



# Hauropi whakahou ki Aotearoa Restoration Ecology in New Zealand

NZPCN 2022 Biennial Conference  
Queenstown 4<sup>th</sup> - 7<sup>th</sup> December



**NEW ZEALAND  
PLANT CONSERVATION NETWORK**

Rōpū hononga Koiora Taiao ki Aotearoa



# NEW ZEALAND PLANT CONSERVATION NETWORK

Rōpū hononga Koiora Taiao ki Aotearoa

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If you have any questions or if problems arise during the conference, please speak to a conference organiser or NZPCN committee member.

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Front cover photograph: Lake Alta, the Remarkables Conservation Area (Photographer unknown)

Back cover photograph: Whakatipu Basin, Callum Wood ©

## Welcome and conference overview

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Nau mai, haere mai ki Tāhuna, ki rōpū hononga Koiora Taiao ki Aotearoa hui, Hauropi whakahou ki Aotearoa. Tēnā koutou, tēnā koutou, tēnā koutou katoa.

Tēnā tātou katoa  
(Kua hui i runga i te whakaaro Kotahi)  
Me manaaki tātou i a tātou anō i tēnei mahi whakahirahira  
Kia toitū te marae o Tangaroa  
Kia toitū te marae o Tāne  
Mō tātou, ā, mō kā uri ā muri ake nei  
Kia tātou katoa

*We acknowledge all of us  
(Who have gathered with a common purpose)  
Let us support each other in this invaluable work  
So that the ocean with all its plants and creatures thrives  
So that the forest with all its plants and creatures thrives  
For us and the generations to come  
Let us all be well*

On behalf of the New Zealand Plant Conservation Network (NZPCN) we warmly welcome you to Queenstown for our 2022 conference Restoration Ecology in New Zealand. After a nine-month delay due to COVID-19 it seems a very long time since we last all connected kanohi ki te kanohi – face to face.

The role of the NZPCN is to facilitate and advocate for indigenous plant conservation as well as providing information and support to plant conservation practitioners, landowners, and managers. Our biennial conferences provide a unique opportunity to meet people who are passionate about plant conservation and to network and collaborate on shared issues and challenges.

The focus of our 2022 conference is restoration ecology in New Zealand. We see Queenstown as an ideal location to host a restoration focused conference given the extent of the conifer to native ecosystem conversion underway and the ever-increasing number and size of local restoration projects. We are very excited about having so many of you travel south and engage with the people and projects of the Queenstown Lakes District Region.

Our four excellent keynote speakers – Adam Forbes, Estelle Pērā-Leask, Geoff Rogers, and Peter Heenan – will between them identify challenges and share their experience of ecological restoration and plant conservation in southern Aotearoa New Zealand. In addition to two days of spoken presentations, we have a number of social events, including locally unique field trips and diverse workshops. It is fantastic to see the level of interest in the workshops and field trips which are all fully subscribed. We think you will find these activities informative and enjoyable and we appreciate you taking the extra time to engage in upskilling but also in getting to know the Queenstown Lakes and Central Otago Districts.

Please take the time to read our conference code of conduct and do your part to make this a safe, enjoyable and productive conference experience for all. After nearly three years apart we sincerely hope you make the most of the opportunity to make new connections, strengthen existing contacts, share your knowledge freely and engage with our conference content. Finally, a big thank you to everyone who has helped bring this event together, to all our volunteers, all presenters, all workshop and field trip leaders, and to our treasurer Bill, we could not have done this without your excellent support.

Nā mātou noa, nā Alex Fergus, Jesse Bythell and Joanna Smith

NZPCN 2022 Conference Organising Committee

## Conference Code of Conduct

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*He taonga rongonui te aroha ki te tāngata—Goodwill towards others is a precious treasure*

In the interests of all participants and supporters of this conference we are dedicated to creating a positive, supportive and rewarding experience for everyone, regardless of race, ethnicity, nationality, culture, religious beliefs, gender, gender identity and expression, sexual orientation, age, status, disability, physical appearance, political affiliation, or technology choices. We will not tolerate harassment of conference participants in any form.

We believe everyone has an obligation to contribute. Here we have outlined appropriate and acceptable behaviours expected at the conference. We aim to influence helpful and constructive outcomes from the conference, and for everyone involved to feel supported to make positive choices, manage risk and have a great experience.

Everyone has a responsibility to speak up when there is, or could be, a situation that may breach or lead to a breach of this Code, or the law.

### We ask everyone involved with the 2022 NZPCN Conference to:

- Look out for one another and contribute towards a safe environment where people are treated with dignity and respect, feel comfortable and encouraged, feel their opinions are valued, and can speak without fear.
- Be conscientious about how your actions and comments might be perceived or misunderstood by others.
- Be mindful of how you use social media, remembering the internet is a public place and we can't control how long something will remain on the internet, or other people's access to the content.
- Aspire to perform at your best while attending the conference. Please refrain from using or abusing alcohol, or any other drugs, that could prevent you from being at your best, or that could create a dangerous situation.
- Have zero tolerance for unwanted verbal or physical conduct (sexual or otherwise) or degrading and disparaging statements related to race, ethnicity, nationality, culture, religious beliefs, gender, gender identity and expression, sexual orientation, age, status, disability, physical appearance, political affiliation, technology choices, and other categories protected by the law.
- Support the use of Treaty of Waitangi principles – ‘partnership, protection and participation’ – and te reo Māori throughout the conference.
- Embrace and value diversity so all people involved with this conference feel supported. We believe diversity of people and ideas inspires innovation, can provide alternative insights and perspectives, and help lead to our collective successes.
- Be mindful of behaviours or comments that intimidate, create discomfort, interfere with a person's participation, or reinforce social structures of domination or that might be construed as an abuse of power.

Thank you for helping us to create a memorable and rewarding conference experience.

## What to do if you feel that the behaviours outlined above have been contravened?

In the event that you feel that someone's behaviour is not in line with our Code of Conduct, or have any other concerns about safety and wellbeing, please contact Alex Fergus, Jesse Bythell or Joanna Smith. This can be done in person, or via text message, phone call, email, or letter. You may request anonymity during this process. The person you contact will discuss the situation with a small committee to determine the next steps to take. We have established the principles below to allow us to manage any reported breaches of our code of conduct:

- We will do our utmost to be fair and impartial when investigating reported breaches
- We will act with sensitivity and discretion appropriate to the circumstances
- We will endeavour to gather as much information to support reported breaches
- We will investigate and come to our conclusions with as much promptness as the matter allows
- Where reported breaches involve illegal activity, the police will be contacted immediately
- We will comply with all relevant New Zealand legislation
- We will communicate any breaches of the Code of Conduct to all conference delegates with complete anonymity and confidentiality.

We wish to acknowledge the efforts of our previous conference co-convenors Heidi Meudt and Rewi Elliot in compiling a rigorous code of conduct which we have made only very minor modifications to.

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## Sponsors

The conference organising committee are very pleased to acknowledge the sponsorship and support given by the following organisations and businesses to help us run the 2022 conference:



**Wildlands** - Principal Sponsor

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

Wildlands Consultants is a progressive ecological consultancy committed to providing high quality ecological information, advice and technical services to a wide range of clients. Wildlands is a consistent supporter of NZPCN conferences in the past and currently co-sponsor of our website.



**Manaaki Whenua - Landcare Research** - Principal Sponsor

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

Manaaki Whenua-Landcare Research is New Zealand's Crown Research Institute (CRI) for our land environment. Our scientists undertake world-class science focused on New Zealand's biodiversity, biosecurity, land resources and environment. We work with other Crown Research Institutes, universities, businesses and the wider science system to create impactful, relevant and useful research.



**e3Scientific** - Principal Sponsor

[www.e3scientific.co.nz](http://www.e3scientific.co.nz)

e3Scientific is a New Zealand owned and operated environmental science consultancy. Our team deliver technically excellent, innovative science; practical intelligent solutions; and expert advice to assist our clients in the smart management of resources.



**Real NZ** - Principal Sponsor

[www.realnz.com](http://www.realnz.com)

RealNZ's story began in 1954 when Les and Olive Hutchins started taking visitors into unexplored Doubtful Sound. Over 65 years on, we continue their dream of sharing the spectacular wilderness with visitors. We understand what a privilege it is to operate in this special part of New Zealand and we take our responsibility to protect and preserve these special places seriously.



**Queenstown Lakes District Council** - Principal Sponsor

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

Queenstown Lakes District Council is the local governing body of Queenstown Lakes District. Our Vision Beyond 2050 includes the vision statement "deafening dawn chorus | waraki" where our ecosystems flourish and are predator-free under our kaitiakitanga. We are proud to support the NZPCN Biennial conference here in Queenstown.



**Ahikā** – Session 3 sponsor: Iwi/hapū led restoration processes and case-studies [www.ahika.co.nz](http://www.ahika.co.nz)  
Ahikā is a Māori concept relating to sustaining the fire and keeping the home fires burning. For us, it means sustaining and enhancing our place and our communities. By working together, we shape places where nature and communities thrive forever. Ahikā is pleased to support the Iwi/hapū led restoration processes and case-studies session as there are very exciting restoration projects with Māori kaupapa that add additional perspectives to other restoration projects.



**NZSki Ltd** – Workshop 3 and 4 sponsor: Plant identification course – New Zealand grasses (*Poaceae*) and New Zealand sedges (*Cyperaceae*) [www.nzski.com](http://www.nzski.com)  
NZSki Ltd manages three major New Zealand commercial ski fields. The company is based in Queenstown and has been involved in restoration and transplanting of alpine plant communities following land modification, some of which will be visited during the Mountains field trip. NZSki is sponsoring our sedge and grass identification workshops.



**Whakatipu Reforestation Trust** – Workshop 1 and 2 sponsor: Starting your own community nursery and Introduction to propagation of native plants [www.wrtqt.org.nz](http://www.wrtqt.org.nz)  
The Whakatipu Reforestation Trust (WRT) is a community nursery in Queenstown with the vision ‘to protect and restore the native biodiversity of the Whakatipu Basin through revegetation projects, collaboration, education and advocacy. WRT is offering the nursery site as the venue for the Introduction to Native Plant Propagation and Starting Your Own Community Nursery workshops.



**Kiwi Park** – Workshop 6 and 7 sponsor: Botanisng with iNaturalist and Lichens workshop [www.kiwibird.co.nz](http://www.kiwibird.co.nz)  
Kiwi Park is a wildlife sanctuary found in the heart of Queenstown which holds and displays over 20 species of native NZ wildlife in a 5 acre park, all of which are part of nationally managed conservation programmes. Visitors are able to see native species in a safe setting where they can learn about their uniqueness and visitor entry fees are used to support conservation work. Kiwi Park is providing the venue for two workshops, Lichens and Botanisng with iNaturalist and workshop participants have a day pass to the wildlife park during these workshops.



**Sherwood** – Workshop 5 sponsor – Botanical illustration [www.sherwoodqueenstown.nz](http://www.sherwoodqueenstown.nz)  
Sherwood is an eco-friendly hotel with an on-site restaurant and bar. The property is set on a hillside overlooking the picturesque Lake Whakatipu and the Remarkables Mountain Range. This unique property offers a tranquil retreat with a bicycle track and a vegetable garden. Sherwood is offering the venue for the Botanical illustration workshop.

## Conference venue – QT Queenstown and Rydges Lakeland Resort

The two days of conference talks and most of our social events will be held at the conference facilities at QT Queenstown and Rydges Lakeland Resort, 38-54 Lake Esplanade, Queenstown.

The following rooms will be used for the conference:

- Queenstown and Wakatipu Rooms: Monday and Tuesday plenary sessions
- Clancy’s Room: Sunday registration and auction; Tuesday NZPCN Plant Conservation Awards Ceremony
- Bazaar Restaurant: located on the 6th floor, plenary session lunches
- 5th Floor Pre-Function Area: plenary session morning and afternoon tea breaks

Clancy’s Room will also be available as a break-out room for conference organisers and participants during the Monday and Tuesday plenary sessions.

### Food & Beverages

On Monday and Tuesday (plenary sessions) tea and coffee will be available on arrival each day. Morning tea, lunch and afternoon tea will all be catered. The dietary requirements you specified in your registration form will be available, please refrain from eating food that is labelled with specific dietary requirements unless previously requested at registration.

NZPCN will additionally provide platters of canapés for the registration and auction events on Sunday, for the botanical bowls event on Monday, and for the NZPCN Plant Conservation Awards Ceremony on Tuesday. A cash bar will be available at all evening events.

### Internet Access

Complimentary Wi-Fi is available throughout the conference venue.

To access connect to wifi network: **QT-Event**

Wi-Fi password: **QQueenstown**

### Transport Options

QT Queenstown and Rydges Lakeland Resort is centrally located at 38-54 Lake Esplanade, Queenstown. Getting around Queenstown is easy, however due to ongoing extensive infrastructure projects we recommend you travel by foot, bike or ferry where possible. If using a private vehicle or bus, allow plenty of time to commute.

**Foot or bike:** <https://queenstowntrails.org.nz/maps-and-trails/>. Between Frankton and Queenstown, the Queenstown Trail runs alongside Lake Whakatipu, making for a wonderful commute.

**Public Transport:** <https://www.orc.govt.nz/public-transport/queenstown-buses-and-ferries>

- **Bus:** Orbus run a regular service around the Whakatipu Basin. With a tag on / tag off Bee Card, all local fares are just \$2. For more information, visit [www.BeeCard.co.nz](http://www.BeeCard.co.nz).
- **Water Taxi / Ferry:** Queenstown Bay, Frankton Marina, Hilton Queenstown Resort & Spa, and Bayview on Kelvin Peninsula. Fares are \$5 per trip with a Bee Card

**Parking:** Queenstown has covered and uncovered parking spaces.

Man Street Car Park (<https://queenstownparking.co.nz/>) is conveniently located in central Queenstown with car access from Man Street and pedestrian access from Man and Shotover Street. Parking is open 24 hours. You can pay with cash, EFTPOS or credit card.

For those early enough, all day free parking can be found along Esplanade Road near the conference venue.

## Registration

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The registration desk will open at 4:30pm on Sunday 4th of December – located in Clancy’s Room of QT Queenstown and Rydges Lakeland Resort, 38-54 Lake Esplanade, Queenstown. We encourage folks to join us on Sunday afternoon as in addition to complimentary refreshments, a showcase of local botanical art will be on display, and the conference auction will take place at 6:00pm. The registration desk will also be open 8:00 – 8:30am Monday 5th and Tuesday 6th of December.

## Presentations and Posters

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Below are some general tips and guidelines for spoken presentations and posters at the conference.

### Spoken presentations

- Oral presentation slots are 15 minutes long in themed sessions on Monday and Tuesday. We recommend you plan to speak for approximately 12 minutes leaving a few minutes for questions. We have allowed an additional few minutes for moving between speakers.
- Keynote speakers have been allocated 35 minutes speaking time with 5 minutes for questions.
- The conference talks will be held as a single session in the combined Queenstown and Wakatipu Rooms. The room will have a standard AV setup, including dual data projectors, dual motorised screens, a projection screen, remote slide advancer with laser pointer, lectern and lectern microphone.
- An NZPCN representative will chair each session, providing you with a quiet warning when you have reached 10 minutes.
- Taylor Davies-Colley will be our Audio-Visual technician for the plenary sessions. If you have technical queries about your presentation before you arrive in Queenstown, please contact Taylor ([taylordaviescolley@gmail.com](mailto:taylordaviescolley@gmail.com)).
- Presentation computers run Windows. You are welcome to bring your own laptops should you wish, but please bring relevant HDMI cables, or advise the conference cables you require beforehand.
- Most formats (e.g. PDF, PPT) are acceptable; if you have created your presentation on an Apple computer, please make sure it looks the same on a PC before uploading. The screens are 16:9 format.
- Please do not embed video in your presentation. If you would like to show a video in your presentation, bring this as a separate file.
- Please ensure you upload your talk to the presentation computer before your session begins. Please bring your spoken presentation on a USB data stick/flash drive to plug into the presentation computer. Your session chair and Taylor will be available to assist.

## Posters

Posters are excellent tools for communicating and networking.

- Posters for the conference can be of any size that fit our poster boards: 1200 mm wide x 2200 mm high.
- Participants with posters are encouraged to put up posters during registration on Sunday 4th December. Please talk to an NZPCN volunteer at the registration desk who will support you.
- Conference participants will be encouraged to view posters during the registration evening (Sunday), and over the lunch break during the Monday and Tuesday plenary sessions.
- A dedicated poster session will run at the end of session 3 on Monday, at approximately 2:20pm.

## NZPCN conference māngai rangatahi/youth delegate

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The NZPCN conference committee is excited to announce our first conference māngai rangatahi – youth delegate. Our intention with supporting a māngai rangatahi to attend the conference is to provide the opportunity for a younger voice to feel supported enough to both experience the conference content and if they wish, contribute opinion or questions. We expect that a younger voice will likely challenge many of our own assumptions, and broaden our perspectives of priorities and challenges for plant conservation in Aotearoa New Zealand. We are very pleased to welcome Audrey Austin as our very first, and our 2022 conference māngai rangatahi.

## NZPCN Student Scholarships

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The NZPCN is delighted to support the attendance of the first four students who registered for the conference and indicated their intention to give a relevant poster or spoken presentation. The NZPCN supports a scholarship recipient by refunding their registration costs. Our 2022 conference scholarship recipients are Benjamin Teele, Caitlin Daley, Luke Liddell and Marley Ford. We look forward to hearing from each of them during the plenary sessions.

## Social programme

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We requested you register for social events when registering for the conference so we could cater them appropriately.

### Registration, Akaaka art showcase and charity auction

**When:** Sunday 4th December 4:30-7:00pm

**Where:** Clancy's Room, QT Queenstown and Rydges Lakeland Resort

**About:** After a fantastic day expanding your minds in workshops come and join us for a couple of social hours, we'll provide the snacks, bring your wallet for the bar. Sign in at registration and watch out for a line-up of events including our charity auction (all proceeds are split between our John Sawyer Plant Conservation Fund and David Given Threatened Plant Scholarship fund) and a showcase of awarded southern artists.

### Akaaka - Awarded southern artists showcase works of strong natural and historic elements

Accompanying the conference is an exhibition of artworks from awarded southern artists. Laura Shallcrass is an award-winning illustrator and author who creates artwork for publishing, packaging and editorial. She works in gouache, oil, graphite and digital media. Laura's passion is to create artworks which celebrate nature's beauty, with the aim of emphasising our duty as caretakers of the natural world.

Maddison Kelly, Kai tahu artist based in Ōtepoti Dunedin, working in multiple mediums on works grounded in field recording, learning multispecies histories and futures. Seeking entanglements through: observation, research, whakapapa, productive uncertainty and collaboration.

Simon Morrison-Deaker is a mixed media Kai Tahu artist of the Whakatipu area. His explorative artworks are mapping cultures' and species' influence on their inhabited world. In current works colourful bold oil paintings sit amongst carved wooden art boards offering the juxtaposed view of environments that are prominent in Simon's works.

### Charity auction details

Many thanks to all those individuals and businesses that have contributed items to our 2022 conference charity auction. At every conference we run a charity auction, this is typically a relaxed and fun event, where we encourage outrageous bidding wars over such treasure as orchid portraits. The delight we take in the fervour of our conference participants' eagerness for botanical swag is twofold, firstly, it's pretty funny, secondly, all proceeds are split between our John Sawyer Plant Conservation Fund and our David Given Threatened Plant Research Scholarship. The auction at this year's conference will take place on Sunday afternoon/evening, we encourage folks to check out the auction tables and enjoy some light refreshments after they've registered (registration opens at 4:30pm). Most of the items up for grabs at this year's conference will be sold via silent auction, but the most fantastic prizes will be auctioned live by one of our enthusiastic auctioneers (at approximately 6:00pm).

### Bowling and botanical mingle

**When:** Monday 5th December 5:00 - 7:00pm

**Where:** Queenstown Bowling Club, 19 Park Street

**About:** Shake off your 'I've been sitting in a chair all day' conference funk and join us for a late afternoon game of lawn bowls at the Queenstown Bowling Club (19 Park Street) situated amidst picturesque Queenstown Gardens. No need to wear white but please leave your heels at home. Grab a drink from the bar, pick up a bite, and continue that heated discussion you were having about the reclassification of *Weinmannia*. There is a \$20 fee to attend this event and there is a limit to how many the venue can hold. Please get in touch with a conference organiser if you want to attend but have not signed up when you registered for the conference.

### 2022 NZPCN awards ceremony at the conference

**When:** Tuesday 6th December 5:00 - 7:00pm

**Where:** Clancy's Room, QT Queenstown and Rydges Lakeland Resort

**About:** We're very pleased to be hosting the NZPCN awards ceremony on the Tuesday evening of our conference. Everyone is invited to attend our biennial awards event where we will announce the winners for the following categories: individual, school, plant nursery, community group, young plant conservationist, lifetime achievement award, plus a 2022 special award. This glamorous lightly catered event, hosted by Sarah Beadel and Joanna Smith, commences at 5:00pm after the day's talks. Dress code: Black tie optional (tramping boots acceptable).

# Queenstown Lakes District restoration pathways workshop

The NZPCN are excited about the opportunity for our 2022 conference to generate an additional output beyond the general engagement and knowledge sharing resulting from a conference format. We have invited all conference participants (and *Trilepidea* readers) to contribute stories about their restoration experiences in the Queenstown Lakes District region. These have been collated and will be reviewed with the goal of producing a synthesis document which focuses on restoration pathways.

All conference participants that are currently or have formerly been involved in a restoration project in the Queenstown Lakes District region were asked to consider submitting a restoration story/stories. Stories can be anonymous, and while it would help to have specific locations, those details can be omitted if we were provided with specific details of local climate/terrain. We encouraged folks with multiple examples to submit a story for each. In order to make this process simple, and fast, we sent a template to *Trilepidea* readers and conference participants. As we can continue to collate examples we have also included this template at the end of this conference handbook. If you still intend to submit restoration stories please complete as much of the template as you can, and if you have queries, don't hesitate to get in touch with Alex Fergus.

It's important to note that we are interested in all facets of restoration for the workshop, the full continuum from unassisted (natural) recovery to intensively assisted recovery (we're focusing on the intervention continuum of Chazdon et al. 2021 as opposed to the active/passive restoration dichotomy). Putting that in a Queenstown Lakes District perspective, perhaps you've observed the first broadleaf forest species recruit into a patch of local mānuka scrub without any help, or near the other end of the continuum, perhaps you've blocked drains, rewetted paddocks, removed willows and planted intensively to convert pasture back to wetland. Our scope is wide. Projects will also be very different in terms of time, some may only be a few years old, some might stretch to decades. And we want to hear about both successes and failures, both are equally important.

All stories will be reviewed along with existing literature, and we will endeavor to draw out commonalities. In a workshop-style format on Tuesday afternoon of the conference we will work as a group to synthesize these commonalities, identifying areas of oversimplification or adding examples that have been missed. At this stage it's tricky to pre-empt the nature of the output of this work. One option would be to generate simple state-and-transition diagrams for different ecosystem or vegetation types, identifying transitions and the factors that did (or did not) impact on them. The broader goal would be to identify successful pathways that could guide future restoration work in the region. No matter what the output, all conference participants who want to, and all story contributors will be welcomed as authors on the final synthesis document which will be published in *Trilepidea* and as a standalone document that will be free to download from the NZPCN website.

## References:

Chazdon, R., Falk, D., Banin, L., Wagner, M., Wilson, S., Grabowski, R. & Suding, K. 2021. The intervention continuum in restoration ecology: rethinking the active-passive dichotomy. *Restoration Ecology*. 10.1111/rec.13535.

# COVID-19 protocol

This is the fourth version of the NZPCN 2022 conference COVID-19 protocol and we will continue to alter the protocol as government recommendations and infection levels around the country change. The government's current COVID-19 protection framework has no specific actions that pertain to an event like our conference.

The NZPCN conference committee has opted to contact all conference participants with a wellness reminder 72 hours before the conference commences. We will be asking all participants to consider staying home and not attending the conference if they are unwell in any way. Any last-minute cancellations due to illness will be fully refunded. Additionally, we encourage all conference participants to take a RAT test 24 hours before arriving at the conference.

As per our conference code of conduct, we are dedicated to creating a positive, supportive and rewarding experience for everyone involved in this conference. We ask you to look out for one another and contribute towards a safe environment where people are treated with dignity and respect, feel comfortable and encouraged, feel their opinions are valued, and can speak without fear. Be conscientious about how your actions and comments might be perceived or misunderstood by others. There are a multitude of COVID-19 related attitudes and behaviours held by New Zealanders, we ask you to extend our code of conduct to these. Please respect conference participants who wish to wear masks or maintain social distancing during the conference if that is their preference.





# Whakatipu Basin Map

The Whakatipu Basin has a distinctive landscape characterised by a variety of landforms, reflected by the diverse habitats across the area. At its centre lies Lake Whakatipu, New Zealand's longest lake. This map provides an overview of points of interest, with further information is on the next page.



## Key

- Self-guided walks
- Workshop Location
- Field Trip Locations
- Conference venue
- Social Event
- TSS Earnslaw
- Skyline Gondola
- Public Bus Stop
- Airport
- Field Trip Shuttle

## Self-guided walks

We have presented a selection of walks located close to Queenstown where visitors can enjoy scenery, history and of course native plants. The Whakatipu Basin sits at a geological crossroads and offers visitors access to a wide variety of landforms and associated ecosystems and plant communities. A self-guided walk is a great way to explore! The locations of these walks are highlighted with a small orange icon on the map on the previous pages, categorised a-l. Please follow the links below to see species lists for these walks.

### Moke Lake (a)

Originally the area would have been beech dominated with low-stature vegetation in places. Past fires have resulted in a mosaic of grey shrubland and sub-alpine tussock grassland species. Small populations of *Veronica cupressoides* (Threatened - Nationally Endangered) can be found on the western side near the lake edge and diverse wetland species can be seen along a boardwalk portion of the track which passes through a wetland at the southern end of the lake.

**Directions:** From Queenstown, drive along the road to Glenorchy for about ten minutes to the Moke Lake Road turn off. Drive up a steep and windy road before you reach an unsealed gravel road which will take you past the smaller Lake Kirkpatrick, before arriving at Moke Lake.

**Difficulty:** Easy - 1 hour loop

**Species list for Moke Lake Track:** <https://www.nzpcn.org.nz/publications/plant-lists/plant-lists-by-region/moke-lake-loop-track-moke/>

### Mt Crichton (Sam Summers) (b)

**Description:** This track winds up through mountain beech and mānuka, offering views of Lake Dispute and glimpses of Lake Whakatipu eventually coming out into the open above Lake Dispute. Significant amounts of gold were recovered here in the past - keep your eyes open for signs of gold mining activities and the historic Sam Summers Hut (a small side track leads to a rock tunnel near the hut which was once used as a tail race). A variation to this walk also goes past Lake Dispute, at the head of which can be found two ancient gnarly *Olearia hectorii* (Threatened-Nationally Endangered).

**Directions:** The track starts from a car park 12 km from Queenstown on the Glenorchy-Queenstown Road.

**Difficulty:** An easy, well signposted family friendly walk that takes between 2-4 hours to complete (1 hour to access Sam Summers Hut from the carpark).

**Species list for Mt Crichton Track:** <https://www.nzpcn.org.nz/publications/plant-lists/plant-lists-by-region/mt-crichton-mtch/>

### Bob's Cove/Punatapu Bridle Track (c)

**Description:** An area of mixed beech-podocarp-broadleaf forest which is significant within the Whakatipu Basin and gives a fragmented snapshot of the original, pre-human vegetation of the lakeshore. The walk encompasses areas regenerating to forest via bracken and an area of manuka shrubland. Following the track north-east up the shoreline (left) leads to an historic lime kiln and to a high viewpoint. Following the track south-west along the shore (right) brings you along an old bridle track through tall red beech then along the lake shore. Highlights include coastal turf plants, diverse ferns, mountain beech with southern rātā and mataī and also cliff vegetation with *Pachycladon cheesemani* (Threatened-Nationally Endangered).

**Directions:** 16 minutes' drive from central Queenstown. Take the Glenorchy-Queenstown Road west along Lake Whakatipu. Look out for Bob's Cove Nature Track and Nature Trail carpark signposted 14 km from Queenstown.

**Difficulty:** Easy (1-2 hour return).

**Species list for Bob's Cove Track:** <https://www.nzpcn.org.nz/publications/plant-lists/plant-lists-by-region/bobs-cove-queenstown-383b/>

### One Mile (d)

**Description:** Refresh your mind and take advantage of this conveniently located track just five minutes walk from the conference venue. The One Mile Track is a hidden forest walk up a gorge complete with dripping ferns. It passes through regenerating and opportunistic native bush before heading into the closest beech-mixed broadleaf forest to the town centre. The track starts at the Powerhouse near the Fernhill roundabout and will take you to a creek with a small waterfall. The track follows an old pipeline up to the One Mile Dam, one of New Zealand's first hydro-electric power schemes..

**Directions:** The track starts at the Fernhill (One Mile) roundabout at the end of Lake Esplanade Road.

**Difficulty:** Medium - advance (steep). 1 - 1 hour 30 min return. Note, this track is marked, but not currently maintained, so route finding skills may be necessary.

**Species list for Fernhill (One Mile) Track:** <https://www.nzpcn.org.nz/publications/plant-lists/plant-lists-by-region/fernhill-track-frnh/>

### Ben Lomond (e)

**Description:** Views from this iconic spot reward dedicated walkers who climb this steep track - however beware this walk requires experience and time. Starting off in a Douglas fir plantation the track passes through remnant mountain beech patches then into subalpine grassland/shrubland with a good diversity of herbs, shrubs and grasses in places scattered with young Douglas fir. Take note of the named plots kept free of Douglas fir by volunteers.

**Directions:** Start from the Skyline Access Road/Tiki Trail. Access by gondola or walk from bottom on a good track but watch for mountain bikes at crossings.

**Difficulty:** Difficult and recommended for experienced trampers. High altitude steep track which is exposed to weather. Be prepared for snow even during summer and wear suitable clothing and carry drinking water. 3-4 hours return to Ben Lomond Saddle, 6-8 hour return to Ben Lomond Summit. The track gets rougher from Ben Lomond Saddle towards Ben Lomond Summit.

**Species list for Ben Lomond Track:** <https://www.nzpcn.org.nz/publications/plant-lists/plant-lists-by-region/fernhill-track-one-mile-track-queenstown-403b/>

### Queenstown Gardens (f)

**Description:** Established in 1866, the gardens are a tranquil lakeside sanctuary with shady lawns and benches, a children's playground, memorials to Robert Falcon Scott and William Gilbert Rees and the chance to play a round of disc golf, lawn bowls or tennis. Follow the trail around the garden peninsula. After the gardens you can continue on the wide track along the lake shore. There are plenty of benches for you to stop and take in the views across Lake Whakatipu to the Kelvin Peninsula and Cecil and Walter Peak. Or, if you've stretched your legs enough, head back the way you came, or cut across the peninsula along Park Street, and head back to town to explore the boutiques, cafés, and bars.

**Directions:** Start your walk at Queenstown Bay beach and take the Queenstown Trail into the Queenstown Gardens.

**Difficulty:** Easy. Wheelchair accessible and ideal for families with pushchairs. 1.5 hour return.

## Queenstown Hill (g)

**Description:** This is a quick walk which is centrally located and offers stunning views without too many botanical distractions! Queenstown Hill offers panoramic views over the Whakatipu Basin, including good views of the Frankton Arm and Queenstown Bay and Cecil Peak (part of the Bayonet Range, Eyre Mountains on the far side of the Lake).

**Directions:** The track starts from Belfast Street, Queenstown.

**Difficulty:** Medium - gradual yet steady climb. 1 - 1.5 hour loop.

## Tucker Beach (h)

**Description:** This walk takes you along terraces above a braided river system where you may see birds such as tarapiroe/black-fronted tern (Threatened Nationally Endangered), and tarāpuka/black-billed gull and banded dotterel (At Risk - Declining). An ambitious ecological restoration project is underway to manage the wide variety of woody weeds and reinstate appropriate native vegetation and create greater space for riverbed nesting birds. This trail opened in Oct 2018 and was gifted to the community to mark 75 years of Rotary's involvement in the Whakatipu area.

**Directions:** Turn off SH6 left onto Tucker Beach Road just before crossing the Shotover River. Park at the Rotary Carpark at the Old Shotover River Bridge.

**Difficulty:** Easy with a few steeper sections. Allow 1.5 hours, return via same track.

## Bush Creek (i)

**Description:** This walk takes you from Whakatipu Reforestation Trust plantings on the banks of the Arrow River at Arrowtown, climbing up steadily through beech, Olearia shrubland and up to subalpine snow tussock and the corpses of Douglas firs. Historic structures such as stone walls, irrigation pipes and the remains of Arrowtown's outdoor ice skating rink can be seen, after which a newly constructed steeper portion of the track leads to an open basin. A separate track branches off to Sawpit Gully allowing you to extend your walk for a couple of hours (additional route not described here). Return via the same way.

**Directions:** Park at the Historic Arrowtown Chinese Settlement and follow the track west along the true left bank of Bush Creek. Start the walk from the trail noticeboard at Butlers Green at Arrowtown.

**Difficulty:** Easy, though sturdy footwear recommended for steeper sections. 1 hour return

**Species list for Bush Creek Track:** <https://www.nzpcn.org.nz/publications/plant-lists/plant-lists-by-region/bush-track-arrowtown-381b/>

## Lake Hayes / Waiwhakaata (j)

**Description:** The Lake Hayes track is a tranquil lake loop walk offering panoramic and picturesque views of the surrounding mountains. It boasts a healthy population of the pūteketeke / Australasian crested grebe (Threatened - Nationally vulnerable) among other various wetland bird species. It is a short undulating walk (or run or cycle) track that passes through clusters of Carex species found growing along the southern edge of Lake Hayes. You can observe the various restoration projects underway to help improve the health of the Lake whilst strolling along.

**Directions:** 16 minutes' drive from central Queenstown. Can be accessed from State Highway 6. The track has multiple access points.

**Difficulty:** Easy, 2-3 hour loop.

## Lake Alta (k)

**Description:** A popular walk up through the ski area passing wonderful wetlands, *Chionochloa macra* grassland with many herbs (most are flowering spring and summer) to climb over cushion fields and fellfield. Descend the same way, or from the lake follow flagstones and cairns through boulderfields and herbfields to reach the viewpoint at the top of the Shadow Basin ski lift with wonderful views of Queenstown and lakes. Follow back down through the ski area or through more wetlands and herbfields.

**Directions:** Drive up the Remarkables Ski area Road from SH6 and park at the ski area base buildings. Note that there is a \$10 toll per vehicle to use the access road, payable by card at the barriers at the base of the road.

**Difficulty:** Difficult due to rough terrain in places and steepness beyond Lake Alta. Be prepared for snow in summer at this altitude and dress suitably for the conditions. 1.5 hours from ski area buildings to the lake - return the same way.

**Species list for Rastus Burn wetland (near Lake Alta):** <https://www.nzpcn.org.nz/publications/plant-lists/plant-lists-by-region/rastus-burn-wetland-q305/>

## Jack's Point (l)

**Description:** A pleasant walk showcasing areas of native planting after the removal of conifers and offering impressive views of Lake Whakatipu. Starting at the Jean Malpas Whakatipu Reforestation Trust Nursery site, carry on along the lakeshore towards Jack's Point - along this route examples of regenerating native vegetation can be observed.

**Directions:** Start at Jardine Park at the end of Poplar Drive on Kelvin Peninsula

**Difficulty:** Medium. 2 hours to Jack's Point, following a gravelled trail. Look out for other users including mountain bikers.

## Lower Wye Creek (m)

**Description:** A steep walk to rocky bluffs with interesting plants and beech forest tucked into a narrow cleft where Wye Creek flows from the Remarkables to Lake Whakatipu. Special plants which can be found with some diligence on the bluffs include *Pachycladon cheesemani* (Threatened - Nationally Endangered), *Myosotis goyenii* (At Risk - Naturally Uncommon) and *Anisotome caudicola* (At Risk - Declining) on bluffs and *Veronica cupressoides* (Threatened - Nationally Endangered) on right lower cliffs.

**Directions:** 25 min drive south on SH6 towards Kingston/Invercargill. After a few bends pass Drift Bay Rd on right, then c. 50 m to farm gate on left (extensive native planting opposite.) Park in the obvious grassy area a short way up the rough track. This steep track follows the pipeline from the dam and leads you to the foot of a rocky bluff. A further walk through beech forest takes you to the stream in the Lower Wye Creek basin. The views back to Lake Whakatipu and Bayonet Peaks are spectacular.

**Difficulty:** Hard (6.6 km return via same track).

**Species list for Doolan Faces (Lower Wye Creek):** <https://www.nzpcn.org.nz/publications/plant-lists/plant-lists-by-region/wye-creek-doolan-faces-418b/>

## Workshops - Sunday 4th December

Thanks to all of you who have registered for our workshops. Information on where to go, what to bring and how to contact workshop coordinators will be provided in standalone documents which will be emailed to participants beforehand. All workshops are un-catered except Workshop 5: Botanical Illustration.

### Workshop 1 - Starting your own community nursery

**When:** 10:00am - 12:00pm

**Where:** Jean Malpas Community Nursery, Kelvin Peninsula

**Workshop Leaders:** Ben Teele supported by Arne Cleland and Chris Rance

**About:** We will be covering basic knowledge required to operate a small low tech community nursery. This will include knowledge of the plants you want to grow and the basic horticultural techniques/practises to grow them. Also the essential infrastructural facilities and materials required to establish a successful nursery. There will be plenty of Q&A time.

### Workshop 2 - Propagation of native plants

**When:** 1:00pm - 4:00pm

**Where:** Jean Malpas Community Nursery, Kelvin Peninsula

**Workshop Leaders:** Arne Cleland supported by Ben Teele, Chris Rance and Helen McPhail

**About:** We will cover the basics of growing from seed and cuttings within a low-tech nursery. Also included will be what is ecosourcing and its importance. We will have some practical demonstrations and hands-on experience time. There will be plenty of Q&A time.

### Workshop 3 - Plant identification course - New Zealand grasses (*Poaceae*)

**When:** 9:00am - 12:00pm

**Where:** Coronet Peak

**Workshop Leaders:** Kerry Ford

**About:** An introduction to the main grass genera you are likely to run into in the mountains and how to tell them apart. Time will be spent outside collecting grasses before we move inside to focus on basic grass morphology and get you using the NZ Grass Key (Lucid multi-access key).

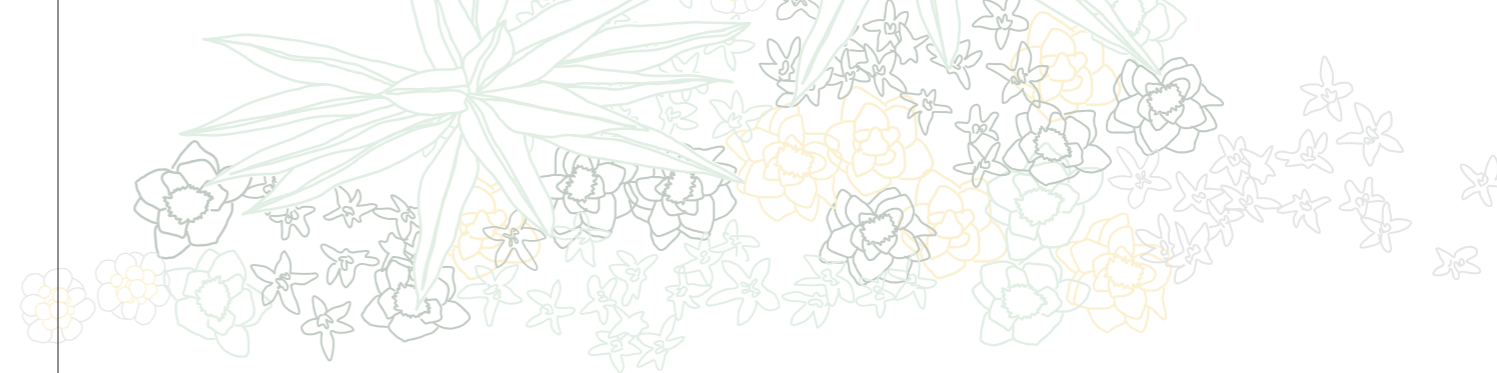
### Workshop 4 - Plant identification course - New Zealand sedges (*Cyperaceae*)

**When:** 1:00pm - 4:00pm

**Where:** Coronet Peak

**Workshop Leaders:** Kerry Ford

**About:** Introduction to the NZ Carex Key (Lucid multi-access key). Time will be spent outside collecting sedges before we move inside to focus on basic sedge morphology and how to recognise genera.



### Workshop 5 - Botanical illustration

**When:** 9:00am - 4:00pm

**Where:** Sherwood

**Workshop Leaders:** Laura Shallcrass

**About:** In this workshop we'll be exploring the visual nature of plants. We'll complete a series of drawing exercises aimed at creative representation of botanical features, including structure and proportion, linework, shading and colour and artwork composition. This workshop is suited for all levels of artistic and botanical experience.

### Workshop 6 - Botanising with iNaturalist

**When:** 10:00am - 12:00pm

**Where:** Kiwi Park

**Workshop Leaders:** Colin Meurk with support from Jon Sullivan

**About:** This consists of two contiguous 1-hour workshops back-to-back in one session (10:00-12:00). The first will be a beginners or refresher course - remembering to record flower/fruit state. Then you will take your iNaturalist experience to the next level learning how to do things like tagging and editing observations; curating the iNaturalist species tree and nomenclature; streaming iNaturalist observations to external websites; and connecting R to iNaturalist for data analysis.

### Workshop 7 - Lichens workshop

**When:** 1:00pm - 4:00pm

**Where:** Kiwi Park

**Workshop Leaders:** Melissa Hutchison and Marley Ford

**About:** Come and learn about the fascinating world of lichens - their habitats, ecological roles, and how to identify them. The workshop will involve a brief local field excursion (to get a feel for the substrates and habitats occupied by different lichen species), as well as an indoor session on lichen identification using keys and lab techniques.

### Workshop 8 - Using direct seeding for large-scale native afforestation

**When:** 1:00pm - 4:00pm

**Where:** Crown Range

**Workshop Leaders:** Pieter Brits and Tim Whittaker

**About:** This workshop is being coordinated externally by Seed NZ Natives and will focus on a demonstration of the technology they've been developing for direct seeding native plants for restoration. Contact Pieter Brits for details ([seedznatives@gmail.com](mailto:seedznatives@gmail.com))

# Field Trips - Wednesday 7th December

Thanks to all of you who have registered for our field trips. Participants of field trip 1 will meet at Steamer Wharf, 88 Beach Street, Queenstown, outside the REALnz visitor centre. Participants of the other three field trips will depart from bus stop on Athol Street. Details for each field trip will be provided to participants in standalone documents which will be emailed to participants beforehand. All field trips are un-catered except field trip 1.

In the event of an extremely poor weather forecast, field trips may be cancelled. All efforts will be made to fully-refund cancelled field trips. Any updates to field trip details will be announced at the close of the plenary session on Tuesday 6th December.

The Department of Conservation Whakatipu District Office has been very supportive in providing an authorisation for our workshops and field trips. We ask all field trip and workshop participants to observe two basic principles:

- Take care to ensure all field clothing and equipment is thoroughly clean to prevent spread of weeds, pest plants or infection
- Do not collect plant material. An exception has been made for workshops 3 and 4 where material for the workshop can be collected following certain criteria which Kerry will oversee.

## What to bring on all field trips:

- Sturdy, covered footwear (no uncovered feet, jandals or sandals please)
- Suitable clothing for rain, cool temperatures, or warm conditions (layers are best)
- Sunscreen and a sun hat
- A hand lens (obligatory)
- Camera, binoculars
- Refillable water bottle

## Field Trip 1 – Islands

**When:** 8:30am - 5:00pm

**Where:** Walter Peak and Wāwāhi Waka / Pigeon Island.

**Meet:** Steamer Wharf, 88 Beach St

**Intensity:** Medium

**Field Trip Leaders:** Rowan Hindmarsh-Walls with support from Neill Simpson and Tony McQuilkin

**About:** Water taxi to Walter Peak station, where hectares of Douglas fir have been removed and there is now an extensive native restoration project. Walk along the lake edge to the DOC camping site and inspect the amazing growth after 6 years. A water taxi will then take you to Wāwāhi Waka / Pigeon Island. Wāwāhi Waka is predator free with wonderful bird song. The mature red beech forest contains the only pōkākā, tūrepo and kahikatea in the district with mataī and tōtara. Extensive restoration after 2 fires has also occurred. Note that all boat trips and lunch are included in the price.

## Field Trip 2 – Mountains

**When:** 9:00am - 5:00pm

**Where:** Lake Alta and the Remarkables Ski Area

**Meet:** Athol St bus stop

**Intensity:** Medium-high

**Field Trip Leaders:** Arne Cleland and Joanna Smith with support from Melissa Jager and Ross Lawrence

**About:** Lake Alta - located within the stunning Remarkables Conservation Area at an elevation of 1800m, is the easiest high alpine environment you will access on foot! This walk boasts amazing alpine scenery, including wetlands, cushion fields and tussock grassland. This diversity of habitats begets a diversity of alpine species including *Myosotis bryonoma* (first described in 2018) as well as *Hectorella caespitosa*, *Leucogenes grandiceps*, and *Ranunculus buchananii*. We will also look at the restoration and transplanting of alpine communities including tussock grasslands undertaken by NZ Ski.

## Field Trip 3 – Drylands

**When:** 8:30am - 5:00pm

**Where:** Crown Range; Butterfield Wildlife Management Area; Māhaka Katia (Pisa Flats) Scientific Area, Cromwell Chafer Beetle Scientific Reserve; Roaring Meg

**Meet:** Athol St bus stop

**Intensity:** Medium

**Field Trip Leaders:** Geoff Rogers and Brian Rance with support from Jesse Bythell

**About:** A whistle-stop tour of several significant dryland sites to learn about their specialised flora, unique management challenges and restoration efforts. Our first stop is Butterfield Wildlife Management Area where we will hear about restoration planting efforts including rare shrub species. Lunchtime will see us settled in at Māhaka Katia/Pisa Flats Scientific Reserve where we will hear from Ellery Mayence (DOC rare ecosystem science lead) about monitoring work at this highly significant site. Be prepared to get down on your hands and knees and marvel at tiny, threatened dryland plants like *Lepidium solandri* and *Raoulia monroi*. Then we'll swing by the Cromwell Chafer Beetle Scientific Reserve and head back to Queenstown via the Kawarau Gorge with a short stop at Roaring Meg to see an example of broadscale conifer removal.

## Field Trip 4 – Restoration Sites

**When:** 8:30am - 5:00pm

**Where:** Lake Hayes, Whitechapel, Feehly Hill, Slope Hill, Treespace/Coronet Forest, Morning Star Reserve, Tucker Beach

**Meet:** Athol St bus stop

**Intensity:** Low

**Workshop Leaders:** Ben Teele and John Barkla

**About:** A terrific tiki tour of native community restoration sites across the Wakatipu Basin, including grey shrubland, riparian, and forest sites encompassing a range of habitats and threatened species.

# Conference programme overview

## Sunday 4th December 2022

- Workshops: 9:00am – 4:00pm, various locations
- Registration, Akaaka art showcase and charity auction 4:30-7:00pm, Clancy's Room

## Monday 5th December 2022

- Registration: 8:00 – 8:30am, Clancy's Room
- Whakatau - welcome: 8:30 – 8:50am, Queenstown and Wakatipu Rooms
- Session 1 - Restoring threatened native plant populations, keynote: Geoff Rogers, 8:50 – 9:30am, Queenstown and Wakatipu Rooms
- Session 1 presentations: 9:30 – 10:30am, Queenstown and Wakatipu Rooms
- Session 2 - Monitoring restoration projects, presentations: 11:00am- 12:00pm, Queenstown and Wakatipu Rooms
- Session 3 - Iwi/hapū led restoration processes and case-studies, keynote: Estelle Pērā-Leask, 1:00 – 1:40pm, Queenstown and Wakatipu Rooms
- Session 3 presentations: 1:40 – 2:20pm, Queenstown and Wakatipu Rooms
- Poster session: 2:20 – 2:45pm, Clancy's Room
- Session 4 - Engagement and education, presentations: 3:10 – 4:30pm, Queenstown and Wakatipu Rooms
- Bowling and botanical mingle: 5:00-7:00pm, Queenstown Bowling Club, 19 Park Street

## Tuesday 6th December 2022

- Registration: 8:00 – 8:30am, Clancy's Room
- Conference updates: 8:30 – 8:35am, Queenstown and Wakatipu Rooms
- Session 5 - Ecosourcing, keynote: Peter Heenan, 8:35 – 9:15am, Queenstown and Wakatipu Rooms
- Session 5 presentations: 9:15 – 10:15am, Queenstown and Wakatipu Rooms
- Session 6 - Valuing natural regeneration, presentations: 10:50am – 12:10pm, Queenstown and Wakatipu Rooms
- Poster session (during lunch hour): 12:40 – 1:10pm, Clancy's Room
- Session 7 - Restoration after conifer removal, keynote: Adam Forbes, 1:10 – 1:50pm, Queenstown and Wakatipu Rooms
- Session 7 presentations: 1:50 – 2:50pm, Queenstown and Wakatipu Rooms
- Session 8 - Challenges to scaling up restoration projects, presentations: 3:20 – 4:00pm, Queenstown and Wakatipu Rooms
- Queenstown Lakes District restoration pathways workshop: 4:00 – 4:25pm, Queenstown and Wakatipu Rooms
- Conference closing: 4:25 – 4:30pm, Queenstown and Wakatipu Rooms
- NZPCN awards ceremony at the conference: 5:00 – 6:30pm, Clancy's Room

## Wednesday 7th December 2022

- Field trips: 8:00am – 5:00pm, various locations.

# Detailed programme

## Sunday 4th December – Workshops and registration

- 10:00am – 12:00pm: **Workshop 1 - Starting your own community nursery**, Jean Malpas Community Nursery, Kelvin Peninsula
- 1:00 – 4:00pm: **Workshop 2 - Propagation of native plants**, Jean Malpas Community Nursery, Kelvin Peninsula
- 9:00am – 12:00pm: **Workshop 3 - Plant identification course - New Zealand grasses (*Poaceae*)**, Coronet Peak
- 1:00 – 4:00pm: **Workshop 4 - Plant identification course - New Zealand sedges (*Cyperaceae*)**, Coronet Peak
- 9:00am – 4:00pm: **Workshop 5 - Botanical illustration**, Sherwood
- 10:00am – 12:00pm: **Workshop 6 - Botanising with iNaturalist** - Kiwi Park
- 1:00 – 4:00pm: **Workshop 7 - Lichens workshop** - Kiwi Park
- 1:00 – 4:00pm: **Workshop 8 - Using direct seeding for large-scale native afforestation** - Crown Range
- 4:30 – 7:00pm: **Registration, Akaaka art showcase, charity auction** - Clancy's Room, QT Queenstown and Rydges Lakeland Resort

## Monday 5th December – Presentations and bowling and botanical mingle

- 8:00 – 8:30am: **Registration**, Clancy's Room

All Plenary sessions are located in Queenstown and Wakatipu Rooms of QT Queenstown and Rydges Lakeland Resort

- 8:30 – 8:50am: **Whakatau - Welcome**

### Session 1: Restoring threatened native plant populations

Session chair: John Barkla

- 8:50 – 9:30am: **Session 1 keynote address, Geoff Rogers** - Self-help or life support: triaging recovery of threatened plants of Queenstown Lakes District
- 9:30 – 9:50am: **Robyn Smith** - Preventing the extinction of *Leptinella nana* in Whitireia Park, Porirua - following in the footsteps of Tom Moss
- 9:50 – 10:10am: **Emma Simpkins** - From regional to national scales: local council approach to plant conservation
- 10:10 – 10:30am: **Carlos Lehnebach** - Orchid conservation in New Zealand: the challenges and recent breakthroughs
- 10:30 – 11:00am: **Morning tea** - 5th floor pre-function area

### Session 2: Monitoring Restoration Projects

Session chair: Alex Fergus

- 11:00 – 11:20am: **Rebecca Teele** - Restoration monitoring in the Queenstown Lakes District
- 11:20 – 11:40am: **Anita Benbrook** - Monitoring Wellington City Councils restoration sites - developing a new tool

### Other topics included within session 2

- 11:40am – 12:00pm: **Luke Liddell** – Wild harvested tōtara berries as an incentive for conservation on private land
- 12:00 – 1:00pm: **Lunch** – Bazaar restaurant

### Session 3: Iwi/hapū led restoration processes and case-studies

Session chair: Jesse Bythell

- 1:00 – 1:40pm: **Session 3 keynote address, Estelle Pērā-Leask** – Te Korowai kia uru ora o Te Taurapa o te Waka a Māui – PF2050 Leading edge technology supports kaitiaki o Murihiku to restore the mauri (life force) of Bluff Hill Motupōhue.
- 1:40 – 2:00pm: **Lisa Forester, Stephanie Tong, Winiwini Kingi** – Successful partnerships for restoration outcomes
- 2:00 – 2:20pm: **Mike Thorsen** – Using Pākehā information to inform Māori restoration projects
- 2:20 – 2:45pm: **Poster Session** – Clancy's Room
- 2:45 – 3:10pm: **Afternoon tea** – 5th floor pre-function area

### Session 4: Engagement and education

Session chair: Sarah Beadel

- 3:10 – 3:30pm: **Kerri Lukis** – Protecting the gains: Securing enduring outcomes for Jobs for Nature projects through legal protection
- 3:30 – 3:50pm: **Philip Smith** – Transmission
- 3:50 – 4:10pm: **Brooke Clark** – Collaborating to achieve conservation goals
- 4:10 – 4:30pm: **Taylor Davies-Colley** – Ngā Taonga ki te Ngāhere o Tāne: The Treasures of the Forest of Tāne
- 5:00 – 7:00pm: **Bowling and botanical mingle** – Queenstown Bowling Club, 19 Park Street (Queenstown Gardens)

## Tuesday 6th December – presentations and NZPCN 2022 Awards Ceremony

- 8:30 – 8:35am: **Conference Updates**

### Session 5: Ecosourcing

Session chair: Shannel Courtney

- 8:30 – 9:15am: **Session 5 keynote address, Peter Heenan** – The myth of 'local' ecosourcing and the paradigm of eco-evolutionary regions to provide resilient conservation outcomes.
- 9:15 – 9:35am: **Tom Ferguson** – The fun and challenges of ecosourcing in lowland Canterbury
- 9:35 – 9:55am: **Matt Ward** – Ecosourcing in practice

### Other topics included within session 5

- 9:55 – 10:15am: **Marley Ford** – What are the Mycorrhizal communities' role in restoration?
- 10:15 – 10:50am: **Morning tea** – 5th floor pre-function area

### Session 6: Valuing natural regeneration

Session chair: Melissa Hutchison

- 10:50 – 11:10am: **Robyn Simcock** – Accelerating regeneration in planted areas using canopy gap makers and seedling-friendly substrates
- 11:10 – 11:30am: **Cara-Lisa Schloots** – Mahu Whenua transects: over two decades of vegetation change in Central Otago tussock grasslands
- 11:30 – 11:50am: **Alex Fergus** – Facilitating natural woody regeneration

### Other topics included within session 6

- 11:50am – 12:10pm: **Richard Ewans** – How do we prioritise where restoration happens and maximise the value of native revegetation and natural regeneration in Otago? Recent GIS mapping tools at ORC.
- 12:10 – 1:10pm: **Lunch** – Bazaar restaurant

### Session 7: Restoration after conifer removal

Session chair: John Barkla

- 1:10 – 1:50pm: **Session 7 keynote address, Adam Forbes** – Restoring the damaged lands – An overview of clear-fell restoration in Aotearoa/New Zealand.
- 1:50 – 2:10pm: **Ben Teele** – What follows after – the challenges of restoration in Central Otago
- 2:10 – 2:30pm: **Briana Pringle** – Coronet Forest
- 2:30 – 2:50pm: **Rhys Millar** – Lessons from a large-scale project to transform *Pinus radiata* forest into indigenous forest
- 2:50 – 3:20pm: **Afternoon tea** – 5th floor pre-function area

### Session 8: Challenges to scaling up restoration projects

Session chair: Jesse Bythell

- 3:20 – 3:40pm: **Caitlin Daley** – Challenges to using one size fits all approaches in wetland management
- 3:40 – 4:00pm: **Janice Lord** – Challenges to seed-based restoration
- 4:00 – 4:25pm: **Queenstown Lakes District restoration pathways workshop**
- 4:25 – 4:30pm: **Conference closing**
- 5:00 – 7:00pm: **NZPCN 2022 awards ceremony** – Clancy's Room

## Wednesday 7th December – Field Trips

Participants of field trip 1 will meet at Steamer Wharf, 88 Beach Street, Queenstown, outside the REALnz visitor centre.

Participants of field trips 2, 3, and 4 will depart from the bus stop on Athol Street. (See map on pages 14-15)

- 8:30am – 5:00pm: **Field Trip 1 Islands** – Walter Peak and Wāwāhi Waka/Pigeon Island
- 9:00am – 5:00pm: **Field Trip 2 Mountains** – Lake Alta and the Remarkables ski area
- 8:30am – 5:00pm: **Field Trip 3 Drylands** – Crown Range; Butterfield Wildlife Management Area; Māhaka Katia (Pisa Flats) Scientific Area; Cromwell Chafer Beetle Scientific Reserve; Roaring Meg
- 8:30am – 5:00pm: **Field Trip 4 Restoration sites** – Lake Hayes, Whitechapel, Feehly Hill, Slope Hill, Treespace/ Coronet Forest, Morning Star Reserve, Tucker Beach.

# Programme with abstracts

## Monday 5th December – Queenstown and Wakatipu Rooms

### Session 1: Restoring threatened native plant populations

Session chair: John Barkla

#### Session 1 keynote address

##### Self-help or life support: triaging recovery of threatened plants of Queenstown Lakes District

8:50 – 9:30am – Geoff Rogers (private individual)

[bogpine@xtra.co.nz](mailto:bogpine@xtra.co.nz)

#### BIO

Geoff Rogers is a renowned New Zealand botanist and plant ecologist based in Wānaka. Geoff's research and advocacy spans conservation ecology, taxonomy, vegetation classification, plant-animal interactions, landscape history, high-country management and beyond. Geoff's contribution to the New Zealand botanical and ecological cannon spans almost five decades and continues in his role as Research Associate with the Department of Conservation. With more time on his hands and a love of flying, Geoff now enjoys whole new perspectives on landscapes from the cockpit of his aircraft. Back on ground he's kept busy turning a lifetime's collection of native timber into exquisite furniture. The NZPCN conference committee is honoured to have Geoff launch our first session Restoring threatened native plant populations with his keynote address *Self-help or life support: triaging recovery of threatened plants of Queenstown Lakes District*.

#### ABSTRACT

Intuitively, we have two simple choices for incorporating threatened and rare plants in the restoration of native vegetation: rebuild the basic community with the commonplace and hardy and rare plants will eventually follow versus resuscitation by planting. Yet the devil-in-the-detail, ecological reality of either option is rather more complicated and compromised by shortfalls in experimental knowledge. This talk will gauge those restoration options for the Queenstown Lakes District' rare flora arrayed across the physical geography gradient of steep mountain-lands and glacial lakes to subdued ranges and dryland basins. Fundamental to the exercise is an understanding of species' biology and landscape history that leads to a plant's threatened or rare status. Examining that theme and apportioning Lakes District rare plants to broad ecosystem categories such as valley slopes, alluvial flats, wetlands, and cliffs and rock outcrops, we might economically build a science platform for each species-habitat couplet to guide hands-on or hands-off decisions. The sobering caveat, however, is that site options for restoring lowland depleted plants are themselves bleak because of increasing greening of that landscape.

#### Session 1 presentation 1

##### Preventing the extinction of *Leptinella nana* in Whitireia Park, Porirua – following in the footsteps of Tom Moss

9:30 – 9:50am – Robyn Smith (Whitireia Park Restoration Group)

[robsmithii@xtra.co.nz](mailto:robsmithii@xtra.co.nz)

#### ABSTRACT

*Leptinella nana*, Aotearoa/New Zealand's favourite plant of the year for 2021, is in trouble. With a Conservation threat status of 'Nationally Critical' and only three known sites remaining in Aotearoa/New Zealand, this tiny perennial herb needs active management to prevent extinction.

There are two sites of *L. nana* in the South Island and only one in the North Island, in Whitireia Park Porirua which has two separate populations. Both sites are severely modified.

My presentation will describe the known history of the plant in Whitireia, the habitat at its current locations and the success of actions that have been undertaken to date. There are a range management issues that could cause the demise of this species in the wild and the Whitireia Park populations of *L. nana* currently need active management, including:

- A small but guaranteed annual fund to maintain and restore the habitat
- Active management including weeding and establishing new areas
- Ongoing study of how best to manage *L. nana* and establish and secure future populations.

#### Session 1 presentation 2

##### From regional to national scales: local council approach to plant conservation

9:50 – 10:10am – Emma Simpkins (Auckland Council)

[emma.bodley@aucklandcouncil.govt.nz](mailto:emma.bodley@aucklandcouncil.govt.nz)

#### ABSTRACT

Auckland Council (AC) is New Zealand's largest local council with resources and staff to design and deliver important region wide environmental initiatives. With the Natural Environment Targeted Rate (NETR), we can invest in activities that support environmental outcomes and community conservation, building capacity for plant conservation to happen across the region. For plant management, we are undergoing a regional review of the threat classification using a panel of experts, following the Department of Conservation (DOC) system and evaluating the pressures of every individual species (with target levels). This will inform species BFAs (Biodiversity Focus Areas) which help us prioritise areas for management where we aim to have a minimum number of sites actively managed for every species. Gaps in our knowledge are supported with target threatened plant surveys and opportunistic seed collections which will be given to the Auckland Botanic Gardens as insurance populations. Auckland Botanic Gardens has facilitated several regional and national plant conservation projects, several co-lead with iwi, and involved DOC, plant experts and other stakeholders. Plants such as *Anogramma leptophylla*, *Pimelea eremitica* and *Metrosideros bartlettii* are species that we contribute to *ex situ* and *in situ* conservation. With a strong *in situ* conservation programme, supported by *ex situ* conservation, we hope to grow the capacity to conserve Auckland's threatened flora.

#### Session 1 presentation 3

##### Orchid conservation in New Zealand: the challenges and recent breakthroughs

10:10 – 10:30am – Carlos Lehnebach (Museum of New Zealand Te Papa Tongarewa), Karin van der Walt (Ōtari Native Botanic Garden), Lara Shepherd (Museum of New Zealand Te Papa Tongarewa), Jennifer Alderton-Moss (Victoria University of Wellington)

[CarlosL@tepapa.govt.nz](mailto:CarlosL@tepapa.govt.nz)

#### ABSTRACT

With more than 100 species, the orchid family is one of the largest families of flowering plants in New Zealand. Although some are shared with Australia and the Pacific, about 70% of the species listed for New Zealand are endemic. Many species are common and widespread across the country, however, some have been reduced to single or disconnected populations. Habitat destruction, habitat invasion, competition by weeds, and illegal collection seem to be the main threats to their conservation. Currently ca. 35% of our orchids are of conservation concern. The prevalence of highly specialised interactions with pollinators and fungal partners, and the limited knowledge of our native orchids' biology, makes conservation of these species a challenging task. In this talk, I will present ongoing research on some of New Zealand's rarest orchids (e.g. *Corybas carsei* and *Gastrodia cooperae*). These studies include pollination biology, genetic diversity, mycorrhizal partnerships, seed germination and long-term storage of seeds and their fungal partner. Information gathered from these studies will inform management protocols and future restoration activities, as well as the creation of back up collections *ex situ*.



## Session 2: Monitoring restoration projects

Session chair: Alex Fergus

### Session 2 presentation 1

#### Restoration monitoring in the Queenstown Lakes District

11:00 - 11:20am - Rebecca Teele (e3Scientific Ltd / Department of Conservation), Melissa Jager (e3Scientific Ltd), Liam Saleminck-Waldren (e3Scientific Ltd)

[rteele@doc.govt.nz](mailto:rteele@doc.govt.nz)

#### ABSTRACT

Over the past 10 to 15 years the scale and number of private restoration projects in the Queenstown Lakes District has increased. This has been driven in part by District Council consenting processes and carbon credit schemes. Private restoration projects can now vary from the planting of 10,000 indigenous plants up to 100,000-plus. Monitoring of projects is required, for example via Council consenting conditions. Different projects require varying types of monitoring information and levels of detail. The information collected during monitoring can include: survival rates, growth rates, photo monitoring points, and/or aerial drone imagery; all of which are undertaken over a range of timeframes. We will present how we have utilised restoration monitoring methods within the Queenstown Lakes District over the past 10 years, as well as learnings and future considerations.

### Session 2 presentation 2

#### Monitoring Wellington City Council restoration sites - developing a new tool

11:20 - 11:40am - Anita Benbrook (Wellington City Council)

[anita.benbrook@wcc.govt.nz](mailto:anita.benbrook@wcc.govt.nz)

#### ABSTRACT

Woefully weedy, windy Wellington provides numerous challenges to restoration planting. From 1992 onwards, 50,000 to 100,000 plants are planted annually. But how well are the sites actually doing? Maintenance is key to success, but what does this look like in reality and how do we consistently monitor our sites.

### Other topics included within session 2

### Session 2 presentation 3

#### Wild harvested tōtara berries as an incentive for conservation on private land

11:40am - 12:00pm - Luke Liddell (University of Auckland), Danarta Sanyata, (University of Auckland), Supannika Chotirat (University of Auckland)

[llido35@aucklanduni.ac.nz](mailto:llido35@aucklanduni.ac.nz)

#### ABSTRACT

Globally, the native foods sector has seen substantial growth in recent times. I founded Native Harvest, a student startup at the University of Auckland's Centre for Innovation and Entrepreneurship, with the aim of supplying wild-harvested native berries as a novel food product. This project has two aims: The first is to acquaint kiwis with the Aotearoa's edible flora. The second is to provide a revenue stream that incentivises private landowners to sustainably manage their native vegetation. Our first product is tōtara berries, harvested from naturally regenerating farm tōtara in Northland and sold to high end restaurants and craft gin distilleries. There is already ongoing work in Northland to develop regenerating tōtara as a sustainable timber resource, and we will work in partnership with this to deliver an additional revenue stream to landowners. We will determine the optimal harvesting, storage, and processing techniques for these berries, as well as investigating potential bioactive properties.

## Session 3: Iwi/hapū led restoration processes and case-studies

Session chair: Jesse Bythell

### Session 3 keynote address

#### Te Korowai kia uru ora o Te Taurapa o te Waka a Māui - PF2050 Leading edge technology supports kaitiaki o Murihiku to restore the mauri (life force) of Bluff Hill Motupōhue.

1:00 - 1:40pm - Estelle Pērā-Leask (Ngāi Tahu, Whakatōhea, Ngāti Ruanui)

[estelle@motupohue.nz](mailto:estelle@motupohue.nz)

#### BIO

The NZPCN conference committee warmly welcomes Estelle Pērā-Leask to deliver our keynote address for our iwi/hapū led restoration processes and case-studies session. Estelle is of Ngāi Tahu, Whakatōhea and Ngāti Ruanui descent and a Senior Environmental Advisor for Te Rūnanga o Ngāi Tahu. Her involvement with te taiao is broad and varied, ranging from being a volunteer, director, trustee, chair, advisory, coordinator or supporter. Estelle's commitment to her rohe is reflected by the sheer number of projects and organisations she is involved with: Bluff Hill Motupōhue Environment Trust, Te Korowai Whakahou Native Plant Nursery, Te Tapu o Tāne, Southland Conservation Board, Predator Free 2050 Ltd., Predator Free New Zealand Trust, Southern Institute of Technology, Maukahuka-Pest Free Auckland Island Project and Predator Free Rakiura, Whenua Hou Komiti, Kākāpō Recovery Programme, Descendant Guided Tours on Whenua Hou, Otātara Community Nursery, Motu Piu/Dog Island Restoration Project, the Bluff Community School Native Plant Nursery.

#### ABSTRACT

Te Taurapa o te Waka a Māui is one of the Māori names for Bluff Hill. The 250m summit is cloaked in a remnant broadleaf, podocarp forest with ancient Southern rātā that meets the sea, it is recognised in the Ngāi Tahu Deed of Settlement 1998 as a Tōpuni or sacred site of cultural, ecological and historic significance. It is an urupa, the burial site of several Ngāi Tahu, Kati Mamoe and Waitaha chiefs. Estelle Pērā-Leask shares her journey as a Ngāi Tahu kaitiaki and chairman of the Bluff Hill Motupōhue Environment Trust since 2010. BHMET has gone from a small community group of volunteers undertaking predator control and habitat restoration on Motupōhue, to an organisation employing locals and using cutting edge technology to accelerate their work protecting the stunning mainland sanctuary. Their work includes building a native plant nursery 'Te Korowai Whakahou', supporting Predator Free Rakiura, and returning taonga species including three locally extinct endemic plants back to the hill.

### Session 3 presentation 1

#### Successful partnerships for restoration outcomes

1:40 - 2:00pm - Lisa Forester (Northland Regional Council), Stephanie Tong (Northland Regional Council), Winiwini Kingi (Te Kahu O Torongare me te Te Waiariki)

[lisaf@nrc.govt.nz](mailto:lisaf@nrc.govt.nz)

#### ABSTRACT

The Northland Regional Council Biodiversity Team has a number of projects where we work in partnership with Māori to achieve restoration outcomes. Mahi includes a number of freshwater and other projects involving actions such as pest control, education, wānanga, survey and monitoring. Along the way there has been failures, successes and learnings. Hopefully these projects are contributing to us becoming better partners. This has led to more mana enhancing behaviours and ways of working both within the Northland Regional Council (NRC) team and in the community. Te Tai Tokerau has a high Māori population from many different iwi and hapū all of whom, as mana whenua, have connections to land on which we want to work. Sometimes we help with projects led by Māori and at other times projects are funded or led by NRC with input from mana whenua, but the most effective partnerships are those built on trust where the decision making, investments and benefits are shared equally.

One example is restoration work done with dune lakes. Around 1,000 students from local kura have attended noho taiao and dune education days run by both Māori and NRC. Roto tapokapoka (dune lakes) hui and wānanga have grown in success and popularity and resulted in many learnings and changes to the way that we work. Mana whenua have also worked in partnership with NRC and other agencies to eradicate aquatic weeds resulting in on these ground successes that otherwise could never have been achieved by agencies on their own. We look forward to continuing to work with mana whenua and hopefully being able to strengthen our relationships by becoming better partners.

## Session 3 presentation 2

### Using pākehā information to inform Māori restoration projects

2:00 - 2:20pm - Mike Thorsen (Ahikā Consulting), Rhys Miller, (Ahikā Consulting)

[mikethorsen@ahika.co.nz](mailto:mikethorsen@ahika.co.nz)

#### ABSTRACT

Large dataset science is proving very powerful for informing conservation management, particularly when it is undertaken in a spatially-enabled context. The information in these big data projects are also of high relevance to mana whenua undertaking site restoration projects as kaitiaki. However, inclusion of big data into kaupapa kaitiaki taiao is not straightforward or easy due to obscurity in its relevance from both scientist and mana whenua perspectives. In this presentation we look at some of the ways that outputs from large data analysis have been brought into Māori restoration projects.

## Session 4: Engagement and education

Session chair: Sarah Beadel

### Session 4 presentation 1

#### Protecting the gains: securing enduring outcomes for Jobs for Nature projects through legal protection

3:10 - 3:30pm - Kerri Lukis (QEII National Trust), Malcolm Lucas (QEII National Trust)

[klukis@qei.org.nz](mailto:klukis@qei.org.nz)

#### ABSTRACT

In 2021, the Queen Elizabeth II National Trust (QEII) secured \$8 million Jobs for Nature funding, over four years to work with government agencies, local government, community groups and landowners across Aotearoa New Zealand to provide legal protection for Jobs for Nature funded projects on private land. Much of this funding will be spent establishing Open Space Covenants (OSC) on areas with high existing biodiversity values, but some of the funding has enabled QEII to develop and pilot a mechanism to legally protect projects that do not meet the standard for OSC protection but have the potential to do so given time and suitable management. Over the years QEII has regularly been approached by groups and private landowners wishing to legally protect their restoration projects, however due to funding constraints and the lack of a suitable legal protection tool we have reluctantly turned down such projects. Through this project, QEII is now piloting a new form of legal protection, a Restoration Agreement (RA), which will function as an intermediate form of legal protection until a restoration project develops sufficiently to transition to protection with an OSC. Criteria such as best practice eco-sourcing, restoration ecology principles and the National Priorities for Biodiversity Protection on Private Land (2007) will be some of the key considerations used to determine whether a project is suitable to be protected with a Restoration Agreement. We will discuss legal and practical considerations regarding the development of this new protection tool and initial insights gained as it is implemented on the ground.

### Session 4 presentation 2

#### Transmission

3:30 - 3:50pm - Philip Smith (O2 Landscapes)

[p.smith@o2landscapes.com](mailto:p.smith@o2landscapes.com)

#### ABSTRACT

Over many years now, NZPCN has carried out extraordinary work in advocacy for native plants - largely through the generation of the website, which has become an authoritative resource for botanists, ecologists, landscape architects and members of the public.

In common with most other information resources, the website mostly focuses on the species in isolation. However, what grabs the imagination of most people (including the public and policymakers) is stories and landscape imagery. Although this ground is covered within Trilepidea, the purpose of this talk is to look at ways of engagement that have been explored overseas, as well as forms of engagement that extend beyond the assumption that our audience has an existing affinity or interest in particular species.

In our work, we are particularly interested in the Swiss practice of Vogt Landscape Architects, and the way in which narratives about the natural world are manifested in their work and publications. This practice is just one example of the way in which story-telling about plants and other natural phenomena/processes can be communicated through the confluence of botany, geology, fluvial processes and even cartography. Similarly, the French plantsman, Olivier Filippi, offers a compelling lens towards Mediterranean garrigue within his nursery and writing practice.

By thinking critically about possibilities associated with this, we can generate new paths for how to excite people about our plants, ecosystems and landscapes.

### Session 4 presentation 3

#### Collaborating to achieve conservation goals

3:50 - 4:10pm - Brooke Clarke (Otago Regional Council)

[baclark@gmail.com](mailto:baclark@gmail.com)

#### ABSTRACT

At Otago Regional Council (ORC) we recognise the enormous benefit of collaboration with schools and community groups to achieve collective environmental management goals. There is a lot of planting that happens in riparian zones, however the schools and community groups often do not know how their plantings are effecting the ecosystem. Informative workshops for schools and community groups delivered in collaboration with local conservation educators enhance understanding of stream ecology and how riparian rehabilitation is interconnected.

### Session 4 presentation 4

#### Ngā Taonga ki te Ngahere o Tāne: the treasures of the forest of Tāne

4:10 - 4:30pm - Taylor Davies-Colley (Orokonui Ecosanctuary)

[taylordaviescolley@gmail.com](mailto:taylordaviescolley@gmail.com)

#### ABSTRACT

This is a Participatory Science Project based in the halo area around Orokonui Ecosanctuary. It will work with the community to investigate the plant communities surrounding the sanctuary and the range of important services for people and wildlife they contribute. By facilitating the community to carry out this work, we aim to empower them to investigate and understand these communities as well as how they can better protect and manage them. Experts and the community will work together to determine whether traditional methodologies for investigating plant communities work for community led projects or whether these methods must be modified or rethought to allow better accessibility.

## Tuesday 6th December – Queenstown and Wakatipu Rooms

### Session 5: Ecosourcing

Session chair: Shannel Courtney

#### Session 5 keynote address

**The myth of 'local' ecosourcing and the paradigm of eco-evolutionary regions to provide resilient conservation outcomes.**

**8:35 – 9:15am** – Peter Heenan (Manaaki Whenua – Landcare Research)

[heenanp@landcareresearch.co.nz](mailto:heenanp@landcareresearch.co.nz)

#### BIO

Peter Heenan is one of New Zealand's most respected and productive plant systematists, his research spans plant families but also delves into plant conservation, cultivation of rare plants, nomenclature, and biogeography of alpine plants. Peter is a Senior Researcher – Botany at Manaaki Whenua – Landcare Research. The NZPCN conference committee welcomes Peter's opening of our ecosourcing session with his topical keynote *The myth of 'local' ecosourcing and the paradigm of eco-evolutionary regions to provide resilient conservation outcomes*.

#### ABSTRACT

Widely practiced in New Zealand for approximately 50 years, ecosourcing seed of 'local genetic stock' is primarily used to restrict the provenance of ecological restoration plants, constrain population mixing of threatened species and control native species outside of their historic range. The value of narrow ecosourcing based solely on 'local' provenances is questioned. Climate change, past extinctions across multiple trophic levels, habitat loss and fragmentation, and the strengthening of many invasive species, collectively, are creating different ecosystems for indigenous plant evolution, reducing options for some species, and expanding opportunities for others. Conservation objectives need to engage with these changes to protect ecosystems dominated by native species. Additionally, phylogeographic patterns based on genotypic variation, biogeographic boundaries and inbreeding depression do not support the small areas traditionally advocated for seed ecosourcing. Genetic data for trees species, which are the life form most frequently used in restoration plantings, are characterised by little genetic variation across their distributional range, often low population genetic differentiation and high net migration of alleles. Modelling of mean annual rainfall and mean annual temperature identify environmental domains that can be considered to define larger geographic areas for ecosourcing. It is argued overly restrictive ecosourcing is counter-productive to enhancing ecosystem integrity, promoting genotypic diversity, and retaining the evolutionary potential of species and ecosystems.

Relaxing seed ecosourcing guidelines by adopting phylogeographic patterns and biogeographic boundaries, promoting environment-adjusted provenancing and utilising successful range extensions are suggested as critical strategies for resilient conservation outcomes that will increase species and genetic diversity in fragmented ecosystems, reduce the detrimental effects of inbreeding and promote mixing of populations of threatened species. Examples of adopting an eco-evolutionary approach to ecosourcing are provided for the indigenous early-successional coloniser *Kunzea ericoides* (Myrtaceae) and late-successional conifer species.

#### Session 5 presentation 1

**The fun and challenges of ecosourcing in lowland Canterbury**

**9.15 – 9.35am** – Tom Ferguson (Wai-Ora)

[tom@wai-ora.nz](mailto:tom@wai-ora.nz)

#### ABSTRACT

The Canterbury Plains: a patchwork quilt of exotic shelterbelts, mixed cropping and irrigated dairy farms, is hardly a landscape one would expect an ecosourcing nursery, let alone several competing nurseries. Working for and co-managing

a nursery that has been growing native plants in Canterbury for over 40 years has been a daunting task. Even more so when we made the decision last year to only grow 'ecosourced' plants. With the use of GIS technology, cold calling landowners, and getting to connect with people better involved at a grassroots level, we seem to be doing alright. But does ecosourcing have a sustainable future in Canterbury? Climate change is coming with its impacts on seed production for our already fickle masting species. We are in the midst of a planting boom, native plants are trendy, but will remnants quickly become lost in a sea of planting? Will our seed sources still be there next year? Will we still be allowed onto the farms we so desperately depend on?

#### Session 5 presentation 2

**Ecosourcing in practice**

**9:35 – 9:55am** – Matt Ward (RESTORE)

[mattwardward@gmail.com](mailto:mattwardward@gmail.com)

#### ABSTRACT

Since the human habitation of New Zealand the native vegetation area has been reduced from 80% cover to 43.4% (LRIS, 2014). This has been a key factor in contemporary New Zealanders joining forces in vast numbers to replant, revegetate and restore areas within their local communities. In some cases this has led to situations where plants planted may not have been the best suited to that environment. To address this a practice called Ecosourcing has developed. Many local and regional councils have entrenched this into policy as a prerequisite for gaining financial support for restoration efforts on public land. However, ecosourcing practice is not presently being audited causing variations in application of the guidelines suggested by Ferkins, (2001). I will explain my involvement and application in the supply of ecosourced seed for local ecological restoration projects as best practice.

**References:** LRIS. (2014) LCDB v4.0 cover class change summary 2008 2012 – Informatics Team | New Zealand | Environment and Land GIS | LRIS Portal: LCDB v4.0 cover class change summary 2008 2012. Latest version 8th July 2014  
Ferkins, C. (2001) Ecosourcing code of practice and ethics. Waitakere City Council.

#### Other topics included within session 5

#### Session 5 presentation 3

**What are the Mycorrhizal communities' role in restoration?**

**9:55 – 10:15am** – Marley Ford (University of Auckland)

[marsbars14@hotmail.co.nz](mailto:marsbars14@hotmail.co.nz)

#### ABSTRACT

The New Zealand endemic *Lophomyrtus bullata* commonly known as ramarama has recently been classed as a Threatened – Nationally Critical species because of the threat from the plant disease myrtle rust (*Austropuccinia psidii*). Mycorrhizal fungi communities, a symbiotic plant fungi association, are known to play an important role in the survival of plant species. It is important to understand these fungal communities and their effects on plant success, ecology, and resistance to disease. This knowledge can in turn work towards the improved management of plant species. By identifying the mycorrhizal communities associated with ramarama we will be able to unravel the interspecific and intraspecific relationships of these communities across different forest types.

## Session 6: Valuing natural regeneration

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Session chair: *Melissa Hutchison*

### Session 6 presentation 1

#### Accelerating regeneration in planted areas using canopy gap makers and seedling-friendly substrates

**10:50 – 11:10am** – Robyn Simcock (Manaaki Whenua – Landcare Research), Alex Fergus (Manaaki Whenua – Landcare Research), Cathy Rufaut (QEII National Trust)

[simcockr@landcareresearch.co.nz](mailto:simcockr@landcareresearch.co.nz)

#### ABSTRACT

Measures of early rehabilitation success for many Aotearoa forests frequently capture naturally established seedlings and epiphytes. However, densely planted areas can ‘stagnate’ post canopy closure for decades, especially in more drought-prone sites and/or where only a few planted species dominate. The latter depauperate planting strategy can be forced by hostile conditions (e.g. only mānuka/kānuka can establish); or planted to quickly/cost effectively achieve cover with the assumption that a diverse, local propagule load will arrive and establish. This paper proposes methods to accelerate natural establishment of seedlings into planted areas based on large-scale (> 30 ha) case studies at Wangaloa coal mine in Coastal Otago and Reefton Restoration project on the West Coast. Both sites had generally low impacts from browsers (through fencing and/or poisoning) and adjacent areas of forest. The planted areas were assessed 10 to 18 years post-planting. At Wangaloa two distinctive successions were driven by substrate fertility; no topsoils were available, so a range of mine overburdens were planted into. On sites with quaternary loess, both planted mānuka and regenerating seedlings were suppressed by canopies of kohuhu and tarata, except in light-wells created by makomako and tree fuschia. These light-wells contained the highest density and diversity of seedlings and ferns. A contrasting succession occurred on coal-rich, non-loess overburdens; plant losses accumulated each season despite soil amendments. This left planted mānuka, and self-established mānuka and kānuka to form short canopy under which some other species could regenerate. At Reefton rehabilitation project rootzones were salvaged mixed topsoils and subsoils, with logs and stumps placed at variable densities before planting. In some cases, the stumps included viable propagules of ferns, forbs and woody seedlings. Based on these observations, a trial of 3%, 10% and 25% ‘canopy gap-makers’ was established into kānuka/mānuka-dominated plantings in Northland, with the plan to assess in 5 years, canopy closure is anticipated at 3 years. Species choices and ecological trajectories of gap-makers will be discussed.

### Session 6 presentation 2

#### Mahu Whenua transects: over two decades of vegetation change in Central Otago tussock grasslands

**11:10 – 11:30am** – Cara-Lisa Schloots (Department of Botany, University of Otago), Janice Lord (Department of Botany, University of Otago)

[caralisa95@gmail.com](mailto:caralisa95@gmail.com)

#### ABSTRACT

Measures of early rehabilitation success Mahu Whenua means “healing the land,” and is the name given to the collective area of Motatapu, Mt Soho, Glencoe and Coronet Stations now managed under a Queen Elizabeth II covenant. In 2015, a partnership between Mahu Whenua and the University of Otago was formed, resulting in a proliferation of research projects. One of these projects was to resurvey sets of vegetation transects last measured in the 1990s, and to create a long-term dataset. The Mahu Whenua transects were established in 1989 (Mt Soho) and 1996 (Motatapu) to monitor the response of tussock grasslands to periodic burning, due to concerns about the long-term sustainability of this practice, particularly the potential for erosion and vegetation change. Deliberate burning is no longer an issue, and on Motatapu and Mt Soho stations even grazing by stock has been halted since 2006/7. With many restoration projects focussing on active reforestation, these transects provide an insight into natural regeneration processes in tussock grasslands over 33 (Mt Soho) and 26 years (Motatapu).

During the 2021–22 summer the transects will be resurveyed to examine if past trends are continuing. Both Mt Soho and Motatapu have thus far exhibited an increase in total vegetation cover; while *Hieracium/Pilosella* species are the only taxa that have consistently increased in cover across all sites, many sites have shown a marked increase in native woody species cover.

### Session 6 presentation 3

#### Facilitating natural woody regeneration

**11:30 – 11:50am** – Alex Fergus (Manaaki Whenua – Landcare Research), Robyn Simcock (Manaaki Whenua – Landcare Research)

[fergusa@landcareresearch.co.nz](mailto:fergusa@landcareresearch.co.nz)

#### ABSTRACT

Our One Billion Trees – Te Uru Rākau ‘Tough Sites’ project focused primarily on improving the resilience of planted native woody seedlings to drought, but many of our sites also permitted examination of practices which facilitate native woody regeneration. Using case studies, we examined: (1) maintenance of existing regeneration through considered site preparation, e.g. careful windrowing and supporting applied nucleation; and management of herbicide application to minimise impact on regeneration; (2) the role of constructing regeneration niches, e.g. utilisation of woody substrate and generation of hump/hollow topography; and (3) the role of, and context required, for successful utilisation of nurse canopies.

### Session 6 presentation 4

#### How do we prioritise where restoration happens and maximise the value of native revegetation and natural regeneration in Otago? Recent GIS mapping tools at ORC.

**11:50am – 12:10pm** – Richard Ewans (Otago Regional Council)

[richard.ewans@orc.govt.nz](mailto:richard.ewans@orc.govt.nz)

#### ABSTRACT

In the context of limited resources and high cost, agencies need to prioritise where they direct support for ecological restoration and seek to maximise the benefits to the environment. This talk will look at some recent GIS mapping and tools that can be used to help prioritise areas and sites to support, and provide a regional ecosystem approach to species choice.

## Session 7: Restoration after conifer removal

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Session chair: *John Barkla*

### Session 7 keynote address

#### Restoring the damaged lands – An overview of clear-fell restoration in Aotearoa/New Zealand.

**1:10 – 1:50pm** – Adam Forbes (Forbes Ecology Limited)

[adam@forbesecology.co.nz](mailto:adam@forbesecology.co.nz)

#### BIO

Adam Forbes is a respected forest ecologist who focuses on a multitude of social, ecological and technical aspects of forest restoration in Aotearoa New Zealand. One of the more significant roles he has recently held was the position of University of Canterbury (UC) Te Uru Rākau/School of Forestry Restoration Ambassador, where he provided expert restoration advice to landowners across New Zealand. While Adam primarily contracts from his own company Forbes Ecology Limited he is also a Research Associate with (UC) Te Uru Rākau/School of Forestry. The NZPCN conference committee welcomes Adam and is eager to hear his keynote address *Restoring the damaged lands – An overview of clear-fell restoration in Aotearoa/New Zealand*.

#### ABSTRACT

Many people are seeking to restore native forest cover on land cleared of exotic plantations. Here I describe my observations of who is undertaking this type of restoration, and why. I describe the ecological effects of plantation clear-fell, present what we have found to be the drivers of native tree regeneration, and report on the most common and important management interventions. Based on my experience studying clear-fell restoration, I give my views on what future forests established on clear-fells might look like and where management is likely to be most needed.

### Session 7 presentation 1

#### What follows after - the challenges of restoration in Central Otago

1:50 - 2:10pm - Benjamin Teele (University of Otago / Whakatipu Reforestation Trust)

[benteele@mac.com](mailto:benteele@mac.com)

#### ABSTRACT

Extensive wilding conifer removal has been undertaken over the last ten years in the Queenstown Lakes District and Central Otago. Several exotic wilding species have been controlled via a range of methods including ground control, lancing, and boom spray operations. With increasing public awareness and visibility of the wilding problem and with more publicly visible areas being targeted, there has been an associated increase in public comment about what will fill in these gaps. To better understand what might replace these trees in such a modified ecosystem, a model is presented outlining prehuman vegetation cover for the region. This process-based model incorporates a range of variables to outline likely species niche. From this, incorporating 800 years of human landscape modification and currently available seed sources, projections are made on what native and exotic vegetation might replace exotic conifer forests. Potential interventions are outlined which could shift the balance towards or away from natural successional processes and resulting hybrid or novel ecosystems. Examples of some successes and failures of small-scale trial revegetation projects and natural regeneration are presented to show what outcomes might be achieved with and without human intervention.

### Session 7 presentation 2

#### Coronet Forest

2:10 - 2:30pm - Briana Pringle (Queenstown Lakes District Council), Yvette Ridley (Queenstown Lakes District Council)

[briana.pringle@qldc.govt.nz](mailto:briana.pringle@qldc.govt.nz)

#### ABSTRACT

Queenstown Lakes District Council Park's Planning Manager Briana Pringle will discuss the early Harvest of the Coronet Forest before maturity to mitigate the wilding conifer issue and the plan for reforesting the area in native species including the development of recreational tracks & trails for multiple user groups.

### Session 7 presentation 3

#### Lessons from a large-scale project to transform *Pinus radiata* forest into indigenous forest.

2:30 - 2:50pm - Rhys Millar (Ahikā Consulting Ltd)

[rhysmillar@ahika.co.nz](mailto:rhysmillar@ahika.co.nz)

#### ABSTRACT

To protect Auckland's primary water resource, a process of restoring 2,300 hectares of *Pinus radiata* forest back to a representative indigenous forest is underway. Replacing this production exotic forest with indigenous forest species without the use of herbicides adds additional management complexity. Several management regimes are being monitored to evaluate the most affordable and effective methods of native forest restoration. The first four years of this project are informing the implementation of a restoration programme which will require over one million native trees being planted annually from 2024. In this presentation we will present our findings from these first four years of monitored operations and recommend management pathways for future implementation of large-scale conifer to native forest restoration projects.

## Session 8: Challenges to scaling up restoration projects

Session chair: Jesse Bythell

### Session 8 presentation 1

#### Challenges to using one size fits all approaches in wetland management

3:20 - 3:40pm - Caitlin Daley (University of Otago), Janice Lord (University of Otago)

[caitlinoldale@gmail.com](mailto:caitlinoldale@gmail.com)

#### ABSTRACT

Today, only 10 per cent of New Zealand's original wetlands are left, with many of the remaining wetlands being degraded and located on private agricultural land. Traditionally, wetlands embedded within agricultural land have been used as watering points for stock and therefore have been particularly negatively impacted. New Zealand fresh water regulations mean that soon all wetlands will need to be fenced off and have stock excluded, however the effects of doing so are not well understood. My Postgraduate Diploma in Science study focused on the effects of livestock grazing on the native vegetation of oxbow lakes in the Upper Taieri Scroll Plains, a nationally significant wetland complex in Otago, New Zealand. My findings suggest that many native wetland species may have survived because of low intensity livestock grazing, rather than despite it. They also show that grazing may be a tool that can be utilized alongside active restoration to restore wetland ecosystems in New Zealand. Building on this, I am now undertaking Masters study to find out what determines the success of a wetland restoration project on agricultural land and what factors influence this success. I am going to create an online decision support tool as part of my study, that will not be one size fits all and will help farmers and landowners better manage and restore wetlands on their property.

### Session 8 presentation 2

#### Challenges to seed-based restoration

3:40 - 4:00pm - Janice Lord (Botany Department, University of Otago), Kate Moss-Mason (Botany Department, University of Otago)

[janice.lord@otago.ac.nz](mailto:janice.lord@otago.ac.nz)

#### ABSTRACT

Upscaling native forestation is a part of Aotearoa New Zealand's emissions reduction plan and a key component of efforts to protect and enhance native biodiversity. However, planting at scale with nursery-grown stock can be costly and limited by species availability. Seed-based methods such as direct drilling or drone seeding have been proposed as economical approaches to landscape-scale revegetation but face a number of challenges. Most importantly, there is a surprising lack of knowledge concerning the seed biology of native trees. Some key species such as southern beech and podocarps must seed so good quality seed in large quantities is not available every year. Furthermore, the seeds of some species are unable to be stored for long periods. Slow seed germination is also an issue. This talk provides an overview of strengths and limitations of seed-based approaches in light of these gaps in knowledge concerning the seed biology of native trees.

## Poster session abstracts

### Integrating conservation and climate action

Katherine Durman (Queenstown Lakes District Council)

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In 2019 Queenstown Lakes District Council declared a climate and ecological emergency, developing its first Climate Action Plan. The second generation of the plan - the 2019-2022 Climate and Biodiversity Plan - integrates climate adaptation, mitigation and biodiversity.

### The Moehau ki te Moana Project

Vanessa Edelsten (Moehau ki te Moana Project), Cassidy Connor (Moehau ki te Moana Project)

[cass@colvillejunction.co.nz](mailto:cass@colvillejunction.co.nz)

Moehau ki te Moana is in Year two of a five-year project supported by funding from the Ministry for Environment's Freshwater Improvement Fund, and co-funded by local farmers in the isolated Moehau region of the Northern Coromandel. Our region's catchments have been identified as vulnerable by the Waikato Regional Council (WRC), Pare Hauraki (iwi collective comprised of 12 iwi), and by the Seachange's Hauraki Gulf Marine Spatial Plan, as our terrestrial freshwater ecosystems feed into the irreplaceable Tikapa Moana/Hauraki Gulf.

The Moehau ki te Moana project will establish 37km of fences around waterways including 12.8 hectares of natural wetlands, whilst providing much-needed employment to the region. A total of 75,000 native trees are being planted in riparian areas and wetland perimeters. Erosion and sedimentation are major issues facing the Moehau catchments as they are distinctively dominated by steep slopes of pastoral land with little vegetation cover.

This project was instigated by local farmers, and builds on the work of Colville Harbour Care, which was a community-led initiative to nurture a healthy Hauraki Gulf. This means we are working with informed and motivated landowners who are integral to the Project's success, and who are aware of the environmental benefits this work will achieve. Environmental monitoring and the incorporation of mātauranga Māori is of utmost importance for this work, as well as the ongoing involvement and education of our local community.

Through our poster we aim to share the origins of our restoration project, our objectives, unique challenges and achievements to date.

### Restoration of Tucker Beach Wildlife Management Reserve

Dawn Palmer (Natural Solutions for Nature Ltd)

[dawn.palmer@xtra.co.nz](mailto:dawn.palmer@xtra.co.nz)

A Jobs for Nature project making progress on the Friends of Tucker Beach Wildlife Management Reserve Society Incorporated Conservation Management Plan. Challenges and progress towards weed control and restoration of indigenous communities in a dry river braided river terrace habitat with a history of mining.

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## Queenstown Lakes District restoration pathways workshop - restoration stories template

<b>Story name / site name</b>	Record anonymous if preferred.
<b>Contributor name</b>	Record anonymous if preferred.
<b>Story location</b>	Record anonymous if preferred - but please include where possible details of altitude, aspect, climate (especially rainfall) and terrain. If not anonymous, addresses or coordinates of the central point of the restoration project site would be very useful, we can assist with collating or identifying location details.
<b>Motivation or goal for your restoration project</b>	
<b>Start point for your restoration project</b>	The ecosystem or vegetation type.
<b>Current/end point for your restoration project</b>	The ecosystem or vegetation type. Your take on how successful the project has been. What has worked. What has not. Include the length of time of time the project has been running to date.
<b>Restoration methods</b>	Restoration methods (e.g. weed control, fencing, planting, using plant guards etc.) and the species (either those used in planting, or those that responded or didn't respond to the methods you used).
<b>Modifiers to restoration outcomes</b>	Additional details relating to pests, weeds, climate, terrain etc. if not captured above.
<b>Social aspects</b>	The roles (both positive and negative) of social networks, advisors, points of social tension, specific social barriers or enablers.







Kia ora anō tātou katoa  
(Kua hui i runga i te whakaaro kotahi)  
Kua tutuki pai te mahi whakahirahira mō tēnei rā  
Me manaaki tonu tatou anō  
Kia hoki ora atu tatou ki te kāinga  
Kia ora tātou katoa

*Again, we acknowledge all of us  
(Who have gathered with a common purpose)  
We have achieved our day's work  
Let us continue to support each other  
Let us return home safely  
Let us be well*

