NZ Marine Sciences Society Conference

5 - 8 July 2021

TAURANGA MOANA

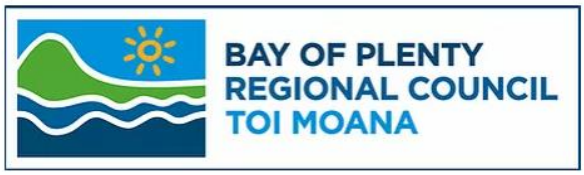
NZMSS 2021

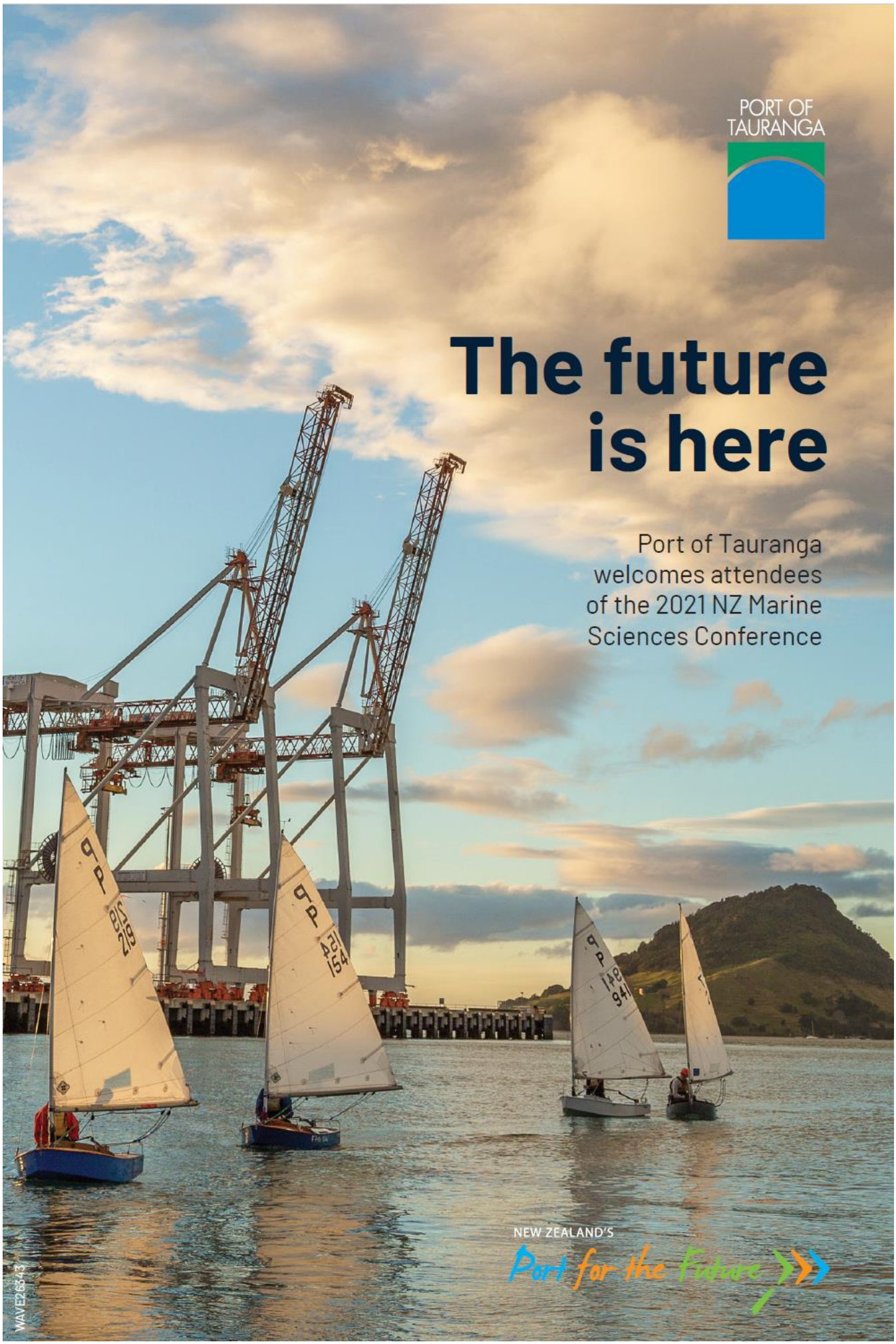
Titiro whakamuri, kōkiri whakamua
Looking back, to move forward

New Zealand Marine Sciences Society
Te Hunga Mātai Moana o Aotearoa

The University of Waikato
Te Whare Wānanga o Waikato

We would like to thank the following sponsors for making it possible to hold this year's conference




PORT OF
TAURANGA
The future
is here
Port of Tauranga
welcomes attendees
of the 2021 NZ Marine
Sciences Conference
NEW ZEALAND'S
Port for the Future
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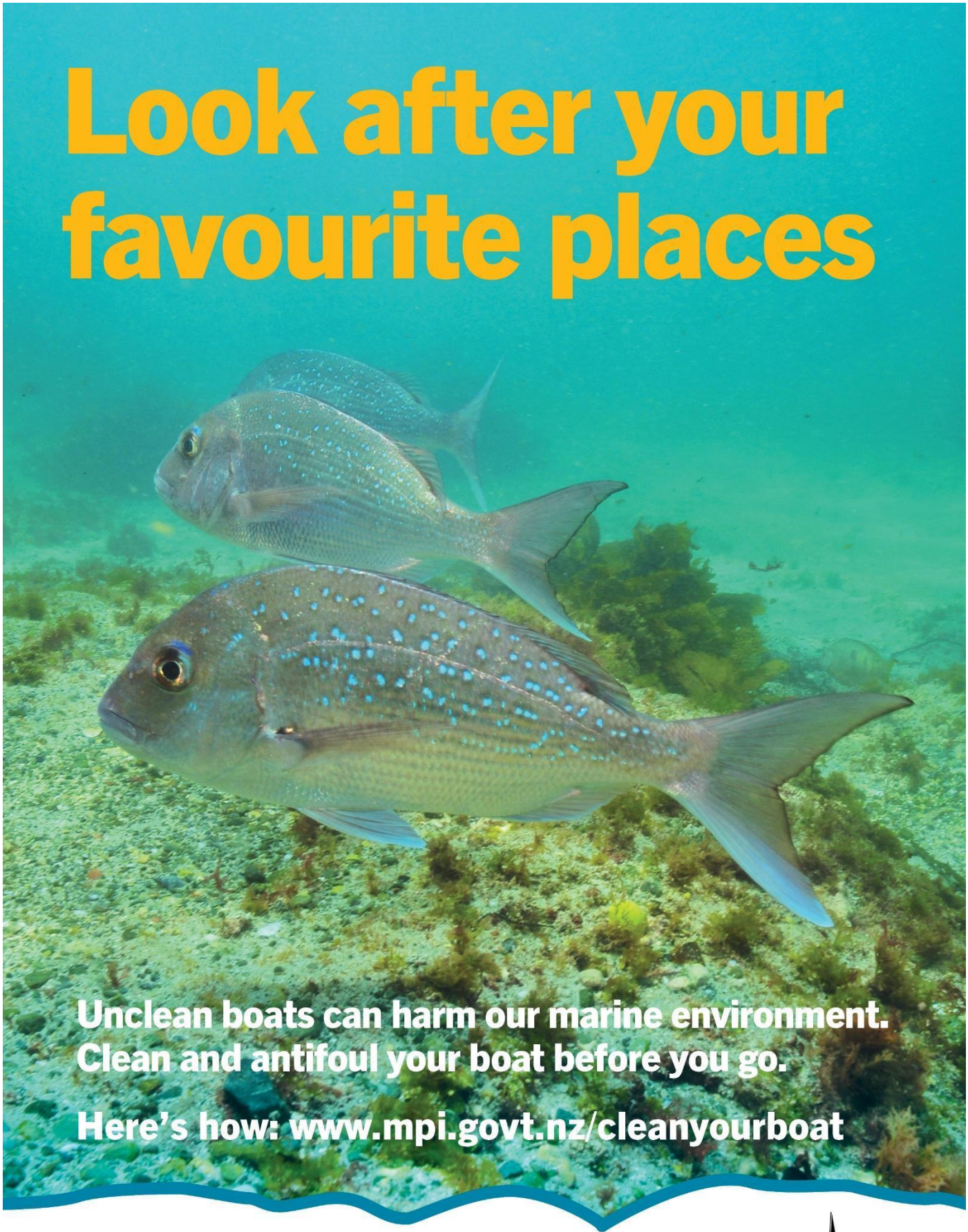
DAY ONE: MONDAY 5 JULY	
Venue	University of Waikato Tauranga Campus 101 Durham St Tauranga 3110
Venue	TCBD 2.03
1230	Registration opens
1400	Powhiri
1530-1600: Afternoon Tea	
Keynote Speaker	
1600	*Tauranga Moana* **Reon Tuanau**
Icebreaker function	

DAY TWO: TUESDAY 6 JULY	
Venue	TCBD 2.03
0845	House keeping
Keynote Speakers	
0900	*Succession: It ain't knowledge until you pass it on* **Jack Thatcher** *Informing Iwi Interests* **Kimberly Maxwell** Panel discussion facilitated by **Clarke Koopu, Bay of Plenty Regional Council**

1030-1100: Morning Tea				
Venue	**2.03**	**1.07**	**2.08**	**3.05**
Theme	**Community Ecology 1**	**Biodiversity 1**	**Sediments**	**Education & Outreach**
Chair	**Hannah Jones**	**Simon Muncaster**	**Malcolm Clark**	**Xavier Pochon**
1100	*Benthic community composition of Temperate Mesophotic Ecosystems: Sponge domination and habitat provisioning.* **Benjamin Harris**	*MARES, a replicable pipeline and curated reference database for marine eukaryote metabarcoding.* **Vanessa Arranz**	*Geochemical mapping of Aotearoa's marine sediments: A Bay of Plenty case study.* **Grace Frontin-Rollet**	*New Zealand and the UN Decade of Ocean Science.* **Mike Williams**
1115	*Microplankton interactions with decadal-scale nutrient enrichment in a deep estuary.* **Karl Safi**	*Monitoring and management priorities for New Zealand habitat-forming bryozoans.* **Hannah Mello**	*Biogeochemical feedbacks to ocean acidification in a cohesive photosynthetic sediment.* **Kay Vopel**	*Reporting on the Unseen. Marine science, art, and community: social art, social science.* **Gabby O'Connor**
1130	*Fish food for thought: Insights into the Fiordland marine ecosystem.* **Callum Long**	*Biodiversity of marine parasites in NZ: what don't we know?* **Jerusha Bennett**	*Spatial changes in estuarine tidal asymmetry to infer sediment dynamics under SLR.* **Remy Zyngfogel**	*Host science teachers, engage science learners.* **Julia Bishop & Kim Beaton**
1145	*Vulnerability of Temperate Mesophotic Ecosystems to environmental impacts: Evidence from Lough Hyne (Ireland).* **Valerio Micaroni**	*Disentangling deep-sea diversity: a comparison of fish communities using functional traits.* **Victoria Carrington**	*The interactions of buoyant river plumes with vegetation and consequences for sediment transport.* **Hemanth Vundavilli**	*Education for circularity in the real world: Example of teaching young engineers system thinking and entrepreneurial skills.* **Ralf Schlothauer**
1200	*Ecomorphological divergence and trophic resource partitioning in 15 syntopic Indo-Pacific parrotfishes (Scarini).* **Georgina Nicholson**	*Predicting how sea level rise will alter estuarine biodiversity and functioning.* **Olivia Dixon**	*How does wind forcing affect velocity asymmetry in shallow tidal basins?* **Peter de Ruiter**	*Shark Spy: Using citizen science for shark conservation and education.* **Rob Lewis**
1215	*Recent trends in estuarine health: Cause for concern.* **Hannah Jones**	*Deep reef discoveries: Exploration of biodiversity in the Bay of Plenty.* **Emma Donald**	*The effects of sedimentation in the deep sea: Emerging results from the Chatham Rise on the impacts of seabed disturbance.* **Malcolm Clark**	*Measuring Aotearoa New Zealand's ocean health through world-class partnerships and outreach.* **Xavier Pochon**
1230-1330: Lunch			**Boxfish ROV demonstration** The latest underwater data acquisition and imaging technology **Room 1.07**	**Science Media Centre Workshop** *Understanding the NZ media landscape* **Room 2.12**

Look after your favourite places



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BIOSECURITY 2025

CLEAN BELOW?
GOOD TO GO

Venue	2.03	1.07	2.08	3.05
Theme	**Restoration**	**Management 1**	**Biosecurity**	**Primary Production**
Chair	**Jenny Hillman**	**Richard Bulmer**	**Kathy Walls**	**Drew Lohrer**
1330	*Efficient mussel reef restoration: Possibility or pipedream?* **Al Alder**	*Getting to grips with incorporating cumulative effects into coastal management.* **Andrew Allison**	*Identifying invasive species management opportunities in New Zealand's recreational vessel network.* **Kyle Hilliam**	*Sucking it up or spitting it out: Carbon fluxes through seagrass sponge assemblages.* **Ramadian Bachtiar**
1345	*Estuary dynamics or decolonising environmental restoration.* **Raewyn Bennett**	*Safeguarding seafood security, threatened species and marine biodiversity, what's the catch?* **Tamlin Jefferson**	*Undaria Pinnatifida In Breaksea Sound, Fiordland: Removal impacts of the invasive kelp.* **Gabrielle Keeler-May**	*Consequences of a dimming world on seafloor primary production and nutrient processing.* **Georgina Flowers**
1400	*Remediation options for a degraded estuary, New River Estuary.* **Keryn Roberts**	*A critical re-appraisal of risks associated with mangrove removals in Aotearoa New Zealand.* **Richard Le Heron**	*Framework for compiling quantifications of marine biosecurity risk factors by vessel type.* **Mimi Tzeng**	*Extreme South Pacific phytoplankton blooms induced by tropical cyclones.* **Christopher Horvat**
1415	*Development of a standardized monitoring plan for mussel restoration.* **Sophie Roberts**	*Co-developing mātauranga Māori and science to inform seastar management in Ōhiwa Harbour.* **Megan Ranapia**	*RPA-based point-of-need detection assay for the invasive Mediterranean fanworm Sabella spallanzanii.* **Martin Zirngibl**	*Effects of a variable light environment on large brown algal productivity on an earthquake-affected coastline.* **Steph Mangan**
1430	*Testing intertidal feasibility for optimized mussel bed restoration.* **Trevyn Toone**	*Industry management strategies in a new Kaikōura pāua fishery.* **Tom McCowan**	*The correlations between bioactivity and marine invader success in native and non-native ascidians.* **Yanika Reiter**	*Variation in primary production during tidal emersion within different intertidal habitats.* **Kate Rogers**
1445	*Aiding the functional recovery of soft-sediment habitats.* **Natalie Prinz**	*The use of size-based models in ecosystem based fisheries management.* **Alice Rogers**	*Developing a national strategy for domestic marine biosecurity – connecting science to strategy.* **Emma Hill**	*Evaluating the effect of tidal exposure on Zostera muelleri photosynthesis.* **Iñigo Zabarte-Maeztu**
1500	*Ka pū te ruha, ka hao te rangatahi.* **Taryn Shirkey**	*Some thoughts on management of the nearshore zone in the face of increasing stressors.* **David Schiel**	*Cleaning up our act – development of a vessel hull biofouling characterisation tool.* **Kathy Walls & Samantha Happy**	*Coastal darkening substantially limits the contribution of kelp to coastal carbon cycles.* **Caitlin Blain**
1515	*Novel techniques for mussel restoration*. **Jenny Hillman**	*Using an expert-based Bayesian Network to inform multiple stressor management.* **Richard Bulmer**		*Synoptic assessment of seagrass primary production in intertidal and subtidal zones.* **Drew Lohrer**

1530-1600: Afternoon Tea				
Venue	**2.03**	**1.07**	**2.08**	**3.05**
Theme	**Community Ecology 2**	**Management 2**	**Algae 1**	**Population Dynamics**
Chair	**Rebecca Gladstone-Gallagher**	**Megan Oliver**	**Marie Magnusson**	**Sarah Flanagan**
1600	*Deep-sea benthic community resilience to earthquake-triggered turbidity flow in Kaikōura Canyon.* **Katharine Bigham**	*Facilitating data transfer from scientist to community; creating end-user focused reports.* **Lucy Coyle**	*Drivers of variation in seaweed nutritional composition: A meta-analysis*. **Georgia Hrstich**	*Changing population dynamics of pāua Haliotis iris: re-assessment of Peraki Bay.* **Finn Ryder**
1615	*The structure of the Southern Ocean's phytoplankton community.* **Alexander Hayward**	*Using spatially explicit quantitative risk assessments to prioritise future research and management.* **Martin Cryer**	*Protein and nutritional profile of six New Zealand seaweeds.* **Zoe Battershill**	*Population history and demography of the Australian long-spined sea urchin in Aotearoa.* **Jenny Ann Sweatman**
1630	*Biofilm community succession dynamics in a kelp forest* **Hanneloor Heynderickx**	*Assessing the risk of emerging contaminants in New Zealand.* **Olivier Champeau**	*Brews and blooms: Development of novel seaweed biostimulants supporting sustainable agricultural practices.* **Holly Robertson**	*Survival rates and its drivers in pakake, Phocarctos hookeri, pups in Otago.* **Moss Thompson**
1645	*Benthic community patterns at cold seep sites that face potential impacts.* **Ashley Rowden**	*Integrating biodiversity datasets to support marine spatial planning.* **Megan Oliver**	*National trends of benthic light availability for kelp forests using satellite imagery.* **Francois Thoral**	*Population size structure and shell morphologies of pāua (Haliotis iris) in the Canterbury Region.* **Thuy Nguyen Thi**
1700	*Silica secreting organisms regulate climate on Earth.* **Terry Isson**	*Guidance for using decision-support tools for marine spatial planning* **Shane Geange**	*The biology of Asparagopsis armata for closed life-cycle cultivation in New Zealand.* **Alisa Mihaila**	*Implementation of remote sensing photography and analysis to track fluctuations in seagrass meadows.* **Grady Petersen**
1715	*Identifying the 'vital attributes' for disturbance-recovery potential of seafloor communities.* **Rebecca Gladstone-Gallagher**		*A comparative study on fucoxanthin accumulation in selected brown seaweeds and diatoms species.* **Amirreza Zarekarizi**	*Reproductive ecology and phenotypic variation of native pipefish in seagrass beds.* **Sarah Flanagan**
1730	**Student Function** **Room 1.07**		**Green Shipping** *Sponsored by:* **Maritime New Zealand** and **The Ministry of Transport** **Room 2.08**	

DAY THREE: WEDNESDAY 7 JULY	
Venue	TCBD 2.03
0845	House keeping
Keynote Speakers	
0900	*Tangaroa Tohu Mana, Tangaroa Tohu Mauri – Marine Cultural Health Programme* **Te Kaha Hawaikirangi** *Waiheke Rāhui: restoration of taonga species guided by mātauranga* **Herearoha Skipper** Panel discussion facilitated by **Kura Paul-Burke, Associate Professor, University of Waikato**
1030-1100: Morning Tea	

Venue	2.03	1.07	2.08	3.05	2.13
Theme	Community Ecology 3	Marine Protection 1	Biodiversity 2	Microbiota	Oceans & Currents 1
Chair	Leigh Tait	Fabrice Stephenson	Emily Douglas	Kendall Clements	Stephen Hunt
1100	*The immediate effect of partial river re-diversion on salinity and tidal flow in Te Awa o Ngātoroirangi (the Maketū Estuary).* **Mojgan Razzaghi**	*Aotearoa NZ & marine protection. Let's host the International Marine Protected Area Congress (IMPAC6) in 2026!* **James Nikitine**	*The effect of turbidity on biodiversity-multifunctioning relationships.* **Johanna Gammal**	*Endozoicomonas bacteria in toheroa: Friend or foe?* **Matthew Bennion**	*Seabirds as Tohu of Ocean State.* **Sarah Davis**
1115	*Advances in benthic ecosystems assessment – biogenic features and structure as surrogates of ecosystem functioning.* **Stefano Schenone**	*Species distribution modeling of false killer whales (Pseudorca crassidens); investigating range shifts.* **Maurice Kasprowsky**	*Effects of foundation species on estuarine biodiversity across latitudes and seasons.* **Derek Gerber**	*Taxonomic versus genomic composition of the hindgut microbiota in Kyphosus sydneyanus.* **Sam Stevenson**	*Seabed 2030 initiative to map the global ocean floor.* **Jaya Roperez**
1130	*Remote sensing of co-seismic relative sea-level changes to inform fine-scale ecological impact assessment across 100 km of coast.* **Shane Orchard**	*New abundance estimate for Otago's Hector's dolphin population.* **Hannah Williams**	*Eukaryotic plankton diversity across New Zealand EEZ.* **Andrés Gutiérrez-Rodríguez**	*Hindgut microbiota composition in the marine herbivorous fish, Kyphosus sydneyanus.* **Alessandro Pisaniello**	*Turbulence modelling of the Kaipara River: Investigation of the performance of the k-ε closure scheme in Delft3D.* **Berengere Dejeans**
1145	*Novel drone technology improves habitat mapping for a coastal octopus species.* **Samantha Patterson**	*Designing effective protection for New Zealand dolphins using an agent-based approach.* **Elisabeth Slooten**	*Sentinels of change: Biodiversity monitoring using environmental DNA from filter-feeding organisms.* **Gert-Jan Jeunen**	*Metabolism of gut microbiota in seaweed-eating marine fish.* **Cesar Facimoto**	*GIS image services of satellite (MODIS) water quality products (NIWA-SCENZ).* **Mark Gall**
1200	*Facilitation cascades in marine ecosystems: Commonality and impacts from disturbances and heatwaves.* **Mads Thomsen**	*The hard line: Modelling spatial variation in exploited species across marine reserve boundaries.* **Benn Hanns**	*Shaping up: Using morphometric methods to differentiate lineages of the Mytilus (Blue mussel) congeners* **Lorenz Ravalo**	*Uncovering drivers of heterotrophic bacterial production and hydrogen peroxide in macroalgal habitats.* **Isla Twigg**	*A global oxygen atlas produced using data interpolating variational analysis.* **Christopher Roach**
1215	*Missing the forest and the trees: Utility, limits and caveats for drone-imaging of coastal marine ecosystems.* **Leigh Tait**	*Predicting distributions of vulnerable marine ecosystem indicator taxa: Have we reached the limit for presence-only models?* **Fabrice Stephenson**	*Productivity and biodiversity of seagrass and unvegetated intertidal flats in Tauranga Harbour.* **Emily Douglas**	*Biogeographic patterns of bacterial communities in arid Avicennia marina mangrove soils.* **Timothy Thomson**	*Preliminary characterisation of estuarine plumes off the west coast of the Waikato Region.* **Stephen Hunt**
1230-1330: Lunch **NZMSS AGM – 1.07**					

Venue	2.03	1.07	2.08	3.05	2.13
Theme	**Climate Change**	**Aquaculture 1**	**Recruitment**	**Genetics**	**Physiology**
Chair	**Hannah Mello**	**Gaya Gnanalingam**	**Armagan Sabetian**	**Libby Liggins**	**Craig Radford**
1330	*It hasn't always been this way: A deep-time perspective on oceans.* **Abigail Smith**	*Aquaculture effects in the Firth of Thames using a coupled physical-biogeochemical model.* **Charine Collins**	*Translocation of blackfoot pāua (Haliotis iris) in the East Otago Taiāpure.* **Louise Bennett-Jones**	*Environmental DNA from pāua (Haliotis sp.) reflects common genetic variation.* **Clare Adams**	*Mg2+ concentration in seawater affects growth and composition of marine invertebrate skeletons.* **Ian Dixon-Anderson**
1345	*Coastal marae and urupā: What about sea level rise?* **Akuhata Bailey-Winiata**	*Ecosystem modelling of green-lipped mussel, Perna canaliculus, beds in the Hauraki Gulf.* **Holly Fleming**	*Of boring sponges (Cliona sp.) and bored oysters (Ostrea chilensis).* **Imke Böök**	*Morphological stasis masks ecologically divergent coral species on tropical reefs.* **Pim Bongaerts**	*Friendly neighbors or fiendish invaders: Can upland bullies recognize unfamiliar individuals?* **Dominique Harrison**
1400	*Fossil foraminifera document changing marine environmental conditions and help predict the future.* **Bruce Hayward**	*We have the pāua: Managing for resilience in New Zealand's iconic abalone fishery.* **Shawn Gerrity**	*Environmental-recruitment relationships and catch data based analysis of movement patterns in snapper.* **Richa Garg**	*Systematics of the strawberry squid (Histioteuthidae; Cephalopoda).* **Heather Braid**	*The effects of captivity on cortisol production in short-finned eels (Anguilla australis).* **Mia Milsom**
1415	*Microbiome shifts in tropical sponge Stylissa flabelliformis in response to climate change.* **Nora Kandler**	*Stopping the next pandemic: Optimal management strategies for healthy aquaculture.* **Ben Knight**	*Using light trap arrays and otolith microchemistry to reveal temporal movement patterns for larval reef fish*. **Daniel McNaughtan**	*Getting to know your shy neighbour: Population genomics of kanakana/piharau*. **Allison Miller**	*Reproductive phenology and lunar rhythms in larval growth: Why the night matters.* **Jeff Shima**
1430	*Marine parasite distribution in a changing climate.* **Thomas Morris**	*Long term storage, hatchery and grow-out protocol for giant kelp (Macrocystis pyrifera): A methodology appraisal.* **Duong Le**	*A new perspective on aggregation and aggregative settlement in marine invertebrates.* **Robert Wolf**	*In-field environmental DNA technologies exploring passive filtration and PDQeX extraction.* **Ulla von Ammon**	*Stunted pāua, the Chatham Islands, and a toolbox of physiological assessments.* **Leonie Venter**
1445	*Trace fossil Chondrites: A biogenic deep marine paleo-environmental proxy.* **Francisco Saldaña-Monroy**	*Enhancing the blue economy through data-driven technologies for aquaculture.* **Chris Cornelisen**	*Modelling approaches for exploring patterns of benthic invertebrate biodiversity throughout NZ waters.* **Tom Brough**	*Contrasting phylogeography of two limpet genera in the Southern Ocean.* **Hamish Spencer**	*Metabolome–trait associations in fish: Fishing for insights in a multidimensional world.* **Tim Young**
1500	*Ross Sea Life in a Changing Climate (ReLiCC) 2021 voyage RV Tangaroa.* **Richard O'Driscoll**	*Reopening a closed pāua fishery: Strategies, benefits, and challenges.* **Gaya Gnanalingam**	*Using otolith elemental chemistry to detect chaotic New Zealand snapper (Chrysophrys auratus) movement.* **Armagan Sabetian**	*Drivers of genetic diversity and connectivity in New Zealand coastal species.* **Shane Lavery**	*The New Zealand spotty (Notolabrus celidotus): a novel model species for vertebrate sex change.* **Simon Muncaster**

1515	*Assessing embryo fate development as a means of selective climate adaptation.* **Emily Frost**			*Social environment, but not relatedness, determines piggy-backing of Kermadec Islands giant limpets.* **Libby Liggins**	*Ocean acidification effects on fish hearing.* **Craig Radford**
1530-1600: Afternoon Tea					
Venue	**2.03**	**1.07**	**2.08**	**3.05**	**2.13**
Theme	**Community Ecology 4**	**Moana Project**	**Algae 2**	**Marine Protection 2**	**Habitats**
Chair	**Mads Thomsen**	**João Souza**	**David Aguirre**	**Nick Shears**	**Marta Ribo**
1600	*Relating Ross Sea phytoplankton community composition to environmental conditions and seasonal progression.* **Antonia Cristi**	*Moana Project: Understanding ocean dynamics, connectivity to support NZ's seafood sector.* **João Souza**	*Ecosystem function and role of soft sediment red macroalgal communities.* **Namrata Chand**	*Overview of DOC research on marine protected species interactions with commercial fisheries.* **Shannon Weaver**	*Microhabitat variability and seasonality in limpet (Cellana spp.) responses to thermal stress.* **Spencer Virgin**
1615	*Describing benthic community patch characteristics to inform fishing disturbance-recovery models for seamounts.* **Savannah Goode**	*Increasing complexity in modelling larval dispersal in Aotearoa New Zealand.* **Carolyn Lundquist**	*Why we should care about missing juvenile macroalgae.* **Dan Crossett**	*Marine protection enhances kelp forest stability.* **Ohad Peleg**	*Natural and human-induced factors contributing to benthic habitat suitability.* **Marta Ribó**
1630	*Match or mismatch: Making conservation efforts align with life histories.* **Christopher Meijer**	*A coastal-scale hydrodynamic simulation for the Bay of Plenty.* **Mireya Montaño**	*Post-earthquake reorganization of intertidal algal communities along the Kaikōura coastline.* **Thomas Falconer**	*Investigating the ecological effects of Long Bay Okura Marine Reserve.* **Sara Kulins**	*What are the best nursery habitats for blue cod?* **Andy Chang**
1645	*Mātauranga Māori to understand population dynamics and pipi health, Waihi Estuary.* **Tyla Kettle**	*Modelling population connectivity of Perna canaliculus at Ninety Mile Beach.* **Romain Chaput**	*Impacts of large earthquakes and extreme heatwaves on bull kelp around Kaikōura.* **Shinae Montie**	*Subtropical sea urchin takes hold in northern New Zealand marine reserve.* **Celia Balemi**	*Refuge and the reef: Is all habitat structure created equal?* **Chelsey Beese**
1700	*Spatial predictions of species occurrence and abundance at national and regional scales.* **Stephanie Watson**	*Oceanographic and genetic connectivity of green mussels at the national scale.* **Calvin Quigley**	*Effects of ocean acidification and temperature on Caulerpa species.* **Aleluia Taise**	*Empirical evaluation of spatial fisheries closures to reduce protected species bycatch, using a spatially explicit risk assessment.* **Ben Sharp**	*To fish, or not to fish: the probably wrong answer to the possibly right question.* **Mike Hickford**
1715	*Benthic biogeography of the Taranaki region reflecting land and oceanic influences.* **Sam Mc Cormack**	*Moana Reanalysis – an ocean estate estimate for the New Zealand EEZ.* **João Souza**	*Kelp forest eco-evolutionary dynamics.* **David Aguirre**	*Kina barrens as an ecological indicator of overfishing: Reality or an oversimplification?* **Nick Shears**	*Anchor drag: Disturbance agents of benthic habitats.* **Sally Watson**
Poster Session					

Posters	
Presenter	**Title**
Andrea Alfaro	*An integrated omics approach to investigate summer mortality of New Zealand green-lipped mussels.*
Olga Belonovich	*Harnessing eDNA for marine mammal monitoring – in situ assessment of different sampling techniques.*
Kathrin Bolstad	*Trophic ecology of Moroteuthopsis ingens from the Chatham Rise, Aotearoa New Zealand/Trace element concentrations in mass-stranded long-finned pilot whales (Globicephala melas edwardii).*
William Carome	*Long-term trends in Hector's dolphin distribution are correlated with levels of tourism.*
Ted Conroy	*Remote sensing of turbid river plume variability.*
Phellipe Couto[1]	*A coupled wave-hydrodynamic model of the nearshore and coastal waters around Kaikōura.*
Annabelle Cranswick	*Foraging flexibly or consuming conservatively? Foraging ecology of New Zealand right whales.*
Caleb Crosbie	*The effect of nutrient enrichment on inorganic carbon cycling in temperate mangrove soils.*
Dayanitha Damodaran	*Understanding substrate requirements of a native species to produce effective eco-engineered surfaces.*
Roberta D'Archino	*New members of the New Zealand seaweed flora: The latest two introductions.*
Samik Datta	*A multi-species size-based ecosystem model of Chatham Rise, and comparisons with Atlantis.*
Ashley Davis	*Reconstructing physical and biogeochemical oceanography around NZ using deep-sea black corals.*
Imogen Foote	*Seabird surveillance: Developing a new genetic analysis for bycatch species identification.*
Emily Frost	*Gut microbiome and pathogenic eDNA investigations on New Zealand pāua (Haliotis iris).*
Lydia Green	*Overview of spatial ecology and critical foraging habitats of Mobula birostris in Aotearoa New Zealand.*
Marta Guerra	*Offshore surveys reveal a hotspot for oceanic megafauna off the Northland coast.*
Christopher Horvat	*Waves and floes in Antarctic sea ice.*
Ryan Howard	*Retinal anatomy of deep-sea oegopsid squids.*
Julie Jakoboski	*The Moana Project's Te Tiro Moana: Observing New Zealand's Oceans.*
Erik Johnson	*Wind-related chlorophyll variability at New Zealand's subtropical front.*
Samantha Happy	*Clean Hull Plan – sailing towards consistent pathway management.*
Melissa Kellett	*Novel insights into movement behaviour of bronze whaler sharks in New Zealand.*
Dallas Lafont	*Distribution and drivers of variation in seaweed forests in Queen Charlotte Sound, New Zealand.*
Blake Lewis	*Distribution of cortical alveoli throughout oocyte development in eel, Anguilla australis.*
Libby Liggins	*The Ira Moana Project: A genetic observatory for Aotearoa's marine biodiversity.*
Katie Littlewood	*Using citizen-science to monitor range dynamics of marine fishes under climate change.*
E [Manue] Martinez	*Using citizen science to improve our understanding of marine macro-litter in Northland.*
Tom Massué	*Determining responses to warming of Otago region benthic communities using heated panels.*
Alice McCullough	*Morphological and physiological response of a temperate calcareous sponge to ocean acidification.*
Valerio Micaroni	*Global status, impacts and management of rocky temperate mesophotic ecosystems.*

Posters	
Presenter	**Title**
Alice Morrison	*Fantastic fish and where to find them using BRUV in Tauranga Harbour.*
Simon Muncaster	*Spawning performance of female yellowbelly flounder, Rhombosolea leporina, following GnRHa treatment.*
Courtney Ogilvy	Investigating diet of Māui dolphins using stable isotope analysis.
Paige Olmstead	*Understanding the effects of microplastic ingestion on gut-morphology in triplefins.*
Xavier Pochon	*Biosecurity implications of drifting marine plastic debris: Current knowledge and future research.*
Rebecca Pratt	*Not a silent world: Utilising bioacoustics from New Zealand reefs in documentary film.*
Zoe Psarouthakis	*Do ingested microplastics affect the health and behaviour of triplefin fish?*
Catriona Robertson	*Diving into the world of animal welfare in aquaculture species, Seriola lalandi, NZ yellowtail kingfish.*
Naif Rushdi	*Spatial prioritisation for marine biodiversity conservation using MARXAN.*
Zhanchao Shao	*The true colour of water – removing seafloor reflectance from satellite imagery.*
Michelle Simone	*Towards sustainable salmon aquaculture.*
Jessica Smith	*Sound production and associated behaviour of Jasus edwardsii.*
Georgia Third	*Morphological and life history variation in snapper populations.*
Laura Torre-Williams	*The forgotten shore whaling station: Records from Whangaparapara, Hauraki Gulf, Auckland.*
Giulia Trauzzi	*Genetic connectivity of H. iris at Kaikoura.*
Lolita Vallyon	*Under pressure: How do cumulative impacts of multiple stressors affect shellfish?*
Leonie Venter	*Physiological responses of juvenile New Zealand geoduck (Panopea zelandica) post emersion and recovery.*
Mengjie Wei	*Water-extractable carbon across vegetated and non-vegetated coastal ecosystems.*
Benjamin Williams	*Shifts in macroalgal community structure of kelp forests in the Marlborough Sounds.*
Tim Young	*Beyond relaxed: Magnesium chloride anaesthesia alters the circulatory metabolome of a marine mollusc (Perna canaliculus).*
Jochen Zaeschmar	*False killer whales off north-eastern New Zealand: social structure and site-fidelity.*

DAY FOUR: THURSDAY 8 JULY	
Venue	TCBD 2.03
0845	House keeping
Keynote Speakers	
0900	*This morning's plenary talks are sponsored by the Sustainable Seas National Science Challenge.* *Plastics pollution: Centering Indigenous partnerships and knowledge for healthy oceans and environments.* **Tina Ngata** *Whakaika te moana: He huarahi ki Te Ao-tū-roa* **Te Rerekohu Tuterangiwhiu** Panel discussion facilitated by **Linda Faulkner, Sustainable Seas Manahautū/Deputy Director Māori**
1030-1100: Morning Tea	

Venue	2.03	1.07	2.08	3.05
Theme	**Sustainable Seas**	**Stressors**	**Restoration 2**	**Oceans & Currents 2**
Chair	**Linda Faulkner**	**Jenni Stanley**	**Chris Hepburn**	**Julia Mullarney**
1100	*Ehara i te numa noa - Advancing Māori Cultural Health Indicator (MCHI) theory and practice through exploration of Maramataka (Māori Lunar Calendar).* **Waiaria Rameka**	*Is red the new brown? Tracking long-term biogenic changes in response to an earthquake and a modified physical environment.* **Robyn Dunmore**	*"Kelping" the Hauraki Gulf: does kina removal work for kelp forest restoration?* **Kelsey Miller**	*Marine heatwaves in shallow water ecosystems of New Zealand.* **Felix Cook**
1115	*Kia tika te hī ika: An exploration of fisheries tikanga and mātauranga.* **Maru Samuels**	*How COVID-19 Lockdown increased dolphin and fish communication ranges.* **Matt Pine**	*Patterns of biodiversity on newly restored mussel beds in the Marlborough Sounds.* **Emilee Benjamin**	*A year in the life of the East Auckland Current.* **Rafael Santana**
1130	*Why are we always arguing about risk and uncertainty?* **Paula Blackett**	*Hypoxia and multiple stressors on bivalve Austrovenus survival in a laboratory experiment.* **Nichola Salmond**	*Bivalve distribution models and ecosystem service predictions to inform management & restoration.* **Vera Rullens**	*Shelf-ocean exchange at the Southland Front, New Zealand.* **Robert Smith**
1145	*Kaitiakitanga: Traditional Māori practices to assist contemporary marine management and research.* **Kura Paul-Burke**	*Warming up: sponge tolerance to marine heatwaves.* **Francesca Strano**	*Subtidal mussel (Perna canaliculus) restoration efforts alter associated biological community structure.* **Mallory Sea**	*Nitrogen enrichment increases greenhouse gas emissions from emerged intertidal sandflats.* **Dallas Hamilton**
1200	*Building a blue economy in Aotearoa New Zealand.* **Nicolas Lewis**	*Recreational boats are a ubiquitous source of acoustic stress in the coastal waters of the Hauraki Gulf.* **Louise Wilson**	*Heavy metal exposure influences maternal investment of the mud-whelk Cominella glandiformis.* **Alison Duncan**	*Physical controls on the fate of nitrogen in open coastal zones.* **Ines Bartl**
1215	*First steps in building a seaweed sector framework in Aotearoa New Zealand.* **Rob Major**	*Sedimentation impacts on deep-sea macrofauna communities of the Chatham Rise, New Zealand.* **Campbell Murray**	*Construction of a spatial habitat bottlenecks modelling framework for the first year of fish life.* **Samik Datta**	*Otago Shelf heat budget and the importance of the Southland Current.* **Jesse Vance**
1230	*eDNA reveals estuarine benthic community response to nutrient enrichment.* **Dana Clark**	*Hearing in black seabass and the effects of pile driving on their behaviour.* ***Jenni Stanley***	The East Otago Taiāpure: Community-led restoration of connected fishery ecosystems. **Chris Hepburn**	*Drivers of erosion and accretion across the fringe of a coastal mangrove forest.* **Julia Mullarney**
1245-1345: Lunch **SCIENTIFIC DIVING MEETING – 2.08**				

Venue	2.03	1.07	2.08	3.05	2.13	2.12
Theme	**Elasmobranchs**	**Charismatic Mega-fauna & Trematodes**	**Plastic Pollution**	**Aquaculture 2**	**Biotechnology**	**Workshop**
Chair	**Brittany Finucci**	**Brendon Dunphy**	**Bridie Allan**	**Phil Ross**	**Mike Packer**	*Improving Ocean Literacy in Aotearoa New Zealand* *Sponsored by:* **Plant & Food Research** *Presented by:* **Katherine Short, James Nikitine, Steve Menzies, Rachel Haydon, Suzy Black, Michelle Cherrington, Liam Kokaua**
1345	*Habitat use by deep-sea chondrichthyans.* **Helen Armstrong**	*Multi-species foraging associations: Investigating the fine-scale foraging behaviours of marine megafauna.* **Wednesday Davis**	*Quantification and characterisation of microplastics in commercial fish from southern New Zealand.* **Isabella Clere**	*Development of molecular tools to monitor king salmon health.* **Roberta Marcoli**	*Development and validation of molecular biomarkers for the green-lipped mussel, Perna canaliculus.* **Camille Baettig**	
1400	*Movements of school sharks with regard to the Kaipara Harbour.* **Alex Burton**	*The contribution of seagrass (Zostera muelleri) to the diet of Canada geese.* **Michal Ferries**	*Marine plastic-degrading bacteria are rare and exhibit little substrate preference for attachment.* **Jessica Wallbank**	*Genetic considerations for translocation of kelp brood stock for aquaculture.* **Jacob Nepper-Davidsen**	*Diet metabarcoding for grazing fishes: Remedy or rabbit hole?* **Kendall Clements**	

1415	*Hearing in sharks.* **Carolin Nieder**	*Stable isotopes unravel the feeding mode-trophic position relationship in trematode parasites.* **Amandine Sabadel**	*Microplastics in the marine environment: Sediment contaminant and bioaccumulation rates in bivalves within the Bay of Plenty.* **Anita Lewis**	*Seeding density impacts important responses in the Greenshell™ mussel, Perna canaliculus.* **Carrie Reyden**	*Applications of Third Generation Sequencing to support management of NZ flat oysters.* **Guillermo Rodriguez-Piccoli**	*This session will explore how practitioners from marine conservation, science and sustainability can work together to build a unique approach to Ocean Literacy that complements and integrates the principles of Mātauranga Māori.*
1430	*Inner ear morphology and directional hearing in sharks.* **Derek Sauer**	*Long-term consistency in bottlenose dolphin distribution in Fiordland, NZ.* **Steph Bennington**	*The effect of plastic pollution on the reproductive success of cryptobenthic fishes.* **Teresa Morrell**	*Green-lipped mussel farms as habitat for local fish recruitment and feeding.* **Lucy Underwood**	*Exploring traditional practices of bivalve translocation: A multidisciplinary approach.* **Vanessa Taikato**	
1445	*First insights into the spatial ecology of endangered Mobula birostris in Aotearoa.* **Edy Setyawan**	*Thirty-seven years and counting: Lessons learned from long-term monitoring of cetaceans in Aotearoa.* **Will Rayment**	*Impacts of DEHP on the territory establishment of male Fosterygion capito.* **Fletcher Munsterman**	*Designing structures to farm green-lipped mussels in open-ocean environments.* **Malcolm Smeaton**	*An experimental framework for assessing the capture of environmental DNA and RNA.* ***Anastasija Zaiko***	
1500	*Escape behaviour and metabolic capacity in a neonate tropical shark: Temperature effects.* **José Trujillo**	*Patterns of decline in hapū of Māui and Hector's dolphin (Cephalorhynchus hectori).* **Gemma McGrath**	*Investigating the ecotoxicological impacts of microplastic additives on New Zealand native species.* **Andrew Barrick**	*Developing trigger values for a Northland mussel farm.* **Pete Wilson**	*Development of biomaterials from sustainably produced macroalgae feedstocks.* **Nethmie Jayasooriya**	
1515	*Drivers of spatial distributions of basking shark (Cetorhinus maximus) in the Southwest Pacific.* **Brittany Finucci**	*An uncertain future for the Māui dolphin.* **Rochelle Constantine**	*Litter on New Zealand beaches, baseline evidence for future policy.* **Ella van Gool**	*Thinking outside the can: Developing community-based sustainable toheroa aquaculture.* **Phil Ross**	*Adaptive genetic variation shows fine-scale population structure in Australasian snapper (Chrysophrys auratus).* **Tom Oosting**	
1530		*Hoiho (Megadyptes antipodes) stress and foraging patterns across 15 years at Rakiura.* **Brendon Dunphy**	*Microplastic exposure interacts with warming to affect escape behaviour in fish.* **Bridie Allan**		*Biotechnological advances: How to understand the language of physiology.* **Andrea Alfaro**	
1545-1615: Afternoon Tea						

Closing session	
Venue	**TCBD 2.03**
1615	*Presentation of the John Morton Medal for advances in marine conservation and sustainability* *Presentation of the New Zealand Marine Sciences Award for advance knowledge and understanding of marine science in New Zealand* *Closing of the conference*

Conference Dinner & Awards Ceremony

Classic Flyers
9 Jean Batten Drive
Mount Maunganui 3116

Buses will depart from the University of Waikato for Classic Flyers at 1815 and 1830
Return buses from Classic Flyers to the University of Waikato will depart at 2230, 2330 and 0030

With one of the world's largest Exclusive Economic Zones, New Zealand's ocean provides vital social, cultural, economic and environmental benefits.

The Moana Project, spearheaded by MetOcean Solutions, the oceanographic division of the New Zealand MetService, is a five-year ocean research project funded by Ministry of Business, Innovation and Employment. It aims to improve understanding of coastal ocean circulation, connectivity and marine heatwaves to produce information that supports sustainable growth of the seafood industry, iwi initiatives and how we manage our marine environments. The project does this through four project workstreams:

Te Tiro Moana – Eyes on the Sea: Increasing the number of ocean observations available, so that we have better data about our ocean. This includes developing a smart sensor which can be deployed on commercial fishing gear to dramatically increase the number of observations, and quality checking and making available in one easy-to-use database existing data held by NZ organisations.

Ngā Ripo o Te Moana - Whirlpools of the Ocean: Improving ocean models using ocean observations and up-to-date physics, allowing us to predict ocean circulation, temperature and particle transport, including by forecasting marine heatwaves. In addition to our New Zealand-scale model, we are doing high-resolution zoom-in models in the Bay of Plenty, Hauraki Gulf and Kaikoura.

He Hono Moana - Ocean Connection: Determining the connectivity of important kaimoana species through genetics, microchemistry and mātauranga Māori, supported by ocean modelling. We are looking at this nationally and also using the zoom-in models to examine connectivity in the Bay of Plenty, on Ninety Mile Beach, and Kaikoura.

He Papa Moana – Ocean Foundation: Bringing together ocean modelling, kaimoana connectivity and iwi aspirations to help further iwi interests and marine management within a cross-cultural ocean knowledge platform. This research explores traditional waka voyaging and mātauranga relating to changes in ocean temperatures as well as the effects of a changing climate on Māori fisheries.

Moana PROJECT www.moanaproject.org