

EnviroSOUTH

August 2023

Winter bale grazing

Regenerative trial success

Page 10

Reinstating Home Creek

Planting for the future

Page 16



environment
SOUTHLAND
REGIONAL COUNCIL

Te Taiao Tonga

Contents

Tamariki restoration project	3
Knocking back invasive weeds	4
Green-Gold EnviroSchool	6
Whitebait season nears	8
Predator Free Southland	9
Winter bale grazing	10
Reinstating Home Creek	12
Thriving catchments	14
Keeping communities safe	16
Updates	18
On the farm	19
Out in the field	20

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)

Contact Us

Cnr North Rd & Price St, Invercargill
(03) 211 5115 | 0800 76 88 45
service@es.govt.nz | www.es.govt.nz
www.facebook.com/enviromentsouthland

Cover

◀ Dylan and Sheree Ditchfield on their Northern Southland farm Freedom Acres.

Printed using ECF (Elemental Chlorine Free) FSC® Certified pulp from Responsible Sources and manufactured under the strict ISO14001 Environmental Management System.



We're at the start of the 2023-24 Annual Plan and there are important milestones ahead.

The proposed Southland Water and Land Plan (pSWLP), Murihiku Southland's regulatory foundation for improving water quality, is expected to finally emerge from the Environment Court, with a number of changes.

Building on the pSWLP, Plan Change Tuatahi will develop limits and targets, in conjunction with the community; and the Government's freshwater farm plan rules will be progressively rolled out.

Flood protection upgrades across the Mataura and Ōreti catchments are expected to be completed in the next construction season (from spring). This includes the installation of the new fish-friendly pumps for the long-term protection of Invercargill Airport and surrounding area.

We will also be progressing upgrades to our digital services and securing business continuity planning to improve our ability to provide our services under unexpected and trying circumstances.

Wilma Falconer, Chief Executive, Environment Southland



Freshwater farm plans will build on all the good work farmers are already doing.

I'm proud the Council, supported by iwi and the farming community, had the courage to say to central government that plans at farm scale will be a significant tool in improving freshwater quality.

Murihiku Southland and Waikato are the first to implement the Government's rules requiring the plans and Aparima, and Fiordland and the Islands are the first catchments in our region.

As a trailblazer, the opportunity to incorporate some regional flavour and ensure farm plans are user-friendly and farmer-controlled, is quite compelling.

It's not a one-size fits all. On-farm actions should be uniquely tailored to the individual farm/growing enterprise and surrounding environment to mitigate environmental risks to freshwater.

The trick will be in ensuring it is reasonably simple to develop plans and update existing ones.

Nicol Horrell, Chairman, Environment Southland

Environment Southland

A thriving Southland – te taurikura o Murihiku



▲ Hedgehope Primary School students and Environment Southland senior education advisor Josh Sullivan, enjoy a day filled with learning and activities at Sherwood Forest.

Hedgehope tamariki lead ambitious restoration project

“My name is Ayla. I'm eight years old. We love Sherwood Forest because it's very calm. We like thinking outside of school, just with all the bushes and the birds. We want the forest to have no weeds and no pests.”

Ayla attends Hedgehope Primary School where the students are engaged in restoration and artwork projects at Sherwood Forest, a rare flood plain remnant dominated by giant matai, in Tussock Creek.

For the past two years, the students have immersed themselves in the forest with activities like pest control, native tree identification, stream studies, and a Bioblitz - a species-finding exercise. The fieldwork and data collection from these activities helped the students gain an holistic view of the complexity of the natural environment and to appreciate the delicate balance of nature and ecosystems.

They have collaborated with local artists to co-produce artworks inspired by their experiences in the forest. These vibrant creations, including a large-scale sculpture representation of Matamata, the beloved 'pet' Taniwha of Te Rakitaunake, will soon adorn the school's boundary fence for the wider community to enjoy.

The school's principal, Sue Rogers emphasises that the restoration project perfectly aligns with the school's curriculum and EnviroSchool's focus on the well-being of the whole school, community and ecosystem.

“As a rural EnviroSchool, we are fortunate to have the support of private land ownership in Sherwood Forest, allowing us to conduct the two-year restoration project. The insights gained from the EnviroSchools Action Learning Cycle have guided us in shaping the project and bringing everything together.”

Students have been working alongside staff from the Hokonui Rūnanga to hear stories about this forest. It helps them to understand their place in the world and to gain a perspective of how local Māori value and respect their natural environment, Sue says.

Hokonui Rūnanga educator, Rodney Trainor, says the time spent with students in Sherwood Forest helped them to understand

the significance of the site and the wider Makarewa and Mataura catchments.

“It was intriguing to witness the growth and development of the children, from initially being frightened of picking up an insect to fearlessly dismantling logs with whatever tools are available to them.”

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.



Community-focused Fiordland project knocks back pest plants

Kylie Krippner coordinated a community-led project that removed ‘a gazillion’ pest plants from around Te Anau and Manapōuri, which was exactly what was needed during the uncertainty of the Covid-19 pandemic.

Kylie is the co-owner of Te Anau’s Wings & Water, a tourism operation that like many others in the area, experienced an abrupt slow down to its business due to the pandemic. She says everyone appreciated having the Fiordland Buffer Zone Project to lean on, and to learn from.

“Taking hundreds of thousands of seeds out of circulation is an amazing effort. The piles of plants pulled out have been phenomenal.”

The buffer zone project was a boost to Environment Southland’s existing weed control programme in the Te Anau area, thanks to the Jobs for Nature – Mahi mō te Taiao Government fund in 2021. It aimed to help protect Fiordland National Park from invasive weeds while also providing jobs to local tourism operators at what was a very difficult time for them. The fund provided \$690,000 over two years, and the project is now complete.

The project involved carrying out weed control at properties throughout a one

kilometre buffer zone alongside Fiordland National Park, from Manapōuri to Te Anau and at Milford Sound.

The work focused on stopping invasive plant species like cotoneaster and Darwin’s barberry from entering the park, protecting its biodiversity values for future generations. These pest plants are a particular problem near our national parks as they can outcompete important native species.

One of the reasons the project was so successful is because residents were running it on the ground, says Kylie.

“It makes me so proud of what the team of 90 people has done over thousands of hectares. Now we’ve got people controlling their own weeds in town. There’s been a big buy-in.”

Kylie says the project was intended to be bridging income for people in tourism while borders were closed, and the timing has been perfect.

“Everyone’s busy now and everything’s back to normal, so it was bang on.”

Environment Southland biosecurity team leader pest plants, Jolie Hazley says the Te Anau and Manapōuri communities have been hugely supportive and got right behind the project — and she wanted to thank them for their efforts.

About 15-20 companies were involved in the project, and it gave a lot of people something positive to focus on during the height of the pandemic, she says.

“For some, it kept them in the town, kept their kids in school, and helped pay the bills.”

More than 2500 hectares and 2500 sections were covered by the project.

A “gazillion” plants have been removed from the likes of Ivon Wilson Park, the shorelines of Lakes Te Anau and Manapōuri, and from residential gardens in both towns, she says.

“We went into almost every property in Manapōuri and Te Anau and removed cotoneaster and Darwin’s barberry and

helped educate people about any other pest plants that might be lurking in their gardens.

“The project helped open people’s eyes to pest plants in the area. Even when they are busy back in their tourism operations, many of them are revisiting their patches and continuing to get rid of pest plants.”

There was still a lot of cotoneaster and Darwin’s barberry, but Environment Southland was working to keep it progressively contained.

“There’ll be some regrowth but we’ve knocked it back, some really good progress has been made.”

Hopefully, the programme would encourage people in other areas of Southland to check their gardens for pest plants and get rid of them where possible, Jolie says.

“Let’s keep it going, keep checking your garden.”



Cotoneaster

Cotoneaster is a long-lived, evergreen shrub that grows up to approximately 3m tall. Young shoots with pale downy hairs mature into arching red-brown stems. Leaves are shiny with soft shaggy hairs above and white-grey hairs underneath. Flowers are small, white and in clusters. Cotoneaster tolerates grazing, damp and drought conditions, temperature fluctuations, and a range of soil types. Highly viable and long-lived seeds, combined with early maturity and the formation of dense stands, means that cotoneaster outcompetes native shrub species in a wide range of habitats.



Darwin’s barberry

Darwin’s barberry is a spiny green shrub that grows up to 4m tall. The leaves are a dark glossy green and stiff with 3-5 spiny points. Hanging clusters (7cm long) of deep orange-yellow flowers appear from July to February, followed by oval purplish-black berries (5-7mm diameter) with a bluish-white surface. This long-lived plant tolerates moderate to cold temperatures, damp to dry conditions, high wind, salt, shade, damage, grazing (not browsed), and a range of soils. Birds and possibly possums eat the berries and subsequently spread the seeds. Berries are also occasionally spread by soil and water movement.



▲ Kylie Krippner



▲ A cotoneaster hedge in the process of being removed.



▲ Simon Marwick with some of the cotoneaster removed from properties around Te Anau.



▲ Ava, a Year 8 student, and Emma, community liaison for the Stewart Island/Rakiura Community and Environment Trust, share details of the penguin camera monitoring project during the school's Green-Gold reflection process.

Halfmoon Bay School shines Green-Gold

Tamariki at Te Kura O Rakiura are adventurous, self-reliant and thrive in nature – traits that have led to the school becoming New Zealand's southernmost Green-Gold EnviroSchool.

Nestled in the heart of Halfmoon Bay, Stewart Island Rakiura, the school recently celebrated its Green-Gold reflection with teachers, the community, EnviroSchools facilitators and its 40 students, who have demonstrated visionary thinking and that they care wholeheartedly for their pristine environment.

We live in such a beautiful place. It's important we look after the wildlife and nature, says Sayla, a Year 7 student.

As kaitiaki, students have a strong sense of connection to the land. This connection, and student-led initiatives like their rat trapping programme, have taken the school from the Silver reflection stage to Green-Gold.

The EnviroSchools programme offers three key reflection stages – Bronze, Silver and Green-Gold. The Green-Gold reflection stage allows EnviroSchools to describe their experiences as they increase actions and practices on their journey towards a sustainable world. After completing the holistic reflection process, the school

may choose to be officially recognised as a 'Green-Gold EnviroSchool', celebrating their past, present and future journey.

Underpinning the EnviroSchools approach are five Guiding Principles – Ngā Mātāpono woven into all aspects of school life. Those principles are: empowered students, sustainable communities, learning for sustainability, te ao Māori, and respect for the diversity of people and cultures.

Principal Kath Johnson says the recognition is a nice celebration of the mahi children, teachers and the Rakiura community have achieved together.

"We are still on our journey and improving the Kura every day. Empowering students is incredibly important to us and for them to take responsibility for their learning."

One area we've really improved is incorporating Māori perspectives into our culture. We've done this through our greeting and welcome practices, karakia, and increased awareness and visibility of tikanga, says Kath.

"We are fortunate to have such an engaged community who support us on our journey, care about the environment and are always willing to be involved."

The school's Green-Gold reflection process, held on a chilly day in late June, was led by students and EnviroSchools facilitators from Environment Southland. The students spent the morning sharing their ideas, actions and initiatives to demonstrate how the five guiding principles were a part of everything they do.

Many of these successful student-led initiatives, such as the penguin monitoring cameras and kura kai garden, focus on sustainable communities with measurable actions to make a difference.

Following the EnviroSchools framework, students reflected upon their achievements to decide 'hand-on-heart' if they are a Green-Gold EnviroSchool. The answer from students was a resounding – yes!

Year 8 student, Ava, says the Green-Gold recognition is a great label for the school as it tells them they are doing great across all guiding principles, especially Māori perspectives.



▲ Josh Sullivan, Environment Southland senior education advisor; Alison Fitzsimons, Halfmoon Bay School teacher; Morag Vasilaki, EnviroSchools facilitator and Kath Johnson, Halfmoon Bay School Principal.

"I'm most proud of the kai garden because we sold seedlings from this garden to the community, and it felt like we were giving back."

The penguin camera project was set up to monitor penguin activity and the population at Ackers Point. Students were curious and wondered if there were little blue penguins at the local wharf, and are now monitoring that spot, says Ava.

As part of the penguin project, tamariki visited the hoiho rehabilitation facility at Mamaku Point Predator Free Sanctuary. Students learned about penguins and their habitats and created artwork inspired by their visit.

Bevan Mudie, the school's volunteer art teacher says they create artwork to celebrate the island's culture and wildlife.

"I think we've well and truly drawn or painted every animal on the island.

"Working with the school and students is a wonderful way for me to get to know the whole community, and it's a nice contribution that I can make to the life of the school."

Bevan says the teachers have done a wonderful job of supporting the students to think about their lives and the impact their decisions have on the environment.



▲ Halfmoon Bay School students, teachers and extended whanau celebrate their Green-Gold reflection on 30 June.

Whitebait habitat work underway as season nears

Imagine having a day job that's all about whitebait – that's the reality for Helen Ough Dealy who's in the Department of Conservation-Te Papa Atawhai Whitebait Programme.

Helen might not have much time for getting out of the office, and along to the water herself, but she really gets it, when it comes to people's passion for the pastime.

"It's a kiwi tradition, it's part of going out and being in nature, relaxing and spending time with family," Helen says.

Whitebait are the juveniles of six species of native freshwater fish. The whitebait fishing season runs from 1 September to 30 October.

Helen says that from the 2023 season, the West Coast fishery will be included in a nationwide regulation about fishing gear length.

"When whitebaiting from a licensed stand, the maximum overall length limit for fishing gear will now be 6m. This brings fishing gear length in line with the regulations elsewhere in New Zealand, including Murihiku Southland," she says.

"There are people from Murihiku Southland who go across to the West Coast to go whitebaiting, so it's good to highlight the change."

Aotearoa New Zealand has upstream limits for fishing. Whitebait fishing is only allowed where water levels are affected by the tide. Back-pegs mark this point in some rivers.

Helen says back-pegs have been installed at the Titiroa Stream, near Fortrose.

"These have proved effective at helping fishers enjoy their whitebaiting and preserve whitebait habitats further up-stream."

Back-peg installation will be gradually carried out across the region on an 'as needed' basis following consultation with local stakeholders, she said.

Alongside regulation changes, there is significant recent research into whitebait habitat in Southland, including isotope analysis work at Waituna.

"This study provides good insights into food web relationships between fish and invertebrates species in Waituna Lagoon and Creek."

The research highlights the value of inanga as a source of food for larger fish such as giant kōkopu (whitebait species), trout and eels, and the importance of freshwater restoration work in our lowland ecosystems.

Waituna Creek rehabilitation and monitoring, and lower Waituna Creek transformation work is underway as part of the Whakamana te Waituna programme – a multi-agency programme that includes Environment Southland and DOC.

Environment Southland works supervisor Jimmy Turnbull said the regional council has three trial plantings of Carex grasses for whitebait habitat along the lower Waihōpai River.

"We are hoping to carry out some egg counts when the plants are of an adequate size to compare with the grass currently growing in the area, to see if it's feasible to carry out further plantings in the future."

"I think we will see some good growth this spring," he says.

Environment Southland works supervisor, Jimmy Turnbull inspects Carex grass growth along the Waihōpai River.

New face lending a hand to conservation groups

Community groups focused on pest control and conservation have a new name to keep in their back pocket – Rose Hanley-Nickolls.

Rose took on the role of Predator Free Southland project coordinator in January and her main focus is on community-led conservation. The goal of Predator Free Southland is to enthuse, educate and empower the people of Murihiku Southland to restore their natural environment by controlling invasive predators.

An English native, Rose moved to New Zealand nine years ago to follow her career, initially settling in Haast for two years to work as part of the Kiwi Coast Project.

"Communities coming together to protect their patch can have powerful results – you only have to look at the Kiwi Coast Project in Te Tai Tokerau or Southern Lakes Sanctuary closer to home to see what we can do when we all pull together," Rose says.

"There's great potential for collaboration across the Southland conservation community – from the agencies through to the people doing the mahi (work) on the ground, everyone has something to contribute."

She then went on to work for a number of organisations and community groups, including the Department of Conservation and Environment Southland, working on a range of conservation projects, including species recovery, landscape restoration and predator control, before taking on her current role at Predator Free Southland.

"Predator control is one of the most important things we can do to protect our native species, and there's a great scope in Southland for everyone to do this work".

ROSE HANLEY-NICKOLLS

Predator Free Southland is a collaborative effort between Environment Southland, Invercargill City Council, Gore District Council, local iwi and the Department of Conservation. It aims to increase collaboration between agencies, rūnaka, community groups and private landowners to protect and reconnect our tāonga species on a landscape scale.

"It's a good challenge. Everyone who is involved in conservation in Southland needs to work together. Predator control is one of the most important things we can do to protect our native species, and there's a great scope in Southland for everyone to do this work – as a region we don't have many people, but we do have a passion for our environment and the place that we live."



▲ Rose Hanley-Nickolls

"I want to make protecting your patch as easy as possible for as many people as possible."

In her role, Rose is trialling a range of new support services for community groups; holding education and networking events; and helping communicate Southland's conservation story.

"There's a fantastic conservation community in Southland – I want to help people work together more easily and share our successes with the rest of the country."

"If you want to start a new community group or if you've been part of a group for a number of years, there's always something that you can use a hand with – especially our volunteer groups," Rose says.

"If you need help navigating the process for getting permission to work on public land, or working out what trap is best for you, or help with writing a grant application or health and safety plan – please get in touch. Predator Free Southland will be able to help."



▲ The work undertaken by Predator Free Southland is critical to protecting our native birdlife.



▲ Dylan and Sheree Ditchfield on their farm Freedom Acres.



▲ Hay fed out on pasture to the Ditchfield's cows during winter.

Winter bale grazing trial success backed by positive data

From conventional farming to transformative regenerative practices, Dylan and Sheree Ditchfield continue to develop experimental wintering methods on their Wendonside dairy farm, Freedom Acres.

Five years ago, the Ditchfields were at a crossroads. With increasingly negative publicity in the farming sector, they knew some significant changes were needed to ensure they weren't handing down a burden to the next generation.

It just so happens that regenerative farming was the future-thinking approach they sought. After lengthy discussions with local gurus Mark and Madeline Anderson, Dylan and Sheree began incorporating more sustainable ideologies into their day-to-day farm management.

Dylan says they knew they had to start making positive changes, and could see so much potential in regenerative practices.

So they started the winter bale grazing trial with two paddocks.

The trial, feeding hay to cows on a pasture during the winter months without bale racks, is now in its third year and has expanded to include 75% of their herd. The positive results speak for themselves – reductions in nitrogen leaching, improved soil health and pasture regeneration.

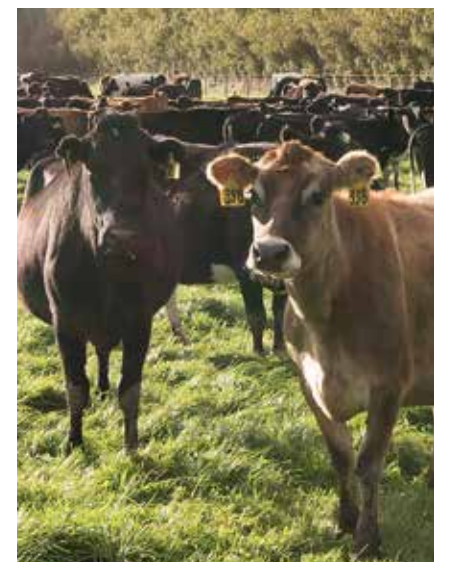
The data collected over three seasons shows a 75% reduction in nitrogen loss compared to crop-based grazing during winter. The animals also seem happier lying down and relaxed, whereas on crop they stand for longer periods, says Dylan.

“We’ve worked closely with the animal welfare team from AgResearch. Their tests, including mud scoring and depth, show the trial plots result in cleaner and more comfortable cows, with much less soil pugging. They’ve also taken blood samples to test the cows’ cortisol levels, and we expect the results back later in the year.”

Using the positively-trending trial data as a baseline indicator for soil health and ecosystem function, the Ditchfields recently received an Ecological Outcome Verification (EOV). The verification measures how well farms are doing from a regenerative standpoint and gives consumers trust in their food systems and production.

Among other accolades, Dylan and Sheree were winners of the 2022 Environment Southland Community Award for Leadership in Farming. They impressed judges with their overall focus on lowering their farm’s environmental footprint and winter bale grazing trial.

“The award allowed us to tell our story and share our learning experiences with the wider community. Getting recognition from the judges, who could see that what we were doing was making a difference, was really positive.”



The community unites for Home Creek

The Manapōuri community is giving Home Creek the love it deserves as one of the last remaining meandering waterways in Southland.

Recently, Environment Southland helped initiate the Home Creek Restoration Project alongside strong support from local landowners, community members and organisations in the Te Anau/Manapōuri area.

Local sheep and beef farmers Cameron and Wendy McDonald have farmed in the area for over 40 years and feel a strong connection to the catchment and the waterway.

"It's such a beautiful and gorgeous little stream," Wendy says. "We just want to reinstate it with native species and create an environment that supports fish and other wildlife."

For a small catchment, Home Creek has a reasonable water quality level. As with most streams, there is room for improvement, particularly around reducing the impact of sediment reaching the waterway. Planting grass species such

as *Carex secta* is one example of a method being used to reduce the effects of wind erosion around the banks, and slow down runoff before it enters the stream. The root systems of the plants will help stabilize the sandy banks and draw out excess nutrients.

"We all get our drinking water from the creek, so its protection is paramount," Wendy says.



▲ New planting along the banks of Home Creek.

Home Creek's 4000-hectare catchment is predominantly surrounded by sheep and beef stations, with an internationally significant wetland, the Kepler Mire, nestled in the middle. The creek's main environmental challenges are pest plants like willow, gorse, broom and blackberry, as well as pest animals like possums.

"Protecting these species, and enhancing the habitat to support bird life, while connecting with the local community, are really the main benefits of this project".

JESSICA AGATE

The restoration project aims to enhance the creek's freshwater ecosystem and increase indigenous biodiversity by planting 6,500 native trees over five years.

The McDonalds are taking a step back from the day-to-day management of their farm and are looking forward to spending more time planting. Cameron says, "We've been here since 1981, and we're not going anywhere else. These planting projects provide us with a perfect pastime activity to enhance our surroundings."

The project's inaugural community planting day in May showcased the commitment from the local community. Te Anau-Manapōuri residents and

◀ Local landowners Cameron and Wendy McDonald help with the restoration project at Home Creek.

Environment Southland staff planted more than 500 native seedlings along the stream bank in just three hours. Home Creek Nursery, a local business eco-sourcing indigenous New Zealand plants, generously donated the plants.

During the early stages of the project, land sustainability officer and project coordinator Jessica Agate carried out an environmental DNA (eDNA) assessment of the stream. This paints a picture of the diversity of life in contact with the stream.

"The eDNA sample taken confirmed a whole range of species were present in the stream, including longfin eels, koura (freshwater crayfish) and Gollum galaxiids, which haven't been identified in this area before."

"Protecting these species, and enhancing the habitat to support bird life, while connecting with the local community, are really the main benefits of this project," Jessica says.

As well as the ambitious planting goal, the Home Creek Restoration Project aims to connect passionate local farmers, businesses and schools with the area.

Wendy says, "Farmers often receive bad press, but we do care deeply about our land and the environment we live in. By engaging in environmental protection initiatives like this, we hope to change the narrative surrounding farmers and demonstrate our commitment to safeguarding waterways and the wider surroundings."

Further planting days are planned for schools and the community. Check out Environment Southland's Facebook page for event details.



Thriving catchment groups work towards lasting change

After making a conscious decision to call Southland home, Jersey-born Sarah Thorne has embedded herself in her local community.

Sarah, her partner, Keith Brinkworth, and their three children live on a lifestyle block near Tussock Creek.

"We could have chosen anywhere, and we chose here," Sarah says. "Southland got its claws into us, and we love it."

Since arriving in 2004, Sarah has held several roles supporting community initiatives, first with the Department of Conservation, then with the New Zealand Landcare Trust.

In 2017, there were 14 active groups across Southland, and growing interest, so the New Zealand Landcare Trust applied to the Ministry for Primary Industries for funding from the Sustainable Farming Fund, with widespread industry and council support. The funding application was successful, and Sarah took on a support role for the Southland farmer-led Community Catchment Groups project.

The three-year project was designed to support the establishment of farmer-led catchment groups and help them identify their local issues, implement solutions and improve their environment.

The project aimed to create more catchment groups that were cross-sector and took an holistic, whole-of-community approach across urban and rural communities. The success of the project led to the development of Thriving Southland in 2019.

"There was a lot of hard work by a number of people to set up Thriving Southland and secure the funding, and now, instead of just me looking after 23 catchment groups, we have a team. We currently support 35 catchment groups, covering around 90% of mainland Southland, and there's interest in new ones starting all the time."

Sarah looks after the six mid and lower Ōreti catchment groups. She sees the key parts of her role as facilitation and doing some of the heavy lifting.

"The way I help is to get the ideas out or in front of them. I might facilitate a meeting, suggest a way to come to a decision or suggest an expert who can come and talk more about a specific topic. I might help with a funding application. I can take the grunt work – because they're all volunteers."

Sarah says groups just kicking off often spend time building their understanding of the local environmental issues, learning from other catchment groups and growing a core team. They might host field days or other events, and start to focus in on some key projects.

"By working with communities and people on the ground, you make change that's long and lasting".

SARAH THORNE

The mid and lower Ōreti groups have projects that include wintering trials, forestry, wetlands creation, pest animal control, bush restoration, water quality monitoring, seed collection, greenhouse gas reductions and building online platforms for sharing knowledge.

"I've been blown away by the sheer quality and quantity of work they've done, stuff they've made happen on the ground. They are really practical, they're really down-to-earth, and they really cover such a wide variety of topics now."

Sarah says that while Thriving Southland provides the primary support, it wouldn't work without all the stakeholders and those connections to gather and share that expert knowledge and skill.

New regulations or growing concerns about things like climate change provide the groups with opportunities to engage with others, learn more, and come up with their own solutions.

Plan change in the works

Environment Southland is developing a plan change to the Southland Water and Land Plan (known as Plan Change Tuatahi) and will be seeking input from the community about local solutions to improving Murihiku Southland's freshwater.

Later this year, key topics will be up for discussion like farming, wetlands, river and gravel management, water security and limits. Further opportunities will be available throughout 2024.

Your feedback will provide councillors and staff with information to support the drafting of the plan change, which is Murihiku Southland's method of meeting the National Policy Statement for Freshwater Management. This requires us to set limits, targets and action plans to improve freshwater.

Go to www.es.govt.nz/know-your-wai to find out more and to keep up-to-date with opportunities to share your thoughts.



▲ Sarah Thorne and Environment Southland land sustainability officer Rob Bird look over macroinvertebrate charts. The presence of macroinvertebrates is an indicator of the health of the stream.



▲ Sarah Thorne, Environment Southland land sustainability officer Rob Bird and Georgie Galloway check out the water clarity tube.

Keeping communities safe, but not in the usual ways

In a place nicknamed the ‘mai mai’ sits a team of mostly blokes whose work once went largely unnoticed, but is now at the forefront of council operations and communities’ interests.

It's thanks to the work of this team, Environment Southland's catchment operations division, that over the years most Southlanders have been spared from flooding during times of high rainfall and rivers levels. Events like Cyclone Gabrielle and planning for and managing climate change impacts have highlighted the importance of their mahi.

Many in the team have been around Southland's waterways and the hallways of the regional council for many years – Paul Pollard, Dave Connor, Craig King, Clint Cartwright – their names will be familiar to many.

There's some fresh faces too – Mitchell Harvey, Jimmy Turnbull, Stephanie Gray, Grant Gerrard, Jo Paterson and manager Randal Beal.

Together, they work on aspects of Southland's natural resources and flood defences, through programmes that include gravel management, stop bank maintenance and land drainage management.

Climate change has brought with it an ever-increasing work programme for the catchment operations team and as we learn more about what is needed to protect our communities, best practice continues to evolve.

Recently, Clint, Paul and Randal travelled to Hawkes Bay to assist in the response to Cyclone Gabrielle, a first for the catchment operations team.

The biggest eye-opener was the sheer scale of the damage, and the look of devastation in the faces of the people affected.

There was also much to see and understand from a professional perspective.

“It was a real world experience of a worst case scenario,” says Paul. “It was a good learning experience.”

Clint says he found the use of chevron plantings interesting.

Chevron plantings is when you use large trees, like poplars, in flood ways. In some instances, it caught debris which prevented it from destroying infrastructure, and in other cases, it had caused water to over flow from stop banks, he said.

“They're a bit of a double-edge sword.”

“We need to be looking at other options, not just building stop banks out and up, but in critical areas; things like moving stop banks back. It's about thinking long-term and looking at the bigger picture.”

PAUL POLLARD

For Paul, the main takeaway was the fact that 40 years of river engineering work was so severely damaged, and in some cases destroyed, by one event.

“It shows we need to diversify how we manage our flood protection assets going forward, especially in the face of climate change.”

“We need to be looking at other options, not just building stop banks out and up, but in critical areas; things like moving stop banks back.”

“It's about thinking long-term and looking at the bigger picture.”

What that means for Environment Southland's catchment operations team, is their load is growing and the work they have been doing will continue to diversify.

As Randal puts it, “it's necessary work that is visible to the community and it's work people will be seeing more of.”

A recent example of this has been the removal of a series of high-risk trees from River and Richmond Streets in Gore.

Trees and shrubs on and near stop banks can interfere with the integrity, potentially leading to the banks failing.

The roots of trees and vegetation can weaken stop banks, and during a flooding



▲ Protecting our infrastructure: Before and after photos of the tree removal work that was undertaken in River Street in Gore, to protect the integrity of the stop banks.

event, water can begin flowing through this weak patch, often leading to a rapid failure.

Trees can also topple in heavy winds creating holes for water to flow through, and tree debris becomes a hazard during a flood, which can cause damage to infrastructure.

The tree removal in Gore was part of Environment Southland's wider maintenance programme, which starts with annual stop bank inspections throughout the region, in winter each year.

It includes educating and working with landowners to manage flood protection assets on private property, Randal says.

“The other aspect is identifying the maintenance work we need to carry out on our flood protection network.”

Looking to the future, there are more trees that need to be removed from our stop bank network.

This includes many on the Otepunī and Waihōpai stop banks within the Waihōpai Invercargill boundary and in other communities, such as Ōtautau.

The catchment operations team is passionate about all of its work - to protect Murihiku Southland's people and property.



▲ Contractor Alister Swann (left), and Environment Southland works supervisors Mitchell Harvey and Jimmy Turnbull inspect stop banks at Ferry Road near Invercargill.

Updates



FLOOD WARNING SYSTEM

As part of our network of rain gauges and water level and flow recorders, we have refined our flood warning system to provide greater clarity for the community.

The new two-tier alerting system provides information about rising water levels. A **High River Watch** will be activated when river levels are above normal levels. On average, this happens at a site two times per year. You might see water over some roads, but river levels will be well within the capacity of our flood defences.

A **Flood Warning** will be activated when water levels reach about one metre on flood banks, but the flood duty officer will consider a range of factors before making the call. This happens, on average, once every five years at a site. It can include some unpredictability around weather forecasts or possible snow melts, and usually results in at least surface flooding.

Emergency Management Southland is kept informed at all levels and will lead the response to serious flood events and any evacuations.



2023/24 ANNUAL PLAN

The Council adopted the 2023/24 Annual Plan Tahua ā-tau at an extraordinary meeting on 29 June 2023. This annual plan is the third year of the current Long-term Plan (LTP). Every three years the Council reviews its 10-year LTP and in the intervening years, produces annual plans.

The Council has a demanding year ahead. The key priorities are, improving freshwater quality; building community resilience to climate change impacts, which are becoming increasingly evident; and improving our internal systems to ensure our work programmes deliver greater efficiencies.

In May, the Council set an average rates increase of 6.9% for the 2023/24 financial year, in line with the most recent inflation predictions. Rates increases always vary from household to household, primarily due to the variance in property values.



CLIMATE RESILIENCE

We have been making significant progress on a number of climate resilience projects over the summer construction season. Reinforcing rock work has been completed along the Mataura River stop bank in Mataura, and the Stead Street pump station replacement project is on track for completion later this year. The southeast Gore stop bank project has started, with site preparation and construction underway.

The winter weather means it is too wet to carry on with bulk earthworks for the Waihōpai and Wyndham stop bank projects, so these will get underway again in November 2023.

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

Time to think about...

SEPTEMBER

RABBITS AND POSSUMS – With spring growth, these pests are on the move to look for food sources, so it's a good time to undertake pest 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.

CHECK, CLEAN, DRY – Get your tackle 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.

LAND CULTIVATION – October is the time when farmers are able to get machinery onto their paddocks and begin cultivating land for winter crops or new grass. Before getting started, there are a few things to keep in mind, such as rules and conditions that relate to winter grazing and cultivation. Environment Southland's land sustainability team can provide advice specific to your property. If you would like to know more, give the team a call on 0800 76 88 45.

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 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

On the farm



By **KARL ERIKSON**
Principal land sustainability officer

Farm environmental planning has played a big part in helping the region's farmers move to more sustainable farming practices. A farm environmental plan sets out the actions a farmer can take to stop contaminants from being lost from the farm boundary. However, a key piece of information is missing from the region's farm environmental plans – catchment context.

Catchment context describes an area's water quality, identifies which contaminants are problematic, and where they're having an impact. It also describes areas of importance, the sites valued by tangata whenua and shows how on-farm actions can contribute to upholding catchment values. Incorporating catchment context in Freshwater Farm Plans is a key focus in the Ministry for the Environment's Freshwater Farm Plan regulations, which were released on 8 June, and came into effect in some areas of Southland this month.

Environment Southland has developed an online geospatial tool to provide farm operators with all the catchment context information relevant to their property. This is available for Aparima now and under development for other catchments, in line with the Freshwater Farm Plan rollout. The information will also be key to Southland's many catchment groups and will help shape future plans for their catchments. It can also provide some direction and prioritisation for any future projects that aim to improve water quality within a catchment.

If you would like to know more about catchment context or would like support for farm environmental plans, give the Environment Southland catchment integration team a call on 0800 76 88 45.

Out in the field



▲ Team leader hydrological response Chris Jenkins installing a gauge board and testing the monitoring equipment at Jacobs River Estuary. The continuous recorders monitor long-term sea levels and water temperatures.



▲ Compliance team members and Councillors Neville Cook, Phil Morrison and Lyndal Ludlow joined some of The Hits crew to stack firewood for the winner of our Free Firewood giveaway, Judi Scott (centre).



▲ Senior environmental technical officer Sarah O'Neill collecting water samples from Lake Monowai to see if *Daphnia pulicaria*, commonly called water fleas, are detectable.



▲ Resource management officer Jenna Rule on board the Dutch dredging vessel, Albatross, checking resource consents for maintenance dredging of Bluff Harbour at South Port, ensuring the process is compliant.