

# EnviroSouth



environment  
SOUTHLAND

*Te Taiao Tonga*

# Continued focus for new Council

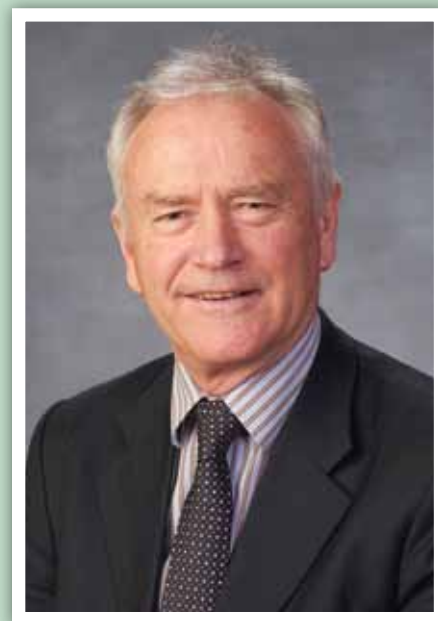
One new face has joined the Council following the local body elections last month. Lloyd McCallum brings a wealth of knowledge and experience as we look to make further progress with our major priority; improving water quality in Southland. Ali Timms has been re-elected as Chairman and Nicol Horrell as Deputy Chairman. Councillors Horrell, Rodway and Cockburn all retained their seats as Chairmen of the Environmental Management, Consents and Regional Services committees respectively, while Councillor Riddell was newly appointed as chair of the Corporate Management and Audit Committee.

Water is a continued focus for us in Southland. It has also been recognised nationally because of its importance to our environment and lifestyle, and because it underpins a large chunk of our economy. Government is setting the agenda for water through the National Policy Statement (NPS) which requires regional councils to maintain and improve water quality and improve and maximise the efficient allocation and use of water.

The NPS is under review and changes will include the Government establishing water quality national bottom lines. Government has recently begun discussing its proposal for a framework for these national bottom lines (known as NOF). I'd encourage you to

take an interest in these proposals. We can see that for Southland the major challenge will be around maintaining and improving water quality while providing for further development.

Environment Southland's response to these Government initiatives is our Water and Land 2020 & Beyond project. Significant progress is being made in relation to water quality through this coordinated and collaborative approach. The project pulls together the many strands of the Council, as well as working closely in partnership with Te Ao Marama and involving the community. The focus to date has been on holding the line on water quality with an emphasis on good management practices.



Rob Phillips, CEO, Environment Southland

We are seeing a good level of uptake on these across the board. Longer term, a limit setting programme required by Government will become the focus.

While water quality is a focus for the Council, our core business remains important to Southland. This include flood protection works, river and drainage maintenance, civil defence, pest plant and animal management, consent processing and advice from our land sustainability officers.

## In this issue...

<i>The faces of your Council for the next three years</i>	3
<i>Coming together for Waituna</i>	4
<i>Strengthening ties with iwi</i>	6
<i>Know your neighbours, know your community</i>	7
<i>Community support helps project</i>	8
<i>Science making a difference</i>	9
<i>Taking care of water quality pays off</i>	10
<i>Safer boating this summer</i>	12
<i>A warm winter makes a difference to air quality</i>	14
<i>'Wintertime Water' key to understanding nitrate</i>	16
<i>Eyes on Etal and Eyre</i>	17
<i>Join Brucie's Buddies Club</i>	18
<i>Environmental education in action</i>	19
<i>Out in the field</i>	20

## Cover

Rolf Harrison (4) slowly releases a big puff of air and gently blows bubbles during a kindy 'air' activity at Anderson Park in November.

The air learning activity was hosted by Environment Southland to gain photos for the region's State of the Environment Report (SOE) on air quality, which is due out in 2014.

Children from Lees Street Kindergarten in Invercargill blew bubbles and horns, flew kites, played with streamers and a butterfly net to show how they interact with the air.

The Air Quality SOE will bring together technical and values-based information about the air in Southland. For more information about the Air Quality SOE please turn to page 15.

# The faces of your Council for the next three years

**E**nvironment Southland's Council has remained relatively consistent after this year's local body elections. Councillor Lloyd McCallum is the only new face to join the existing council members. He replaces Brian Mason as the voice of the Southern constituency.

Councillors Maurice Rodway, Rowly Currie, Jan Riddell, Robert Guyton, Marion Miller, and Neville Cook all retained their seats in the Invercargill-Rakiura constituency.

Also returning are Councillors Ross Cockburn (Fiordland), Nicol Horrell (Western), Grant Hubber (Hokonui) Peter Jones and Ali Timms (Eastern-Dome), who were all re-elected unopposed.

The new Council's inaugural meeting took place on the 30th October where all councillors were sworn in. Ali Timms was re-elected as Chairman and Nicol Horrell retained his position as Deputy Chairman.



Environment Southland Councillors 2013–2016. Back row, from left, Marion Miller, Rowly Currie, Robert Guyton, Grant Hubber, Lloyd McCallum, Maurice Rodway, Jan Riddell and Peter Jones. Seated, from left, Ross Cockburn, Nicol Horrell, Ali Timms and Neville Cook.



New Environment Southland Councillor, Lloyd McCallum

## New face joins Council

The newest face sitting around the Environment Southland council table is born and bred Southlander Lloyd McCallum.

Lloyd has a diploma in Agriculture and another in Farm Management from Lincoln. That's where he met his wife, Kathy.

Lloyd was a driver for transport companies Ryal Bush Transport and Tulloch Transport before he and Kathy returned home to the family farm when his dad retired. Lloyd says they converted to dairy that year and a year later they were milking. "It meant that we could keep the family farm and payout my parents," Lloyd says. "I've worked in the industry ever since."

Lloyd has been on the Fonterra Shareholder Council since 1991. He's the last inaugural member, but he's going to stand down at the end of this term to focus on his commitments with Environment Southland.

One of the reasons Lloyd stood for election was that he felt that the work the council does was interesting and he liked what he saw from the National Policy Statement (NPS) for Freshwater. "I wanted to contribute to those outcomes," he says. Lloyd says that the role he has with Fonterra is similar to what his role will be with Environment Southland and he will be able to take what he has learned and understands and apply it to the benefit of the local community.

There were three things that Lloyd stood for during his campaign. One was to follow through with the foundation work that has been started for the NPS for Freshwater. The second was to make sure that the council is the right size and that it has the capability it needs; and the third was communication. Lloyd says council needs to be out talking to ratepayers. "Talk to them; listen to them," he says. "Follow through on that. Have the consultation, have the discussion."



Waituna Lagoon open to the sea (Photo: Karl Erikson)

# Coming together for Waituna

**T**he Waituna Wetland Reserve is well-known to Southlanders for its unique ecological values and standing as a Ramsar Wetland of International Importance. This was brought home to all of us in early 2011 when concerns were raised about the lagoon's declining water quality and the potential risk of it becoming dominated by algae.

A coordinated response involving the community and a variety of agencies kicked in to mitigate the risk and to better understand the environment. A lot has been done since then. The community has really stepped up and farmers have invested heavily in on-farm methods and systems to ensure the waterways are protected. At the same time, scientists have been carefully and consistently monitoring the lagoon's health to help inform decision making.

It's little wonder that Waituna Lagoon and its catchment is important business for the four organisations that have statutory responsibilities for it. These organisations are Environment Southland, Ngāi Tahu, the Department of Conservation and the Southland District Council. They have

been working together cooperatively, but recently formalised this arrangement with the creation of the Waituna Partners Group.

The aim of the Partners Group is to provide a more comprehensive and coordinated approach in the care and management of Waituna for the benefit of the lagoon, its catchment and community, than would have been possible if the organisations had worked separately.

Environment Southland Chairman Ali Timms says now that groups in the community have representation and the statutory partners have come together there can be a strong focus on common goals. "It's important that we work with the community to develop a plan for the longer term that builds on the good work

already being done to improve the water quality of Waituna Lagoon."

Waituna Lagoon is one of the best remaining examples of a natural coastal lagoon in New Zealand with diverse habitats, rich biodiversity and significant birdlife. The lagoon is fed by three creeks and drains to the sea through managed openings to relieve flooding on low-lying farmland when water levels get high. This interplay of fresh and salt water in the lagoon makes for a dynamic and challenging natural environment.

The lagoon and surrounding area is also popular for duck shooting, fishing, boating and walking; and the wider catchment is home to small communities of people and farming interests, some of whom go back for generations.



## About Waituna

*Please visit our website [www.es.govt.nz](http://www.es.govt.nz) for more information about Waituna Lagoon and to view the informative short videos in the LEARNZ Virtual Field Trip to Waituna Lagoon.*

**Left: Waituna Partners Group signatories: Hana Morgan, Kaiwhakahaere, Te Rūnanga o Awarua; Ali Timms, Chairman, Environment Southland; Frana Cardno, Mayor, Southland District Council; and Barry Hanson, Director Conservation Partnerships, Department of Conservation, celebrated their formal agreement to work together at Te Rau Aroha marae in Bluff in August.**



# Take a peek at Waituna Lagoon...with our web cam!

**W**aituna Lagoon is one of Southland's unique features. Although its sight is always worth the journey by car, scientists now have a smarter way of keeping an eye on it.

To save time and fuel for the regular trips to the lagoon for monitoring purposes, a web camera has been installed, which enables our scientists to take a quick look at the lagoon online. Pictures are taken in regular intervals throughout the day and are available online.

Science Technical Leader, Dr Andy Hicks, says the main benefit of the web camera is to help monitor the lagoon's opening and closing processes, and to help with the long-term monitoring of environmental conditions in the lagoon.

"The camera allows us to keep an eye on the lagoon without having to physically be there. In the future, the web camera could even be used for other purposes like monitoring local bird populations."

## Waituna newsletter

To read the latest issue of our Waituna newsletter, go to our website [www.es.govt.nz](http://www.es.govt.nz) or pick up a copy from our North Road Office in Invercargill.



## Fact or Fiction?

**O**ur scientists are often asked about some of the common misconceptions about Southland's environment.

**Myth:** Bird droppings contribute significantly to nutrient loads in Waituna Lagoon.

**Fact:** While it is true that bird droppings contain both nitrogen and phosphorous, the amounts are minimal compared to animal dung. A recent study by Dairy NZ found that bird droppings contributed less than 1.4% of total nitrogen and less than 4% of the phosphorus load to Waituna Lagoon. And while Waituna Lagoon is home to plant-eating birds like geese and waterfowl, it is actually gulls that have higher nutrient content in their droppings.

**Did you know?** In 1963, goose droppings were considered as a fertiliser for agricultural purposes. It was calculated that in order to produce one tonne of wheat grain and straw, it would require 1,000 geese to defecate on the same acre of grass for three weeks straight – a scenario which would never occur in nature.

# Strengthening ties with iwi

**The positive ties between Environment Southland and Southland iwi will now be even stronger with the introduction of a new position – and a new face.**

The council, in conjunction with Te Ao Marama Incorporated (TAMI) is welcoming on board Ailsa Cain, who will take up the new position of Iwi Policy Officer. She will act as a liaison between the two organisations to further strengthen communication on up and coming council projects, as well as extend the capability of TAMI as a proactive partner with Environment Southland.

TAMI is the body responsible for ensuring iwi values are fully represented and understood in dealings with local

authorities including Environment Southland over resource consent applications, proposed plan changes and other resource management issues.

Ailsa's role involves consulting with Environment Southland staff to ensure the cultural impact of policy proposals is understood and carefully considered as well as continuing to promote the importance of iwi input into local government decision-making.

Southland councils entered into a Charter of Understanding with local iwi in 1997, in order to better incorporate their input into resource management policies for the region. Since then, Environment Southland and TAMI have maintained a close and positive working relationship.

Environment Southland Policy and Planning manager Ken Swinney says an increase in upcoming projects requiring iwi input had contributed to the need for an Iwi Policy Officer.

"Environment Southland has several major projects on the go, specifically the Regional Policy Statement review and the Water and Land 2020 & Beyond project. Because these projects require significant iwi input throughout their duration, folk from Te Ao Marama tend to spend a large amount of time dealing with us," he says.

He says that as a result, other councils were missing out on access and time to TAMI staff, but the introduction of an Iwi Policy Officer would alleviate the problem, as well as being of significant benefit to both organisations.

Kaupapa Taiao Manager Michael Skerrett agrees. He says the need for an Iwi Policy Officer is a positive step towards addressing the issue of Environment Southland projects requiring more attention.

"The need has arisen because of the workload for Te Ao Marama Inc. with Environment Southland projects over the next three years. Te Ao Marama Inc. has to service six other Councils and Environment Southland has been taking up a disproportionate share of their time," he says.

Michael says it also shows that Environment Southland is committed to maintaining a strong partnership with tangata whenua and the move will be of significant benefit to local iwi by building capacity for iwi involvement.

Ken says Ailsa's extensive background in heritage and policy and her ties to Southland made her an excellent candidate for the job.

"We need someone who understands policy, [it's also] beneficial to have someone who's local in terms of their heritage," he says.

## Our new Iwi Policy Officer

Ailsa Cain is taking up the role of Iwi Policy Officer, a newly created, jointly-funded position with Environment Southland and Te Ao Marama, in early November.

The role is expected to strengthen already very good relations between the two organisations and the people they represent, and go a long way towards meeting Environment Southland's demand for iwi input into the many projects that help to manage Southland's natural resources.

Ailsa, who has ties with local iwi, says the role will provide her with great professional and personal challenges.

"It's an exciting and unique role and the mahi is of great importance," she says. "Kati (Ngati) Mamoe and Kai (Ngāi) Tahu have lived in Southland for a very long time and have an important role in planning for Southland's future," she says.

As well as working for the Wellington City Council, Ailsa has also worked as the Senior Advisor of protected objects for the Ministry of Culture and Heritage and as the Senior Policy Advisor for New Zealand customs.

Ailsa grew up in Milton and attended Otago University before heading to Wellington. She is moving back to the south after 13 years away, bringing with her husband Ben, two young children and two dogs.



Ailsa Cain, Iwi Policy Officer

# Know your neighbours, know your community

**I**f an emergency struck tomorrow, leaving you cut off from help at home would you feel comfortable turning to your neighbours for support? Emergency Management Southland (EMS) Advisor Jayne McAllister explains why breaking the ice now is one of the most important things you can do to prepare for an emergency.

The 2010 Christchurch quakes took everyone by surprise. Soon after the first shocks were felt, emergency services were busy and had trouble attending to the hundreds of people suddenly in need of help. Soon it became clear to many that they would be on their own for the time being, save for the support they could provide to each other.

Jayne McAllister was part of the New Zealand Red Cross Response Team which was tasked with doing community outreach: visiting dozens of communities affected by the quakes. What she experienced during that time made it clear to her how important it is to 'be connected' in the event of an emergency.

"In the streets where people knew their neighbours, we found that most coped quite well. People were checking on their neighbours, and were willing to help each other out."

When Jayne visited the streets where people were not talking to their neighbours, things looked quite different.

"They weren't coping well at all. Many felt isolated and stayed in their homes, worrying. They didn't feel like they had anyone they could turn to, even just to talk."

The focus of this year's Get Ready Week was to encourage people to get to know their neighbours and their community, so that if there is an emergency neighbours would feel confident reaching out to each other.

People living in cities were the main target of the campaign, as they tend to be particularly disconnected from one another. "Some people know their next-door neighbours, but few are in touch with the rest of the people living on their street," Jayne says.

Knowing who your neighbours are can be helpful in many situations, not just Civil Defence emergencies. Just a short introduction can suffice, so that if one of you ever needs help, you aren't afraid to get in touch with each other.

If you would like to know more about how you can prepare for an emergency, visit [www.getthru.govt.nz](http://www.getthru.govt.nz) or [www.civildefencesouthland.govt.nz](http://www.civildefencesouthland.govt.nz).



EMS Advisor Jayne McAllister promotes this year's Get Ready Week message.

## Do you know your neighbours?

Getting to know each other is one of the most important things you can do to prepare yourself and your family for an emergency. It only takes a minute, and can be as simple as a quick chat over the fence to introduce yourself.

## Helping build community resilience

### Get Ready Week

This year's 'Get Ready' campaign is about getting to know your neighbours to build a ground-base of community resilience. EMS Advisors Sandra Miller, Jayne McAllister and Craig Sinclair travelled across Southland, handing out bags with goodies and Get Ready Get Thru plans, and talked to the Southland community about how to prepare for an emergency.

### Manapouri Meeting

A community meeting with Manapouri residents was held in October. It was aimed at building a community emergency plan around the resources of the township.

### Meeting with Neighbourhood Support

Following the theme of this year's Get Ready Week, we invited the neighbourhood support groups from Invercargill to attend a presentation on emergency preparedness. The groups were keen to look at another facet of helping the community support itself, rather than focusing on crime prevention.



# Community support helps project

**W**ater and Land 2020 & Beyond – if you haven't heard, is Environment Southland's response to managing land use effects on water quality in partnership with Murihiku Ngai Tahu and the Southland community. Protecting human and ecosystem health while providing for a strong economy, is a central theme to the project. It's been going for 12 months now, and steady progress is being made.

Project leader Ken Swinney says his team is working hard on the first part of the project which is about moving to good practice. Good management practices, particularly nutrient management, wintering, riparian management and on-site wastewater are advancing, while community wastewater schemes, manures and slurries and hill country development are on the list for 2014.

"We are looking to put in place a plan for education and advice, backed up by policies to make sure we get widespread up-take," Ken says. "There's a lot of information on our website which is regularly updated. Just click on the Water and Land banner for specific details."

Environment Southland is supported by a range of people – internally the Environmental Information and Land Sustainability teams have been key to providing information to help develop solutions. "In the community, we've been working hard to fulfil our commitment to partnership with Murihiku Ngai Tahu, and are grateful to our steering group who provides dynamic discussions and practical input," he says.

Central government initiatives are also an important consideration for this project. We are continuing to work closely with government as they refine

the National Policy Statement for Freshwater, introduce a national objectives framework for freshwater, and ensure that proper consideration of the economic consequences is given.

Water and Land is a big project and we're going to need everyone's thoughts and views about the economic, social, cultural and environmental consequences of potential freshwater decisions. To register your interest in being involved in the project or to sign up to receive our e-newsletter about Water and Land 2020 & Beyond, go to our website – [www.es.govt.nz](http://www.es.govt.nz).

Farmers and Environment Southland staff discuss wintering practices at a Dairy NZ Field Day on a farm at Fairfax.





# Science making a difference

**R**oss Monaghan describes himself as a soil scientist who knows a little about farming systems and a little less about water quality. The research and experiments he's been involved in since joining AgResearch would suggest he's being rather modest.

Ross' first project with Environment Southland was the 'infamous' Oteramika Catchment Project in 1995. "It's probably been forgotten by many," Ross says, "but it was one of the first projects where a major investment was made in trying to understand the environmental impacts of the recent change in land use from dry stock to dairy farming."

The project was multi-agency and looked at groundwater, surface water, and detailed soil science. "It was important because there wasn't a lot of investment in measuring environmental impacts and trying to understand them."

That project was the catalyst for other field trials and Ross' involvement with

Environment Southland has continued since then in field scale and catchment scale research.

He is now providing technical input to the Water and Land 2020 & Beyond steering group. Ross is currently working on a study looking at how to best manage animal wintering systems. He says the research is showing that it can be a fairly important source of contaminants getting into water.

The work being done will inform the council and the steering group about the measurements made, and how the losses compare with other land uses. "We also have experimental treatments that look at ways to try and minimise those losses," Ross says.

Ross says he works at the pointy end of the spectrum; working with colleagues and other agencies to try to use technical details to guide community groups and farmers to land use practices that will meet the water quality outcomes those communities seek. "That's where Environment Southland is important," says Ross. "They are able to broker those discussions and formalise the water quality outcomes."

"The Water and Land initiatives and forums are an important conduit for the detailed stuff we do. It gets used to develop evidence based policy guidelines to help our science make a difference."

He says Southland is lucky in relation to other provinces as a lot of field research has been undertaken here. "While we always yearn for more science, more data, we have a good understanding of pathways for sediment and nutrient losses from soils to water."

Scientist Ross Monaghan collects water for testing.





# Taking care of water quality pays off

## New research benefits a range of farming interests in Balfour

**W**ater quality issues have loomed larger in the lives of Balfour farmers David Stevens, his nephew Brendon and neighbour Gary Collins than they ever imagined. It all started when they attended a community meeting in 2009. It was the beginning of a journey where they faced up to challenges, learnt a lot, and made gains in productivity and efficiency on their properties, and it's not over yet.

Dairy farmer Brendon Stevens who runs a 700 cow dairy farm says the original meeting was quite exciting. "There had been something in the *Lumsden Light* about a public meeting to talk about drinking water quality in the Balfour region. There was a really big turnout because everyone thought they were affected."

In fact, the meeting was about the consistently high nitrate levels recorded from the monitoring of the aquifers, not the Balfour-Lumsden water supply. "After that the numbers halved and there was a lot of finger pointing," says Gary, a local grain farmer.

"For the first two years we tried to find the source. We thought it had to be one thing; silage or a wintering pad. But there was no source."

David is a fourth generation deer farmer. "We all started to wonder what we were doing differently than everyone else but, after several frustrating years, we've now found out that we aren't doing anything differently," he says.

*"The economic benefits go hand in hand with the benefits to the environment."*

Farmers in the area are farming above what's called a 'nitrate hotspot'. This is where there are two or more wells in an area with consistently high levels of nitrate. These hot spots are found across Southland, but tend to be located in areas where groundwater filters through from the soil above. In this situation, the water flows relatively slowly so it sits around for longer, and there is little 'flushing' by rivers, streams, snowmelt, etc. High nitrate levels can affect the health of people, livestock and the broader environment.

Recent science has taught these local farmers that their soil types and the water flow around their area has more to do with the elevated nitrate levels than their farming practices. "It [nitrate] can accumulate in the older soils," says David. "We've learned a lot about the movement of water in the aquifer underneath. It could take around 5-7 years for nitrate to reach the aquifer," he says.

They all agree that farmers in the area are doing things on their properties a little differently than they would have 10 years ago, and that this is mainly due to the increased research and awareness around good management practices. "Since that first meeting four years ago, most people in



Balfour farmers (from left) Brendon Stevens, David Stevens and Gary Collins.

# Water and Land 2020 & Beyond

area have changed their farming practices a little through increased knowledge, which will help some of the effects," say Brendon. "Most of the people that come along to the meetings have gotten something out of it for their business."

Gary, who's a board member for the Foundation for Arable Research, says he's growing crops just about all year round because he now knows it's good for his soil, but it is something that wouldn't have been done some years ago. Brendon and David apply different spray techniques than they would have previously, so losses are less.

"The economic benefits go hand in hand with the benefits to the environment," Gary says.

David has joined the Water and Land 2020 & Beyond steering group, a group representing a wide range of interests, industry and community. It has been set up to assist with the development of response initiatives to central government's water reforms, scientific water monitoring results and the wider community's goals for water in Southland.

He believes Southland is taking a "pretty responsible" approach to the water quality issues, and not tearing ahead like other regions he has seen. "I think we are going the right way about it."

He says the response needs to be local. "Catchment level is only way to deal with some of these issues. People are interested if it's in their own backyard, and the issues are different in each area."

"The hard stuff is still to come," says David. "We haven't set [nitrate] levels yet, and we need to decide what we want to achieve and what we are actually going to do here. It will be a balancing act economically, not just for our region, but for the whole country. It must be sustainable."

They all agree that they have come a long way and learned a lot so far, but that the problem won't be solved in the short term.

## Factsheets Now Available

**T**he first stage of Water and Land 2020 & Beyond has focused on good on-farm management practices. These have mainly been about nutrient management, riparian management and wintering.

To help clarify what good management practices are for these activities, several factsheets have been created. To get your copy visit our website and click on the "Environment" page, then Water and Land 2020 & Beyond.

### Nutrient Management

Nutrient management plans are like financial budgets. They are written plans that describes how the major plant nutrients (nitrogen, phosphorus, sulphur and potassium, and any others of importance to specialist crops) will be managed annually on a particular area or property.

### Preparing for Winter

Intensive winter grazing is a common practice in Southland. Paddocks used for this purpose are thought to contribute a disproportionately high amount of nutrient and sediment loss. When actively managed, contaminants should be prevented from getting into waterways under normal weather conditions.

### Riparian Management

Riparian areas provide a buffer between water and land, protecting water from any adverse effects of activities on adjacent land. These areas can be in many forms such as grass margins, trees, shrubs and headwater or riparian wetlands.



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 [www.es.govt.nz](http://www.es.govt.nz)

# Safer boating this summer

Summer has arrived and boaties from across Southland are ready to take a spin on the lower Oreti River. Deputy Harbourmaster Lyndon Cleaver thinks this season will be a good one, thanks to new signs which clarify the rules on who is allowed where on the water.

The lower Oreti River is a busy patch, as those who have been on it before know. For years it has been divided into four zones, where different recreational activities can happily co-exist.

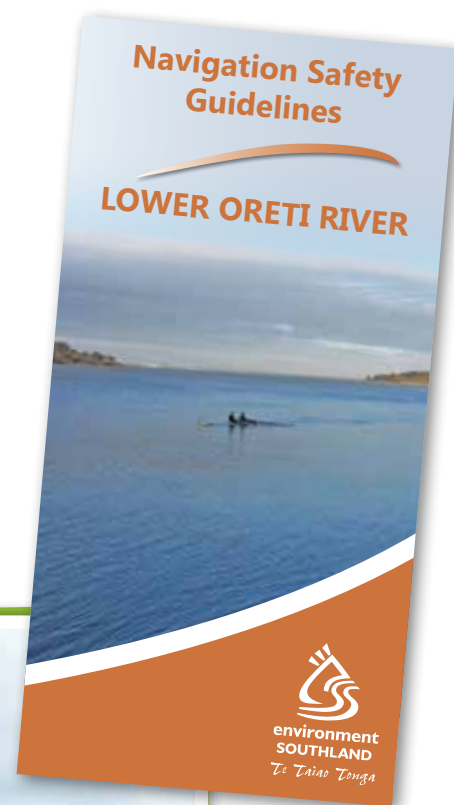
Four new signs have now been installed at the Sandy Point boating clubs and along the shore, explaining the activity zones and restrictions in force on the lower Oreti River. "We've done our best to make the signs as user friendly as possible, and hope they will lead to increased safety on the water," Lyndon says.

Along the shores, markers have also been put up to provide river users with an indication of where the activity zone

boundaries begin and end, so they are always in the know about whether they are still boating within their 'territory'.

Lyndon says the signs replace their outdated predecessors, which were faded and hard to read. The rules on the signs now also reflect the current state of the Navigational Safety Bylaws.

If you're out boating on the lower Oreti River this summer, make sure you know the rules before setting off. You can download a copy of the Navigation Safety Guidelines for the lower Oreti River and other popular boating spots from our website – [www.es.govt.nz](http://www.es.govt.nz).



Deputy Harbourmaster Lyndon Cleaver has installed new signs to increase boating safety on the lower Oreti River this summer.

Deputy Harbourmaster Lyndon Cleaver beside one of the recently installed signs at Sandy Point.



# Schools jump onboard with boating safety

**A**round 150 Riversdale School children were among the first to participate in this year's Boating Safety Education programme. This is the second year that the popular programme has been offered to Southland schools, and the second time that keen schools have had to be turned away because of full bookings.

Deputy Harbourmaster Lyndon Cleaver is running the programme again this year and says getting into the schools has been a great way of getting the message out to people about lifejackets and being safe on and around boats.

When the idea was first raised Lyndon thought they might get half a dozen schools. "We've been overwhelmed with the response from the schools and the kids. The schools we've spoken to all see it as really important, especially the rural schools. A lot of those families have boats but aren't necessarily that schooled up on boating safety," Lyndon says.

"Plus, the kids love it. It's a fun, interactive day for them, and the best part is that because they are having fun, they will learn and remember it," he says.

Lyndon is expecting around 550 students to participate this year ranging from new entrants to Years 7 and 8. The programme runs for about an hour with each class. During that time the children have some classroom time where they learn about what makes a good lifejacket and get to try on different jackets. "It's good to show them what can happen if their lifejacket doesn't fit properly. We also go over when you would wear a lifejacket – which is basically for any activity involving water, particularly if they aren't confident swimmers."

After the classroom time, the children take a look through Environment Southland's boat, talk about some of the safe practices while on the boat, and compete in a lifejacket relay race.

Lyndon often compares boating scenarios to cars. "With lifejackets they need to click properly like a car seat belt, and when out on the beach or water, kids need to be careful when swimming around the boat, because if Dad can't see you then you could be in danger of being run over – like playing on the driveway."

Lyndon says one of the best parts of the programme is the interaction with the kids and being able to get the message through to them about boat safety. "They'll be able to carry that message through for the rest of their lives and hopefully keep their parents honest," Lyndon says. "Hopefully, if they are out on a boat and their mum or dad doesn't have a lifejacket on they will pull them up."



Deputy Harbourmaster Lyndon Cleaver demonstrates the correct way to wear a lifejacket with students at Riversdale School.



# A **warm** winter makes a difference to **air** quality

**W**inter this year was Southland’s warmest on record, resulting in much better air quality results than expected. Environment Southland monitors air quality in Invercargill, Gore and Winton and reports the results each week during winter. The urban areas of Invercargill and Gore are gazetted airsheds because they repeatedly exceed the Government’s national standards for particulate matter or PM<sub>10</sub>.

Ordinarily, the Invercargill airshed has more than 20 exceedances a year and Gore, more than five. But this past winter Invercargill had only 12 (and one more since) and Gore had only three.

Air Quality Scientist Owen West says most of the exceedances occurred in June due to cold temperatures and high-pressure weather systems. “There were 10 exceedances in that month alone. July was the opposite, with warmer temperatures and higher wind speeds, there were no exceedances at all.”

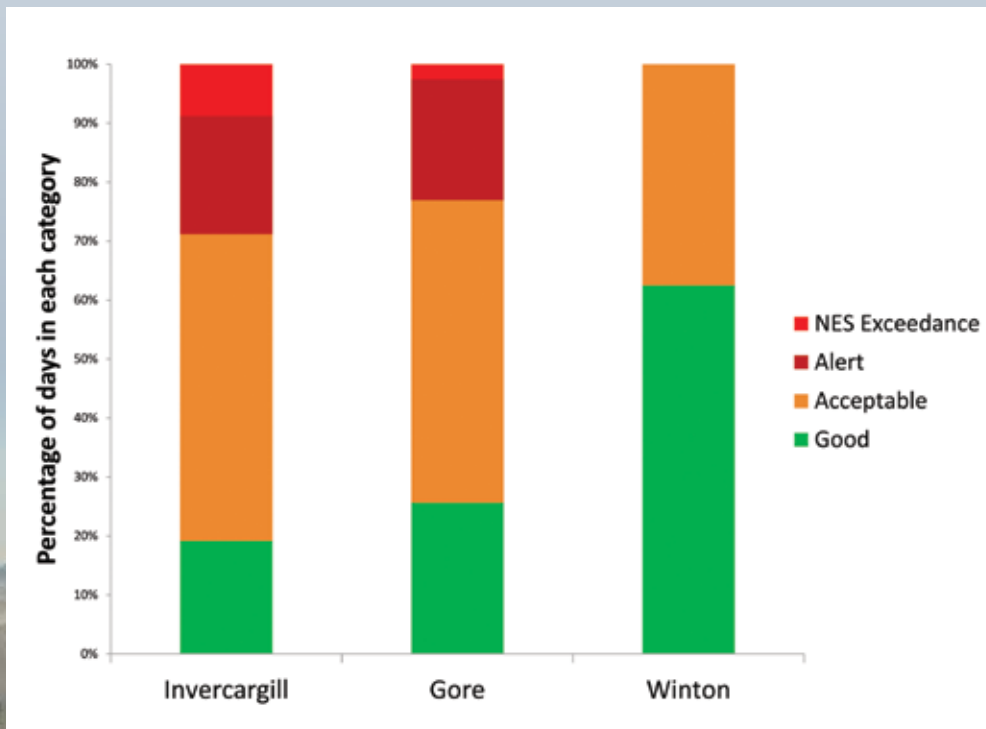
The national standards allow for one exceedance per year and the Government has set deadlines for achieving this – 2020 for Invercargill and 2016 for Gore. The *Regional Air Quality Plan for Southland* is currently being reviewed with a view to addressing this issue.

## What is PM<sub>10</sub>?

PM<sub>10</sub> is tiny particulate matter less than 10 microns in diameter (PM<sub>10</sub>). It is the most widespread air quality problem in Southland and is created predominantly by the burning of coal and wood in home fires and burners.

High levels of PM<sub>10</sub> are associated with poor health, especially breathing difficulties, which is why the Ministry for the Environment has set strict National Environmental Standards for Air Quality (NES): Average daily levels of PM<sub>10</sub> should not exceed 50 micrograms/m<sup>3</sup>.

Summary of Winter Air Quality in Invercargill, Gore and Winton. May – August 2013 (To see the weekly results for the airsheds and to find out more about air quality, please visit our website.)



# Regional Air Quality Plan for Southland review

A Review of the *Regional Air Quality Plan for Southland* is underway. The existing Plan has been in place since 1999 and doesn't address today's air quality issues or the Government's National Environmental Standards for Air Quality.

The standards have been designed for the benefit of our health and the environment and require improvements in air quality by 2020 for the Invercargill airshed, and 2016 for the Gore airshed. At issue is the number of exceedances of the national standard for particulate matter (PM<sub>10</sub>) each year. Invercargill ordinarily has more than 20 and Gore usually has about five, but the standards allow for only one.

The primary cause of PM<sub>10</sub> in Southland is the burning of coal and wood in home fires and burners. Consequently, the biggest issue for us as a community is the way we heat our homes. This was outlined in an early consultation document and questionnaire, *Breathe Easy*. We received 174 responses to *Breathe Easy* and a summary of these is available on our website.

Potential options to update the Air Plan are currently being considered and are expected to be available for public comment and feedback early next year.



## Regional Air Quality Plan for Southland review progress

- March 2013 – *Breathe Easy* early consultation document is distributed.
- April 2013 – 174 *Breathe Easy* submissions are received, collated and analysed.
- Ongoing 2013 – Potential options are considered and drafted.
- Early 2014 – New Draft *Regional Air Quality Plan for Southland* released for public comment and submissions.

## Southland's Air Quality – State of the Environment Report

Southland's first Air Quality State of the Environment Report (SOE) is currently being created. A joint project between iwi (Te Ao Marama Inc) and Environment Southland, it seeks to bring together technical and values-based information into the one place.

The Government requires us to have one and it will be a great community resource that will inform and help us to effectively manage air quality in Southland.

The Air Quality SOE will essentially be a report card on the state of the air environment in Southland. It will seek to answer three questions:

- What is happening to our air?
- Why it is happening?
- What are we doing about it?

It's a big project and the report should be published and available in mid 2014.

# 'Wintertime Water' key to understanding nitrate

**H**ave you ever wondered where the water in our rivers comes from in summer? With no rain for days or even weeks, how are our rivers still flowing? The answer is groundwater.

Most people know that our rivers originate in the mountains, flow down through the valleys and out to sea. On the way, melting snow, streams and rainfall contribute to the flowing water. What you may not know is that the water you can't see under the ground also contributes to the river.

Principal Scientist Dr Clint Rissmann says under low flow conditions during the summer or winter up to 100 per cent of our river water is from groundwater.

A regional scale model of when our aquifers are topped up (recharged) has been

completed based on a 23-year climate record including data on rainfall, soil moisture and groundwater levels. This work indicates that the majority, up to 75 percent, of all recharge to our groundwater is occurring during the winter months, when soils are wettest. It is during these winter months that our aquifers are topped up, but also the time when contaminants such as nitrate are carried from the soil surface by infiltrating water into our underlying aquifers, a process called leaching.

"This knowledge could be one of the biggest things that will help us with water

quality as it explains 'when' the majority of nitrate is entering our groundwater, and ultimately our rivers," says Clint.

So while it's important to know that our summer river flow is probably groundwater, the most important lesson from the research is that much of the groundwater is actually recharged in a 2-3 month window during winter.

"This is when the soils are the wettest, there is not much evaporation or plant growth, and so the risk of losing nitrate is greatest."

It's also the time when nutrients from animal waste or unutilised fertiliser are most likely to be lost. "If the contaminants make it past the root zone, it is likely to be lost to groundwater," says Clint.

Contaminants like nitrate are carried by water through the soil. "Nitrate can't move through dry soil but it can build up in soils when grass growth slows during the Autumn," says Clint. "This tells us that the majority of nitrate can only ever get through during that wintertime recharge." So Clint is asking people to think in terms of 'Wintertime Water' and 'Wintertime Nitrate' because ultimately this is when both enter our aquifers.

There is also a strong link between these wintertime losses to groundwater and poor water quality in our rivers during summer or other low flow periods. If wintertime nitrate losses contaminate groundwater, the effect on water quality in our rivers comes when groundwater enters them, which is often during the summer.

"Managing our farms and industries to limit nutrient build up pre-winter and minimise the losses during these months of winter recharge is one of the best ways to improve water quality" Clint says.

The research also suggests that the timing and magnitude of recharge is slightly different across Southland. Peak recharge can differ depending on rainfall, distribution and evaporation.



Environment Southland's Principal Scientist Dr Clint Rissmann measuring water and sediment temperature.



# Eyes on Etal and Eyre

**T**he beautiful flower of the nodding thistle should be enough to attract the eye of keen trampers, mountain bikers and fishermen in the Eyre Creek and Etal Stream areas – which will help Environment Southland as we are looking for sightings of this unwanted pest.

Eyre Creek and Etal Stream have been somewhat under the radar of our biosecurity team until recently when several anecdotal reports of nodding thistles were received.

The team is hoping that the public will be able to help by adding to these reports.

Biosecurity Officer Adam Brown says that while efforts to control nodding thistle across Southland have been strong in the past, having the help of the public is essential.

“We have been running a control programme along the Aparima River and several other rivers for some years now. Our successes there are largely due to the helpful eyes of the public,” Adam says.

Nodding thistle, as with many pest plant species, like disturbed ground. “River and stream banks are regularly disturbed, which means that soil is constantly opened up and reveals new ground available for infestation. Because they are not someone’s personal property they are more likely to be neglected,” Adam says.

“If you are out tramping, biking or fishing along these waterways this summer, we would appreciate you telling us if you see any nodding thistles,” Adam says.

To report sightings of nodding thistles in the Eyre Creek or Etal Stream areas, call our biosecurity team on 0800 76 88 45. If you can provide GPS coordinates, this makes it even easier for us to track the plants down.

## Beautiful but problematic

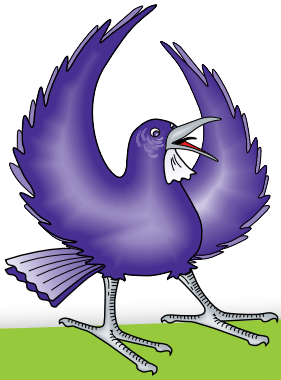
Nodding thistle is a large, invasive thistle and a serious threat to agricultural production. It grows in dense patches achieving almost total ground cover and is not readily grazed because of its spiny foliage.

Seeds of nodding thistles are carried along waterways. They can also be spread as contaminants in hay and on machinery. The seeds survive in the ground and can re-emerge when pastures are turned over.

One of Environment Southland’s many important functions is to monitor, provide advice, and where appropriate control the spread of pest plants throughout the Southland Region.



The beautiful flower of the pest plant nodding thistle.



# JOIN BRUCIE'S BUDDIES CLUB

Do you have children or grandchildren who would like to join Brucie's Buddies Club?

Brucie's Buddies Club is an environmental club for 4-14 year olds run by Environment Southland's education team. Four times a year Brucie's buddies receive a magazine packed full of fun environmental learning activities, games and competitions. They also receive a message on their birthday and an invitation to join Brucie at his birthday event each summer.

For more information and to read the magazines online, go to Brucie's website.



Yes, I would like to join Brucie's Buddies Club

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Address: \_\_\_\_\_ Age: \_\_\_\_\_

Email: \_\_\_\_\_ Date of birth: \_\_\_\_\_

School: \_\_\_\_\_

**Send to: Brucie's Buddies Club, Environment Southland, Private Bag 90116, Invercargill 9840**

Join online – it's free!



[www.brucecgull.co.nz](http://www.brucecgull.co.nz)



# Environmental education in action

## Meet the team

The environmental education team at Environment Southland works with schools and community organisations to further environmental education on a wide range of topics for both children and adults. Pat Hoffmann and Mark Oster have a great deal of science, education and field experience between them. If you would like more information about the Environmental Education services that we offer, contact the education team at [education@es.govt.nz](mailto:education@es.govt.nz), call 0800 76 88 45, or visit [www.es.govt.nz](http://www.es.govt.nz).



Pat Hoffmann



Mark Oster

## SEEN (Southland Environmental Education Network)

This subscriber based FREE e-newsletter holds a wealth of information for those involved in the wider environmental education community.

Each month the SEEN newsletter covers topics such as:

- Upcoming events
- Requests
- Resources for schools
- Announcements
- Offers
- Funding, competitions and awards

To subscribe to the SEEN e-newsletter, contact [education@es.govt.nz](mailto:education@es.govt.nz)

## Squawk

Squawk is a teacher focused environmental education magazine loaded with great activities, actions and science for use with students. It is distributed to all schools at the beginning of each term. To download a copy go to [www.es.govt.nz](http://www.es.govt.nz) and click on the "For Schools" page.



Students from Woodlands Primary School take part in a Stream Connections study.



## Stream Connections Fund for schools

Environment Southland is giving schools the opportunity to apply for funds to support water quality improvement projects! To find out more about the Stream Connections Programme and this exciting new fund visit our website and click on the "For Schools" page.

# OUT IN THE FIELD...

*Our staff 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.*



Environmental Education Officer Pat Hoffmann took teachers from schools in Heddon Bush, Otama, Tokanui and Aroha Early Learning Centre to the Mataura River for a Stream Connections workshop. The teachers learned how to evaluate the health of their local streams and rivers, and to make the process a worthwhile experience for children.



Environmental Technical Officer McKayla Holloway recently attended the Stewart Island Coastal Clean-up where 100m<sup>3</sup> and 7 tonnes of plastic, fishing debris and rubbish was collected.



Dung Beetles were released onto a dairy farm near Wyndham recently, a first for New Zealand. Dung beetles reduce the amount of dung in paddocks and can help to improve soil health and pasture productivity, reduce water and nutrient runoff, and decrease parasitic infection in livestock.



Operating a school boiler was just one of the activities on offer at the school caretaker workshop hosted by our Environmental Education team. Caretakers came from across Southland to learn about boiler efficiency and to discuss practical matters related to caretaking in schools.



*Follow us on Facebook to get updated on all the exciting things Environment Southland staff are doing in our region.*

## 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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