

# **New Zealand Farm Forestry Association Conference**

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## **South Canterbury 2023**



# Champion of the Cypress

The scent from freshly cut macrocarpa is amazing and evocative.

It brings back memories – stacks of firewood from the macrocarpa shelterbelt at grandpa's farm in the backblocks.

But that is not why Dean Satchell is a fan of macrocarpa and other cypress species.

He's interested in timber. Though they take longer than radiata pine to grow to harvest maturity, he says these cypress, and some other exotics, deliver lumber twice the value.

Dean says the best way to harvest these trees is to identify each tree when it's ready and leave the trees around it to maintain a permanent forest.

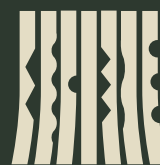
Cypress trees are prone to getting canker, but new cypress hybrids are more resistant to this infection.

The New Zealand Farm Forestry Association has lots of on-line advice on how to grow cypress.

[www.woodourlowcarbonfuture.nz](http://www.woodourlowcarbonfuture.nz)



DEAN SATCHELL  
Kerikeri



**Wood**  
our low-carbon future  
He kākano āhau i ruia mai i Rangiātea

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# Welcome to the NZFFA 2023 annual conference hosted by the South Canterbury Branch

## ***Branch President welcome***

I have been involved with the branch for only two years, but it has given me an accelerated opportunity to learn much about forestry and South Canterbury as a province.

This part of New Zealand is very variable in many respects. The climate with rainfall ranging from 600 to 4,500 mm a year, altitude ranging from sea level to mountains, topography from very steep to flat, and soils from highly fertile to very infertile and eroded, and from a forestry perspective, mainly difficult. You will see some very good examples of farm scale and large scale commercial forestry plantations growing in places where pasture production is challenging.

Just as important to the sector is what goes on outside the plantation gate. We are very fortunate to have Timaru Port on our doorstep to reduce the cost of exporting logs. However, there is no domestic log processing factory in the province. Furthermore, the massive expansion of irrigation since 2000 with the resulting dairying and processed vegetables may affect the forestry sector as processors look to reduce their carbon footprint. Woodchips are one option for them, although electricity, of which the province generates 850,000 gigawatts, is another. I think that is half the nation's hydro power.

While it is true we have been planning for this conference for two years, none of the committee is complaining. In fact, we are getting excited as the work has come together and we can see what a great agenda of people and properties we have put together for you to visit and listen to. Outside of the conference we hope you will take the opportunity to enjoy the attractions of the province.

On behalf of the South Canterbury Branch please accept our warmest welcome.

**Tom Ward**

## **Conference Convenor Welcome**

Hello and welcome to South Canterbury for this the 65th national conference of the New Zealand Farm Forestry Association. I hope you feel welcome and enjoy the local hospitality.

It is 21 years since the last conference was held here. Incidentally, everyone on this organising committee was involved on the previous committee, a truly dedicated bunch, which is replicated throughout New Zealand in the farm forestry community. The issues and topics facing us today are quite different from 21 years ago. Back then we were production and species focused. However, now there are many environmental considerations and a raft of new regulations to get to grips with.

Having been in this organisation for many years I can say that farm foresters have always considered the environment and used trees to enhance and protect their environment. The statement – Right tree, Right place – came from the NZ Farm Forestry Association and fits with the basic philosophy that most farms could have 10 per cent of their farm area in trees without affecting farm production. Many well-known members have won national awards in past years. The environmental record and credentials of many members is unmatched while many farm forester farms stand as a testament to what can be achieved in environmental and sustainable land management.

The theme ‘The new normal: Opportunity or threat’ lays down the aim of this conference to address some of the environmental issues and ways that farm foresters may address those in their forests and farms. Are there any future opportunities arising out of the environmental regulations? The specific area for foresters for monetary return is from the Emissions Trading Scheme. The scheme is continually evolving. We will present the latest developments in the legislation and view on farm practical examples of the Emissions Trading Scheme in action along with the financial returns possible.

Other market-related benefits from sustainable and environmental stewardship are intangible for farmers. There may be market benefits at the top of the market, but we do not all fit in that area. Much of New Zealand’s produce is sold into commodity markets which are very price sensitive. Environmental restrictions placed on New Zealand farmers that are not matched by other countries, I believe will not be rewarded financially, ultimately restrict on farm profitability and reduce overall production. Remember also, that we farm in an unsubsidised environment.

As always, organisations such as ours, are indebted to our sponsors who are featured throughout this handbook. Thank you to all those who generously supported our conference in any way.

There is always excitement at the beginning of a new conference. I hope this is one of the memorable ones for all attendees. Once again welcome and enjoy your stay.

**Ian Jackson**

# Conference planning committee

Conference chair: .....Ian Jackson

Secretary: .....Liz Chapman

Treasurer: .....Tom Ward

Registration: .....Andrew and Vicky Steven

Catering and venues: .....Jane Evans

Transport: .....Paul Bartrum

Field days: .....Andrew Steven

Committee members: .....James Jamieson, Angus Chapman and Peter Evans

Health and Safety: .....James Jamieson



Organising committee from left to right – Vicky Steven, Andrew Steven, Peter Evans, Jane Evans, Liz Chapman, Angus Chapman, Ian Jackson, Paul Bartrum, Tom Ward and James Jamieson

## **Conference programme**

### ***Day 1 Thursday 30 March***

8.00 am Registration desk open all day – Foyer of the Caroline Bay Hall

#### **Action Group meetings all day in Sopheze Tearooms**

8.45 am to 10.00 am.....Eucalypt Action Group

10.00 am to 11.15 am .....Cypress Development Group

11.15 am to 12.30 pm .....Indigenous Forest Section

#### **12.30 pm to 1.15 pm ..... Lunch**

1.15 pm to 2.30 pm.....Sequoia Action Group

2.30 pm to 3.45 pm.....Acacia Melanoxydon Interest Group

2.30 pm to 3.45 pm.....Proposed Poplar and Willow Action Group

3.45 pm to 5.00 pm.....Oaks New Zealand

5.00 pm to 6.15 pm.....Farm Forestry Timbers

Free evening

### ***Day 2 Friday 31 March***

#### **All meetings and workshop presentations in the Caroline Bay Hall**

8.00 am .....Registration desk open all day – Foyer of the Caroline Bay Hall

8.00 am to 10.00 am.....Councillors Meeting

#### **10.00 am to 10.30 am ..... Morning tea**

10.30 am to 12.00 noon .....Annual General Meeting

#### **12.00 pm to 12.50 pm..... Lunch**

12.50 pm.....Conference Opening: Conference Convenor

12:50 pm to 1:00 pm.....Ian Jackson – Conference opening

#### **1.00 pm to 4.30 pm..... Workshop presentations – The New Normal Opportunity or Threat**

1.00 pm to 1.30 pm.....Phil Taylor (Port Blakely Ltd)

Setting the New Zealand forest scene, the implications of the Emissions Trading Scheme

1.30 pm to 2.00 pm.....Simon Petrie (Ministry for Primary Industries)

Technical aspects of the Emissions Trading Scheme

2.00 pm to 2.30 pm.....Clayton Wallwork (Orion NZ)

Corporate climate responsibility paying for indigenous forestry

2.30 pm to 3.00 pm.....Peter Weir (Environmental manager Ernslaw One)

The forestry National Environmental Standards: implications and practical effects for farm foresters

#### **3.00 pm to 3.30 pm..... Afternoon tea**

3.30 pm to 4.00 pm.....Aslan Wright-Stow (Dairy NZ)

Nutrient mitigation with wetlands and riparian planting

4.00 pm to 4.30 pm.....Alex Wilson (Te Uru Rakau – New Zealand Forest Service)

Governments vision for forestry in New Zealand

#### **7.00 pm ..... Opening Dinner at Speights Ale House**

## **Conference programme**

### **Day 3 Saturday 1 April**

- 8.00 am ..... Depart for field day to Jane and Peter Evans Farm – Alpine
- 8.30 am ..... Peter Evans – Introduction to the farm, his forestry programme and riparian plantings
- 9.00 am ..... Rosemary Clucas (ECAN) – Talk on mudfish
- 9.30 am ..... Morning tea in the farm shed**
- 10.00 am..... Tom Forbes (Forest Management Group)  
Forest growth on the farm and opportunities for the Evans with the Emissions Trading Scheme. A comparison of livestock farming with carbon farming.
- 10.30 am..... Peter Bradley (Bradley Rural Partners)  
Economic analysis of recent harvest.
- 11.00 am..... Madeline Hall (Beef and Lamb)  
Implications of the Emissions Trading Scheme on livestock farming and where does He Waka Eke Noa fit.
- 11.30 am ..... Silver Fern Farms  
Interpretation of the Emissions Trading Scheme, the effect on the livestock industry and possible marketing opportunities.
- 12.00 pm ..... Mark Preece (WorkSafe)  
Launch of a new initiative in Canterbury
- 12.30 pm ..... BBQ Lunch**
- 1.15 pm ..... Travel to Gladwyn
- 1.45 pm..... Andrew and Vicky Steven  
Introduction and welcome to Gladwyn.  
A walk and discussion of many of the farm forestry fads of the past.
- 2.20 pm..... Alan Laurie (Laurie Forestry Ltd)  
To harvest or not to harvest, the decision-making process. Is it too early to harvest, what am I losing in potential yield? Should we harvest at all, turn the block into a carbon forest.
- 3.20 pm..... Paul Marshall (Woodmizer agent)  
Discussion on portable sawmills
- 3.50 pm..... Andrew Steven  
Farm forestry meets agro-ecology, Andrew's view of the world.
- 4.15 pm ..... Travel back to Timaru
- 7.00 pm ..... Awards Dinner in the Bay Hall**

### **Day 4 Sunday 2 April**

- 7.30 am ..... Depart for Mackenzie Basin visit
- 9.30 am ..... Arrive at Balmoral Station  
Andrew and Karen Simpson  
Introduction and welcome to Balmoral
- 9.45 am ..... Nick Ledgard  
Overview of the trial site, background and trial objectives. Changes in soil nutrient status. Biodiversity changes of birds and insects. Native planting.
- 10.00 am..... Shaf van Balekom (Proseed)  
Hybrid pine performance. Trials with natives. Species and hybrid trials.



# *New Zealand Farm Forestry Association national conference South Canterbury, 30 March to 3 April 2023*

## **Conference programme**

11.40 am.....Simeon Smail (Scion)  
Experimental findings on trees and carbon methane dynamics.

**12:00 pm to 1:00 pm.....Lunch**

1.15 pm.....Travel to Mt Cook Station

2.30 pm.....Clint and Alana Miles  
Introduction and welcome to Mt Cook Station

2.40 pm.....Ross Ivey (Mackenzie Basin Wilding Tree Trust)  
Wilding control in the Mackenzie Basin

3.05 pm.....Steven Palmer (Environment Canterbury)  
Control strategies and costs for wilding pines

4.00 pm.....Travel to Tekapo

**5.00 pm to 6.45 pm.....Drinks and dinner – The Godley Hotel (cash bar)**

6.45 pm to 8.00 pm.....Travel back to Timaru

### ***Day 5 Monday 3 April***

8.00 am.....Depart for Geraldine

8.30 am.....Visit to Andy Palmers Dairy farm – Flaxburn  
Andy Palmer – Introduction to the farm  
Helen Risk, (Environment Canterbury)  
A look at water quality before fencing and planting and present day water  
quality in an intensively farmed area.

10.15 am.....Travel to Geraldine

10.40 am.....Visit to Port Blakely Ltd Forest at Te Moana  
Andrew Cocking (Port Blakely), Brad Coleman (Canterbury Wood chip Supplies)  
A presentation on the production of wood chip in the forest and the overall wood  
fuel market.  
Environmental management and the implications of SNAs on forest production.

**12.30 pm.....Lunch time – Viewing a cable hauler operation**

1.15 pm.....View and discuss a significant area of indigenous SNA, which has a resident bat  
population.  
Macrocarpa production in the forest.

3.20 pm.....Depart Port Blakely

3.45 pm.....Woodside  
John Parish. View an impressive stand of conifers.

4.45 pm.....Travel

**5.00 pm to 9.00 pm.....Closing dinner – Hilton View**

# The South Canterbury Branch – a short history

The South Canterbury branch was conceived and born in 1958 in the classic style. Neil Barr visited and instilled his vision into a receptive region. The farm forestry concept was an idea whose time had come. Farming was prospering, production was king and aided and encouraged by the government. South Canterbury farms were well developed, and the old gorse hedges were giving way to post and wire. Trees were often seen as an impediment to full production as they took up crop and grazing space.

Yet there were farmers who were uneasy at the lack of animal shelter, worried over erosion events and felt our wide-open countryside needed more than homestead blue gums and macrocarpa hedges. A tree planting association pre-dated farm forestry and was involved with community enhancement and school promotion. A small group of Waimate farmers led by Allan Meyer had already met Neil Barr and this led to a local branch being established.

The concept of farm forestry gained ready acceptance. Farmers were looking for practical help in their tree planting efforts and sought a better physical and aesthetic environment. Ready assistance to achieve these aims was at hand from the New Zealand Forest Service and the South Canterbury Catchment Board.

The Forest Service extension officers gave excellent service and were well received and liked by our members. They administered the Government Loan and later the Forestry Encouragement Grant. The Catchment Board also gave valuable support. The Board's soil conservators administered subsidised programmes for water, slip and wind erosion control. Some members caught the tree planting bug through these programmes and continued planting shelter long after the subsidies ended. Today logistical support continues under the mantle of ECAN.

The South Canterbury Branch has always taken a fairly low key stance but is now looking forward to hosting their fourth National Conference. Third and fourth generation members are still planting trees and expanding the species choice. They have the benefit of good professional gangs for silviculture and management.

The forestry landscape is changing with the recent growth in lifestyle blocks, the introduction of the Emissions Trading Scheme and consideration of alternative species.

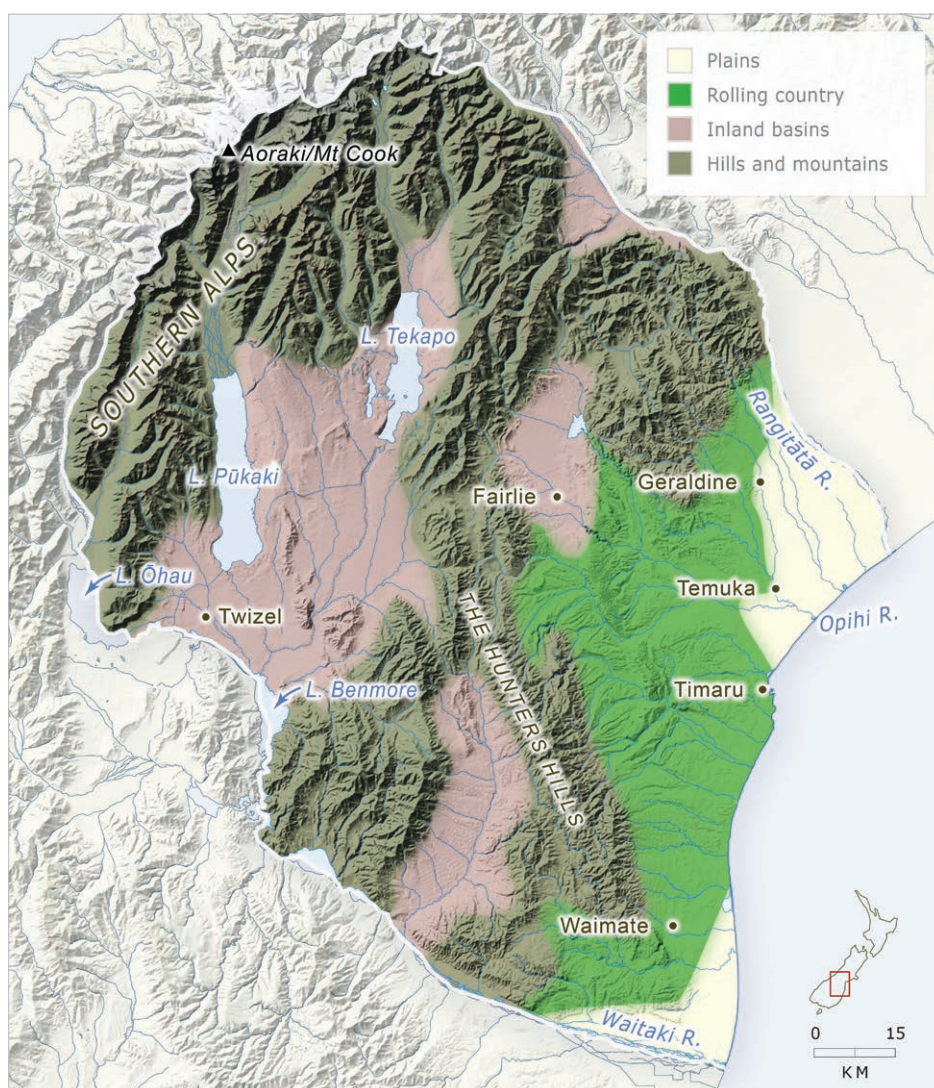
# Introducing South Canterbury

Rising from sea level to over 3,750 m, South Canterbury rightfully claims to be one of New Zealand's more diverse provinces. Bounded by the Rangitata and the Waitaki Rivers, it covers three broad climatic zones – the drier milder coastal area, the higher rainfall foothills and the high country.

From a forestry perspective, South Canterbury is a challenging place to grow trees. The foothill areas are the most attractive, therefore the establishment of the original State forests around Geraldine and Waimate. Wind and snow damage are inherent risks although timber quality is generally better on these downlands' sites than on the drier, more exposed coastal areas where resin pockets and compression/tension wood tend to be a problem.

Driven mainly by rainfall, tree growth rates vary greatly. For example, from 10 cubic metres a year at Omarama and lower Balmoral Station near Tekapo where annual rainfall is 400-600 mm, to 20 cubic metres a year at western Balmoral Station and the head of Lake Ohau where rain is about 1000 mm a year, to 25 cubic metres a year at Mt Cook Station where rainfall is 1500-2000 mm a year.

Geologically, the plains to the north of Timaru, and south of Waimate, feature young soils of alluvial origin. Derived from greywacke sandstones they are of low natural fertility and vary greatly in quality depending on where the rivers deposited the most silt. However, even the poorest soils will grow a lot of grass with moderate fertiliser inputs and water.



The ice ages of the Pleistocene period, two and a half million years ago, tied up a lot of the world's water and sea levels dropped 100 metres below today's levels. The fine glacial silt blew off the newly exposed continental shelf to form our clay downs. These soils are less versatile than those on the flats – some would call them Sunday soils – too wet to work on Saturday and too dry by Monday! Lime played an important part in developing these soils from brown top to ryegrass/white clover dominant pastures following World War II.

Timaru itself has been built on rolling hills created from the lava flows of the extinct Mt Horrible volcano, which last erupted thousands of years ago. The result is that most of the main streets are undulating, a clear contrast with the flat landscape of the Canterbury Plains to the north. This volcanic rock is used for the construction of local 'bluestone' buildings.

The indigenous vegetation, when European settlers arrived was mostly tussock grasslands with bush along the foothills. There were fine podocarp forests around Waimate, Temuka and the Geraldine/Peel Forest areas. Native short-tail bats can still be found at the Raincliff, Kakahu and Hanging Rock areas.

## Forestry and the economy

South Canterbury is made up of the three districts of Timaru, Mackenzie and Waimate. The area covers 13,658 square kilometres. Timaru became an industrial centre processing products from South Canterbury farms. Relatively slow growth since the 1950s means the town has, like nearby Temuka, a well-preserved early 20<sup>th</sup> century main street and other notable historic buildings. It is the administrative centre for the Timaru District, which now includes Temuka and Geraldine and extends north to the Rangitata River.



South Canterbury's major forestry operator is Port Blakely Ltd who have approximately 15,000 hectares spread over two blocks near Waimate and Geraldine. The conference field trips include a visit to their forests near Geraldine. Other companies with a strong forestry presence include PF Olsen, Laurie Forestry Limited and Forest Management Group. Farm forestry plays an important role, and this sector contributes approximately 14,000 hectares to the overall forestry estate. Not surprisingly radiata makes up the largest proportion of the species grown at 64%, but this is well below the national average of 90%. Douglas-fir makes up nearly 30% which is well above the national average.

Another important component of the forestry industry is Prime Port Timaru which exports approximately 500,000 – 700,000 cubic metres annually.

In terms of processing, we have a number of specialist producers and small to medium scale mills. These include Point Lumber, Starwood, Waitohi Timber, Hedley Contracting, Waimate Timber and Arundel Lumber Company.



## Population

South Canterbury has a population of around 61,500. The largest centre of population is Timaru. It currently has a population of 28,700. The town developed at the only sheltered point on the coast between Banks Peninsula and North Otago and owes much of its prosperity to its artificial harbour, first developed in the late 1800s.

# Short biographies of some of the conference speakers



## **Phil Taylor**

A love of nature and an interest in applied science led Phil to a career in forestry, which began more than 30 years ago as a forest worker pruning and thinning trees in Otago. He holds a New Zealand Certificate of Forestry and a bachelor's degree in forest science from the University of Canterbury.

Phil is the Managing Director at Port Blakely Ltd, on the Executive of the New Zealand Forest Owners Organisation and a board member of the Forest Growers Levy Trust.



## **Simon Petrie**

Simon is the Manager ETS Delivery at Te Uru Rakau-New Zealand Forest Service. He is responsible for the operational oversight of the forestry aspects of the Emissions Trading Scheme. He has a background in environmental reclamation and has been involved with the Emissions Trading Scheme for more than 10 years.



## **Clayton Wallwork**

After graduating from the University of Canterbury Clayton worked for the Ministry of Forestry for 10 years. For the next 15 years Clayton was self-employed, advising NGOs, land owners, district councils, iwi and trusts on all aspects of carbon forestry. During this time Clayton also was the project lead for the Tane's Tree Trust demonstration native forest pilot project and a founding technical advisor around carbon for Trees That Count. He then moved to take up an 18-month fixed term contract as a Senior Advisor with Te Uru Rakau's One Billion Trees Programme. For the last two years Clayton has been employed by Orion NZ (Mid-Canterbury lines company) leading their native carbon offsetting project.

Outside of work Clayton is the interim NZFFA representative on the board of Orton Bradley Park and is the chair of the OBP forestry sub-committee. Clayton and his wife own a 31 hectare forest in Te Moana Gorge near Geraldine, 18 hectare of the forest is in the ETS with 14 hectares of pines and four of natives trees .



## **Peter Weir**

Peter has been an influential member of the New Zealand forestry sector and has been known for his tireless and professional approach to representing the industry in a wide range of issues. This was acknowledged by him being awarded the NZIF Forester of the Year in 2011.

He advocates on behalf of the industry on many fronts, too many to include here. Some of these include MfE Freshwater Leaders Group, Executive Council of NZ Forest Owners Association (President 2018 to 2020), Fellow NZ Institute of Forestry, MPI Forestry Emissions Reference Group, MPI NES for Plantation Forestry Working Group and a reference group member of the Independent Forest Safety Inquiry (2014).



## **Aslan Wright-Stow**

Aslan is Senior Manager - Environment at DairyNZ. In this role he manages a team of water quality scientists and water and climate change policy analysts. Collectively, this work aims to raise the environmental performance of dairy farmers, provide clarity for farmers on their responsibilities and options, ensure environmental policy drives the environmental outcomes it seeks, and help the sector to demonstrate and communicate environmental achievements and leadership.

Aslan's research experience and interests includes land use impacts on water quality with a focus on biological indicators as measures of stream health, and edge-of-field mitigations as tools for reducing effects on receiving waterways. Prior to DairyNZ, Aslan worked at NIWA as a Freshwater Ecologist.



### **Allan Laurie**

Allan's career in forestry spans 50 years having started as a Junior Woodsman in the NZ Forest Service in January 1973. After 18 years in leadership roles with the Forest Service, he ticked the redundancy box in March 1987. He began a Forestry Consulting and Management company a month later and now heads a successful and respected business covering the South Island owned by Allan and Gail.

Allan represents small growers on the operational advisory group of the NZ Forest Industry Safety Council. He is current Chairman of The Lyttelton Log exporters group, Chairman of Bushtown Waimate Inc and serves on numerous committees and in various organisations.

Laurie Forestry Ltd provides a complete suite of management services across the forestry sector from project planning through land preparation, planting, forest management, harvesting and marketing. The company has an extensive portfolio of business and clients who include farmers, investors, corporates, and Local Authorities.



### **Nick Ledgard**

Nick joined the NZ Forest Service as a trainee in the mid-1960s. From 1971 through to retirement in 2011 he worked for the NZ Forest Research Institute commercially operating as Scion. Over that time he has seen the establishment of over 100 hectares of tree trials in New Zealand's high country. He was also involved in the Himalayan Trust's Sagarmatha National Park forestry programme.

For a number of years he presented a lecture series 'Trees in the NZ landscape' to first-year students at the Canterbury University's School of Forestry. Since retirement he has spent most of his 'non-home' time involved with wilding spread problems. Nick and a colleague also run Mt Barker Forest Ltd, a 380 hectare area of wilding trees near Lake Coleridge. For almost 50 years, Nick and his wife, Biddy, have lived on four hectares of mixed trees and pasture at Loburn just north of Rangiora.



### **Alex Wilson**

Alex is the Director Forestry Engagement and Advice for Te Uru Rakau – New Zealand Forest Service. She has over 15 years of experience managing and developing high performing teams. She has held significant leadership positions in central government, a crown research institute, and local government, focused on strategic leadership, staff management and operational delivery.

Her technical experience includes community engagement, strategic partnerships, catchment management, forestry, environmental funding, and landfill aftercare.

Recently, Alex contributed to the establishment of the One Billion Trees programme and supported the regional scale-up of Te Uru Rakau – New Zealand Forest Service.



### **Simeon Smaill**

Dr Simeon Smaill is a microbial ecologist who specialises in plant-soil-microbe interactions in forest systems. His research encompasses the plant growth-promoting microbes, biogeochemical cycles, nutrient modelling, improving the efficiency of plant production, and the impacts of climate change. He has numerous publications related to the ecology and management of natural and planted forests, and is frequently invited to present at national and international events. He has a broad international network, engaging with leaders in forestry research in the USA, Canada, Australia and Scandinavia, and also holds an Adjunct Professorship with East China Normal University related to collaborative research into beneficial soil microbial processes in managed ecosystems.

# Field visit to Alpine

Jane and Peter Evans farm Alpine is a 1,040-hectare property 22 km west of Timaru located on the slopes of Mt Horrible and Mt Misery. The farm is a mix of steep hill, rolling hills and arable flats and has the Pareora River run through it.

Stock numbers are 3,500 to 4,000 ewes, 1,000 hoggets (800 in lamb) and 250 cows in-calf to Angus bulls. The aim is to fatten all the progeny depending on the weather. They have 90 hectares under irrigation, 90 hectares of forestry and approximately 100 hectares of indigenous vegetation.

Peter's great grandfather was the first settler when he bought 80 hectares from the crown in 1874 and named it Alpine. He came to New Zealand from Wales in 1863 as a farm labourer. Imagine the landscape then. It would have had tussocks, and lowland scrub such as matagouri, coprosmas, cabbage trees and kowhai with a braided river winding through the flats. The land was clear of any dense forestation and so was readily available for cultivating and grazing.

Peter took over a lot of the running of the farm in the early 1980s from his father. The first task was subdivision which he started under his father's guidance with concrete posts, waratahs and netting. He then continued with electric fencing and now has 150 blocks for rotational grazing of stock.

The family have always had an interest in trees. Early plantings included poplars in paddocks and willows for river protection. The first pines were planted as shelter and for gorse control as there were no sprays available. Peter's interest and investment into forestry started in 1989 when they purchased the Mt Horrible block. For him the only solution for this gorse infested land was to plant pines. Over the next 15 years, 90 hectares have been planted, predominately in pines with four hectares of macrocarpa. There is a big risk here with the Nor-west gales which affect this region. Fortunately, droughts are not a problem with growing pines, unlike livestock. The first block was harvested in early 2021 with very rewarding results.

Peter sees the future as being very positive for planting more of this marginal land in trees, carbon will be an additional income stream with 70 hectares of pines registered in the Emissions Trading Scheme. Compared to the battle with gorse, livestock emissions, labour costs and other regulations makes forestry look very attractive. They have another 40 hectares planned to go into pine forest over the next four years.





The Pareora River has been fenced for several years and the focus is now on the Taiko Stream. The willows are being removed and the stream is being enhanced with riparian planting of indigenous trees, shrubs, flaxes and grasses. They have worked closely with ECAN and are also part of the Pareora Catchment Group. There are 100 hectares of regenerating indigenous bush, over the farm and the past attitude of slash and burn has been changed to valuing these areas and protecting the plants with fencing, and a weed and pest control programme.

Over the years a substantial amount of time and money has gone into gorse and pest control. Tordon has mainly been used, applied by handgun, knapsack and helicopter. Willows are another problem and those and other weeds amongst the riparian planting are controlled with release spraying with Roundup. An increase of wallabies in the area risks the establishment of new planting, so they now employ someone with a thermal imaging scope to come in and shoot these pests. This has had good results and over the last year they have shot over 400 wallabies and a similar number of hares and possums.

Rules, regulations and consents play a major part in farming operations today. The focus of the field day is how Alpine moves forward sustainably while looking after the environment, complying with regulations and being part of this new modern era of farming.

A person wearing a high-visibility orange shirt, safety harness, and helmet is using a chainsaw in a forest. The person is positioned in the center-right of the frame, with the chainsaw held horizontally. The background consists of dense trees and foliage.

### Tree harvesting is risky business, but you can make it safe for everyone.

Tree felling and harvesting is a hazardous activity that results in high rates of serious harm and deaths across Aotearoa. That's why you must notify WorkSafe before this work begins, so we can help you ensure everyone involved goes home healthy and safe.



For more information please scan the QR code or visit [worksafe.govt.nz/forestry-notify](https://worksafe.govt.nz/forestry-notify)

**WORKSAFE**  
Mahi Haumarū Aotearoa

# Field visit to Gladwyn

Gladwyn is a 400-hectare property owned by Andrew and Vicky Steven. They are the third generation on the farm, and they have all been keen on planting trees. They followed the lead of Andrew's parents, John and Christine, and established a 25-hectare woodlot of radiata pine during the early to mid-1990s and you will see this block. This block was commercially focussed but the desire was also to have a park feel so there is planting that for aesthetic reasons such as *Abies concolor*.

The more gently sloped parts of the farm are used for crops—wheat, barley, peas as well as various seed crops being grown in the past. The soil types are Timaru silt loams derived from loess and typical of the South Canterbury downlands. They compact and erode quite easily. The average annual rainfall is 550 mm and there are often long dry periods.

They also have 250 breeding hinds on a lease block in the hills 25 km away, and they finish the progeny on the home farm. They have 800 breeding ewes and buy in fine wool type lambs for finishing over winter and spring. They have been rearing 100 calves to sell as yearlings.

Like many farm foresters, they also plant trees for fun and attendees will recognise various fashionable planting from recent years. The arrival in the mail of the Appleton's catalogue was always interesting and species would be duly and selected and ordered. Under the constraints of running a farm, they did not always get the care they warranted. You will see some evergreen oaks that have made remarkable recovery from grazing.

On the field visit you will be shown a variety of sites including the plantation and the small sawmill. A 1.5 hectare site has had a digger create a series of small ponds to catch water from run-off. This prevents nutrient loaded sediment from leaving the farm. To improve biodiversity flowering shrubs have been planted and the better soils around the gully and ponds have been planted with oak and red alder to provide some useable timber.

We will also visit their small sawmill. Owning a sawmill is good fun and changes your perspective on planting. It can mean that every log is valuable, and they have enough trees blow over each year to warrant a mill. If you want value from planting small areas, you are going to have to do it yourself.



# Visit to Balmoral Station

Balmoral Station is owned by Andrew and Karen Simpson. Besides their farming interests, the Simpsons and their three children also have various other tourism and property related businesses.

Balmoral Station's 9,700 hectares consists of 2,000 hectares of over-sown tussock, 200 hectares of cultivated dry land, 300 hectares under irrigation and another 120 hectares consented for irrigation, which is still to be developed, and the balance of 7,200 hectares are native tussock. Under irrigation, peas/oats and peas/barley are grown for silage, and rape/ryegrass for summer feed. Stock is wintered on turnips/grass, baleage and swedes.



## Forestry at Balmoral

There are two substantial blocks of plantation forestry on Balmoral Station, 100 hectares east of the main road and 350 hectares to the west. The station has 1,000 hectares of forestry consents and it is planned to plant another 200 hectares in trees.

Planting began on trial sites on Balmoral Station on the 100-hectare block in 1994, with advice from Scion. A joint venture agreement signed in 1994 between Scion and Balmoral station has assured research rights on this site for 50 years. The trial sites are fairly typical of the drier lands of the Mackenzie Basin where over a century of burning, grazing by rabbits and domestic stock, coupled with the more recent invasion of low-producing hawkweeds, has led to serious production losses. As a result, the future sustainability of traditional extensive pastoralism is under question. Forestry is another land use option – not only for the traditional production of timber and fibre, but also for 'newer' end-uses such as carbon storage and as a resource for manufacturing bio-fuels.

On the 350 hectares, 90% of planting was initially Douglas-fir covering 200 hectares, and these trees are now aged between four and 22 years. For the last four years radiata hybrids, *Guadalupe x radiata* and *radiata x attenuata*, have been planted. These have proved to be the best performers in a snow prone locality, in fact outperforming the Douglas-fir.

Harvesting will start in 15 years and the harvesting plan is for 15 hectares to be cut each year yielding, it is hoped, 470 tonnes a hectare from the hybrids to 700 tonnes a hectare from Douglas-fir. At \$40 a tonne, net of harvesting costs, and a 7,000 to 10,000 tonne total production a year, net annual returns from the 15 hectares are expected to be between \$280,000 and \$420,000.

The Douglas-fir are on a 60-year rotation and the radiata hybrids a 25 to 30-year rotation. Carbon is the only income for the first 40 years from the Douglas-fir and first 20 years from the hybrids. The plantations are accumulating 10,000 tonnes of carbon a year.



Andrew is looking to stay cash flow positive from the carbon trading. In 15 years, he will have approximately 600 hectares of plantation forest, most of it radiata hybrid.

## Simeon Smail – forest soils, carbon sinks and stores

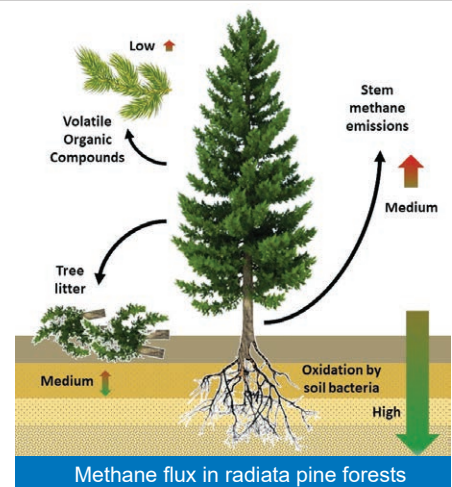
### Methane capture

Radiata pine forests have the potential to affect methane cycles through various pathways.

Considerable attention has been given to interactions which could either release methane or extend the life span of atmospheric methane. However, radiata pine forests also support an environment which allows the soil microbiome to consume methane, and the extent of this activity is substantial compared to the other pathways. Scion is undertaking new research to quantify the scale of this activity, to better understand the effect on the overall New Zealand methane budget.

### Deep soil carbon

Forest soils hold large reservoirs of carbon, created by the flow of carbon from tree roots into soil. These roots can extend far into the soil, going metres deep. Maintaining this carbon input to soils is critically important, as is retaining the carbon already stored at depth. We know very little about this deep soil carbon, which prevents accurate prediction of how it will respond to climate change. Scion has launched a project to explore deep soil carbon, indicating how much forest soil carbon we are missing by only sampling the uppermost layers of soil.



Biological activity around tree roots at 2.5 – 3.5 m depth, indicating significant carbon inputs

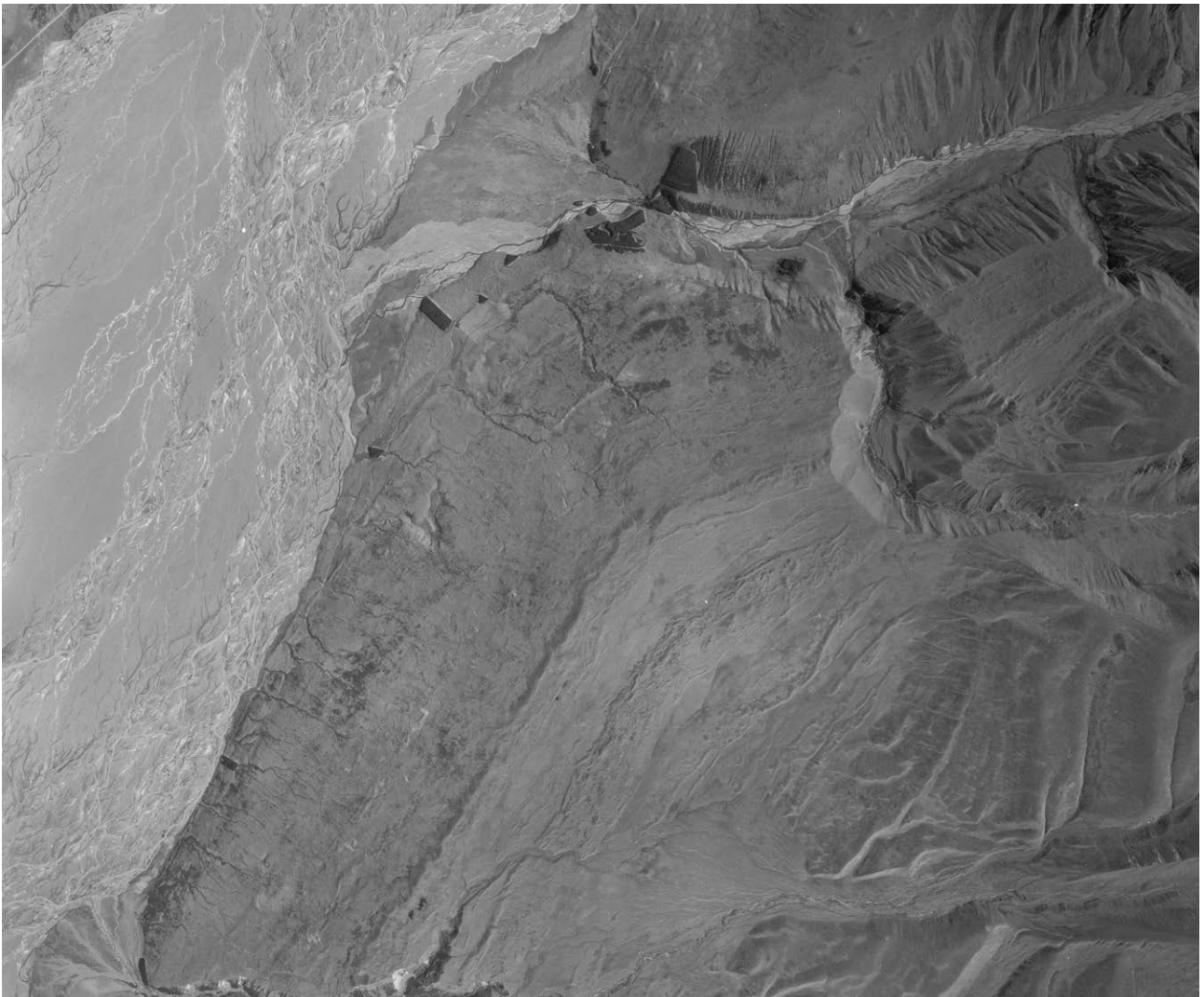
# Visit to Mount Cook Station

Mount Cook Station is a 2,619-hectare property which stretches approximately 20 km along the eastern shore of Lake Pukaki and up through the Tasman Valley. Throughout the farm there are spectacular views of Aoraki/Mt Cook, the Southern Alps, Lake Pukaki and the Jollie and Tasman rivers. The station is run by Alana and Clint Miles who purchased it in 2017 from the Burnett family.

The property has two houses, two sleepouts and a shearers' quarters as well as utility buildings. The farm manager's house has three bedrooms while the main homestead built in the 19th century has six bedrooms and two bathrooms.

Since owning the property, the Miles have made it a priority to clear the wilding pines. So far they have developed approximately 30 hectares after harvesting into permanent grass and two-year rotational grass and over-sown with clover. There are roughly 350 hectares of sprayed out trees to the north which are being cleared as fast as they can. Approximately 1,450 hectares will be developed on the south side and 400 hectares more to be over-sown on the north side of the river. This would mean 2,250 hectares would be developed into pasture land.

The station runs approximately 350 angus cows on the property. Within the fenced area they also have 800 to 1,000 red deer, 400 to 500 fallow deer, 250 to 300 Awapara sheep and 600 to 700 tahr.



## *Field visits*

On our visit we will see the post-harvest areas and the developed areas which is what they want the whole farm to look like. Some areas will just be over-sown with clover where there is not enough. There is natural white clover in a lot of the areas that have been under trees for years with thick coverage.

The wilding clearing programme is an ongoing operation. They have cleared all the carbon credits by paying them out, trading them on the capped price market. This process has taken nearly four years and a lot more costs than originally planned. However, they are now cleared, and they are looking forward to finish clearing all the areas. If they were to carry out this clearance now it would be an \$18 million problem to try and resolve. It took nearly two years to get a consent from the district council to clean up after harvest and a fair bit of money. This was an eye-opening experience for the owners, and they are grateful for the support from the ECAN and MPI wilding tree control programmes along with the Mackenzie wilding conifer team.

In terms of the future, they are waiting for the export market to improve as it would cost them money to take the trees down. Their approach is that if they can get rid of the wilding pines and still make enough to do the clean-up afterwards, then it would be worth it. They are also looking at planting shelter belts which will be natives and staying well away from the Emissions Trading Scheme wherever they can.



# Visit to Flaxburn Farm

Flaxburn farm is a family owned 146-hectare dairy farm milking 530 Friesian x cows. It is currently farmed by Andy Palmer and Sharon Collett. This is the third generation Palmer family on the property with 105 years continued stewardship.

The farm has a history of cereal and processed crop, sheep, bull beef and small seed production, but underwent a full conversion to dairy from 1997. Cow numbers peaked at 620 in 2005 but have since dropped to 530 with fewer inputs and greater production. The farm has won several awards including the Balance Farm Environment Best Dairy Farm Award in 2004 and Canterbury/North Otago Sharemilker of the Year in 2008.

Visitors will see the riparian planting which started in 1995, and is continuing, of the Ohapi stream, a spring fed tributary of the Orari river. Once overgrown with gorse, blackberry, broom and choked with willows, this stream is now clear of exotic weeds, fenced from stock and a habitat for brown trout, spawning salmon and a healthy population of bird life. Environment Enhancement funding from ECAN was used to install fencing and for 10,000 native plants to be established.

# Visit to Port Blakely

Port Blakely Ltd is a sixth generation owned forestry business with its roots going back to 1864 in the Pacific Northwest. At that time Nova Scotia sea captain William Renton built a sawmill on Bainbridge Island's Blakely harbour. Over the next four decades, the Port Blakely Mill Company flourished, at one point operating the world's largest sawmill under one roof.





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## Field visits

In the late 1970s and early 1980s a strong environmental move, particularly in the Pacific North West, resulted in the Endangered Species Act which placed significant extra controls and regulations on public and private forest land in the United States. With Federal forests effectively 'locked up' harvesting was stopped and there was an associated reduction in supply from the private estates as increasing areas of land were tied up for conservation purposes. With the effect of greater environmental restrictions took effect into the late 1980s and early 1990s log supply significantly reduced.

As a result of this reduction in supply, global log prices increased dramatically and a lot of private timberland owners found themselves on large reserves of cash but at the cost of increasing environmental regulations. Looking to diversify its risk exposure in the United States, Port Blakely undertook a global scan for new, but complimentary forest investment opportunities in countries with fewer environmental restrictions. Drawing up a matrix of 10 possible countries, each country was measured against a list of criteria that included English speaking, ease of business, lack of corruption, well-established forestry, advanced forest research and good growing sites. After visiting all 10 countries, New Zealand bubbled to the top and in 1994 a significant area of production radiata pine forest was purchased in Matakana Island in Tauranga harbour.

The family's original plan was to replicate what they had in the United States, which was Douglas-fir but New Zealand was and remains very radiata pine-centric. Over the next decade new forests were established in the North and South Islands planting predominantly radiata pine in the north with Douglas- fir planted extensively in the south.

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Port Blakely currently own 39,223 hectares in the North Island and the South Island with an estate of approximately 70,000 hectares in the Pacific North West. The species mix in New Zealand is 35 per cent Douglas-fir and 57 per cent radiata pine with the remaining being minor species such as macrocarpa, eucalypt, cedar and muricata pine. In recent years increased areas of the radiata/attenuata hybrid has been planted on higher altitude exposed sites not suited for radiata pine planting.

The Geraldine Forest of 5,500 hectares was purchased in 1999 from Ngai Tahu. Geraldine Forest was a Crown Forest managed by the Forest Service, started in the early 1960s and finished expanding in the late 1980s. The land use before was sheep and beef farms.

Hauler logging is currently taking place in the Te Moana Gorge Block. The area is a pruned stand. They have recently planted the third rotation along the Geraldine and Fairlie highway corridor.

In recent years Port Blakely has diversified its business in New Zealand. Today Port Blakely manages and markets log production from its own forest land and also provides harvesting and marketing services to third party forest owners. In addition, it has a growing forest residues business as well as having a significant investment in the Emissions Trading Scheme. In 2022 Port Blakely commissioned an industrial scale essential oils plant in one of its southern Douglas-fir forests – this is the first foray Port Blakely has made into processing since its sawmill on Bainbridge Island burned down in 1924. Good things take time.

### **Port Blakely notes**

#### **Geraldine forest**

Established by NZ Forest Service from 1961 to 1989

Geraldine Forest continued to expand through the 1970s and 1980s with the purchase of neighbouring farm blocks.

Gross area – 5,556 hectares

Net planted area – 4,385 hectares

Native bush area – 737 hectares

Balance – Roads, landings, quarries and fire ponds

#### **Added points**

Regime for radiata pine is mix of pruned and unpruned

Radiata pine GF 22 aged cuttings are planted to manage the risk from snow and wind damage

Altitude ranges from 350 to 700 metres above sea level

Hybrids radiata x attenuata are planted in the higher altitude areas where dark faces will be affected by snow. Earliest planting of hybrids 2014.

Douglas-fir is still established on key sites. Douglas-fir makes up 23% of the forest

Hauler logging is carried out in the Te Moana Gorge block which was planted from 1983 to 1989

Douglas-fir planted 1976 to 1979 is currently being logged on the eastern side of the forest

Muricata pine is located above the radiata pine to ridge line. This was planted 1983 and 1984 by the Forest Service. Never replant this species up at this altitude.

Port Blakely continues to prune a percentage of its estate to maintain its silviculture resources and future product mix.

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