



Te Hunga Takutai o Aotearoa

**NEW ZEALAND
COASTAL SOCIETY**

Conference 2024

19-22 November
Ōtautahi Christchurch

Conference handbook

Welcome

Kia ora koutou katoa, and welcome to the 2024 New Zealand Coastal Society Conference in Ōtautahi Christchurch. This year's conference theme is Dynamic Coasts: Embracing Nature's Partnership. This aspirational theme encapsulates the appeal of our coastlines, as well as the challenges faced by our diverse members in their professional roles. It's also a great opportunity to return to Christchurch this year. After the (very) dynamic and adaptive management required to host the Coasts and Ports Conference in 2021, we're looking forward to the chance to reconnect in person with our local members.

This year's conference has some excellent keynote speakers lined up, who will be able to present a range of local and international perspectives on the conference theme and share their expertise on our dynamic coastlines, the associated hazards (over and above the land) and potential pathways to an adaptive future. Our field trips are always a highlight of the conference, and the local organising committee has done a great job lining up coastal sites of interest within and outside of the Christchurch city limits.

Our sold-out Conference Gala Dinner will provide an opportunity to celebrate the achievements of our members and share a few laughs on our interpretations of the theme of "beach life". Emerging Professional members can look forward to networking and guidance from experienced society members at the Eric Verstappen Early Career Professionals Breakfast and the NZCS/PIANC Young Professionals Networking Event. Finally, we'd like to encourage you all to attend our AGM and help shape the future direction of the society as we plan our strategic direction for the coming years. As in previous years, we'll be making our conference handbook available in digital format; you're welcome to print this in advance of the conference if you prefer a hard copy.

A huge thanks to the Local Organising Committee, led by Derek Todd, along with support staff from Engineering New Zealand, who have worked hard to make this conference a success, and thanks to you for attending and for your contributions to NZCS.

We look forward to meeting you at the conference.

Noho ora mai,

Colin and Sam

Co-Chairs, New Zealand Coastal Society

Programme

Tuesday 19 November	
Evening	Registration
	Ice breaker drinks
Wednesday 20 November	
Early	Registration
9.00am	Conference opening
	Keynote speaker
	Morning tea
	Parallel session 1 5 papers x 3 streams
12.30pm	Lunch
	Field trips
Thursday 21 November	
Early	Registration
9.00am	Keynote speaker
	Quickfire poster talks
	Morning tea
	Parallel session 2 4 papers x 3 streams
12.30pm	Lunch
	Parallel session 3 5 papers x 3 streams
	Afternoon tea
	Parallel session 4 4 papers x 3 streams
Evening	Pre-dinner drinks
	Conference gala dinner

Friday 22 November

Early	Registration
9.00am	Keynote speaker
	Parallel session 5 2 papers x 3 streams
	Morning Tea
	Parallel session 6 3 papers x 3 streams
12.30pm	Lunch
	Panels
	Endnote speaker
3.00pm	Closing



[View the full programme.](#)

Sponsors

Keynote speaker



Poster session



Session and panel



Conference dinner



Young Professionals Breakfast



Coffee cart



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Trade displays





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Sam Morgan

Technical Principal -
Coastal Adaptation

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Living Seawall in Tauranga – in this project WSP introduces precast concrete units as an innovative strategy to boost the ecological value of the scheme. A first for NZ and closely monitored by Bay of Plenty Regional Council. The intent of these 'living seawall' units is that it integrates into the rock revetment design to encourage growth of marine life.



New Zealand Coastal Society

Who are we?

NZCS members represent a wide range of coastal science, engineering, management and planning disciplines. They are employed in the engineering and environmental consulting sectors, in local, regional, and central government, in research institutes, in the tertiary education sector, and in schools.

NZCS is a technical group of Engineering New Zealand. The multi-disciplinary nature of coastal management in New Zealand means many of our members are from areas other than engineering. There are no entry criteria for the society and we welcome membership enquiries from anyone with an interest in the coast.

Our Mission

To take a leading role in facilitating robust discussion and nationally-coordinated interactions to better manage and learn about our coastal and marine environment.

Our Vision

Sustainable management of New Zealand's coastal and marine environment underpinned by sound science, engineering and policy practice, comprehensive monitoring, involved communities and effective national networks.

Our Values

The NZCS will promote this vision by being: professional, communicative, apolitical and responsible. The NZCS will work supportively with others with common interests.

What we do

- Support you with first class professional development and networking opportunities at regional seminars and events.
- Hold an annual conference where >130 local and international experts across a range of coastal management disciplines gather to share their knowledge and experience. We also host the bi-annual Australasian Coasts and Ports Conference.
- Keep you informed with current research and best practice through our premier journal Coastal News published three times per year.
- Recognise your achievements in research or advocacy on coastal issues through a series of awards and prizes.
- Further your professional development with a scholarship to support research projects.
- Keep you informed of upcoming events, news and job opportunities in our regular email digest.
- Assist with furthering your career by publishing your work (eg books, best practice guides, educational material).

Collaborations

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Want to know more?

Check out our website or talk to
Gareth during the conference.



Dr Gareth Taylor,
Director

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Lana Greig

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Jazmynn Hodder-Swain

Environment Canterbury

Nicóla Green

Engineering New Zealand

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Tonkin + Taylor

Keynote Speakers



Debbie Tikao

Director NZILA | Registered Landscape Architect
[Tuia Design](#)

Debbie Tikao is the President and Chairperson of Tuia Pito Ora New Zealand Institute of Landscape Architects, the director of Tipu Design, and the manager of the Environmental Portfolio for Ōnuku Rūnanga. She is a panelist on the Christchurch City Council Urban Design Panel and is leading the process of developing a mountains-to-sea management and climate change

adaptation and mitigation plan for Akaroa Harbour.

For 7.5 years she was the General Manager of Matapopore. During this time Debbie worked closely with local and central government to ensure post-earthquake Christchurch embedded the values and stories of mana whenua and emerged as a 21st-century city rich with meaning and character, expressing our dual histories and treaty partnership.

[Read abstract](#)



Dr Leanne Morgan

Associate Professor
[Waterways Centre, Te Whare Wānanga o Waitaha](#)
[University of Canterbury](#)

Dr Leanne Morgan is an Associate Professor at University of Canterbury, where she teaches groundwater hydrology at undergraduate and postgraduate level, and supervises Master's and PhD research students. She is interested in understanding how hydrologic systems function, specifically the groundwater component. Her research

areas include groundwater dynamics in coastal regions and groundwater - surface water interaction. She characterise field systems using various methods and parameters including pressure, conductivity and natural tracers. She tests processes and performs sensitivity analyses using analytic, numeric and physical modelling. She is Associate Editor for Journal of Hydrology Regional Studies and Hydrogeology Journal, and regularly reviews for several international journals.

She is also a Principal Investigator on the following MBIE Endeavour research programmes: Subsurface processes in braided rivers - hyporheic exchange and leakage to groundwater (2019–2024); Transforming coastal lowland systems threatened by sea-level rise into prosperous communities (2021–2026)

Leanne will be providing a keynote talk on the impacts of sea-level rise on coastal groundwater.

[Read abstract](#)



Fernando Méndez

Full Professor of Coastal Engineering
[University of Cantabria, Spain](#)

Fernando Méndez is Full Professor of Coastal Engineering at University of Cantabria, Spain. He is Head of the research group “Geomatics and Ocean Engineering Group”. His research lines are focused on building knowledge to incorporate climate and data science in coastal engineering (databases of marine variables, statistical models of extremes, data mining,

statistical downscaling, climate variability, climate change, tropical cyclones, dynamical downscaling, flooding and coastal erosion). On-going collaborations with institutions in USA (Duke Univ., OSU, SCRIPPS, USGS, NOAA), Brazil (UFSC), New Zealand (NIWA, U. Auckland), Spain (UPC, Univ. Granada, AZTI, U. Coruña) and Australia (CSIRO, U. Sydney, UNSW).

Fernando will be providing our Endnote presentation on Compound Coastal Flooding Risk in a Changing Climate in areas affected by Extra Tropical and Tropical Cyclones.

[Read abstract](#)



Rob Young

Professor, Coastal Geology
[Western Carolina University](#)

Robert S. Young is the Director of the Program for the Study of Developed Shorelines, a joint Duke University/Western Carolina University venture. He is also a Professor of Geosciences at Western Carolina University and a licensed professional geologist in three US states (FL, NC, SC). The Program for the Study of Developed Shorelines (PSDS) is a research and policy outreach

center serving the global coastal community. The primary mission of PSDS is to conduct scientific research into coastal processes, storm impacts, hazard vulnerability and sea level rise and to translate that science into management and policy recommendations through a variety of professional and public outreach mechanisms. The Program specializes in evaluating the design and implementation of coastal engineering and restoration projects and helping communities develop coastal adaptation strategies.

He currently oversees more than \$5.5 million in grant-funded research projects related to coastal science and management and is leading a major project for the National Park Service to identify the vulnerability of all coastal park assets to coastal storms, erosion and sea level rise for the purpose of adaptation planning.

[Read abstract](#)

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Networking events

Conference Ice-Breaker

6pm–9pm, Tuesday 19 November,
Botanic, The Terrace, Level 1, 126 Oxford Terrace, Christchurch

Join us for a cold beverage and tasty canapés!

Eric Verstappen Emerging Professionals Breakfast

7.30am, Wednesday 20 November (before opening ceremony)
Tower Room, Chateau on the Park

The NZCS conference breakfast aims to provide students and early-career professionals with an opportunity to network with, and 'pick the brains' of, invited mentors who have 'been there, done that' in the coastal scene.

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NZCS/PIANC Young Professionals Networking

5.30pm–7.30pm, Wednesday 20 November
Craft Embass, The Terrace Level 1, 126 Oxford Terrace, Christchurch

Networking event for young professionals (under 40 years of age) to learn more about PIANC - The World Association for Waterborne Transport Infrastructure, what the New Zealand regional chapter offers and how you can get involved.

Drinks and nibbles provided.

BROUGHT TO YOU BY PIANC

Conference Gala Dinner

6pm – 11pm, Thursday 21 November
The Beach Sumner, 25 Esplanade Sumner, Christchurch

6pm – 7pm	Pre-dinner drinks
7pm – 8.30pm	Dinner/awards
8.30pm – late	Music

Theme: "Beach life"- come dressed in your favourite beach attire – whether that's a Hawaiian shirt, as a surfing legend, or your favourite sea critter. This year we are keeping it casual while celebrating at the beach!

Field trips

Northern Tour

Our northern tour departs the central city and head north to stop at Brooklands Lagoon/ Te Riu o Te Aika and the Waimakariri River mouth. Part of the mouth system of the Waimakariri River, the lagoon has changed dramatically over the last 140 years through a combination of natural events and a history of successful (and not so successful) river control works which have shaped the estuary morphology we see today. The lagoon-side settlement of Brooklands was badly affected by the 2010/2011 Canterbury earthquake sequence and subsequently red-zoned with around 500 properties demolished.

We'll then cross the Waimakariri River and continue north to visit the Tūhaitara Coastal Park. The Park spans 10km of coastline from the Waimakariri River to Waikuku Beach. Te Kōhaka o Tūhaitara Trust is dedicated to the rehabilitation and management of this 700ha coastal park, with a multi-generational vision to restore indigenous coastal ecosystems supporting a diverse range of native flora and fauna species and providing sustainable mahinga kai.

We'll visit a number of the Trust's numerous rehabilitation projects including Biota Nodes, restoration of the magnificent Tūtaepatu Lagoon and the establishment of a demonstration site of a restored native coastal forest sequence, from foredune to coastal hinterland, once typical of north Canterbury.

Important information

- We will have lunch at the conference venue before departing on the field trip
- Be ready to meet the tour buses for a 1.30pm departure
- The buses will return to Chateau on the Park by 5.30pm
- Please wear comfortable walking shoes and bring warm clothing and rain protection. The field trip will still run if the weather is marginal. Please bring water and sun protection (hat, sunscreen) in anticipation of beautiful weather!
- Please note this field trip will involve an (optional) 30 min-return walk away from the buses at Woodend Beach.

Christchurch Walking Tour

Christchurch has had to adapt in response to the changing physical and social environment, and even 14 years after the devastating earthquakes of 2010 and 2011 that adaption through recovery and rebuilding of the city infrastructure is ongoing. Our city field trip has a coastal flavour through observation and interpretation of the paleo-coastal landscape from post-maximum sea-level transgression to impacts on the post-earthquake revival.

Our local geographer/field guide will provide a walking commentary on the history and rejuvenation of central Christchurch, lessons learnt from engineering successes and failures, what we have lost and what we have gained. If you have never been to Christchurch there is much to enjoy from our small urban village. If you have not been here since before 2011 then there are huge changes to appreciate. If you haven't been to the city within the last week you'll still see and learn something new.

A round trip of about 6 km will be covered over three hours, with pauses for talk, play and refreshment.

Important information

- We will have lunch at the conference venue before departing on the walk
- Be ready to depart to central city by 1.30pm (option of a 30min walk to the start of the tour or minivan drop off – individual preference)
- Return to Chateau on the Park by 5.30pm
- Please wear comfortable walking shoes and bring warm clothing and rain protection. The field trip will still run if the weather is marginal. Please bring water and sun protection (hat, sunscreen) in anticipation of beautiful weather!



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Whakaraupō Lyttelton Harbour Cruise

Join us on a cruise of picturesque Whakaraupō Lyttelton Harbour. We'll depart through the inner harbour of Lyttelton Port, then head over and land on Ōtamahua Quail Island, rich in history and culture and boasting several local and national historic sites.

After a short steep stroll on the island, we'll cruise out to the Heads, where along the way we'll share some of the harbour's natural and cultural history and hear about the Christchurch City Council's coastal adaptation planning programme for the Harbour's many and unique coastal settlements and assets.

Important information

- We will have lunch at the conference venue before departing on the field trip
- Be ready to meet the tour buses for a 1.30pm departure
- The buses will return to Chateau on the Park by 5.30pm
- Please wear comfortable walking shoes and bring warm clothing and rain protection. The field trip will still run if the weather is marginal. Please bring water and sun protection (hat, sunscreen) in anticipation of beautiful weather!

Eastern Christchurch

Our eastern fieldtrip will travel north-east from the centre of Christchurch through the now vacant 'red zoned' areas on the north side of the Avon River to the coast at North New Brighton where we'll hear about the history and reasons for the modifications that have occurred to the dunes in this area, as well as the ongoing management of the dunes along the Christchurch coast. No visit to the Christchurch coast would be complete without taking a trip out to the end of the New Brighton Pier, and from this focal point of New Brighton, we'll be able to see the recent developments in the New Brighton area including the popular He Puna Taimoana hotpools.

Our fieldtrip will continue down the coast to the tip of the South Brighton spit, and from here we'll be able to see some of the impacts on the coastal areas of Redcliffs and Sumner caused by the earthquakes, as well as some of the subsequent works and developments that have occurred in these areas over the last decade. We'll also be able to see the dynamic interactions and physical changes that occur at the mouth of the Avon Heathcote/Ihutai Estuary, and also see how the adjacent coastlines are responding to bed level changes in the estuary as a result of the earthquakes.

Our last stop will be at the western edge of the estuary to take in the Charlesworth Reserve, where over the last 30 years, the CCC has restored and replanted a 20 ha area of former pastureland into a diverse coastal wetland ecosystem.

Important information

- We will have lunch at the conference venue before departing on the field trip
- Be ready to meet the tour buses for a 1.30pm departure
- The buses will return to Chateau on the Park by 5.30pm
- Please wear comfortable walking shoes and bring warm clothing and rain protection. The field trip will still run if the weather is marginal. Please bring water and sun protection (hat, sunscreen) in anticipation of beautiful weather!

NIWA's expertise can help you to make robust decisions for managing Aotearoa's coastal environments:



- Coastal hazard and sea-level rise impact assessments
- Flood and groundwater modelling
- Tide, storm surge and wave hindcasts, forecasts and related services
- Joint probability and compound flood hazard assessments
- Multihazard risk and vulnerability assessments – including RiskScope.

Contact

Scott Stephens
NIWA Chief Scientist Coasts
and Estuaries
scott.stephens@niwa.co.nz

niwa.co.nz/coastal-hazards



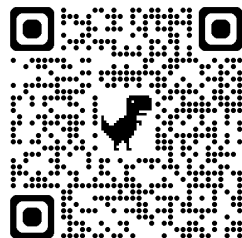
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3rd to 8th of November 2025



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 - Coastal Hazard Assessment
 - Complex Numerical Modelling
 - Field Data Collection
- Monitoring Design and Collection Campaigns



Te Hunga Takutai o Aotearoa
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