

Top of the South Marine Biosecurity Partnership Meeting - 16 August 2019

Meeting Notes

Councillor Brian McGurk opened the meeting.

Jono Underwood, Chair of the TOS Marine Biosecurity Partnership welcomed everyone to the meeting.

Overview of current state

1. Jono Underwood, Biosecurity Manager, Marlborough District Council

Subject: How the rules have changed in Marlborough.

Background:

- 2008 to today - Top of the South Marine Biosecurity Partnership.
- 2013 - *Styela clava*
- 2014 - Mediterranean fanworm
- 2017 - Small-scale management programme
- 2018 - Regional Pest Management Plan (RPMP)

The marine biosecurity programme for Marlborough started in 2008 with a \$20,000 budget, and now has just under \$140,000.

Objective of the RPMP is to prevent the establishment of Mediterranean fanworm in Marlborough to eliminate adverse effects on economic wellbeing, the environment and enjoyment of the natural environment.

To prevent the spread and incursions of marine pests, Marlborough Marinas require all visiting vessels to have been recently cleaned. They need to have been anti-fouled in the last six months or lifted and washed in the last one month.

10 months in with the new Regional Pest Management Plan:

- No specific compliance activity
- Used as a basis of putting up a 'paper/digital' barrier
- Making the new programme and rules known
- In time, progress into more active compliance checks integrated with the Harbourmaster and/or TOS Summer Survey

Question

Q: Why marinas only and not the whole Marlborough Sounds?

A: Marlborough Marina put in place the 6 and 1 rule. Council rules apply to anywhere in the Marlborough waters, the marina rules apply just to those using the marina facilities.

2. Oli Floerl, Cawthron Institute

Subject: Science update - research relevant to biosecurity in the Top of the South region.

Sabella spallanzanii - impacts, biology and novel detection tools:

- Experiments to determine ecological impacts of fanworm in soft sediment.
- Reproductive biology of *Sabella*.
- Optimisation of eDNA based surveillance tools.

PhD project: *Sabella spallanzanii* in the context of mussel farms in the Coromandel. Project aims:

- Reproductive cycle and output.
- Seasonal presence of larvae around mussel farms
- Larval development and settlement preferences.
- Potential for regeneration after fragmentation.

Environmental DNA approaches to finding *Sabella* (and others).

Questions

Q: Ecological impacts were covered, what about impacts on mussel production?

A: We have focussed on soft sediments, NIWA have done a model-based assessment of *Sabella* and other species on mussel production over a 25-year timeframe.

Q: Can you tell us about the results from eDNA sampling?

A: Paul Sheldon: Cawthron provided TDC and NCC with advice in terms of optimising samples in Tasman Bay. Fourteen sites were identified in Tasman, 20 samples were taken from each site, two sites in the NCC area. We went to Golden Bay, Tarkohe, Awaroa, Anchorage, Adele, places you'd expect boats to be parked up maybe carrying *Sabella*, Motueka river mouth, Mapua. Nothing found at any of those points. It has given us a degree of comfort that it's worth continuing with the dive surveys and suppression effort and worth continuing eDNA sampling in the future.

A: Richard Frizzell: In Nelson the two sites were around the marina and industrial ship loading area. Nothing was found.

Q: How sensitive is this testing? Could it detect a relatively small population?

A: Sampling methodology showed a 95% likelihood of detection.

3. Peter Lawless, Coordinator, TOS Marine Biosecurity

Subject: Operations and summer survey results.

From what we are observing, suppression at nodes is working but people's behaviour isn't changing, and *Styela* is spreading. We need to reduce the risk from people's behaviour. These marine pests can't move by themselves, they are assisted by boats.

In the summer survey 450 boats and about the same number of structures across the Top of the South were surveyed. Active boats and inactive boats were surveyed. We tried to get a broad sweep. Barrie analysed the data across the last four years - these are available in his report.

We are only looking at recreational vessels, not commercial. We're doing it with a snorkel diver so there's only so much you can do. Recreational vessels are the biggest unknown risk factor.

Fouling rates are getting worse in Nelson/Tasman.

Marlborough is most exposed to fouled boats from Nelson/Tasman.

Niche areas are the biggest issue.

Most *Styela* on active vessels is from Nelson.

Styela is now spreading on structures from secondary nodes.

Undaria shows the results of unconstrained spread.

Keeping the level of fouling below 3 will stop most pests spreading.

In-water cleaning is ineffective.

A quarter to a third of all active vessels breach current rules.

Summary:

- Suppression of *Sabella* in nodes is working, so far.
- *Styela* spread can be slowed, but not stopped - better maintenance of vessels in Nelson/Tasman is critical.
- Marlborough is more exposed to new pests but compliance with its rules would be effective.
- Awareness alone is not enough.

Questions

Comment: The summer surveys started through the Partnership, however since TOS councils have moved into Biosecurity Act provisions for marine pests those surveys have been extended and are providing great continuity and a great dataset.

Q: Regarding facilities not being compliant, what are your thoughts on additional facilities in Nelson and Tasman?

A: There is a need for additional facilities. Seaview Marina has a hardstand for one-tenth of vessels in the marina. Using that rule of thumb, we have around 1000 vessels in Nelson and Tasman - the limiting factor is the hardstand. The existing hardstand wouldn't comply with MPI standards. There is a shortage, particularly as everyone wants their boats cleaned at the same time every year. As an example, one of the vessels we surveyed had *Styela*, but there was no room on the hardstand so they just went on their trip. There is a significant limitation; it comes down to investment rather than cost. Marina fees are higher in Waikawa but that is reinvested into the facilities. They have the only facility that complies with port of first entry requirements from Biosecurity NZ. The Marlborough model is working much better. Unfortunately it does come down to someone spending millions of dollars on better facilities.

Q: What is the most preferred facility?

A: For in-water boat wash, we don't have standards. The ideal would be to have fab docks for all boats - this would be better for the boats and environment. In the meantime, boats do have to be hauled for all sorts of reasons. Having a basic travel lift and hardstand in place would make a big difference. There needs to be a standard that boats do get anti-fouled before being put back into the water. We need to upgrade the whole system. Drive-in drive-out would be great, but if a really dirty boat comes through it may spread things around.

Don McKenzie: We've been talking about a contained drive-in boat wash and all material is pumped to land. If that standard came in it would offer vessel owners a quick and affordable system. There should be a 'Gold Star' standard so that owners could have confidence. There's no clear standard at present.

Comment: Education is helping, there is a lot better awareness.

Q: Regarding fouling the bottom of the keel - sometimes last minute anti-fouling is put on the keel as it's hard to reach and then the keel becomes fouled very quickly after anti-fouling. Have you spoken to haul out facilities to ask if it is possible to raise the keel a few more centimetres so the keel can be reached?

A: Kathy Walls: I have asked at Seaview marina when I recently had my boat lifted. I talked to the operator about how to add a few extra things to improve that process without significant change to equipment. It looks as though there needs to be some change to equipment currently in use to enable the keel to be anti-fouled. When it's sitting on hardstand for weeks it's usually on blocks and hard to get to the keel.

Bruce Thompson: 80% of the weight is on the keel - lifting the boat 15cm doesn't help.

Peter Lawless: Where boats are just propped there is a safety issue. If they're in a cradle they can't tip over. Some marinas have anchor blocks set into concrete to tie things down. There doesn't seem to be any two the same - so it's not a single solution.

However, meticulous boat owners can do the keel using a hydraulic jack or making sure they're the last boat of the day at the travel lift and then having 8-10 hours of drying time before going back into the water. Some put blocks in different places each time. There are a lot of practices that could help.

4. Katie Lubarsky, Adviser, Treatments & Inanimate Pathways, Biosecurity NZ

Subject: What's happening at the border: CRMS Biofouling

The intent of the Craft Risk Management Standard for Biofouling (CRMS) is to reduce the risk of biofouling by requiring operators of vessels to take preventative methods to manage biofouling before coming to New Zealand. It came into force on 15 May 2018.

Short-stay vessels - here for 20 days or less and only visiting Ports of First Arrival, e.g. project vessels, bulk carriers. If you are a short-stay vessel you are allowed:

- Slime - layer
- Gooseneck barnacles
- Slight fouling of early stage biofoulers, eg. barnacles, tubeworms or bryozoans.

Long-stay vessels - here for 21 days or more, visiting an area not approved as a Port of First Arrival, e.g. yachts. If you are a long-stay vessel you are allowed:

- Slime - layer
- Gooseneck barnacles
- No other fouling is allowed

Vessels must carry documentation showing that:

- The vessel has been continually maintained following best practices; or
- The vessel has been cleaned <30 days prior to arrival; or
- The vessel is booked to be hauled out within 24 hours of arrival at an MPI-approved facility.

Vessels that cannot meet the requirements by undertaking the measurements in the CRMS can apply for a Craft Risk Management Plan:

- Outlines alternate management actions that meet the same risk management outcome as the standard.
- Approved by MPI.
- Cruise vessels, military vessels, domestic fishing fleet, oil rigs etc.

Non-compliant vessel action:

- Vessel is referred to border staff for action.
- Action taken based on level of fouling (biosecurity risk) - hull inspection, issuing educational material, itinerary restriction, direction to leave NZT.

1 year summary - total commercial vessel arrivals:

- 2,555 total arrivals (excludes recreational vessels).
- 81% were low risk.
- 16% were medium risk.
- 3% were high risk.

Recreational vessels - data from 15 May 2018 to 24 February 2019:

- 546 yacht arrivals - 2 yachts found non-compliant with CRMS biofouling.
- During summer yacht season, 75% of yachts arriving in Opuia were verified using a pole camera.

Questions:

Q: Is the pole camera adequate for seeing the bottom of the keel and niche areas?

A: It depends on the size of the vessel, but they can get down into the keel in many cases and the video that they get is reasonably high quality. I have video clips I could share if you would like to see the level of detail. There have been some teething issues with the camera being cumbersome to use, it does require two officers to operate it but they're working on updating it.

Q: When there are notices of direction issued or boats that are caused to be slipped, could the regions be notified?

A: One of our areas of work this past year has been working on communications within and outside of MPI when it comes to actioning vessels. We're working on improving communications. Right now communications are decentralised and we're working on our internal processes as well. I acknowledge it hasn't been perfect. Perhaps we could have a list of key contacts within each region and we could set up each regional port office with a key contact and make sure our border staff know to contact the appropriate region. I would be happy to facilitate that.

Jono: Locally there are a few different aspects, ie. the likes of harbour masters around navigation and safety, and also biosecurity staff. We could supply what we would like to see as a heads up. I note there are some legal issues, but we're just after a summary of whatever is possible to release.

Q: Is there any intention of putting a diver audit on the sea chests and niche areas of cruise ships?

A: We are currently working on this. We want to increase our ability to physically verify larger vessels. We're working on getting some ROV technology so MPI can conduct its own inspections of niche areas. We are also looking into the possibility of applying for funding for diving inspections of a few random vessels. We also have just put out a project for vessel surveys to be done now that we have the CRMS in place, which will give us a lot of information linking the paperwork we're getting. We're always looking at ways to increase our verification.

Q: In terms of regional communication - what sort of communications are happening with Pacific countries at the moment? There is a lack of cleaning facilities for vessels operating throughout the Pacific.

A: There is the GloFouling Project with the Pacific. We also have been in contact with Fiji and their biosecurity agency who are keen to come over and talk about how we regulate biofouling as they're interested in increasing their potential to regulate biofouling. The in-water cleaning issue is a tricky one because there are very few places to clean in the Pacific. We encourage them to clean before repositioning into our region.

Q: Regarding the problem of ballast tanks on larger commercial vessels, are they inspected when empty, are they treated with anything?

A: Ballast water has been managed for a long time in New Zealand. The International Ballast Water Convention came in a couple of years ago. All international vessels intending to discharge ballast water in New Zealand need to either exchange their ballast outside of New Zealand waters, that should remove any coastal species from ballast tanks, or vessels can show they have an approved cleaning system on board and that they have been treated with that system.

Q: Would they hold any residual risk?

A: Under the biofouling standard there is no special provision for ballast tanks. Ballast sediment does need to be disposed of in an environmental manner. Inspections of tanks haven't been done.

Q: Can we have it done?

A: As part of our vessel surveys we may be able to. Funding will be a problem. Under the Ballast Water Convention the management of ballast water is being transitioned to Maritime NZ so it's a bit 'in transition' at the moment but we are working with Maritime NZ to make sure they have the skills in place to manage it.

I will definitely send it up the chain.

Q: Some of the overseas vessels of a commercial nature are high risk, is that due to their ports of origin? Are there any ports of origin considered more risk than others?

A: Risk indicators have been done based on research projects - from that, MPI came up with a suite of indicators used to risk profile vessels when they arrive. Generally these tend to relate to factors relating to a vessel's management history, how recently they were anti-fouled, things like that, also their previous itinerary. We don't focus so much on where it's been. All previous ports are treated as potential risk ports. The length of time spent at ports is also taken into account. We don't necessarily have a risk ranking of previous ports.

Q: Are the NZ Navy and visiting military exempt?

A: The Navy are not exempt. All vessels regardless of vessel type are subject to biofouling rules. Because the Navy tends to have a different profile and are domestic vessels they do have a problem meeting measures in the Standards and we are working with them to develop a CRMS. MPI has a lot of oversight over what the Navy plans to do because MPI need to sign off activities. We are also engaging with the Australian Navy.

Group workshops - report back

Group 1: Changing behaviours

We acknowledge Top of the South has seen behaviour change already, due to awareness and engagement, but it's perhaps not enough.

Barriers:

- Engagement - what are the drivers for vessel owners to clean?
- Cost to vessel owners.
- Lack of facilities.
- Lack of impact/science information and awareness.
- Lack of consistent rules/infringement fines.

Solutions:

- Need to understand the social drivers for change - personal impact.
- Better information distribution, better articulation of impacts.
- Mix of incentives (facilities, anti-foul) and disincentives.
- 'Gold' standard to improve vessel owner confidence and output.

Group 2: Improving our infrastructure and facilities

Issues:

- Lack of capacity and investment within current infrastructure within Tasman and Nelson areas, leaving a significant shortfall with maintaining vessels.
- Main limitation is the number of hard stands.

Opportunities:

- Need to look at techno solutions.
- Differential pricing by season.
- Need 6-8,000 m² hard stand - need to secure.

Solutions:

- Port Nelson/Nelson marina obvious location where provision would need to occur, but needs to be hard stand space available.
- Urgent need to have conversation between councils and user groups to reach consensus in terms of moving forward.
- Councillors should be invited to do a tour of facilities.

Group 3: Legal and planning integration

Issues:

- Everyone is breaking new ground.
- Consistent rules will help compliance.
- Information sharing could be improved.
- Variable pressure for change.
- National tool required.

Solutions:

- Could another 'standard' be developed outside of regulatory tools?
- Incentives to lift standards.
- Information sharing is key.

Group 4: Novel technologies

Fields where development and application of novel technologies is needed most urgently:

- Surveillance
- Management/Eradication
- Compliance control (e.g. Ballast Water Management Convention compliance monitoring)
- Information exchange

Surveillance:

1. eDNA-based methods - on-going development of technologies, needs further R&D for:
 - Sampling approaches optimised for the most efficient capture of eDNA/eRNA signals.
 - Solution: research funding, validation case studies with RCs.
 - Better understanding of eDNA dynamics in water for relating detected signal to benthic populations.
 - Solution: research funding, validation case studies with RCs.
 - Better harnessing of metabarcoding potential.
 - Solution: research funding, international collaboration, cross-validation and standardization of protocols/pipelines, technology development.
 - Development of reference sequence databases for (i) NZ and international high-profile pests and their closely related taxa; (ii) other marine taxa of NZ.
 - Solution: long-term strategic investment into developing and managing professionally curated sequence database for NZ marine species
 - Develop/validate a suite of species-specific assays for high-priority marine pests in NZ.
 - Solution: operational funding for assay development, validation case studies with RCs.

2. ROVs to support underwater detection over larger areas
 - Cross-comparison with other methods, optimisation of surveillance programmes.
 - Solution: operational funding for cross-comparison studies, validation case studies with RCs.
 - Automatisation (e.g. couple with automated image recognition).
 - Solution: research funding, validation case studies with RCs.

Management/Control/Eradication:

1. Novel trapping methods (e.g. attraction with sound).
 - Solution: research funding, validation case studies with RCs.
2. Novel method to prevent/restrain biofouling in hubs (e.g. bubble scouring, biocontrol).
 - Solution: research funding, validation case studies with RCs.

Compliance control:

1. Effective BW monitoring techniques and hull surveillance methods are needed.
 - Solution: research funding, international collaboration, validation studies (with MPI, MNZ, RCs).

Inventory and exchange of information on recreational vessels and their movement patterns in NZ:

- Registration of recreational boats (voluntarily -> obligatory) - we can refer to experience in other countries where registration legally exists.
- Registration fee ~ analogy with the road tax, when taxpayer money is spent to maintain roads. Registration money can be investment to maintaining/improving marina's infrastructure in biosecure manner, local investments to biosecurity projects.
- Apps to collect information on recreational craft in easy way -> contribution to better prediction of risks and better management

Closing remarks from Chair

On behalf of TOS Partnership, we appreciate you taking the time to be here today. We're learning a lot about managing the threats and slowing down any future ones. There is a lot of strength to keep building on.