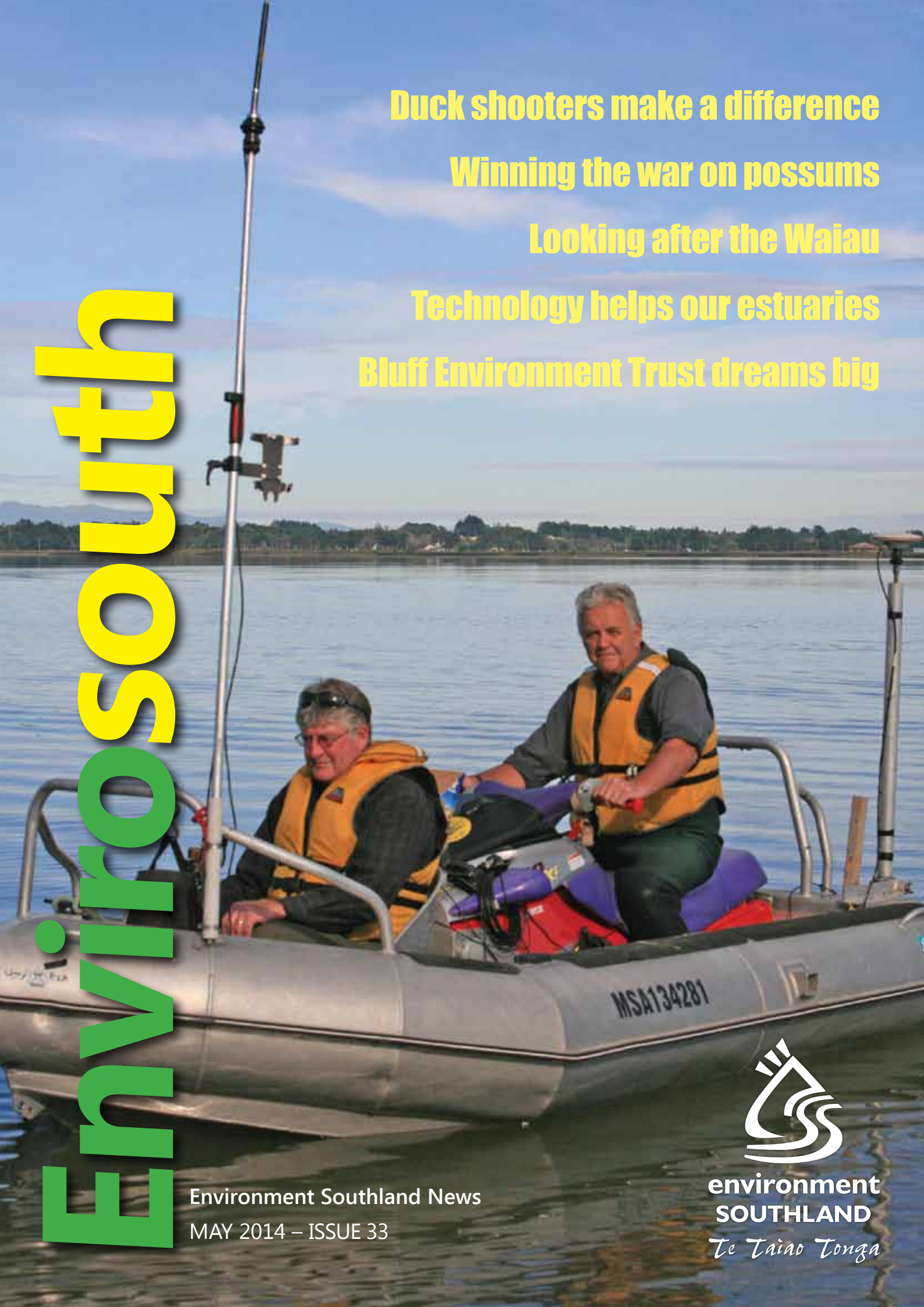


Duck shooters make a difference
Winning the war on possums
Looking after the Waiau
Technology helps our estuaries
Bluff Environment Trust dreams big

Environment Southland



Environment Southland News
MAY 2014 – ISSUE 33



environment
SOUTHLAND
Te Taiao Tonga

Southland at the forefront

In Southland two of our most beautiful places are Fiordland and Stewart Island. Both are really special and treasured, we are privileged to have them right on our backdoor. I take every chance I can to get out and enjoy them, walking, tramping and more recently when I spent three wonderful days taking part in the beach clean-up at Mason Bay on Stewart Island.

Therefore, I'm very pleased that Environment Southland is able to be a part of two significant projects to help protect and enhance each of these special areas. Both projects are unique and aim to provide some long-term solutions to the threats both face from invasive pests.

Firstly, a Marine Pest Pathways Plan for the Fiordland marine area is currently being developed in partnership with the Ministry for Primary Industries, the Department for Conservation (DOC), the Fiordland Marine Guardians, Ngāi Tahu and other key stakeholders. Because of the remote nature of Fiordland and the high number of visiting vessels, it is particularly at risk from invasion by harmful marine organisms in an area

world-renowned for its unique and diverse marine life. The interagency plan will focus specifically on marine pests that attach to vessels and marine equipment. This plan will be the first of its kind and be regarded as a pilot for other similar plans elsewhere in New Zealand.

For Stewart Island/Rakiura a unique project, initiated by Gareth Morgan, is getting underway and is another first. The Predator-free Rakiura project is aiming to take a two-stage approach to eradicating pest animals from Stewart Island, with stage one being a predator-proof fence extending from Halfmoon Bay to the Rakiura Track.



Ali Timms – Chairman, Environment Southland

If Stewart Island became predator-free, it would become one of the most important islands for biodiversity in the world. Similar projects have been carried out on smaller islands (e.g. a 28,000 ha island in South Africa compared to 170,000 ha on Stewart Island) but none with an existing permanent community.

I am a member of the projects governance group which has been formed with representatives from the Rakiura community, DOC, local councils, iwi and business interests. I'm passionate about this project, Rakiura is a place I've enjoyed visiting for the past 30 years. The assessed benefits of the project to the island's economy are considerable, resulting from increased numbers of visitors passionate about viewing the island's enhanced native flora and fauna.

Both of these ambitious projects have enormous potential and put Southland squarely at the forefront for innovation in managing pest threats. Many of the stories in this edition of *Envirosouth* highlight the significant progress we are making in this area across the region. None of this would occur without the support of Southlanders including community volunteers, landcare groups, contractors and our own skilled staff.

Cover

Craig Thompson (left) of TrueSouth Survey Services Ltd and Environment Southland Catchment Engineer Robin Wilson map the seabed in New River Estuary using a specially modified boat. The full story is on page 17.

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Change is in the Air...

Winter is nearly upon us and thoughts of keeping warm and toasty during the chilly months ahead are in the forefront of most people's minds.

It's also the time (May – August) when our scientists start keeping a close eye on the quality of the air, which can become quite poor in the urban centres of Invercargill and Gore.

We love our home fires in Southland, but they are the reason why we have high levels of air pollution during winter. It's an issue that's currently being addressed in the review of the *Regional Air Quality Plan for Southland (1999)*.

It is inevitable that people living in those urban areas will have to make changes to the way they heat their homes if the Government's health-inspired national standards for air quality are to be met. We know that poor air quality during winter impacts on people's health, especially the vulnerable – children, elderly people and those with asthma or other respiratory conditions.

If you live in Invercargill or Gore you may recall receiving the *Breathe Easy* brochure and questionnaire in your letterbox last year. It asked for your ideas on how we might improve air quality. We received a lot of responses, which was helpful because keeping warm, having affordable heating and improving air quality is a balancing act of important priorities that will take time to achieve.

While we can't be sure about the exact detail of the changes yet, we will be able to give people a 'heads up' that 'change is in the air'. This winter we plan to get another *Breathe Easy* brochure out to brief you on the kinds of changes that are likely to come about as a result of the air plan review. So keep an eye out for that.

At this time, the *Regional Air Quality Plan for Southland (1999)* review is looking at not only domestic heating, but also outdoor burning, agricultural use and fertiliser use. There will be an opportunity for public feedback on any suggested changes in due course.



More information

Please visit our website for more information about air, including:

- Results of the Breathe Easy early consultation for the air plan review
- Our weekly winter air quality results
- The downloadable brochure *Warm Up Wisely: getting the best out of your wood burner*

www.es.govt.nz/environment/air

BIG dreams for Bluff Hill

Dedicated, determined and driven are just three words you could use to describe Estelle Leask and the band of volunteers and supporters behind the Bluff Hill Motupöhue Environment Trust.

The trust was established in 2008 following the gruesome discovery of a dead and gnawed adult titi/muttonbird on the Glory Track on Bluff Hill. After that there was a realisation that something needed to be done if the special colony of birds was to be saved.

The volunteers gained commitment from the Department of Conservation (DOC), which is

responsible for the reserve, Invercargill City Council (ICC) and Environment Southland to support their efforts in eradicating pests on the hill. The pest problem was so bad, Estelle says they used to see stoats running around when they walked the track. "It was silent up there too, no bird calls."

Bluff Hill Reserve is a special place. "There aren't many places like this, where the forest

meets the sea and a colony of titi also nests," Estelle says.

Some initial rat, possum and mustelid monitoring gave the group a good idea of what they were dealing with. Environment Southland continues to do periodic pest and bird monitoring on Bluff Hill and these results are an invaluable tool in the Trust's decision-making for their pest control plans.

Funding was gained to buy mustelid traps and they instantly started catching stoats and weasels. Since 2008, they have caught 56 stoats, 108 weasels, 839 possums and 1040 rats. That rat total doesn't include the thousands that have died due to the Trust's 489 poison stations.

Five years on and Estelle says they don't catch many stoats and weasels now.

The Trust volunteers started to do some titi monitoring that first year. "We wanted to see what the result of our trapping would do to the population of the birds," says Estelle. They have continued the monitoring each year since and the results are extremely promising, with bird numbers increasing steadily.



Estelle Leask is lucky enough to combine her passion for the environment with her day job, where she works as a receptionist for Environment Southland.



Titi are a seabird that spend part of the year in the northern Pacific feeding and return to the subantarctic and temperate zones when they are ready to nest and breed. They generally arrive back on Southland shores in September and lay their eggs in late November/early December, so by the time the Trust volunteers start their monitoring in April, there are 'cute, fluffy chicks' to see. After travelling thousands of miles, breeding pairs lay only a single egg.

For Estelle and husband Peter, the monitoring can be tricky. "We monitor the same burrows every year at two sites. The first site has 68 burrows and the second has 22, but there are other colonies on the hill. We only monitor these two sites and that gives us a good indication of what will be happening in the other areas," she says.

They take data record sheets with them and a burrow-scope. "It's like a vacuum cleaner hose, about 2-3 metres long, and we put that down the burrows. There's a camera on the end and we can see on the screen straight away if there are chicks in there."

The monitoring takes count of the chicks whether they are alive or not as this shows that a bird has come back to breed. "2013 was a bad season for titi because the water temperature was so high. Most of the fish they would normally feed on, like anchovies, didn't come to the surface. So we had quite a few abandoned nests. If they have nothing to feed on, then they can't feed their babies. Last year we had 29 chicks out of 90 burrows which wasn't fantastic but compared with the previous year that was an increase," says Estelle.

And the trapping must be working because they continue to find new burrows, and the birdsong is returning. "We've even got kaka at Bluff now, and the kakariki/green parakeet, they're breeding on the hill. So we're right up there," she says.



Peter Leask with a titi chick.

"You've got to dream big, especially for something like this. Because if we don't it will be gone forever."

Funding for the Trust has been an ongoing effort, with financial support coming from a range of organisations including major support from the Environmental Enhancement Fund administered by Environment Southland, ICC, South Port and Wilbur Ellis. Estelle says the rat control poison costs about \$11,000 each year as it's such a huge area that they are controlling. "We are currently tracking at zero for rats which is really good for such a big bush block, but there is a constant threat of reinvasion."

The group is incredibly ambitious. They've recently partnered with Blacks Fasteners and have purchased a property with the aim of turning it into a native plant nursery, which will also act as storage and as a meeting place. Blacks Fasteners' partnership also supports possum control on the hill.

They also opened an account for a fence fund with the idea of putting up a predator-free fence blocking the Bluff Hill Reserve from pest animals. "It's one of our big dreams to one day have a fence to protect the reserve," Estelle says. "It's not going to be cheap, but we're ambitious. It's the only sustainable long-term solution to it."

The hope is to one day reintroduce species. The group is already in talks with DOC to introduce the South Island robin. "But to be able to have kiwi, takahe, kakapo, maybe tuatara. Imagine that," says Estelle. "You've got to dream big, especially for something like this. Because if we don't, it will be gone forever."



Estelle's husband Peter uses a burrow-scope to check if there are any chicks in the titi nest.

Iwi values are community values

Michael Skerrett can trace his family back several hundred years to Codfish Island/Whenua Hou where local Māori married European settlers in order to quell unrest in the area and gain resources including ammunition.

He says the earliest Māori settlers had to learn to live with the environment. "They had to learn to be hunter gatherers because they came from Hawaiki where there were no seasons; they could grow crops all year round," says Michael. "They couldn't do that here in Southland, and so learned to live with the environment. They had their rules (tapu – polluted/sacred and rahui – a ban for a period of time) in order to maintain resources, and now we are doing the same thing."

Michael says incorporating cultural values into a project or plan is not that onerous.

Cultural aspirations for the environment are very much in line with Environment Southland's obligations under the Resource Management Act. "There's nothing like a rule in a plan to disempower you, to take you out of something you should be involved in. So we see ourselves in quite a supporting role. We are very well aware of the purpose of the RMA, which is about sustainable development. We're not about trying to stop everything; otherwise you'd be on a hiding to nothing," he says.

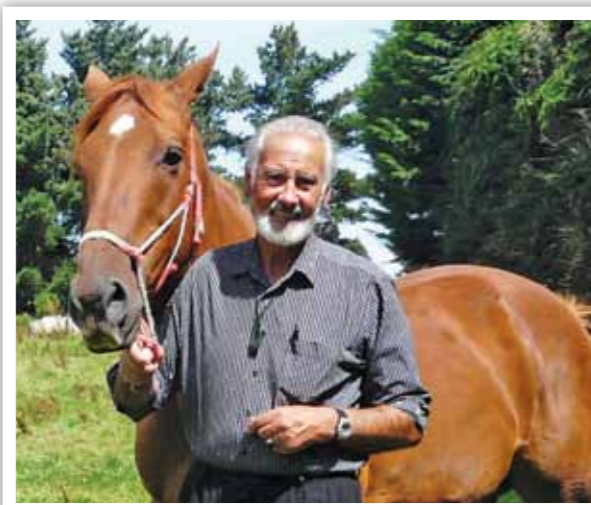
As a member of the Water and Land 2020 & Beyond Steering Group, Michael says there is a strong direction from central government to 'hold the line' in terms of water quality "and we support that position".

Michael feels that we are just starting to address adverse effects now. "Hundreds of

years ago we woke up to the fact we had to address things from the mountains to the sea. What you do upstream will have a cumulative effect downstream and the place to measure that effect is in the estuaries. That's something that's not being addressed properly at the moment with the National Policy Statement. The actual place to measure adverse effects is in the estuaries."

Another key principle for Māori is that they are only borrowing resources from future generations. Michael says we must aim to leave them better if not as good as we receive them. "You can't spend more than your share. Otherwise you are robbing of the future generations," he says.

Michael feels that iwi values are very much in line with the wider community's cultural values for water. "They all value good water," he says. "We feel a lot of the time, that we are the voice for the wider community. We certainly get the messages from them."



Michael has recently been awarded two significant honours. The first was an Honorary Fellowship from the Southern Institute of Technology where he has been the Kaumatua for nine years and also a council member. The honorary fellowship commemorates his contributions to environmental management, tertiary education and other community leadership in Murihiku Southland.

The second award was the Queen's Service Medal for services to Māori and the community. He had found out several months prior to being honoured with the QSM and didn't even consult his wife Winsome in his decision to accept it.

He hopes that the awards will help give more weight to the support he gives to community projects.

Left – Horses have been a lifetime passion for Michael.

Fresh service to offer farmers advice

Environment Southland is piloting a programme that offers farmers specific advice on good management practices and clear actions to protect and enhance water quality.

Focus Activity Plans are being piloted on 60 Southland farms. The free service developed by Environment Southland's Land Sustainability team will give farmers straightforward advice on three key areas which have been a major focus of the Water and Land 2020 & Beyond project for the past year.

Labelled 'Focus Activities', nutrient management, riparian management and intensive winter grazing are the activities that have been identified as having a significant effect on water quality.

Land and Water Services manager Nikki Tarbutt says farmers are already making positive changes. "With these plans we hope to provide better, more coordinated support to assist them to make changes towards best

management practices of the focus activities. Winter grazing, nutrient and riparian management are key activities where good environmental gains can be made," she says.

While the advice that is being given to farmers isn't new, pulling it into one package is. "It's a new way of working," she says.

Land Sustainability Officers aim to visit 60 farms involved in the pilot programme between April and August this year. They will walk the farm with new GPS and mapping software which will allow them to use aerial photographs to map existing farm features including fences, plantings and waterways. Specific advice will then be given on the actions and priorities that could be taken with regard to protecting water quality.



Land Sustainability Officer Anastazia Raymond uses a GPS to map a riparian area.



Fencing waterways to exclude stock can improve water quality by minimising the flow of sediment and nutrients into the water.

Nikki says, "Advice might include things like the most effective direction for winter grazing, identifying critical source areas and tactics for managing those, and identifying the types of trees and plants that could be used in a riparian margin."

Changes to policy around these focus activities are currently being worked through, so information on these will also be incorporated into the plans where possible. "These changes are likely to affect all farming types, so these plans are designed to assist beef and sheep, dairy, deer farming and arable cropping," she says.

If the pilot programme is successful it may be extended over more farms in the coming year.

A gathering of the Landcare Groups

Southland Landcare Groups

Anyone with a bit of spare time on their hands and an interest in their local environment is welcome to join the groups and lend a hand. If you want to make a difference by volunteering, contact Environment Southland on 0800 76 88 45 and we can put you in contact with a landcare group in your area.

- Waituna Landcare Group
- Bluff Hill Motupōhue Environment Trust
- Manapouri WeedBusters
- Dipton Landcare Group
- South Catlins Environment and Development Trust
- Myross Bush Landcare Group
- Te Anau Landcare Group
- Makarewa Landcare Group
- Lower Mataura Landcare Group
- Otatara Landcare Group
- Stewart Island/Rakiura Community & Environment Trust (SIRCET)
- Riverton Estuary Care Society
- Aparima Pestbusters

Right – The Otatara Landcare Group, together with the *Living Legends* Project, have planted thousands of native trees over the past three years as part of the Bushy Point Restoration Project.

If you're living in Southland, chances are you've already been in contact with a landcare group, even if you weren't aware of it. Planted patches of native bush, information panels on walkways, more native birdsong – much of our everyday enjoyments are due to the work of these dedicated volunteers.

Landcare group members from all corners of Southland recently came along to a bi-annual networking day to discuss their groups' activities, and to learn from each others' achievements and discoveries at the Southland Community Nursery in Otatara.

One of the highlights of this year's meeting, hosted by Environment Southland, was a presentation by Biodiversity Ranger Colin Bishop on the Department of Conservation's 1080 programme in southern Fiordland.

Environment Southland Land Sustainability Officer Nathan Cruickshank says "The use of 1080 is highly contentious and today we got the chance to discuss its suitability for community groups and listen to DOC's point of view."



Landcare is about looking after our land and other resources together as a community. Groups of volunteers are often neighbours who band together to take care of a common area; common tasks include carrying out planting, fencing, and pest control work.

The groups also visited Bushy Point Reserve and viewed the last three years' growth of *Living Legends* Project plantings. Organised by the Otatara Landcare Group, last year *Living Legends* volunteers planted 4000 native plants in an hour and a half.

Environment Southland Chairman Ali Timms says this project is another good example of how things worked when Southlanders collaborated. "Southlanders are good with getting on with things, and Environment

Southland comes in with advice and resources. It also shows how landcare groups have a tendency to multiply the small amounts we supply."

The groups praised the enthusiasm they received from the wider public around landcare events and discussed ways to get more on-going commitment from the community. "Having an enthusiastic planting bee is often the easy part," says Nick Roundturner from the Waituna Landcare Group. "Things revert very quickly if left unattended."

Maintenance work often only required a couple of hours of work each week, but was frequently carried out by senior group members. "We'd like to attract more of the young members of our community who are prepared to do the work," says Libby Furr of the Bluff Hill Motupōhue Environment Trust.

Winning the war on possums

For most of us, the only possums we see are the ones flattened on our roads. Those unlucky creatures are but a fraction of a population that poses economic, animal health and biodiversity threats.

Possums are potential carriers of bovine TB, which is readily transmitted to cows. They consume large amounts of pasture, stock feed and crops, and damage forest plantings. They deplete native forests, browsing on trees and regenerating plants. Possums will also eat the eggs and chicks of our native birds.

The Australian brushtail possum was originally introduced into the country in the late 1800s to establish a fur trade. While that never took off in a big way, the possums did, and are now widespread right across mainland New Zealand.

In Southland, the Possum Control Area (PCA) programme is proving very successful in tackling the problem. Environment Southland Senior Biosecurity Officer Dave Burgess says the aim of the programme is to follow on from or complement the intense pest control work undertaken by TBfree New Zealand to eradicate Bovine TB.

"It's always been about maintaining the gains; keeping the possums down. No one would want the possum numbers up, rural or urban," says Dave.

In just three years, the PCA programme has gotten some 600 farms involved in 26 PCAs across 170,000 hectares and is continuing to grow rapidly. "We aim to add 40–50,000 hectares a year, and looking ahead, we'll easily do that," says Dave.

A PCA is where farmers within a defined area agree to participate in possum control. If necessary, Environment Southland initiates pest control work to get the possum population down to a manageable level across the properties and then arranges for bait stations to be set up.

While landowners are responsible for the possum control on their properties, Environment Southland biosecurity officers coordinate the annual maintenance work for PCAs. Dave says they remind farmers when the work is due and encourage them to use contractors to carry it out.

"Contractors are a key factor in the success of the programme in Southland because they are able to effectively target the whole possum population of a PCA by covering all the properties within a short time span. They also use good baiting strategies consistently and carry spare parts with them."

Environment Southland tracks the performance of the PCAs using a national possum monitoring method. It shows that the Southland PCA programme is achieving its goal: with only five (or less) possums caught per 100 traps.

Limehills sheep and cattle farmer John Cowie joined the PCA programme early on. "We see very, very few possums, now" he says. "The native vegetation is coming away and we're seeing a lot more native birds. It's good."

Dave says it can be easy for landowners to start losing interest in their PCAs when the possum numbers are down, but that it's important to never lose sight of the gains.

"With low possum numbers there's less risk of TB. There are economic benefits too, like increased pasture production and less damage to crops and trees, you have healthier bush, increased biodiversity and hopefully more birdlife, in time."



Dave Burgess,
Senior Biosecurity Officer

PCA Incentives

If you join the PCA programme, Environment Southland will:

- Arrange for the initial possum control and setting up of bait stations.
- Contact you each year to remind you about the annual possum control maintenance work.
- Fund the cost of your bait and materials 100% if you engage an approved pest control contractor to do the maintenance work.
- Fund about 50% of the cost of bait and materials if you undertake the maintenance work yourself.
- Conduct possum population monitoring on your property from time to time.

To find out more please visit www.es.govt.nz or get in touch with a biosecurity officer at Environment Southland.

Left – Contractors are an effective option to regularly check and bait possum traps in a Possum Control Area.

Restoring the wilderness

What started out as simply a great place to go duck shooting for a group of mates some 30-plus years ago is now transforming into a natural wildlife sanctuary, thanks largely to the commitment of one man.

Clive Geddes bumps along the ruts and tussock fields in his open-air, red Argo. Pulling up, he leaps out and leans down to check a small wooden box. It's a trap, one of 40 designed to capture predators – ferrets, stoats and feral cats. It's empty.

"To be honest the heat has gone out of us as duck hunters," he says. "We used to be mad, keen hunters. It's now more about companionship. We're still duck hunters but with a changed view of the property."

A former Queenstown Lakes District mayor, Clive is one of five owners of the Castle Downs property in north-west Southland. It is 525 hectares of open wilderness with peat soils and several small lakes. "All of the partners realise it's an invaluable natural resource ... it's not modified and that is becoming increasingly rare when you think these peat bogs were common in Southland and now they're not."

The clouds are high in the sky, the sun is beating down and Clive still has plenty more traps to check and bait up, plus rat-bait stations to replenish before the day is out. It's a routine he repeats every month.

It all started about three years ago when his wife spotted a stoat on the property. "We'd owned the place all that time and never thought about predators," he says. "I knew the damage they could do. Suddenly it was personal."

The group sought help from Environment Southland and Clive has been managing the pest control ever since. "In that time we've trapped and killed over 180 ferrets, stoats, feral cats and rats," he says.

This past year he's caught fewer ferrets (there were 40 in the first year); fewer stoats (they've all been juveniles); and more feral cats (four in the previous four months). For every pest animal he catches, Clive estimates that four pass him by. Still, his efforts have been enough to give the birdlife the edge.

"There are more ground dwelling birds in the swamp this summer and Canadian geese are breeding here, and ducks; we've never had ducks breeding before. There's a lot of juvenile pukeko in the southern part of the swamp, and for the first time, there's a lot of pied stilts feeding in our pond, and herons nesting in the trees."



Clive uses an Argo all-terrain vehicle to check the traps and bait stations on their Castle Downs property.

Not long after starting the pest control work, the property joined the Castle Downs Possum Control Area (PCA) in Environment Southland's PCA programme. A PCA comprises property owners within a defined area who agree to work together to get possum numbers down. The programme is very successful with 26 PCAs now covering 170,000 hectares in Southland and growing.

Clive has caught very few possums on their property, but he's a firm believer in the late Sir Paul Callaghan's vision of a predator-free New Zealand. While he concedes that it would take generations, he's adamant that it can be done and he thinks the PCA programme is the vehicle to achieve it.

"I see these (Possum Control Areas) as the areas into which predator control can become established, creating islands where the predator numbers are being forced down and everyone is trapping," says Clive, who believes the benefits would be akin to those of marine reserves "where the biodiversity of species flourishes and spills out into the surrounding area."

In his view it would require one national coordinating agency and low maintenance trapping systems. "That's the key, to take the perception of work out of it," he says. "That way it becomes part of what you have on a property, like you have fences and gates and tractors."

He sees the advantages for farmers as threefold: disease-free stock, increased birdlife and the satisfaction of "restoring New Zealand back to what it was before these well-meaning, disastrous introductions [of pest animals]."

"The bonus is the birdlife and that's good for everyone," says Clive. "What New Zealander wouldn't want to wake up to a tui or bellbird? It's about being able to see layers of benefit in everything we do to enhance the environment, and I think New Zealanders are wholly able to respond to that."



Clive checks and baits 40 predator traps on a monthly basis.

"I see these (Possum Control Areas) as the areas into which predator control can become established, creating islands where the predator numbers are being forced down and everyone is trapping," says Clive, who believes the benefits would be akin to those of marine reserves "where the biodiversity of species flourishes and spills out into the surrounding area."

Clive Geddes



Looking out for the Waiau

It's one of New Zealand's longest rivers and is so awesome it made the cut in a *Lord of the Rings* movie. But keeping the Waiau River in good shape takes time, energy and money. One initiative – a riparian fencing project to help private landowners protect the river – has just gained momentum thanks to a major step up in funding.

The fencing project, now in its fourth year, is a community partnership between Meridian Energy and Environment Southland via the Waiau River Liaison Committee. Meridian Energy provides the committee with regular funding for river works and the fencing project has been able to draw on this to the tune of \$20,000 each year. This year the amount has been doubled to \$40,000.

Waiau River Liaison Committee Chairman Peter Horrell says farmers on the main stem of the Waiau River are entitled to apply for the funding, which matches the cost of the fencing dollar-for-dollar with landowners.

"Once farmers see the fence is up and they've only paid for half of it, they're pretty happy," says Peter.

More than three kilometres of river margin has been fenced every year under the project. Peter says based on Meridian's existing commitment, funding should continue for another 15 years, and if the increased amount for the project can be sustained, that would mean a lot of fencing protection for the Waiau River.

Meridian Energy's Andrew Feierabend says they're pleased to support the work done around riparian management in the lower Waiau River, and appreciates the significant contribution that the Waiau River Liaison Committee makes in co-ordinating this work.

Environment Southland Land Sustainability Officer Nathan Cruickshank is the project's man on the ground. He visits interested landowners and organises the fencing work. Nathan is keen for farmers who think they might be eligible to get in touch, and says while the fencing protects the river through stock exclusion it has other benefits too.

"The financial incentive is great. We're seeing pristine areas with lots of values – water quality, biodiversity – being fenced and protected," says Nathan.

Peter also sees an upside in building relationships. He says Nathan's collaborative approach with landowners is a win-win. Sometimes landowners don't meet the project's criteria and Nathan is able to refer them to other organisations such as the Waiau Fisheries and Wildlife Habitat Enhance Trust for assistance.

It also means Nathan can find himself doing additional work like drawing up plans for riparian planting or giving advice on a wide range of farm environmental practices. This extra support comes at no cost to the farmer; it's all in a day's work for a land sustainability officer.

If you would like more information about the Waiau River fencing project then give Nathan a call at Environment Southland.



The Waiau River cuts a path from Lake Te Anau downstream to Lake Manapouri, then skirts Fiordland National Park for some 70 kilometres south to Te Waewae Bay.

Partnerships

The role of the Waiau River Liaison Committee is to advise and assist Environment Southland in the development of annual maintenance works programme, budgets and the management of any special river and land drainage issues.

It is one of seven river committees in Southland, but where the Waiau committee differs from the others, is in its relationship with Meridian Energy. The energy company has a long-term commitment to funding improvements in the catchment since the Manapouri power scheme, and the committee has been a long-time partner.

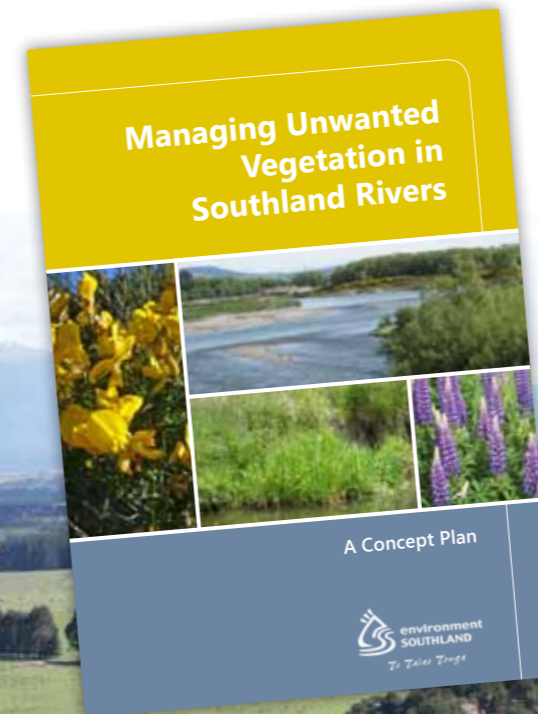
The other river liaison committees represent the Maitai, Oreti, Aparima, Te Anau, Makarewa and Waimatuku catchments.

A unique plan comes together

There's something quite unique happening here in Southland. A plan has been formed, and not only that, groups are working together to make it happen.

It might not sound like ground-breaking stuff, but it is the first time that Environment Southland, the Department of Conservation, Land Information New Zealand, iwi and many of our communities have worked together on a concept – to sustainably manage our riverbeds for the good of the environment.

The idea for the *Managing Unwanted Vegetation in Southland Rivers - Concept Plan* came from Environment Southland Councillor Ross Cockburn, who was frustrated at the lack of foresight being used to manage the aerial spraying programme. "There would be a great job done aerial spraying the vegetation, but then it would be left for 2-3 years and we would be back to where we started," he says.



The future financial sustainability of the programme was a major concern. Environment Southland Catchment Works Supervisor Ken McGraw says in the past the riverbeds have been managed using herbicide to control pest plants and maintain flood fairways.

"Vegetation, such as gorse, broom and crack willow, is a major issue in terms of blockages to our floodways network, which causes all sorts of other issues for river management works, particularly soil erosion and damage to our flood protection schemes," says Ken. "But those plants also harbour a range of pest animals such as rabbits and possums."

Environment Southland currently spends around \$1million per year on the aerial spraying programme which controls the vegetation. Through this concept plan Ken hopes that some areas will be able to be removed by using an alternative control option, saving ratepayers money.

"For every hectare that we can remove from the spraying programme, we'll save in the order of \$500 per hectare per year," says Ken. "We know we won't be able to get entirely away from using herbicide but we are looking at every other option that will reduce the dependency on that."

Several areas have been identified for trials and planning for these has already begun. The first will involve a 'cut and carry' trial on the Mararoa River below the Key Bridge, the second will be extensive reintroduction of native plantings on the Mararoa River above the Station bridge and the third will be a grazing trial at SoBig, on the upper Oreti River.

These areas have been chosen because they have wide braided beds, expansive berms and require a high level of ongoing weed management.

"Through this plan we hope that we can enhance our community's connection to our river systems by working with them to provide better recreational opportunities such as access for walking, biking and picnicking," says Ken.

Councillor Cockburn says the key to the concept plan's success is getting all the parties sitting around a table to work out a plan that we all agree with. "I'm certainly excited about it. I'm very hopeful of a positive outcome for the whole region."

The next stage will be to develop an operational plan which will set out the implementation strategies for the programme across all Southland rivers.



Working alongside locals at Waituna

It's easy to think that a land sustainability officer's job is all about the land, and while it is a central focus, it doesn't begin and end there.

Katrina Robertson has been a 'land sus' officer in the Awarua/Waituna catchment for five years. She describes her role as "the link for all things Waituna" for Environment Southland staff and between the community and other organisations such as the Department of Conservation.

In a nutshell, she works with farmers and communities to achieve sustainable land and water management practices.

Katrina's job is demanding and varied. Her day might include farm visits, editing scientific reports, tracking budgets for stream projects, briefing policy makers, writing articles for newsletters and end with an evening meeting with the Waituna community.

"It's not just a job to me; I feel a sense of attachment to Waituna. I enjoy working with people in the community and I want to help them make a difference in the environment," she says.

As environments go, Waituna is particularly complex and interesting. Some 20,000 hectares of the Awarua Wetland has recognition as a Ramsar Wetland of International Importance due to its unique flora and ecosystems. The area also has cultural significance for the local Ngāi Tahu people.

The Waituna Lagoon is naturally dynamic. It is a freshwater lagoon, but it borders the ocean and is subject to extended influxes of sea water. This occurs when the lagoon is opened to the sea by diggers to drain farmland during episodes of high rainfall. Sometimes it can remain open for months at a time before the wild weather and natural conditions close it.

A good understanding of the interplay of the natural elements, farming in demanding conditions and respect for the local community, some of whom go back for generations, is essential in Katrina's job.

It helps that she comes from a Southland farming family and has a double university degree in psychology and honours in geography. But Katrina would be the first to say that your background and knowledge only takes you so far.

"You have to be able to develop relationships with people. If you can't build that rapport, you can't work alongside them to implement changes and reduce the impact on the environment," she says.

Fifth generation local farmer Ewen Pirie agrees. "The biggest single problem I see with Waituna is too many experts with no local knowledge and no common sense, and Katrina certainly has a lot of common sense," he says. She's become part of the community in a lot of ways. She's magic at developing those relationships."



Katrina Robertson,
Land Sustainability Officer

Back in 2011 the Waituna Lagoon hit the headlines. A range of scientific work had come together showing that the quality of its water was in decline and the aquatic life it supported was at risk due to a build-up of nutrients and sediment. Environment Southland became involved in an interagency response, which is ongoing. Katrina's role was pivotal.

"The farmers felt like the finger was being pointed at them. I could feel the pressure they were under. It was a very tough time," she says.

Ewan says, "She had the ability to sense people who were under stress and get in there and talk to them."

Katrina says many farmers were already implementing good farming practices or looking to make improvements, but that the interagency response took their awareness of environmental issues to the next level. She says progress has been steady and farmers have made considerable financial investments, particularly in effluent systems.

"The water quality issue at Waituna hasn't arisen overnight and won't be solved quickly, but the farming community has really stepped up and made a fantastic effort," says Katrina.

"They know Waituna's a special place and they are thinking about future generations. They're in it for the long haul."

Reconstructing slumping banks

Back in 2011 some Waituna farmers approached Environment Southland to inform us about bank slumping on some of the waterways in the catchment. The accumulation of sediment in the Waituna Lagoon is a big problem and they believed the eroding banks were a major source.

Environment Southland successfully secured funding from the Ministry for the Environment's Fresh Start for Fresh Water Clean-Up Fund to help remedy the slumping.

Last year, a trial of bank reconstruction (bank rebattering and rock armouring) along 1km of the Waituna Creek on a farm in the lower part of the Waituna Creek catchment was undertaken. Further bank reconstruction work is now underway starting near the mouth of the Waituna Creek, just below the Marshall Road bridge, and working upstream.

The plan is to reconstruct about 10.5km of the Waituna Creek this season, but this will be weather dependent.



Building a wetland

Wetlands are really helpful for filtering nutrients and stopping them from getting into our rivers. Wetlands occur naturally, but it's also possible to create them.

In late January work began on constructing a wetland pond on a Waituna farm. Designed by NIWA in conjunction with DairyNZ and Environment Southland, it demonstrates a cost effective, constructed wetland in an area of relatively high nutrient levels.

Once completed, the wetland will be closely monitored, and if successful in removing nitrogen and phosphorus, will be used as a model for creating more wetlands.



Biocontrol is the 'bees knees'

For Jesse Bythell, biocontrol is the 'bees knees.' "It's great, such a fascinating corner of science," she says. Although she admits native plants will always be her first love, what started as a quirky university research project stemmed into eight years working as a biocontrol contractor in Southland, often alongside Environment Southland.

Biocontrol involves purposely introducing the natural enemy of a pest - a biocontrol agent - to help reduce the damage it causes. In the case of Jesse's war on pest plants in Southland, this means bugs.

"Some people think it's a terrible idea," she says, "mostly because we've not set a very good example in the past, just look at New Zealand's gorse problem."

Pest plants like gorse, broom, and ragwort are causing significant problems for our native species of flora and fauna all over the country, by outcompeting them for resources and space.

Many plant species were brought into New Zealand as ornamental decoration but jumped the garden fence and escaped into the wild, where favourable conditions saw them thrive. Not all foreign species were stowaways on a boat or a lack of foresight by early settlers.

Biocontrol helps to reign in the spread of these pesky species. In Southland, there are currently 28 different biocontrol agents including 25 insects, two mites and a fungus that are working to combat the unwanted species.

Biocontrol in the region isn't new. Since the 1980's, different insects have been introduced to combat pest species with varying levels of success.

What makes the creepy crawlies in Jesse's arsenal different is that they are rigorously tested before they set foot in the country, to make sure they will only affect the species they depend on for their life cycle.

While traditional methods of control like chemical spraying provide a quick and easy fix, the long term effects are hugely detrimental to the environment. Which is why biocontrol, according to Jesse, is a more environmentally friendly option.

"Traditional methods like spraying have an instant and dramatic effect, but aren't specific to the pest plant. There's a lot of hit and miss involved," says Jesse. "Biocontrol agents just work away quietly and only effect the plant specific to their life cycle, which is a much more sustainable and long term approach."



Broom gall mites make their home inside the buds on new broom stems. The plant then produces galls for the mites to live in, instead of growing new shoots.



Jesse Bythell (left) and Senior Biosecurity Officer Randall Milne harvest gorse soft shoot moths.

So although you might see yellow ragwort flowers blooming throughout the region during the summer months, thanks to the Ragwort plume moth, it's also under silent siege. Plume moth caterpillars feed by tunnelling through the crown roots and stems of the plant. Just two or three can kill an entire ragwort plant.

Environment Southland has been an active and long-time proponent of the use of biocontrol agents to help combat pest plants and was among the first regional council's to back the introduction of dung beetles, with releases onto Southland properties last year.

Some other recent breakthroughs include the discovery of broom plants dying at a broom gall mite release site in Manapouri, and the confirmed establishment of the ragwort plume moth at sites on a Tukurau property - all of which are very exciting for the future.

"What people have to realise with biocontrol is that the agents depend on these plants as a food source and as part of their life cycle. So it's not a quick fix solution but it's being more sustainable in the long term. You won't get an instant dramatic result, but in the long run it can make pest plants more manageable," says Jesse.

Biocontrol agents are being tested on release sites of willing property owners around the region and both Jesse and Environment Southland hope to eventually build up enough biocontrol agent populations to harvest, so the community can distribute them on any target pest plants they might have at home.

"The trick is to educate people so they realise that while it might seem like a slower way of getting things done, the bugs are very good at what they do. I think it's a really good option for tackling pest plant species in our region," says Jesse.

Technology advances help rivers and estuaries

Our river systems are constantly changing and shifting, which can make measuring and mapping them a challenging task.

That's why Environment Southland Catchment Engineer Robin Wilson is grateful that technology is playing a much larger role in the river and estuary mapping programme he is currently working on.

Since the 1960's, in the days of the Southland Catchment Board, cross sections of our rivers have been surveyed. Robin says they used good old pen and paper, as well as a level and tag line surveying equipment, in order to record the depth and any changes in the river.

"Before, you needed two people to record the information on datasheets and it would take a day to do two cross sections. They then had two more days just to do the maths and another two days to draw up the maps," he says.

With expert assistance from TrueSouth Survey Services, along with major advances in sonar and GPS technology, systems have been developed to record riverbed and seabed levels in real time, using a modified jet boat. "Now we can record everything on a data recorder, download it back at the office and run the data through a mapping programme to finally plot the maps. The ability to navigate back to the exact section to record changes is a real plus," says Robin.

The information gathered is used for river management purposes and to determine the extent of gravel extraction. The process is now being used to map the beds of our estuaries.

Environment Southland Coastal Scientist Nick Ward says the data gathered from the estuaries will provide a baseline so movement and changes to mud and sediment build up can be mapped.

Robin says he's already mapped Jacobs River Estuary and part of the Waiau River and is working on New River Estuary. "It's three kilometres wide in parts and we need to travel in 30 metre sections in parallel lines, which means we'll end up travelling about 600 kilometres to complete the mapping on this estuary. The only thing stopping us now is the wind and rain as we need reasonably calm conditions to safely get the best readings," he says.

Below - Using a specially modified boat, Catchment Engineer Robin Wilson (left) with Craig Thompson from TrueSouth Survey Services map New River Estuary to provide information on the seabed.



Restoring the Waihopai – walking the talk



Land Sustainability Officer Nathan Cruickshank demonstrates tree planting techniques to students from Otatara School.



Students from Southland Girls' High School (above) and Invercargill Middle School (below) plant the stream margin below the Waihopai Dam.



Over the next few years, schools and community groups will be helping Environment Southland to restore a stream alongside the Waihopai Walkway. The work is part of a concentrated effort to plant Environment Southland-owned land in the Waihopai catchment to improve water quality and create a healthy habitat for fish.

Otatara School, Donovan Primary School, Invercargill Middle School, Southland Girls' High School, Makarewa School and Southland Adventist Christian School will work towards planting 700 metres of stream margin below the Waihopai River dam. The project has so far involved putting up fencing to exclude stock, developing a vision for the stream, and organising the school plantings.

Environmental Education Officer Pat Hoffmann says schools have been planting above the dam area for years, but the latest restoration project alongside the walkway will be bringing the message home to the wider public. "It's quite exciting that people will be able to see a restored stream. Hopefully it will change the perception of what a healthy stream should look like."

Pat says the plantings teach children the benefits of riparian strips for river and fish health. "In combination with the plantings we usually also run a stream study, and that varies slightly depending on what a particular school wants. We could be looking at water quality and ecosystem health, or include a focus on whitebait."

Each school group will plant a specific section of the stream depending on how many children there are and how much time they have, until the whole stretch is planted. At the end of the project, signs will be unveiled to celebrate the achievement and commemorate the involvement of each school.

Coming Up: Teacher Workshops

The Environment Southland Education Team would like to invite all teachers interested in Environmental Education to a workshop on Thursday 19 June. Topics will include an 'Introduction to Education for Sustainability' and an 'Introduction to EnviroSchools'. The workshop will run from 9am to 3pm. Funding for teacher release is available for a limited number of participants. To register, please email education@es.govt.nz.

BRUCIE'S BIRTHDAY BASH

Bruce C Gull celebrated his birthday at Anderson Park in March, with approximately 230 Brucie's Buddies Club members and parents attending.

The event was hosted by Environment Southland and supported by the Department of Conservation and nature educator Lloyd Esler. Environmental activities were themed around biodiversity and use of natural materials – children identified bugs, participated in a pine-cone throw and had a look at leaves' colours in the different stages of decomposition.

Brucie's Buddies Club provides environmental education opportunities for children between the ages of 4 and 14, through articles, actions and events. Approximately 1400 children are part of Brucie's Buddies Club. They receive a quarterly magazine in the mail and are invited to fun events such as Brucie's Birthday.

If your children want to join Brucie's Buddies Club, visit www.bruciesbuddies.co.nz to sign up – it's free!



Want to arrange a visit from one of our education team to your school or community group? Then phone 0800 76 88 45 or email education@es.govt.nz



Amy Kirk –
Education Team Leader



Mark Oster –
Education Facilitator



Pat Hoffmann –
Education Facilitator

OUT IN THE FIELD...

Our staff and contractors are no strangers to extraordinary situations. See what they've been up to lately as they go about looking after our region's natural resources.



Biosecurity Officer Alfredo Paz visited Waikaia School recently to promote safety around poisons and bait stations to the students. He showcased the bait stations and poisons used in them for possum control so the children will recognise them and take care should they come across any on their farms.



St Joseph's Primary school students show Environmental Education Officer Pat Hoffmann designs for enhancing whitebait spawning habitats on the Otepunui Stream as part of their Stream Connections study.



Farmers attending the Southern Field Days at Waimumu talk with Data Management Officer Helen Brown about the clover root weevil and the parasitic wasp used as a bio-control agent. Around 100 sample pots of infested weevils were handed out, with a further 200 names taken to follow up with.



More than 200 people joined in Brucie's Birthday Bash at Anderson Park. Children took part in some environmental games and activities before having a barbeque lunch and photos with the birthday gull himself, Brucie.



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Envirosouth

Envirosouth is published four times a year by Environment Southland. It is delivered to every household in the region. We welcome your comments on anything published in this newsletter, as well as your suggestions for topics you would like to read about in future issues.

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