Partners' Newsletter

Keeping you informed

Spring 2023

Recent marine biosecurity webinar series

In May and June, Top of the South Marine Biosecurity, along with Top of the North Marine Biosecurity, hosted three webinars.

The first, held on 24th May, discussed 'Who should pay for marine biosecurity?' When it comes to preventing the spread of pests domestically, local boat owners shoulder the burden of checking, cleaning and maintaining their vessels. However, we all benefit from marine pest management and the environmental protection it brings. The webinar included a range of experts sharing their views on how marine biosecurity should be funded and what role the beneficiaries and exacerbators of marine biosecurity effectively play in the big picture. Panellists included: Dave Taylor from Aquaculture NZ, Craig Thorton from Kelly Tarlton's Marine Wildlife Trust and Waiheke Marine Project, David Abercrombie from Yachting NZ, Don McKenzie from Northland Regional Council and Chris Galbraith from the New Zealand Marina Operators Association.

The second, held on 31st May, discussed 'Filling gaps in our clean hull framework'. More infrastructure is one part of the solution for boat operators needing maintenance options to maintain great hull hygiene, but there are also other solutions – from new-look facilities, to new and emerging antifoul coating products and antifoul alternatives to solutions for underwater structures, and the role of education in creating a new 'hull hygiene' mindset. The webinar included a range of experts speaking about their experience, their wins, and their ideas for the future. The panellists included: Mark Hollier from Half Moon Bay Marina and Boatyard, Nigel Skeggs from Nelson Marina, Oliver Floerl from Cawthron Institute, Greg Kroef from Heron Construction, Glenn Cough from Marine Protection Systems, Marcus Gardner from Carbotec, and Eugene Georgiades from the Environmental Protection Authority.

The third and final webinar was held online on 7th June and focused on 'Marine biosecurity tools and information for council staff'. The webinar included regional council staff discussing the ways in which they're working to prevent the spread of marine pests through surveillance, incursion response, regulations, and education. Panellists included Aless Smith from Northern Regional Council, Dimitri Colella and Scott Godwin from Auckland Council, Hamish Lass from Bay of Plenty Regional Council, Peter Lawless from Top of the South, and Jono Underwood from Marlborough District Council.

If you missed the live sessions or would like to re-watch any of them, you can find the recordings on www.marinebiosecurity.co.nz/news/seminar-series-2023

Exotic caulerpa continues to be found in new locations up north - what does this mean for Top of the South?

Exotic seaweeds *Caulerpa brachypus* and *Caulerpa parvifolia* were recently found in the Bay of Islands, Te Kawau Tūmaro ō Toi Kawau Island, and Waiheke Island.

Current distribution of exotic caulerpa in Aotearoa New Zealand

Exotic and invasive caulerpa was first found in New Zealand waters in July 2021 at Aotea Great Barrier Island. The following year, in March 2022, it was reported from Ahuahu Great Mercury Island and in recent months it has been found at three additional locations: Te Rāwhiti Inlet, Bay of Islands (May 2023); Te Kawau Tūmaro ō Toi Kawau Island in the Hauraki Gulf (July 2023); and Waiheke Island (July 2023).These new locations show how readily exotic caulerpa can be spread - both on tides and currents, and on vessels and equipment.

How exotic caulerpa can spread

Caulerpa spreads through by into little pieces or fragments that can then establish and reproduce. This can happen by wave action and currents during storms or when anchors and fishing gear are moved into or through seaweed beds. Pieces of caulerpa can get tangled in, or stuck on, equipment such as nets, anchors, chains, and dive and fishing gear. Individual fragments can survive out of water for up to a week or more if they're in a moist location like an anchor locker or bunched-up fishing net.

What does this mean for Top of the South

The growth rate and temperature tolerances of *Caulerpa brachypus* and *Caulerpa parvifolia* in New Zealand are currently not well understood. Average water temperatures up north are warmer than here in the Top of the South. Still, exotic caulerpa has been found at depths up to 40 m in Aotea Great Barrier Island suggesting that it can tolerate cooler water temperatures like those in our area. To reduce potential spread in our region we are going to start working with Top of the South marinas to target boats known to be travelling from a caulerpa infested area. Boaters can check their gear for any seaweed fragments and dispose of them onshore - ideally to household rubbish or a bin well away from the ocean. It is important it does not get back into the sea.

Information sheets and what you can do to help

Anchor and anchor chain must be thoroughly cleaned of any seaweed before moving from northern locations. This means removing any visible seaweed and rinsing the anchor and chain.

Keep an eye out for exotic caulerpa species. If you think you've seen it: note the location; take a photo if possible; contact Biosecurity New Zealand on 0800 80 99 66; or complete the online reporting form at report.mpi.govt.nz.

Biosecurity New Zealand information on exotic caulerpa species

A diver holding clumps of caulerpa.
Source: Ministry for Primary Industries and licensed by MPI for re-use under the Creative Commons Attribution 4.0 International licence

Caulerpa seaweed on the sea floor.
Source: Ministry for Primary Industries and licensed by MPI for re-use under the Creative Commons Attribution 4.0 International licence

Prioritising surveillance sites for exotic caulerpa in Northland

The spread and potential impacts of the non-indigenous seaweed ‘exotic caulerpa’ are likely to be of great concern to all stakeholders in Aotearoa New Zealand’s marine environment, in particular the northern regions.

In May 2023, exotic caulerpa was known to occur in only a small number of harbours around Great Barrier Island/Aotea (GBI), and Great Mercury Island/Ahuahu (GMI). This pest seaweed can be readily entangled and spread via vessels’ anchoring gear. Given the high levels of vessel activity between known infested locations and mainland New Zealand, several regions were concerned about vessel-mediated translocation of exotic caulerpa to their coastlines. Northland Regional Council engaged scientists from the Marine Biosecurity Toolbox research programme to assist them with prioritizing locations along the coast of Northland for surveillance and readiness activities The team applied their prototype maritime pathway network model to predict critical risk locations along the Northland coast where anchoring events by vessels arriving from infested sites around GBI/GMI, and associated release of exotic caulerpa fragments may have occurred. Network analyses identified a total of 18 Northland locations that may have received exotic caulerpa transfers via ~4,000 potential anchoring events (Figure 1). The Bay of Islands’ Te Rāwhiti Inlet was identified as the location with the highest relative ‘caulerpa risk’ across the region – and an extensive established population of exotic caulerpa has since been discovered there. These results are being used by Northland Regional Council to prioritise on-the-ground surveillance sites for exotic caulerpa. Our approach is transferable to other coastal regions of New Zealand and can be readily used to identify domestic locations at risk of ‘receiving’ exotic caulerpa from the growing number of known established populations.

The research team were: Oli Floerl and Kyle Hilliam (Cawthron Institute), Eric Treml and Cal Faubel (Australian Institute of Marine Science), and Simone Stevenson (Deakin University).

For access to the full study report please contact Northland Regional Council (marinebiosecurity@nrc.govt.nz) or Oli Floerl (oliver.floerl@cawthron.org.nz).

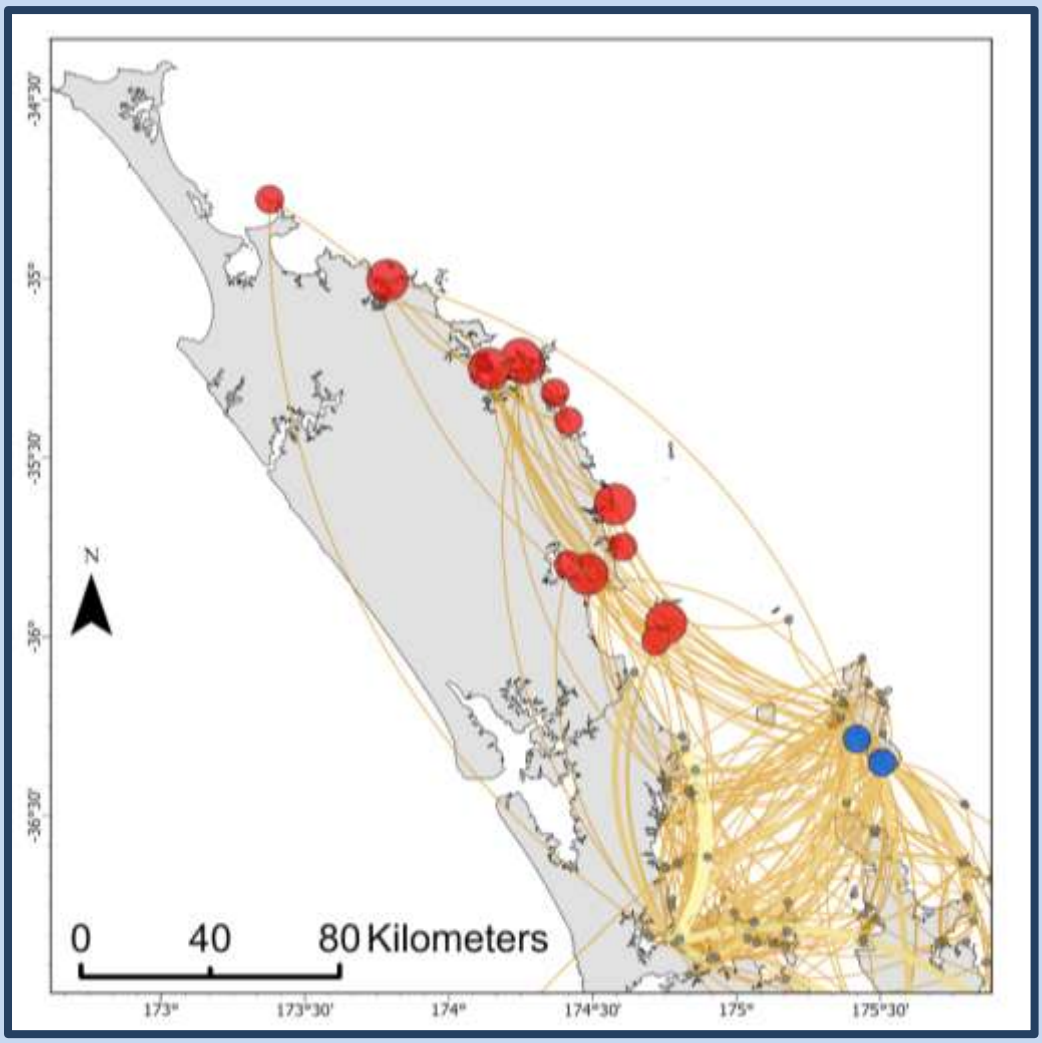
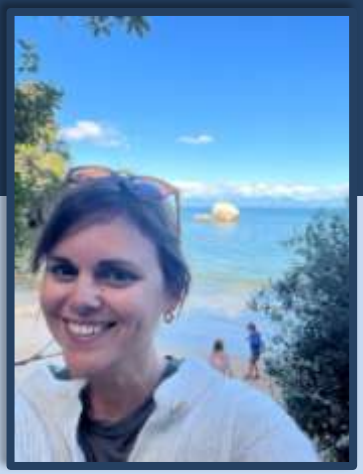


Figure 1: Potential anchoring events along the Northland coast of vessels that had departed locations around Great Barrier Island with known populations of exotic caulerpa (blue circles) within the 10 previous days. Coastal locations where potential anchoring events occurred (red circles) are sized according to their relative risk. Orange arcs represent observed vessel movements between locations and line width is scaled to number of vessels. Directionality of the vessels is implied by the bend of the arc, following a clockwise direction.

Profile: Christina Simkanin



Kia ora Tātou. I recently joined the coordination team for the Top of the South Marine Biosecurity Partnership and will be taking over the coordinator role from Peter Lawless in the spring.

I have 17 years of experience in marine biosecurity work in the US and Canada. This includes a two-year stint in Oregon studying coastal shipping and ballast water management along the US West Coast (California, Oregon, and Washington) which included working with shippers, shipping agents, state regulatory staff, and the Pacific States Marine Fisheries Commission. After that, I moved to British Columbia, Canada to pursue a PhD in marine ecology. My research focus was on non-native ascidians, their distribution in marinas on Vancouver Island, and the likelihood, causes, and consequences of their spread to nearby natural habitats. Some of this research took me to Ireland, Panama, and South Africa to study the same ascidian species in different regions of the world. My PhD work was followed by four years as a post-doctoral researcher in the Marine Invasions lab at the Smithsonian Institution where I worked on projects including a national assessment of non-native marine species, species distribution models to predict regional spread and forecast distributions in a warming ocean, and studying the spread of marine invaders via floating plastic oceanic debris.

My family and I moved to Aotearoa New Zealand in 2019 so my husband could take on a marine biosecurity role at Cawthron Institute. We love living in Nelson and feel so grateful to be guests here. When I'm not working, I spend time with my family including our two daughters (ages 9 and 10). I love being in or on the water, swimming, or paddle boarding. I meditate regularly and feel strongly about growing my connection to nature, self, and others.

I'm looking forward to learning more about marine biosecurity in New Zealand and supporting the Top of the South in protecting this beautiful place. Ngā mihi nui.

Peter Lawless stepping down

After a decade as your Coordinator Peter Lawless is stepping down and had this to say:

"It has been a real privilege to help care for our marine environment in the Te Tau Ihu, the Top of the South Island. When I produced the first strategy in 2009, I never intended to be part of the implementation, but I am now deeply grateful I was asked to tender for the work. It's been a team effort, both for the people that have worked in the Coordination Team with me and for the many council staff and partner organisations that have helped. Travelling to other countries on a Fellowship in 2016, I found that no-one was ahead of us in actually taking measures to prevent the spread of harmful organisms and we have come a long way since then. I may stay part of the work for a bit to help with the transition to a new Coordinator and am hoping that key members of the current crew will be there as well. I will be using the extra time to take things a little slower and pursue my new career as a graphic artist. I wish you all well and the best of luck in keeping our waters safe."

www.marinebiosecurity.co.nz

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