

# RESOURCE MANAGEMENT NEW ZEALAND

Unleash Your Potential with NZARM's  
Capability Assessment Tool (CAT)

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# Welcome to the April 2024 Issue of the Broadsheet

As we draw closer to the cooler months, those lucky enough to be hands-on in the field prepare for planting season. The amount of protection and enhancement work around the country is phenomenal and continues despite Government reviews and potential changes to legislation that we work to. That landowners are 'on a roll' and understanding the needs of land and water makes work very satisfying for our members in all areas of the resource management industry.

This issue of Broadsheet is packed with great reading!

Discover the wealth of knowledge our Capability Project offers. We have two exceptional webinars lined up, one focusing on strategies for navigating decision-making in the ever-evolving farming landscape and the other introducing cutting-edge technology for precise farm planning.

The launch of our innovative Capability Assessment Tool (CAT) tailored for our industry is a game-changer, empowering NZARM members to effectively build their professional profile and set ambitious goals. I also urge you to explore the enriching mentoring programme, a professional and confidential opportunity that benefits both mentors and mentees.

In this issue, we proudly feature two of our esteemed members, Helen Moodie and Chris Phillips. Their significant contributions to resource management, as well as their longstanding dedication to NZARM, serve as an inspiration to us all.

Enjoy the articles about trees on dairy farms, the latest from KMR and even marine environmental management initiatives. It's all here!



**Peter Manson**  
Interim President

## **WELCOME TO OUR NEW NZARM MEMBERS**

Veronica Penny  
Alastair Taylor  
Ian Brown  
Vance Hodgson  
Natalie Fenwick

Jenny Buck  
Adrienne Gravatt  
Aaron Dodunski  
Kelly Heckler

Holly Fleming  
Dean Hawkins  
Rachel Millar  
Michelle Rush  
Aidan Bright

# NZARM CAT is here!

## Building a Roadmap for Capability and Careers Building in Aotearoa



Matt Highway CEO

NZARM is excited to announce the launch this week of the **NZARM Capability Assessment Tool - CAT** – an online tool for professionals that will be a game-changer for capability development in our sector.

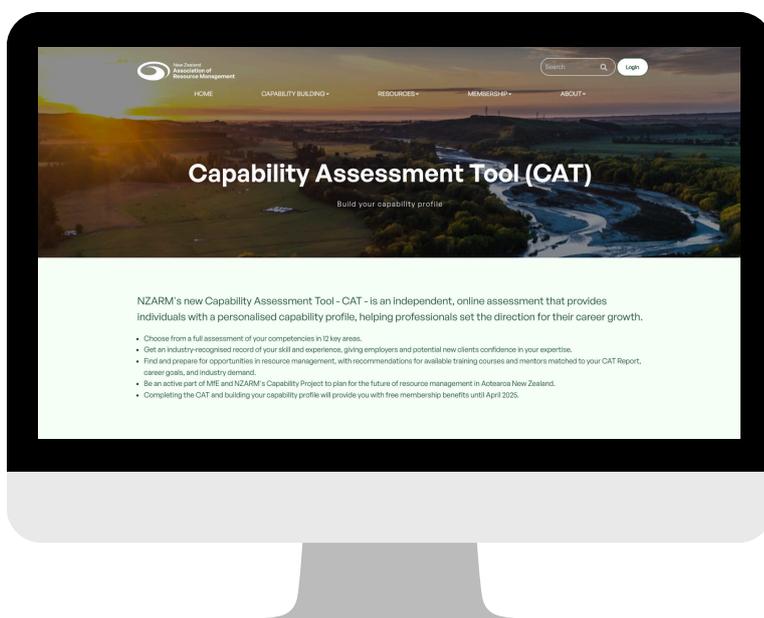
Capacity challenges have dominated discussions within the resource management sphere for several years, reflecting the ongoing struggle of our sector to fulfil the diverse skill requirements demanded of natural resource managers, rural professionals and environmental practitioners.

NZARM CAT is an individual assessment tool that will allow every resource management professional in New Zealand to get a personalised insight into their capability. It is an independent assessment that gives industry recognition, and career development support through identifying opportunities for personal development. The tool will also allow the sector to create a comprehensive picture of capacity – and importantly, capacity gaps – across the country.

Developed in partnership with the Ministry for the Environment, Regional Councils, and industry stakeholders, this version of the tool has taken 12 months to develop. Additional functionality is being built into the tool already and a version two will be released in June.

We were getting a lot of feedback from Councils and our members that there just wasn't enough capacity and capability across the country, and training and development would be needed. But there was no robust process to assess capability, identify gaps, and match it to training. We wanted to develop an end-to-end approach to capability development that meets the needs of everyone in our sector – members, councils, and land stewards.

Anecdotal evidence from Regional Councils has highlighted this gap, but to date there is no robust data on what the sector is able to deliver. The CAT will allow comprehensive maps of capacity in 13 skill areas across the different regions of New Zealand. The structure means the tool is future-proofed, to allow for identification of gaps aligning with future sector need. The data will also make it easy for land stewards to find consultants in their area with the right skills – and for resource management consultancies and professionals to identify gaps in the market.



Individuals who complete the tool will get a personalised, independent record of their skills that can be optionally made available for skill-based searches on the new NZARM website, bolstering individuals' credibility and opening doors to new opportunities.

**The people who sign up with NZARM and complete a capability assessment will receive free NZARM membership from now until April 2025! This offer is available to existing and new members.**

We wanted to make it easy for members to not only present an independent picture of their own skills for employers and clients, but also to get valuable insight into their strengths and areas for development, to serve as a roadmap for career growth and advancement. Our testing phase has already shown that individuals have used the results to develop training plans with their managers – and managers are already telling us that they wish kind of tool was available sooner.

There are 13 competency areas covered in the tool, from People Management and Research to Catchment Management, recognising areas of competency through formal qualifications and experience. NZARM CAT is available free for everyone in the sector and takes approximately 30 minutes to complete.

As we get more and more people using the CAT, we understand more about the current capability in Aotearoa - New Zealand. This enables us to understand capability gaps and target upskilling, mentoring, webinars, training and field-days on **the right topic, in the right place, to meet the right outcome.**

We encourage everyone to take the twenty minutes to get it done – you won't regret it.

**Matt Highway**  
CEO NZARM  
0277643339  
matt@nzarm.org.nz

**MSc Environmental Science**

**About Me**

Matt Highway has worked in catchment, biodiversity, and land management for over 20 years. He has worked in regional council and for the primary sector, where he has developed multiple catchment and farm planning programmes. The key for Matt is to ensure efficient effective approaches that work from end to end and can endure in the long term. Matt is a director of Element Environmental Ltd, and currently also operates as the CEO of The New Zealand Association of Resource Management (NZARM).

**Eliza Burt-Priddy**  
Environmental Consultant  
0226972635  
eliza@nzarm.org.nz

**MSc - Conservation Biology**

**About Me**

I am a Victoria University of Wellington graduate with a Master of Conservation Biology and a Bachelor of Science. As an aspiring young professional currently employed as an environmental consultant, I am passionate about utilising my skills to make a difference in the community and for the environment.

**Capability Profile**

**Expertise Areas**

- Sheep
- Beef
- Production forestry
- Territorial authorities
- Pastoral ecosystems
- Dairy

**Regions Where I Work**

**Current Focus Areas**

- Catchment management
- Other
- None

**Capability Profile**

**Expertise Areas**

- Territorial authorities

**Regions Where I Work**

**Current Focus Areas**

- Catchment management
- People leadership and facilitating change

**How to complete your CAT:**

- 1. Access the Tool:** Visit [NZARM Capability Assessment Tool](#) to create your account
- 2. Complete your Assessment:** Complete the assessment and get your CAT record, using the [online user guides](#).
- 3. Share your Results:** Share your results on your LinkedIn page, with your training managers, and clients.
- 4. Stay Informed:** Follow [NZARM](#) on LinkedIn for updates on upcoming events, webinars, and training opportunities.

**Achievement Badges**

# Upcoming Webinars

## Register Now: Using systems thinking to solve real-world problems

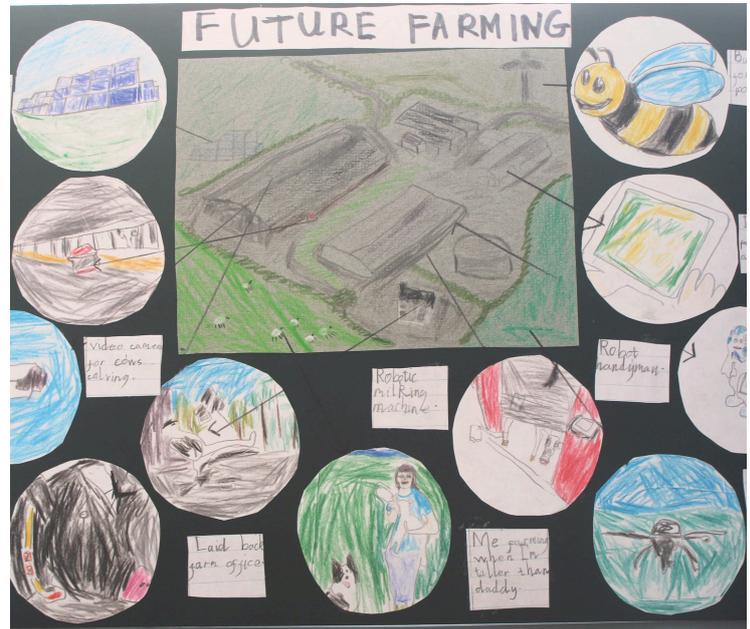
Join Terry Partminter from KapAg as he delves into the power of systems thinking for addressing complex farming issues beyond traditional models. Discover how to foster creativity and effective decision-making to better serve your clients' needs.

Don't miss out on this opportunity to broaden your perspectives and discover innovative solutions!

**DATE:** 2 May 2024

**TIME:** 1.30 pm

[Click here to register](#)



## Register Now: Understanding catchment mapping outputs using nationally available LiDAR data

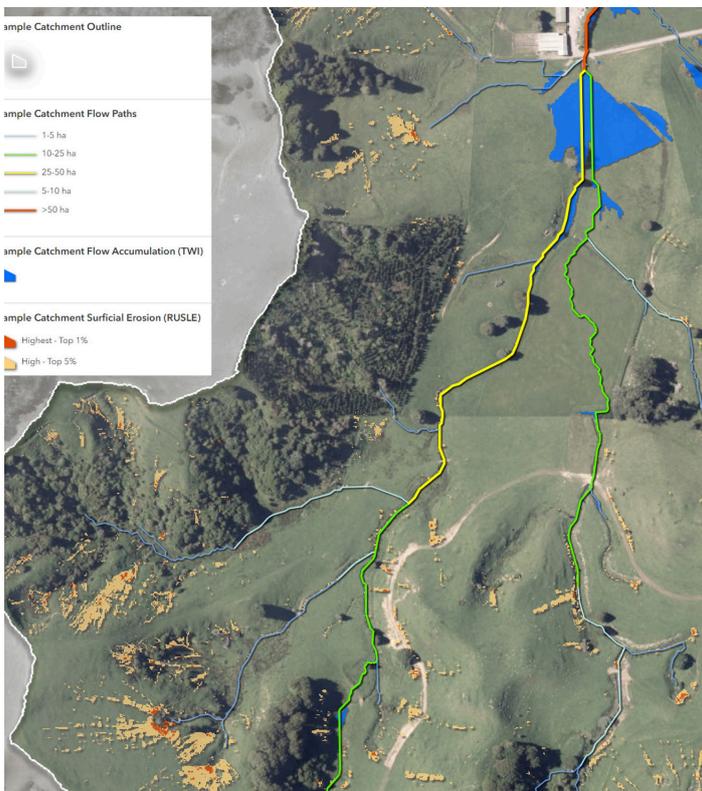
Join Tom Nation from Collaborations NZ as he presents on:

- How publicly available LiDAR data can revolutionise farm-scale mapping.
- Real-life examples showcasing ArcGIS story maps and other applications.
- Insights into identifying ephemeral flow paths, erosion-prone areas, and high flow accumulation zones.
- How this detailed, adaptable, scalable, and cost-effective analysis is empowering farmers, catchment managers, and council stakeholders.

**DATE:** 20 June 2024

**TIME:** 1pm

[Click here to register](#)



**Interested in hosting a webinar and sharing your insights with a wider audience?**

Please email Eliza Burt-Priddy [eliza@element.org.nz](mailto:eliza@element.org.nz) for more information.

# Celebrating NZARMerS

**We want to hear from you!**

If you know a member who who deserves recognition for their efforts in sustainable land and water management

**Email**  
[ceo@nzarm.org.nz](mailto:ceo@nzarm.org.nz)

Recently (January 8, 2024), Farmers Weekly ran an article in its Land Champion's edition on Helen Moodie and her quarter-century care for the environment.

Helen has been an NZARM member since starting as a soil conservator/land management officer with the Auckland Regional Council in the early 80s. However, Northland has been her calling in recent decades, and there she was the regional coordinator for the NZ Landcare Trust, followed by stints with DairyNZ and Fonterra. She is also heavily involved with various other groups, including the Rural Support Trust. Helen has also served as the NZARM Executive over the years.

A comment on LinkedIn truly captures Helen's achievements:

***"Helen is truly the guru of Farmer engagement and a national treasure of resource management in Northland".***



In December 2023, Science NZ held its annual awards where it recognises the contribution Crown Research Institute researchers make to Aotearoa across three categories – Early Career Researcher, Individual/Lifetime Achievement and Team. A Supreme Award winner is chosen from the 24 awardees.

Manaaki Whenua Landcare Research's Lifetime Achievement Award nominee was Chris Phillips.

Chris is a Senior Researcher in erosion processes and has spent his career studying erosion and how it can be managed using vegetation, often within an Integrated Catchment Management context. He has also served the Association as an Executive Committee member and President and is now an Honorary Member. He also edited the Broadsheet for many years.

# INTERESTED IN BEING AN NZARM MENTOR OR MENTEE?

NZARM is thrilled to announce the launch of the second round of our Mentoring Programme, which is open to anyone working in the Resource Management Sector.

Our programme aims to bolster career progression within the sector while nurturing professional skills and capabilities unique to this specialised field. Mentoring harnesses the unparalleled learning resource within our sector - our people.

As one participant from our first round of the programme shared, *"I consider the mentoring programme to be an excellent initiative."* Another mentee exclaimed, *"I don't know how you did it, but you connected me with the EXACT person I need at this stage!"* These success stories are a testament to the potential benefits of our Mentoring Programme.

Whether you're seeking increased support, career advancement, or a platform for sharing practices and building technical expertise, our Mentoring Programme is tailored for you.

Our mentors, whether actively working or retired, are committed to seeing you succeed, offering invaluable guidance and wisdom. *"Being able to help assist my mentee with direction and skill development opportunities, particularly for their work environment, is really enjoyable,"* shared a mentor, highlighting the rewarding aspect of the mentorship experience.

## How does it work?

The mentoring programme will be available through an application process.

Mentors will be either currently in resource management roles or retired. Mentors may be people at any career stage who feel they can contribute to the programme's purpose.

Mentees must work or study within the sector and will signal their development needs on the application.

Both mentors and mentees will attend short training sessions to give them the tools and skills they need to succeed. The training workshops will be live online via Zoom during working hours. The mentor training is a 2-hour, practical workshop with a digital toolkit for mentors. The mentee training is 1.5 hours and will enable mentees to maximise opportunities. These workshops also provide a great networking opportunity.

The mentoring coordinator will match mentors and mentees based on their development needs, preferences, and possibly geography. Mentors typically live some distance from the mentee's day-to-day work environment, so they are neutral and can provide an objective perspective and avoid any conflicts of interest.

## Interested in being a part of the programme?

Please email the mentoring programme coordinator Eliza Burt-Priddy [eliza@element.org.nz](mailto:eliza@element.org.nz) for more information and to sign up.

# Tree on Dairy Farms: Two Cases in Waimakariri, Canterbury

Sandra J. Velarde-Pajares, Kyle Wills and Istvan Hajdu – WSP

Imagine a farming method that could help you protect your soils from wind erosion, improve your soils quality, while controlling soil moisture and temperature? Pasture production could also increase in lesser productive areas all while supporting biodiversity and carbon sequestration.

The good news is that this method has been around for many years, and it is making a comeback as a tool to help New Zealand farmers: it is called agroforestry.

## **What is agroforestry?**

Agroforestry means integrating trees on farm. The location and types of trees will depend on the objectives of the landowner, either within the existing farming system or as part of a new system to transition to.

In New Zealand, we cannot deny that extreme weather events such as floods and droughts are becoming more frequent and intense. With changes to consumer demands, environmental pressures and trade policies, agroforestry could help to diversify agriculture.

## **What is the scale of the opportunity?**

While agroforestry could be implemented across most regions in New Zealand, we specifically looked at the non-irrigated corners of two existing irrigated dairy farms in the Waimakariri District in Canterbury: Ngāi Tahu – Hamua and Claxby Farms.

Irrigation availability and animal welfare requirements have stimulated interest in diversification opportunities on farms. Non-irrigated corners constitute over 35,000ha in Canterbury, providing a unique opportunity for farmers to consider agroforestry as part of their farming system.

We investigated and quantified the potential environmental and economic benefits of an agroforestry system, and this is a summary of what we found:

## **Benefits of agroforestry on non-irrigated corners**

- Agroforestry can bring multiple benefits to farming systems, including (Figure 1):
- Increase in pasture production: moderate local microclimates, increasing nitrogen availability and soil moisture conservation, potentially increasing pasture production under the trees compared to open pastures.
- Microclimate: Reduce wind speed and lower evapotranspiration in the understory.
- Physical and chemical soil property improvements: Soils under agroforestry tend to have higher porosity, infiltration aggregate stability and soil organic matter. Some tree species, such as mature poplars, can also increase soil pH.
- Animal fodder: Species such as mulberry are used around the world to produce high quality foliage for animal fodder.
- Animal welfare and production: provide shade and reduce heat stress for animals.
- Biodiversity: Mature agroforestry systems can provide habitat corridors, improving biodiversity by creating habitat and food sources for fauna.
- Carbon sequestration: increase in carbon sequestration compared to an open pasture environment.

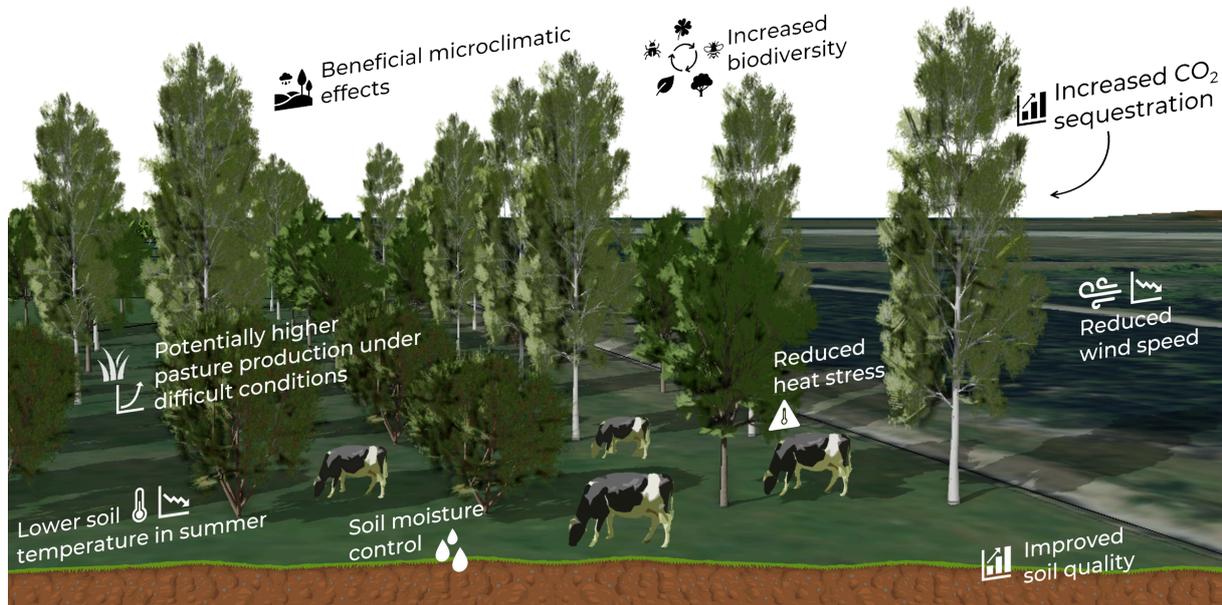


Figure 1: Agroforestry benefits

### Does it make sense for farmers' pockets?

To understand how agroforestry would fit into Ngāi Tahu – Hamua and Claxby Farms, we first needed to understand their farming goals and values. Both farms wanted agroforestry to complement their current farming system with minimal changes to stock, infrastructure and farm management. On-farm management differed between properties and their preference for indigenous biodiversity and species diversification. We used this information to design a tailored agroforestry plan for each farm system.

In the agroforestry design, trees are planted so that they can claim carbon credits (New Zealand Units—NZUs) under the NZ Emission Trading Scheme (NZ ETS). We assume a carbon price of \$70/tonne and a 20% reduction in pasture production under the agroforestry system.

Agroforestry had a positive economic effect on both farms (Table 1). The inclusion of agroforestry at Claxby Farms had a Net Present Value (NPV) of \$19,549/ha with an Internal Rate of Return (IRR) of 26%, and Ngāi Tahu—Hamua had a NPV of \$17,007/ha with an IRR of 20%. The differences in financial performance between farms are mainly driven by the lower cost of establishment per hectare at Claxby Farms.

	Claxby Farms	Ngāi Tahu - Hamua
<b>Total effective area</b>	647 ha	335 ha
<b>Agroforestry area</b>	61.58 ha	25.48 ha
<b>Unproductive area under agroforestry</b>	4.14 ha	1.54 ha
<b>Establishment costs</b>	\$3,974/ha	\$5,017/ha
<b>NPV</b>	\$19,549/ha	\$17,007/ha
<b>IRR</b>	26%	20%
<b>Post carbon annual cashflow</b>	\$120/ha	\$195/ha

Even though the numbers look good, how come agroforestry is not a more widespread practice?

To sustain the economic performance of the agroforestry systems, both farms relied on the cash flow from the NZ ETS, and without this income stream, the IRR of both farms turned negative (-7% for both case study farms).

### What next?

Finding the right tree species for individual farm systems is both science and an art, that requires understanding of the greater farm goals and priorities. Figure 2 and Figure 3 give a visual representation of what agroforestry systems may look like when the trees mature, helping land managers future proof their farming systems.

Due to ongoing interest in agroforestry designs, we are currently working with other land managers on a similar project so watch this space!

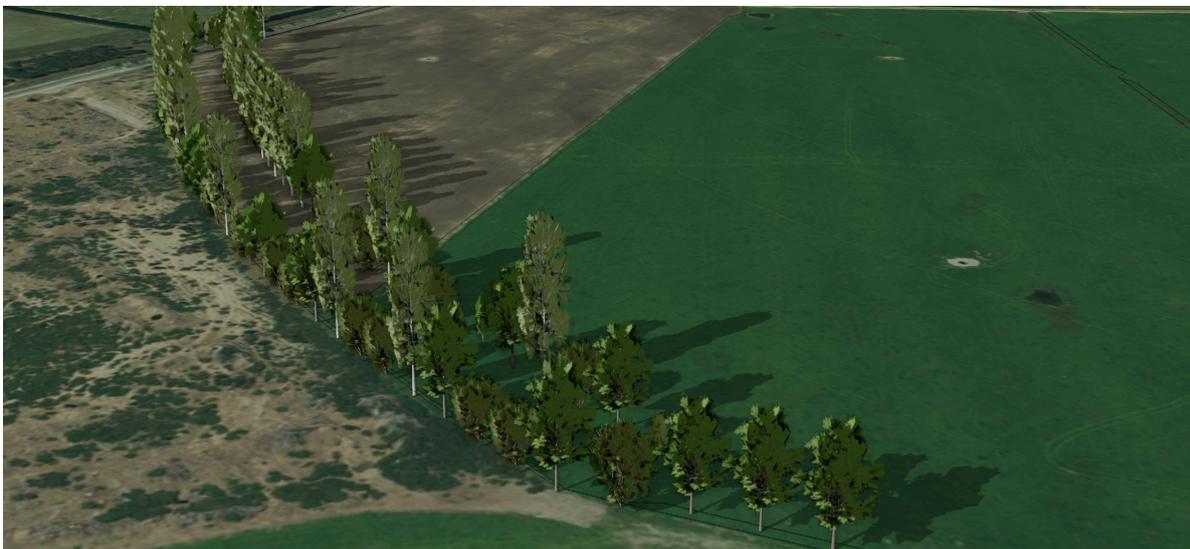


Figure 2



Figure 3

### For more information:

- Request the report from: [Kyle.wills@wsp.com](mailto:Kyle.wills@wsp.com) or [Sandra.VelardePajares@wsp.com](mailto:Sandra.VelardePajares@wsp.com)
- Read Story Map at: <https://storymaps.arcgis.com/stories/05b48b90174a44c59fdc5e106b417c89>
- Watch the webinar at NZ Institute of Primary Industry Management (NZIPIM) on 24th April: [https://www.nzipim.co.nz/Event?Action=View&Event\\_id=730](https://www.nzipim.co.nz/Event?Action=View&Event_id=730)

### Acknowledgements

Thanks to Our Land and Water National Science Challenge 2023-24 Rural Professionals Fund and Jessica Hall at WSP for editing.

# REGIONAL EVENT FUND: CREATE YOUR OWN REGIONAL EVENTS!

NZARM would like to support you to create short training events or network opportunities. You can receive up to **\$5,000 of NZARM support** for single or multiple events.

Applications are open all year around. You must be an NZARM member to apply.

It is completely up to you how these events are run and the topic areas.

## All you need to do is:

1. Email Matt Highway at [ceo@nzarm.org.nz](mailto:ceo@nzarm.org.nz) with the following:
  - a. The event name and location
  - b. The purpose of the event
  - c. Proposed budget needed and a few bullet points on the financial components.
  - d. How many people are you anticipating will attend?
  - e. Outline if you need event management or administration support – NZARM can help you.
2. NZARM can then approve your request and work with you to advertise the event
3. You run the event – with some minor CEO oversight – don't forget to take photos.
4. Finally, write a small blurb, send photos to NZARM and send in receipts for cost recovery to NZARM



# Tangowāhine farmers backing Kaipara Moana Remediation's kaupapa

James Parsons and Travis Pymm are among the first farmers in Tangowāhine Valley to partner with Kaipara Moana Remediation (KMR) to help reduce sedimentation and siltation in the Kaipara Moana.

In fact, James is heading up a KMR Navigator project and is spreading the word to encourage neighbouring pastoral farmers in the valley to join the project, take advantage of the KMR funding opportunity, and look after the land at the same time.

KMR Navigator Projects are a way of supporting landowners and groups across the catchment who are keen to undertake larger-scale or innovative sediment reduction projects - and to share their experience with others in their community, iwi/hapū, or sector so that others can come on board too.

Through the KMR Navigator project, James is in the process of forming and leading the Tangowāhine Catchment group, which will provide technical advice, leadership and coordination services to the Tangowāhine catchment, one of the many sub-catchments in the wider Kaipara Moana catchment.

KMR has engaged AgFirst Northland (represented by James) to bring Tangowāhine Valley farmers into a community catchment group and help develop Sediment Reduction Plans for farmers keen to access KMR investment and other support. James is keen for Tangowāhine farmers interested in learning more. Please reach out to him or KMR as soon as possible.

James believes it is a great opportunity for locals to get behind a common purpose and coordinated action, to play their part in reducing erosion and sedimentation while helping restore the health and mauri of Kaipara Moana.

"While only in their first tranche of KMR activity, the James and Travis have plans to continue retiring parts of their 600-hectare farm by fencing off waterways and wetlands. The strategic planting of native grasses and trees will be phase two on a property home to 500 cattle and 2000 sheep courtesy of Matauri Angus and a Coopworth sheep flock.

Although they faced delays from Cyclone Gabrielle's damage to the farm, followed by a chronic wet winter of 2023, they have managed to fence off 3.4km and are ramping up that activity over the summer. By taking the lead, they hope to encourage neighbouring farmers to get on board.

"I feel fencing off waterways is the right thing to do. There are two immediate benefits. It gives us more paddock subdivision and, secondly, better grazing management. In some places, we have put fences 20 metres from the stream banks to create a more direct fence line excluding cattle.



“Our vision is to get a community of interest going. There are 25 to 30 pastoral farmers in Tangowāhine and it would be great to get them all on board with KMR. It is a good opportunity to have up to 50% of your sediment remediation work funded (including fencing off waterways), while also protecting your waterways and helping the environment,” says James.

His ultimate goal would be to hold a handful of farm field days every year, learn from each other and chart the progress individual farmers are making year on year.

KMR can support fencing and native planting along waterways, and a range of opportunities to take action in the hill country. James is keen for farmers to join in.

“KMR can support a range of options to manage erodible hill country including strategic planting of natives or selected exotic species (e.g. eucalypts or redwoods), as well as fencing and management to support regeneration of native forest and space planting of poplars while maintaining a viable economic pastoral farm unit.



“For pastoral farmers, this presents a significant opportunity to rethink farm layouts with consideration to fence lines that need replacing but can be relocated in a place where they can retire a waterway or block of native vegetation, as well as take care of land affected by recent floods and storms,” James continues.

KMR is always keen to learn from other initiatives and access expertise to support our growing programme. If you’re a rural professional in the Auckland or Northland region and would like to know more about KMR’s work, or are interested in working for us under contract to develop Sediment Reduction Plans, please visit our website ([www.kmr.org.nz](http://www.kmr.org.nz)) or contact us on [hono@kmr.org.nz](mailto:hono@kmr.org.nz)



# How to make better decisions to improve the marine environment

## Sustainable Seas Challenge

The current New Zealand Government plans to repeal the Natural Built Environment Act (NBA) and Spatial Planning Act (SPA) that, in August 2023, replaced the Resource Management Act (RMA). The change to this legislation opens up new possibilities to progress different ways for taking care of our oceans.

New research from Sustainable Seas National Science Challenge has just been released which could help inform these changes. In the face of climate change and extreme weather events, how we make decisions about marine management needs everyone at the table.

Five quick guides have been developed to give marine decision-makers the tools they need to navigate their own perceptions of risk and uncertainty, before attempting to make decisions about managing the marine environment. The way we think about hotly contested issues in the environment are based on our individual worldviews, education, jobs and positions in society. Understanding how these different worldviews shape our decision-making is vital in considering divisive issues, such as consent removals for mangroves or sand mining in Okura.

This includes a Te Ao Māori perspective on kaitiakitanga, connections between people and the environment, and why it is crucial for long-term marine decision-making.

*“It was becoming increasingly accepted that multiple worldviews play a role in natural resource management in Aotearoa,”* explains lead researcher Shaun Awatere.

Previously, risk and uncertainty in environmental management considered only how to reduce the potential impact of an activity.

*“Māori have a different worldview perspective,”* says Shaun. *“They think of how an activity can enhance the mana, or the intrinsic value of the natural resource in the first instance, rather than being limited to reducing adverse risk.”*

*“Collectively, we are in a position to reimagine decision-making and think about investment as a way of meeting both societal needs and the wellbeing of te taiao and the environment.”*

[Read the full framework here.](#)



# 2024 NZARM CONFERENCE

[CLICK HERE TO FIND OUT MORE](#)



**12 - 14 NOVEMBER**

Conference Centre,  
Main Street  
Palmerston North

Horizons Region is excited to be hosting the New Zealand Association of Resource Management (NZARM) conference.

We will have a full conference programme of presentations on Day 1 including the popular “Masterclass Sessions” and Field Trips on Day 2 (Pohangina Valley) and Day 3 (Horowhenua and lower Manawatū).



New Zealand  
**Association of  
Resource Management**



**horizons**  
REGIONAL COUNCIL

# Smarter research hits its target

## Manaaki Whenua Landcare Research

The Smarter Targeting of Erosion Control (STEC) MBIE research programme, led by Manaaki Whenua - Landcare Research, has recently wrapped up five years of research aimed at answering some of the key questions around where erosion occurs and how much and what type of sediment is produced by which processes.

Project co-leads Dr Chris Phillips and Dr Hugh Smith say the research has significantly improved the understanding of the complex array of erosion processes, including the economic impact of erosion and sediment mitigation. *"As severe storms and significant weather events continue to increase in New Zealand, so does the amount of erosion. Recent extreme weather has re-focused attention on landslide-triggering events and approaches for better targeting erosion control to reduce damage to land and water environments from excess sediment,"* says Chris.

Manaaki Whenua erosion researchers partnered with regional councils, iwi, and international and New Zealand agencies and universities during the programme. Many of the studies have put Manaaki Whenua at the forefront of global research to understand how to best target erosion control.

A key area of research focus was on rainfall-induced shallow landslides. This included work to automate the mapping of landslides using high-resolution satellite imagery with the landslide data used to model landslide susceptibility with LiDAR-derived digital elevation models (DEMs). The resulting high-resolution landslide susceptibility maps are informing land-use planning and allowing improved targeting of tree planting for erosion control. This research is also helping our understanding and future management of the 'window of vulnerability' following harvesting in steep-land plantation forests.

Similar data-driven approaches to modelling the likelihood of shallow landslides delivering sediment to streams have also been developed. These models represent the spatial probability of 'landslide-to-stream' connectivity and provide new, high-resolution insight into those specific areas most likely to produce landslides and deliver sediment to streams.



Hawke's Bay Regional Council is already using high-resolution shallow landslide susceptibility layers produced by STEC research following Cyclone Gabrielle. Equivalent landslide susceptibility layers were also produced for Tairāwhiti and shared with Gisborne District Council, MPI and forestry companies following the cyclone.

The work on sediment source fingerprinting spanned multiple applications of the technique to support improved targeting of erosion control to reduce downstream sedimentation. There was also a four-year study of the movement rates for a large earthflow located in the Haunui research catchment, a headwater tributary of the Manawatū River. This work aims to help us better understand the hydroclimatic conditions that drive variations in the rates of sediment delivery to streams from these large, slow-moving landslides.

Chris says the programme has delivered several firsts, including data-driven modelling that represents the influence of individual trees on landslide susceptibility and a new New Zealand landslide susceptibility model that incorporates ground-based weather radar data on rainfall intensities.

He says it's been satisfying to complete the programme seeing increased awareness and confidence among collaborating regional councils to target their erosion control investments towards meeting catchment targets for sediment. "We've seen a more holistic understanding of New Zealand's erosion-sediment and water quality problem particularly among regional and central government agencies."

"With better data, and better models that allow us to actually link erosion on the land to instream related water quality impacts it enables us to better inform managers when it comes to deciding where to target their investment in erosion control to maximise the benefits downstream," says Hugh.

"Iwi partners are using new knowledge of landslide susceptibility in the Whanganui catchment while several regional councils are routinely using improved sediment modelling tools to implement National Objectives Framework sediment targets and assess outcomes under future erosion mitigation and climate change scenarios."

Contact:

Dr Hugh Smith, [smithh@landcareresearch.co.nz](mailto:smithh@landcareresearch.co.nz)

Dr Chris Phillips, [phillipsc@landcareresearch.co.nz](mailto:phillipsc@landcareresearch.co.nz)



# LandWISE 2024 - Rebuilding Our Soils Conference



**Havelock North - 15-16 May 2024**

At our LandWISE Conference in May, we will report on our current work with industry, researchers and growers seeking out and trialing best ways to rebuild soil. Our invited speakers will present alternative practices and novel ideas, some perhaps fringe, but all looking to be mainstream, on a range of topics.

**[FIND OUT MORE HERE](#)**

**NZARM BROADSHEET**  
**April 2024**



NEW ZEALAND  
ASSOCIATION OF  
**RESOURCE  
MANAGEMENT**