station project which Ross says are tricky because the net diameter has to be very large at 1.65 m to fit over the mouth of the outlet pipe.

But Ross is up for the challenge, which demonstrates why his net making services are so popular.

"I make heaps and heaps of different sizes because even ordinary fishermen all want something different. So, I am always having to build something that I haven't got."

Read more about the Stead Street Pump Station project at www.es.govt.nz.



Ross Campbell showcases one of his eel nets.

Water testing shines a light on New Zealand's groundwater drinking supplies

Anyone who visited Environment Southland's site at the Southern Field Days would have encountered the friendly faces shining a light on the quality of New Zealand's groundwater drinking supplies.



▲ Karyne Rogers, environmental scientist.

Anyone who visited Environment Southland's site at the Southern Field Days would have encountered the friendly faces shining a light on the quality of New Zealand's groundwater drinking supplies.

The team from the Crown Research Institute GNS Science headed south from Wellington to showcase their NitrateWatch programme which is testing groundwater samples across the country.

The programme focuses on testing the drinking water from private bores and springs which are not usually monitored or tested regularly.

NitrateWatch started as a pilot programme, led by environmental scientist Karyne Rogers, looking at nitrate and contaminant levels in Northland drinking water.

After making good headway and uncovering some interesting findings, the study was then expanded to include all of New Zealand.

Karyne explains that groundwater can be particularly susceptible to contamination.

"Surface water, such as the water in lakes and rivers, can be diluted by rain which can help wash out contaminants.

"But water in the ground is similar to having water held in a sink, there is nowhere for anything to wash away.

With the NitrateWatch programme around nine months into its national research, more water sampling would help boost the depth of the research.

GNS Science's presence at the Southern Field Days helped increase its numbers.

"We gave out over 100 free water testing kits and had a lot of great conversations with people at the Field Days," Karyne says.

"We were also able to get out and chat to other agencies at their sites."

The NitrateWatch programme provide a free testing service and GNS Science then analyse and use the test results publicly.

"Individual water testing results are confidential," Karyne says

"Our data is published in 10 square kilometre blocks and that gives people an idea about the water quality in their area and whether they need to be testing their own water supplies."

NitrateWatch's published results are consistent with Environment Southland's data, and show some areas of high nitrate concentrations, as well as some better results.

"There are definite hot spots in Southland," Karyne says

"We gave out over 100 free water testing kits and had a lot of great conversations with people at the Field Days."

KARYNE ROGERS

Environment Southland's team leader-science strategy & integration Ewen Rodway says Southland has a network of regularly monitored bores, and this programme complements that data.

"Our monitoring tells a similar story of widespread nitrate contamination in Southland groundwater. This contamination is closely associated with intensive land use but we see hot spots and variation across the region."

"In Southland we've also completed a large piece of research – the Physiographics of Southland – which provides us with a much better understanding of how contaminants



▲ Karyne Rogers collecting a residents water sample at the 2024 Southern Field Days.

move through the landscape. This work is innovative and provides insights into why contamination hotspots exist in some places and not others."

"Each of the nine zones have common attributes that influence water quality, such as climate, topography, geology and soil type."

Zones differ in the way sediment, microbes, and nutrients (such as nitrogen and phosphorus) build up and move through the soil, through areas of groundwater, and into our rivers and streams.

"For example, we see high concentrations of groundwater nitrate in some areas of Southland and not others, despite very

similar land use intensities. The science behind the physiographic zones helps to explain why," Ewen says.

"That means even farmers who are meeting all the rules and following good management practices might still find that they have high nitrate concentrations in their groundwater."

NitrateWatch's research concurs, showing that soil types and geology have a major influence on the contamination levels in groundwater.

Additionally, the NitrateWatch testing analyses isotopes that can reveal the source of the nitrate contamination, such as whether it's from sewage, fertiliser or through natural stores such as trees and crops.

People in an area with high nitrate readings are encouraged to regularly test their own drinking water, find out more, and request a free testing kit from NitrateWatch.

Find out more about the current results in your area by contacting Environment Southland, or check out the results available on the NitrateWatch website www.gns.cri.nz/research-projects/nitratewatch

Find out more about the Physiographics of Southland on the Environment Southland website – www.es.govt.nz

Undaria control vital to protecting spectacular Rakiura marine habitat

It sounds like a typical Southland adventure – but the work that goes into protecting the pristine waters of the south from invasive marine species is more complicated than any ordinary day trip.

>Loading the dive gear, getting the crew together and packing supplies happens ahead of many diving missions.

But the logistics of removing tonnes of *Undaria pinnatifida* (*Undaria*) from southern sea waters mean a huge amount of training, planning and organising go into every Environment Southland biosecurity dive trip.

Undaria is an introduced seaweed that thrives in New Zealand waters, with its rapid growth upsetting the structure of ecosystems and displacing native species.

The destructive weed is considered a progressive containment pest under the Southland Regional Pest Management Plan.

Environment Southland's biodiversity and biosecurity team have been fighting the

battle with *Undaria* for many years, with thousands of kilograms removed from key locations like Milford Sound/Piopiota.

One recent trip to Rakiura/Stewart Island showed the progress Environment Southland has been making.

Seeing those gains makes all of the planning, the preparing and the logistical work that goes into its control worthwhile, Environment Southland's marine team leader Kathryn McLachlan says.

"Our diving trips are a big logistical challenge.

"You are working with the weather which can be very changeable and challenging, and in remote waters which can be very rough.

"We rely on the experience and the skill of our crew to keep us safe.

"Each trip is a big effort, but when we are able to see the progress we have made, it makes the work and the planning well worthwhile."

On their dive trips, the team extensively survey marine areas while also removing large amounts of *Undaria*.

That requires divers to be in sea waters for long periods of time, and naturally, they encounter their share of the local wildlife.

"We come across some big marine species like sea lions, which can be quite territorial, as well as sevengill sharks which generally aren't quite as hostile.

"There is obviously a great white shark presence around Rakiura as well."

The marine wildlife is spectacular, and these species make up the unique biodiversity in the waters surrounding Rakiura, she says.

"We even got to meet some Tawaki (Fiordland crested penguins) which was incredible.

"Protecting their habitat is an important aspect of *Undaria* control work."

The recent Rakiura trip saw Environment Southland's skilled team check on key sites in the quest to eradicate and contain *Undaria*.

"We left Bluff and made our way around the west coast of Rakiura to the southern sites that we have been monitoring.



▲ The dive team onboard vessel 'The Awesome'.

"We completed *Undaria* removal at a known incursion site in Easy Harbour and undertook surveillance at Broad Bay and Port Pegasus.

"We saw no marine pests around the east coast which was really satisfying.

"Port Pegasus is visited by fishers and tourist boats, so to see a high-risk area like that free of *Undaria* was very pleasing."

Environment Southland's ability to send a skilled diving team to Rakiura is directly linked to the success of the Jobs for Nature Fiordland *Undaria* Control Programme.

The Covid-19 pandemic and lockdowns led to drastic changes being made to Environment Southland's marine biosecurity operations.

A successful application for Jobs for Nature funding enabled a new approach at a time when funding was light and maintaining progress was critical.

The programme recruited and trained 15 divers from the local community to a scientific diver standard, which provided thousands of hours of work to businesses and individuals. This was all in the effort to remove 45,000 kg of *Undaria* from Te Puaitaha/Breaksea Sound.

Environment Southland has been actively fighting the spread of *Undaria* alongside the Department of Conservation and the Ministry for Primary Industries for many years.

"The residual benefit from our work at that time is that we now have a highly skilled team that we can call on as we continue to contain *Undaria*."

Marine pests like *Undaria* are not always visible to those above water, but there are important actions that recreational and commercial boaties can take to help contain the pest species.

"Port Pegasus is visited by fishers and tourist boats, so to see a high-risk area like that free of *Undaria* was very pleasing."

KATHRYN MCLACHLAN

Boaties can play their part by ensuring they have a clean hull, clean gear and clean on-board seawater, before venturing to the pristine waters of Rakiura and Fiordland.

If divers and boaties see any unusual marine species, they're encouraged to report this to Environment Southland as soon as possible.

"This gives us the best chance of eradication success so we can ensure that our beautiful marine environment stays this way for years to come," Kathryn says.

▼ Divers survey the thriving underwater biodiversity with no *Undaria* present.



▲ Divers beneath the surface surveying for *Undaria*.

Updates



AIR QUALITY MONITORING

Our winter air quality monitoring season gets underway on 1 May. Air quality monitoring is done in the Invercargill and Gore airsheds all year round but we have a special focus on the winter months when air pollution is at its worst.

In our urban areas during the wintertime, domestic fires are the main cause of poor air quality.

This can impact on people's health, especially the most vulnerable members of our community so we need to work together to ensure everyone can breathe easy.

To help improve air quality in our airsheds there are simple changes you can make to burn smarter and cleaner at home: burn only dry wood with a moisture content of less than 25%, burn your fire hot and dry, allow your fire to burn out overnight and have your chimney cleaned regularly.

Check out our Facebook page each week for a summary of the latest results.



2024 ENVIRONMENT AWARDS

This year the Environment Southland Community Awards celebrate 28 years of recognising Southland's environmental champions. Nominations for the awards open Monday, 3 June, and there are multiple categories to enter, including rural, business and community.

You can nominate yourself or others who you know are doing great things for Southland's environment. As well as cash prizes to be won in each category, the awards provide a wonderful opportunity to showcase the environmental work and commitment of people in our region.

Keep an eye on our Facebook page and website for more information and nomination details.



CATCHMENT CONTEXT TOOL

The Southland catchment context tool provides information on the context, challenges and values of your local freshwater catchment. Developed in partnership with Te Aō Marama, the information is designed to provide information to help you develop your farm plan. Every catchment is different, so each catchment context is unique to the area it is developed for, taking into account the different ways values need to be managed and preserved. These values include: recreational use of water bodies, cultural significance, sites of significance to tangata whenua, taonga species, indigenous ecosystems, and threatened species. Using the tool farmers are able to create property-specific maps which can include be included in their farm plans. To access and get your catchment context go to www.es.govt.nz.

Time to think about...

MAY

AIR QUALITY – Winter air quality monitoring begins – check out www.breatheasysouthland.co.nz for the latest results and tips on how you can help improve our winter air quality.

WINTER GRAZING – Farmers who are intensively winter grazing should have their consents or deemed permitted activity notices in place if they don't comply with permitted activity rules.

Check our website for a checklist and advice – www.es.govt.nz/winter-grazing

MUSTELIDS/RATS – While getting the duck pond ready for shooting season, consider setting and checking traps for mustelids (stoats, ferrets and weasels) and rats.

JUNE

RABBITS – Winter is the most effective time for rabbit control before they start breeding again in spring.

GERMAN IVY – Have you noticed a yellow flowering ivy in your garden? It could be the pest plant, German Ivy, that we're aiming to eradicate from Southland. Check it out on Pest Hub and get in contact with our biosecurity team who will come and investigate.



▲ German Ivy

To find out more about pest animals and weeds in Southland, including control advice and the latest rules, visit our Southland Pest Hub at www.pesthub.es.govt.nz

JULY

ENVIRONMENTAL ENHANCEMENT FUND – This fund can assist with projects to protect and enhance indigenous biodiversity on private and community-owned land in Southland. Applications can be submitted at any time, but funding decisions are made in April and September each year.

Visit www.es.govt.nz/eef for more information on how to apply.

WALLABIES – These animals are capable of having huge impacts on Southland's biodiversity and economy if they get established here. This includes preventing regeneration of native bush, depletion of forest understorey, and damage to tall tussock grasslands. They also compete heavily with livestock for pasture and crops. Wallabies are spreading out from their home range of South Canterbury and moving through Otago. If you happen to see or suspect a wallaby in Southland, please report this immediately to www.reportwallabies.nz.

If you have been away hunting wallabies please do not bring any dead (or alive) wallabies back into Southland and throw away or dump on roadsides. This takes considerable resource to investigate whether they originated from here or outside of this region.

On the farm



By **JOSEPHINE STEWART**
Land sustainability officer

For the past decade or so, Southland farmers have been developing farm environmental management plans for their farms. These plans are a great way to put in place actions that contribute to improving water quality throughout the region. Those without any farm plan will need to develop one and those with an existing plan will need to modify it to meet the Southland requirements.

Environment Southland's land sustainability team are here to help by:

- Providing maps that show physical features specific to your property.
- Sharing the relevant catchment context to understand the context, challenges and values of the catchment specific to your property.
- Explaining what information is required for a Southland Farm Plan.
- Helping identify environmental risks on your farm and which actions to put in place.

Guidance material on the farm planning process is currently being developed, and will soon be available on Environment Southland's website - keep an eye out.

With winter approaching, we encourage all farmers to have a winter grazing plan to demonstrate how the risks associated with this activity can be managed. It's important to identify critical source areas and exclude stock from them, have good buffers from waterways and strategically graze livestock on slopes.

Contact the land sustainability team on 0800 76 88 45 if you would like more information on these topics.

Out and About



▲ The Regional Oil Spill Response team refamiliarises themselves with essential spill mitigation equipment as part of an oil spill exercise in Motupōhue/Bluff. Fire and Emergency New Zealand and Maritime New Zealand joined our harbourmaster's team for the day.



▲ Deputy harbourmaster Zak Smith talks to Te Anau Primary School students about water safety during the school's rural safety day.



▲ Summer student Fergus McCallum undertaking work to help eliminate pest plants, Chilean rhubarb, and Himalayan knotweed on Rakiura/Stewart Island. Both pest plants can negatively impact the native flora on the island.



▲ Senior land sustainability officer Keith Finlayson helps plant native flora at Smith's Bush in the Lower Maitara. These new plants aim to help shelter existing trees from wind and light while suppressing pasture grass growth on the site.