



NZCPS 2010 guidance note

Policy 12: Harmful aquatic organisms

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Policy 12 Harmful aquatic organisms

- (1) Provide in regional policy statements and in plans, as far as practicable, for the control of activities in or near the coastal marine area that could have adverse effects on the coastal environment by causing harmful aquatic organisms to be released or otherwise spread, and include conditions in resource consents, where relevant, to assist with managing the risk of such effects occurring.
- (2) Recognise that activities relevant to (1) include:
 - (a) the introduction of structures likely to be contaminated with harmful aquatic organisms;
 - (b) the discharge or disposal of organic material from dredging, or from vessels and structures, whether during maintenance, cleaning or otherwise; and whether in the coastal marine area or on land;
 - (c) the provision and ongoing maintenance of moorings, marina berths, jetties and wharves; and
 - (d) the establishment and relocation of equipment and stock required for or associated with aquaculture.

Disclaimer: This guidance is intended as general guidance on implementing the New Zealand Coastal Policy Statement 2010 and has been written primarily for local government practitioners. It does not substitute for professional advice where and when that is needed and should not be taken as providing legal advice or the Crown's legal position. This guidance is not official government policy.

Overview of the policy

The New Zealand Coastal Policy Statement (NZCPS) 2010¹ outlines objectives and policies to promote the sustainable management of natural and physical resources in the coastal environment to achieve the purpose of the Resource Management Act 1991 (the RMA).²

Policy 12 of the NZCPS 2010 provides for the control of activities in or near the coastal marine area that could have adverse effects on the coastal environment by causing harmful aquatic organisms³ to be released or otherwise spread. Policy 12 seeks to manage the risk of such effects occurring and includes a list of activities that may cause the release or spread of harmful aquatic organisms.

Readers of this policy guidance note should also refer to the NZCPS 2010 Implementation Guidance Introductory Note,⁴ which contains general information and guidance that is important for implementing all of the objectives and policies in the NZCPS 2010.

Rationale

Occupation, use and development in and along the coastline have resulted in various harmful aquatic organisms being introduced to New Zealand, which have subsequently spread and had adverse effects on New Zealand's coastal environment. Policy 12 of the NZCPS 2010 is concerned with managing activities that could cause harmful aquatic organisms to be released or otherwise spread in the coastal environment. This includes the introduction of new harmful aquatic organisms to New Zealand (probably on objects or matter being transferred) or into a new area of New Zealand, as well as changes to their distribution and dispersal where the potential impact of a harmful aquatic organism that is already present in an area is exacerbated.

Some of the more commonly known examples of harmful aquatic organisms include the clubbed tunicate (*Styela clava*), wakame (*Undaria pinnatifida*),⁵ the Mediterranean fanworm (*Sabella spallanzanii*) and the Australian droplet tunicate (*Eudistoma elongatum*). Other key pest species that affect New Zealand's social, environmental and economic values and are

¹ www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/policy-statement-and-guidance/

² www.legislation.govt.nz/act/public/1991/0069/latest/DLM230265.html

³ Harmful aquatic organisms are aquatic organisms which, if introduced into coastal water, may adversely affect the environment or biological diversity, pose a threat to human health, or interfere with the legitimate use or protection of natural and physical resources in the coastal environment (NZCPS 2010 Glossary).

⁴ Department of Conservation 2018: NZCPS 2010 implementation guidance introductory note. Department of Conservation, Wellington. 12 p. <https://www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/coastal-management/guidance/introductory-note.pdf>

⁵ Pests such as wakame and other fouling species can hitchhike to new locations on fouled boat bottoms and marine equipment. For further information, see the Department of Conservation website 'Asian seaweed *Undaria pinnatifida* found in Fiordland' <https://www.doc.govt.nz/nature/pests-and-threats/common-weeds/asian-seaweed/> or visit the Ministry for Primary Industries (MPI) website: <https://www.mpi.govt.nz/dmsdocument/9806-fact-sheet-on-fiordland-undaria-treatment>

present in localised areas within the country include the Asian date mussel (*Arcuatula senhousia*), the Asian paddle crab (*Charybdis japonica*) and the sea squirt *Pyura doppelgangera*. Harmful aquatic organisms also include microorganisms that are capable of causing diseases, such as toxic algae and *Bonamia ostreae*, which can infect oysters, as well as parasites. Further information on these organisms can be found on the joint Ministry for Primary Industries (MPI) and National Institute of Water and Atmospheric Research (NIWA) Marine Biosecurity Porthole,⁶ which houses all MPI-funded and publicly reported marine surveillance results.

Biofouling is the accumulation of aquatic organisms (including animal and plant pests and disease-causing microorganisms) on surfaces and structures that are immersed in or exposed to the aquatic environment, and can result in the introduction or spread of harmful aquatic organisms. Potential vectors include vessels, aquaculture activities, discharges, moorings, marina berths, jetties and wharves, and other marine structures. Biofouling on commercial and recreational vessels, moveable structures and equipment that is used in the marine environment can transfer harmful aquatic organisms both globally and domestically to new ecosystems. The release and spread of harmful aquatic organisms into New Zealand's coastal environment can have significant environmental, economic and social impacts, including the following.

- Predation on indigenous species.
- Competition with indigenous species for the same habitat or food supply (eg smothering communities).
- Loss of habitat of indigenous species (eg the introduction of a harmful aquatic organism that consumes marine vegetation could destroy habitat that is of importance as a nursery area for juvenile indigenous marine species).
- Altered coastal processes and an increased risk of erosion.
- Increased genetic mixing – an introduced species may be able to cross-fertilise a native species, creating a hybrid species that can spread and outcompete the native species (eg genetic research has shown that the introduction of northern hemisphere blue mussels (*Mytilus edulis*) in the 1800s produced a northern and southern hemisphere hybrid blue mussel). This can irreversibly change the structure of indigenous communities and have negative impacts on indigenous biological diversity.
- Fouling of marine infrastructure (eg wharves, aquaculture facilities) and an increase in maintenance costs.
- Decrease or elimination of aquaculture and fishing stock resulting in a significant economic impact on industries that rely on those stocks.
- Degradation of water quality.
- Effects on customary values (eg subsistence or taonga species could be displaced).
- Negative impacts on human health.
- Reduction in the aesthetics of an area for diving, affecting dive tourism activities.
- Introduction and spread of diseases or parasites.
- Financial costs resulting from changes to the ecosystems and values that are important to aquaculture and other marine-based industries (eg tourism), and costs to central and local government associated with eradication or reducing the spread.

⁶ www.marinebiosecurity.org.nz/

Once established, harmful aquatic organisms can be very difficult to eradicate from an area. Prevention is far more cost-effective than attempting an eradication, which will often be of limited success, as can be seen from the following examples.

- The Mediterranean fanworm eradication programme aimed to eliminate this species from Lyttelton Port (an area of approximately 1 km²) through the removal of individual worms by divers. At the time of planning, it was estimated that the programme would cost \$3.5 million. However, the programme was terminated after approximately 18 months due to the detection of Mediterranean fanworms in Auckland – the small geographic area of the Lyttelton Port incursion was considered to be the limit of what was feasible for eliminating a sedentary species such as this. Since 2012, MPI and a number of regional councils have collaborated to prevent/slow the spread of Mediterranean fanworms to new locations.
- Some \$2 million was spent on slowing the spread of the clubbed tunicate in Marlborough, as it was too widespread for eradication. This programme focused on raising awareness through education and pathway management. However, despite these efforts, this species continues to spread.
- An eradication programme for the brown mussel (*Perna perna*) was initiated following its detection after the defouling of the *Ocean Patriot* oil rig in Tasman Bay. This programme cost approximately \$250,000, which was considered a ‘relatively’ inexpensive response. This was unique in that the incursion site was small due to the nature of the incursion, which was known to be recent and consisted of relatively few individuals.
- A wakame eradication programme was carried out on the Chatham Islands after the *Seafresh 1* grounded in 2000. This grounding cost the insurers of *Seafresh 1* – Shipowners Mutual Protection and Indemnity Association – approximately \$2.5 million for salvage attempts, \$380,000 for treatment and \$43,500 for monthly inspections. Eradication was achieved at only 17% of the cost of the failed salvage attempts but required a long-term commitment. In this case, the restriction of wakame to a confined area (ie a vessel’s hull), early knowledge of the incursion and the rapid response increased the likelihood of eradication. MPI has advised, however, that wakame has been detected growing on structures and substrate in the Chatham Islands in recent years since the eradication programme. It is not known whether this recent establishment of wakame resulted from the *Seafresh 1* incident or was a more recent incursion.
- In 2010, a single mature wakame plant was discovered in Sunday Cove, Breaksea Sound, in Fiordland. On closer investigation, a small population was found.⁷ An immediate joint-agency response between Environment Southland, MPI and the Department of Conservation (DOC) was initiated in an attempt to eliminate this harmful aquatic organism. The local elimination of wakame from Sunday Cove was carried out between August 2010 and May 2017 and involved the removal of visible wakame sporophytes during dive surveys that were conducted every 4 weeks (or every 5 weeks over winter). Other local elimination measures included inserting chlorine under a fixed tarpaulin to treat specific high-risk habitat and applying a biocontrol agent to affected areas, which involved translocating large

⁷ Environment Southland 2013: Marine pest response in Fiordland proving successful. *Scoop*, 20 December 2013. www.scoop.co.nz/stories/SC1312/S00050/marine-pest-response-in-fiordland-proving-successful.htm

numbers of sea urchins/kina (*Evechinus chloroticus*) to areas of dense algal cover. The main aim of this biocontrol was to increase the efficiency of visual searches by divers, but there was also a secondary aim that kina would graze any microscopic and macroscopic wakame. Operational expenditure on this programme was approximately \$1 million after 7 years. However, wakame was found to be very widespread in Breaksea Sound in May 2017 and again in January 2019. Options for the future management of wakame in Breaksea Sound are currently being considered.⁸

A useful introduction to marine biosecurity in New Zealand can be found in the Environment Guide.⁹

⁸ Harding, E. 2017: \$375k undaria eradication mission fails in pristine Fiordland waters. *Stuff*, 2 November 2017. www.stuff.co.nz/national/98476943/375k-undaria-eradication-mission-fails-in-pristine-fiordland-waters

⁹ www.environmentguide.org.nz/issues/marine/marine-biosecurity/

Related objectives, policies and provisions

This section covers the links between Policy 12 and other objectives and policies in the NZCPS 2010, the RMA, the Biosecurity Act 1993 (the Biosecurity Act), other legislation and regulations, and other strategies, conventions and guidelines.

NZCPS 2010

The implementation of Policy 12 of the NZCPS 2010 requires careful consideration of all of the NZCPS 2010 objectives and policies. The table below lists the key objectives and policies in relation to harmful aquatic organisms, as well as other provisions that are relevant.

Key related objectives and policies	Other related objectives	Other related policies
Objectives 1, 2 and 6 Policies 3, 4, 8, 11, 13 and 23	Objectives 3 and 7	Policies 2, 5, 7, 6, 9, 10, 13, 14, 15 and 27

Objective 1

Objective 1 seeks to safeguard the integrity, form, functioning and resilience of the coastal environment and to sustain its ecosystems, including marine and intertidal areas, estuaries, dunes and land. Important components of this are maintaining or enhancing natural biological processes in the coastal environment, protecting representative or significant natural ecosystems and sites of biological importance, and maintaining the diversity of New Zealand's indigenous coastal plants and animals. Maintaining and restoring ecosystems builds resilience, which helps to reduce the susceptibility of marine areas to the harmful impacts of invasive species.

Policy 12 relates directly to Objective 1, as it promotes controlling activities that could cause harmful aquatic organisms to be released or spread in the coastal environment, which would adversely affect natural processes, ecosystems, sites, biodiversity, commercial enterprises, and non-commercial use and values of the coastal environment.

Objective 2

Objective 2 seeks the preservation of natural character of the coastal environment and the protection of natural features and landscape through recognition of such areas and the circumstances where activities in them may be inappropriate. It also encourages restoration of the coastal environment. As noted in relation to NZCPS Policy 13 below, the release or spread of harmful aquatic organisms can cause irreversible changes to the natural character of the coastal environment by altering natural elements and processes and changing its biophysical and ecological characteristics.

Objective 6

Objective 6 focuses on enabling people and communities to provide for their social, economic and cultural wellbeing and their health and safety through subdivision, use and development. It recognises that some uses and developments that depend upon the use of

natural and physical resources in the coastal environment are important to the social, economic and cultural wellbeing of people and communities.

Some coastal activities can increase the risk of harmful aquatic organisms being released and spread, which in turn can have adverse effects on economic activities and people's social and cultural wellbeing.

Policy 12 contributes to the implementation of Objective 6 by promoting the management of activities that could cause harmful aquatic organisms to be released or spread in the coastal environment. It requires provision to be made in planning documents for the control of activities in or near the coastal marine area where appropriate.

Policy 3: Precautionary approach

Policy 3 promotes a precautionary approach to managing activities in the coastal environment when the effects of those activities are uncertain but have the potential to be significantly adverse. This includes managing activities that could cause harmful aquatic organisms to be released or otherwise spread. A precautionary approach that focuses on preventing introductions of harmful aquatic organisms recognises that eradication attempts are associated with significant costs and have had limited success to date.

Policy 4: Integration

Policy 4 promotes integration through coordinated management in the coastal environment, including when dealing with cross-boundary matters. Policy 12 is closely related to Policy 4 as the management of harmful aquatic organisms relies on an integrated, coordinated and collaborative approach to coastal management. Thus, a combination of Policies 4 and 12 can help to promote complementary planning and liaison between local authorities and other relevant agencies, including MPI, DOC and the Environmental Protection Authority (EPA), as well as other stakeholders with an interest in preventing the release or spread of harmful aquatic organisms, such as the Fiordland Marine Guardians. (Refer also to 'Integrated management' in the 'Implementing this policy' section of this guidance note.)

Policy 8: Aquaculture

Policy 8 identifies that aquaculture can significantly contribute to the social, economic and cultural wellbeing of people and communities. The economic value of aquaculture, as well as the surrounding environment, can be significantly threatened by the risk of transmission of harmful aquatic organisms, including microorganisms that are capable of causing diseases. However, some activities in the coastal marine area that are associated with aquaculture, such as the movement of aquaculture stock and equipment, may also hasten or exacerbate the spread of harmful aquatic organisms if not appropriately managed. Furthermore, marine farms can also provide ideal habitats for the establishment of some diseases (eg *B. ostreae* infection in oysters), parasites and biofouling species (eg sea squirts, such as the clubbed tunicate).

Policy 12 seeks to control activities that could cause the release or spread of harmful aquatic organisms in the coastal environment. It specifically identifies that the setting up or relocation of equipment and stock as part of an aquaculture operation may need to be controlled.

An example of improving accountability and promoting best aquaculture practice can be found in the New Zealand Sustainable Aquaculture's A+ management programme

(supported by Aquaculture New Zealand).¹⁰ This industry-driven programme provides New Zealand marine and freshwater farmers with practical tools for demonstrating transparency around their environmental performance and a practical guide on best management operational procedures.

Policy 11: Indigenous biological diversity (biodiversity)

Policy 11 seeks to protect New Zealand's indigenous biodiversity in the coastal environment. This relates to Policy 12 because the release or spread of harmful aquatic organisms can affect indigenous biodiversity (eg introduced organisms may prey on or compete with native species or cause habitat degradation). The effective management of activities that could cause the release or spread of harmful aquatic organisms is a key step in protecting New Zealand's indigenous biodiversity in the coastal environment. Marine biosecurity provisions could be tailored or targeted to protect high-value areas to help give effect to Policy 11.

Policy 13: Preservation of natural character

Policy 13 is concerned with preserving the natural character of the coastal environment and protecting it from inappropriate subdivision, use or development. The release or spread of harmful aquatic organisms can cause irreversible changes to the natural character of the coastal environment by altering natural elements and processes and changing its biophysical and ecological characteristics.

Policy 23: Discharge of contaminants

Policy 23 seeks to manage discharges to the coastal environment both generally (in Policy 23(1)) and specifically from ports and other marine facilities (in Policy 23(5)). Policy 23(5) includes the disturbance or relocation of contaminated seabed material, the dumping or storage of dredged material and the discharge of residues from vessel maintenance. This relates to Policy 12, which identifies the discharge and disposal of organic materials from dredging, vessels and structures (whether during maintenance, cleaning or otherwise) as activities that need to be controlled to prevent the release or spread of harmful aquatic organisms into the coastal environment.

¹⁰ www.aplusaquaculture.nz/

Legislation

Resource Management Act 1991

A number of RMA provisions relate to the management of harmful aquatic organisms.

- Sections 12(1)(f) and 12(3)(a) and (b) restrict the introduction or planting of exotic or introduced plants in the coastal marine area.
- Section 15 restricts the discharge of contaminants into the environment.¹¹
- Section 15A(1) restricts the dumping and incineration of waste or other matter in the coastal marine area.
- Section 15B restricts the discharge of harmful substances from ships or offshore installations
- Sections 30(1)(c)(ii) and (iia), and 30(1)(d)(iv), (iva) and (vii) set out the functions of regional councils and give them the responsibility for controlling specified matters within the coastal marine area in their region, including the maintenance and enhancement of waters and ecosystems in coastal waters, and the control of discharges and activities that may adversely affect coastal waters.
- Section 67(3)(b) states that a regional plan must give effect to an NZCPS.
- Section 70 restricts the inclusion in regional plans of permitted activities or a requirement to adopt the best practicable option where the discharge of a contaminant may give rise to any significant adverse effects on aquatic life.
- Section 107 restricts the granting of discharge permits where the discharge of a contaminant may give rise to any significant adverse effects on aquatic life.

¹¹ Contaminants are defined in the 'Interpretation' section of the RMA.

Proposed National Environmental Standard for Marine Aquaculture (NES-MA)¹²

The public discussion document for the NES-MA, which is likely to come into effect in 2019, sets out suggested provisions to avoid or mitigate the biosecurity risks from marine farms and between marine farms.¹³

The proposed NES-MA would establish a requirement, under the RMA, that all marine farms have a biosecurity management plan in place that meets criteria that are prescribed in an externally referenced technical document. These biosecurity management plans would introduce nationally consistent biosecurity requirements that could be reasonably managed by councils on a consent-by-consent basis under the RMA. The plans would be assessed by regional councils as part of the consent application process, consent conditions that require the plans to be adhered to would be included on each consent, and regional councils would be responsible for ensuring that marine farmers comply with the plans (through monitoring and, if necessary, enforcement of the consent conditions).

Guidance will be developed by Fisheries New Zealand to assist regional councils and marine farmers in implementing the biosecurity requirements of the proposed NES-MA.

Resource Management (Marine Pollution) Regulations 1998¹⁴

The Resource Management (Marine Pollution) Regulations 1998 regulate discharges and/or deposits from ships and offshore installations within the coastal marine area. These regulations apply only within the coastal marine area,¹⁵ and regional councils are responsible for administering and enforcing them. Note that regional councils cannot regulate activities that are controlled by these regulations unless the regulations direct them to do so.

Regulation 4 deems that the dumping of certain types of waste or other matter should be given discretionary or prohibited activity status across all regional coastal plans.¹⁶ The dumping of dredge material and organic materials of natural origin may be covered under subclause (2) and is deemed to be a discretionary activity. Regulation 4 does not apply to discharges made in accordance with section 15B of the RMA or Part 3 of the Regulations.

Regulation 14¹⁷ deals with ballast water as follows.

14 Discharge of ballast water

- (1) Any person may discharge in the coastal marine area, from a ship or offshore installation, clean ballast water or segregated ballast water.

¹² www.mfe.govt.nz/marine/reforms/proposed-national-environmental-standard-marine-aquaculture

¹³ www.mpi.govt.nz/news-and-resources/consultations/proposed-national-environmental-standard-for-marine-aquaculture/

¹⁴ www.legislation.govt.nz/regulation/public/1998/0208/latest/DLM253727.html

¹⁵ Using the definition of 'coastal marine area' that is included in the 'Interpretation' section of the RMA: www.legislation.govt.nz/act/public/1991/0069/latest/DLM230272.html.

¹⁶ This is a deemed status under the Resource Management (Marine Pollution) Regulations 1998. Regulation 4(2) deems the activities it lists to be discretionary activities in the regional coastal plan.

¹⁷ <http://legislation.govt.nz/regulation/public/1998/0208/latest/DLM253789.html>

- (2) This regulation does not authorise the discharge of clean ballast water or segregated ballast water in contravention of the Biosecurity Act 1993, regulations made under that Act, or import health standards made under section 20 of that Act or in contravention of section 246B of the Maritime Transport Act 1994 or rules made under that Act.

Biosecurity Act 1993¹⁸

The Biosecurity Act contains functions and powers that are aimed at excluding, eradicating and effectively managing pests and unwanted organisms. MPI is the lead agency for biosecurity in New Zealand and administers the Biosecurity Act. However, other government agencies and councils can also use the powers in the Biosecurity Act as explained below.

Unwanted organisms and notifiable organisms

An unwanted organism is any organism that is capable of causing harm to natural or physical resources or human health. A number of introduced pests in New Zealand are classified as unwanted under the Biosecurity Act. It is an offence to breed, sell or release these organisms without permission to do so. A list of unwanted organisms can be found in the online Unwanted Organisms Database.¹⁹

Biosecurity (Notifiable Organisms) Order 2016 sets out the pests and diseases that must be reported to MPI if spotted in New Zealand.

National Policy Direction for Pest Management 2015²⁰

This national direction was developed by MPI and sets out the overarching requirements for national and regional pest and pathway management plans and small-scale management programmes.

Regional pest and regional pathways management plans

Part 5 of the Biosecurity Act sets out requirements for the creation of national and regional pest and pathway management plans and small-scale management programmes. The powers under Part 5 can be used by other government agencies, regional councils and national pest management agencies (eg Kiwifruit Vine Health and TBfree New Zealand) when developing these plans and programmes.

While the Biosecurity Act provides the Director-General of MPI with overall leadership in activities that prevent, reduce or eliminate any adverse effects from harmful organisms that are present in New Zealand, it also directs regional councils to do this within their regions and between regions.²¹

Further discussion of the relationship between the RMA and the Biosecurity Act is provided in the 'Implementing the policy' section of this guidance note.

Craft Risk Management Standard – Biofouling on Vessels Arriving to New Zealand (CRMS-BIOFOUL)²²

¹⁸ www.legislation.govt.nz/act/public/1993/0095/latest/DLM314623.html

¹⁹ www1.maf.govt.nz/uor/searchframe.htm

²⁰ www.mpi.govt.nz/news-and-resources/media-releases/government-delivers-national-policy-direction-for-pest-management/

²¹ Section 12B of the Biosecurity Act 1993: <http://legislation.govt.nz/act/public/1993/0095/latest/DLM4757510.html>.

²² www.mpi.govt.nz/dmsdocument/11668/send

MPI is the lead agency for managing biofouling from international vessels via the CRMS-BIOFOUL, which became mandatory on 15 May 2018. This standard manages the risk of non-indigenous organisms arriving as biofouling on all vessels arriving in New Zealand, including floating exploration drill rigs. The CRMS-BIOFOUL requires vessels to manage biofouling prior to their arrival in New Zealand and is administered by MPI.

The CRMS-BIOFOUL allows short-stay vessels that remain in New Zealand for 20 days or less and only call at designated Ports of First Arrival (such as commercial ships passing through) to have a greater threshold of biofouling than other 'long-stay' vessels that remain in New Zealand for more than 20 days or permanently arrive in the country and/or visit areas other than Ports of First Arrival, with the latter only being allowed microfouling (or a slime layer) and goose barnacles. There are also some other ways of complying with CRMS-BIOFOUL – for example, vessels can prepare a Craft Risk Management Plan for approval by MPI.

MPI has developed a number of guidance resources to assist with understanding and complying with the CRMS-BIOFOUL, which are outlined in the 'Resources' section later in this guidance note.

Ballast water management from international vessels

MPI is the lead agency for managing ballast water from international vessels. The discharge of ballast water from vessels arriving in New Zealand waters from elsewhere is managed under the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM),²³ which came into force in 2017.

The BWM requires ballast water to be treated before it is released into a new location. Under the BWM's terms, ships are required to manage their ballast water to remove, render harmless, or avoid the uptake or discharge of aquatic organisms and pathogens within ballast water and sediments. It requires all ships to carry a ballast water record book and an international ballast water management certificate.

Vessels flagged to New Zealand are also subject to the BWM when undertaking international voyages.²⁴

*Maritime Transport Act 1994*²⁵

The Maritime Transport Act 1994 was amended to reflect New Zealand's obligations and privileges under the BWM (Part 19A and Marine Protection Rules Part 300 – Ballast Water Management). More information on the requirements under the Maritime Transport Act can be found on the MPI website.²⁶

*Hazardous Substances and New Organisms Act 1996 (HSNO Act)*²⁷

²³ [www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships'-Ballast-Water-and-Sediments-\(BWM\).aspx](http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships'-Ballast-Water-and-Sediments-(BWM).aspx)

²⁴ www.maritimenz.govt.nz/commercial/environment/operators/ballast-water.asp

²⁵ www.legislation.govt.nz/act/public/1994/0104/latest/DLM334660.html

²⁶ www.mpi.govt.nz/importing/border-clearance/vessels/arrival-process-steps/ballast-water/

²⁷ <http://legislation.govt.nz/act/public/1996/0030/latest/DLM381222.html?src=qs>

The purpose of the HSNO Act is to protect the environment and the health and safety of people and communities by preventing or managing the adverse effects of hazardous substances and new organisms. This Act is administered by the EPA.

The EPA periodically reviews the types of antifoul coatings that can be imported and used in New Zealand in order to bring New Zealand in line with international practice. A review completed in June 2013 noted that while antifouling paints provide significant benefits, particularly as a biosecurity tool, some pose risks to human and environmental health that were considered too great to allow their continued import or manufacture.²⁸

The June 2013 review also resulted in some additional controls being put in place to ensure that approved antifouling coatings are used safely and that any residual negative effects are managed effectively. These included establishing a controlled work area during application to prevent spray drift from reaching unintended areas and bystanders, and collecting and disposing of all antifouling waste from boat maintenance activities in line with the disposal regulations set out under the HSNO Act.

²⁸ www.epa.govt.nz/assets/FileAPI/hsno-ar/APP201051/720402e41b/APP201051-APP201051-Decision-Final.pdf

Strategies, conventions and guidelines

*Convention on Biological Diversity*²⁹

The Convention on Biological Diversity is an international environmental agreement that promotes the conservation of biodiversity, the sustainable use of its components and the sharing of benefits arising from the utilisation of genetic resources. New Zealand has obligations under this Convention to help prevent the spread of alien species.

*The New Zealand Biodiversity Strategy 2000–2020*³⁰

The New Zealand Biodiversity Strategy fulfils, in part, the commitments New Zealand made under the International Convention on Biological Diversity. Ratified by New Zealand in 1993, the Convention requires signatory nations to prepare national strategies to conserve and sustainably use biodiversity, and this strategy establishes a framework for action to do this within New Zealand. In 2016, the strategy was reviewed and updated as the New Zealand Biodiversity Action Plan 2016–2020.³¹

*United Nations Convention on the Law of the Sea 1982 (UNCLOS)*³²

UNCLOS defines the rights and responsibilities of nations in their use of the world's oceans, establishing guidelines for businesses, the environment and the management of marine natural resources.

Under UNCLOS, coastal states exercise sovereignty over their territorial seas and foreign vessels are allowed 'innocent passage' through those waters. Innocent passage should be continuous and expeditious and must not be 'prejudicial to the peace, good order or security of the coastal State'. Passage will be considered to be prejudicial where a vessel 'engages in any act of wilful and serious pollution contrary to [the] Convention'.³³ Vessels exercising their right of innocent passage are required to comply with relevant laws and regulations of the coastal State.³⁴ This includes rules in a regional coastal plan, which are treated as a 'law or regulation' for the purposes of UNCLOS.

*Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species*³⁵

²⁹ www.cbd.int/convention/text/

³⁰ Department of Conservation; Ministry for the Environment 2000: The New Zealand Biodiversity Strategy. Department of Conservation, Wellington. 146 p. www.doc.govt.nz/nature/biodiversity/nz-biodiversity-strategy-and-action-plan/new-zealand-biodiversity-strategy-2000-2020/

³¹ Department of Conservation 2016: New Zealand biodiversity action plan 2016–2020. Department of Conservation, Wellington. 58 p. www.doc.govt.nz/nature/biodiversity/nz-biodiversity-strategy-and-action-plan/new-zealand-biodiversity-action-plan/

³² www.un.org/depts/los/convention_agreements/convention_overview_convention.htm

³³ UNCLOS, Article 19 – Meaning of innocent passage.

³⁴ UNCLOS, Article 21 – Laws and regulations of the coastal State relating to innocent passage.

³⁵ www.mardep.gov.hk/en/msnote/pdf/msin1136anx1.pdf

On 15 July 2011, the International Maritime Organisation (IMO) adopted voluntary guidelines for shipping that are intended to provide a globally consistent approach to the management of biofouling. These guidelines include templates for developing vessel-specific biofouling management plans and record books (for recording all management undertaken), which the IMO considers best practice.

International vessels must comply with the CRMS-BIOFOUL, and demonstrating good practice by adopting the IMO guidelines and maintaining a vessel-specific biofouling management plan and record book is one way to meet these requirements. MPI has produced guidance material to assist vessels with complying with the CRMS-BIOFOUL, which is further detailed in the 'Resources' section of this guidance note.

Anti-fouling and In-Water Hull Cleaning Guidelines 2013³⁶

The purpose of these guidelines is to provide guidance on best practice approaches for the application, maintenance, removal and disposal of antifouling coatings and the management of biofouling and invasive aquatic species on vessels and movable structures in Australia and New Zealand. These guidelines are also intended to assist authorities in deciding on the appropriateness of in-water cleaning operations in general and on a case-by-case basis. In achieving this purpose, the guidelines aim to minimise contamination and biosecurity risks associated with the shore-based and in-water maintenance of vessels and movable structures.

These guidelines replace the Australian and New Zealand Environment and Conservation Council (ANZECC) Code of Practice for Antifouling and In-Water Hull Cleaning and Maintenance in 1997 (the Code of Practice).³⁷

A+ New Zealand Sustainable Aquaculture³⁸

The A+ programme provides New Zealand marine farmers in the greenshell mussel/kuku (*Perna canaliculus*), Pacific oyster (*Crassostrea gigas*) and king salmon (*Oncorhynchus tshawytscha*) industries with practical tools to demonstrate transparency around their environmental performance and includes a biosecurity component. The framework seeks to formalise a cycle of continuous reporting, review and improvement and to provide a platform for the community and industry to engage on their sustainability aspirations. Note that this is a voluntary programme developed by the industry.

³⁶ www.agriculture.gov.au/biosecurity/avm/vessels/biofouling/anti-fouling-and-inwater-cleaning-guidelines

³⁷ www.environment.gov.au/archive/coasts/pollution/antifouling/code/index.html

³⁸ www.aplusaquaculture.nz/

Origins of the policy

The Board of Inquiry recommended that the NZCPS 2010 gave careful consideration to the issue of harmful aquatic organisms. Policy 12 of the NZCPS 2010 builds on the earlier policies of the NZCPS 1994 as a result of the review of that NZCPS and the submissions that were considered by the Board of Inquiry.

The NZCPS 1994³⁹ included a restricted coastal activity (Schedule 1 S1.8) that addressed the introduction of any exotic plant species to the coastal marine area. In addition, Policies 1.1.2 (Protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna), 3.2.8 (Protection of habitats of commercially, recreationally, and culturally important species) and 5.2.1 (Provision of facilities for collection and disposal of residues from vessel maintenance) of the NZCPS 1994 were also relevant.

The Board of Inquiry's report provides useful information about issues that are of relevance to harmful aquatic organisms. For further information, refer to Volume 2 of the NZCPS Board of Inquiry report.⁴⁰

³⁹ Department of Conservation 1994: New Zealand Coastal Policy Statement 1994. Department of Conservation, Wellington. 26 p. www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/archive/new-zealand-coastal-policy-statement-1994/

⁴⁰ Board of Inquiry 2009: Proposed New Zealand Coastal Policy Statement (2008). Board of Inquiry report and recommendations. Volume 2: Working papers. Pp. 69–75. www.doc.govt.nz/documents/getting-involved/consultations/closed-consultations/nzcps/NZCPS-2008-board-of-inquiry-vol-2.pdf

Implementing the policy

When implementing Policy 12, it is necessary to consider the entire NZCPS 2010 as well as the guidance provided here. Therefore, please also refer to the NZCPS 2010 Implementation Guidance Introductory Note,⁴¹ which covers the matters that are relevant in giving effect to the NZCPS 2010.

Policy 12 directs local authorities to manage the risk of introducing or spreading harmful aquatic organisms in the coastal environment. The implementation of Policy 12 involves a number of aspects or considerations, which are discussed below under the following headings.

- Integrated management.
- Strategic assessment.
- Regional policy statement and plan preparation.
- Regulatory decision-making.
- Management of the activities set out in Policy 12(2).

Integrated management

Experience suggests that an integrated approach is beneficial to achieving effective management of harmful aquatic organisms. Integrated management can help to minimise the effects of cross-boundary issues and to promote the complementary, efficient and effective management of harmful aquatic organisms. Integrated management can also help to achieve national consistency in managing threats to the coastal environment from harmful aquatic organisms. Tools in the RMA and the Biosecurity Act can be used in complementary ways to achieve Policy 12. See also the guidance note prepared for NZCPS Policy 4 (Integration).

In the context of Policy 12, integration means:

- cooperation between agencies, including regional councils and central government agencies
- adequate strategic assessment in cooperation with relevant interests and stakeholders
- coordinated management of activities that cross administrative boundaries by using a suite of tools available under the RMA and Biosecurity Act.

It is important to understand the relationship between Policy 12 of the NZCPS 2010 and other laws and regulations. A visual explanation of integration between relevant legislation and agencies can be found in Figure 1, while examples of how Northland Regional Council used an integrated approach under the Biosecurity Act and the RMA and details of the Top of the North Partnership are provided in the 'Resources' section of this guidance note.

Approaches and processes implemented under different management regimes should be integrated where possible, including between neighbouring councils and across work that is mandated to councils by both the Biosecurity Act and the RMA.

⁴¹ www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/policy-statement-and-guidance/implementation-guidance-introductory-note/

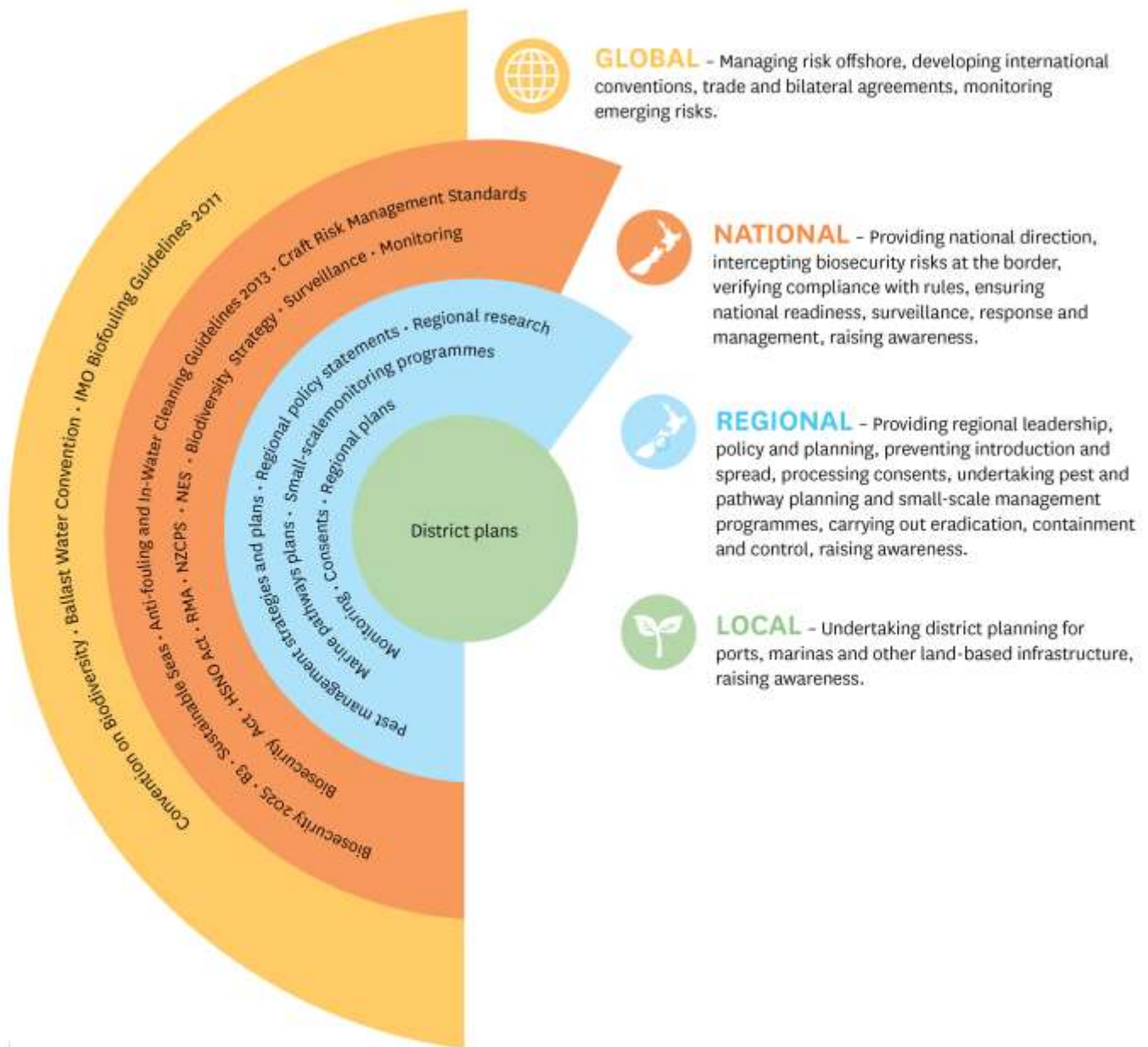
Integrated management can be achieved through consultation and communication processes between councils and agencies such as MPI, DOC and the EPA. The Top of the South Marine Biosecurity Partnership,⁴² which includes Tasman District Council, Nelson City Council, Marlborough District Council, MPI, DOC, the aquaculture industry, port companies, tangata whenua and other stakeholders, is a good example of how integrated management can be achieved, while the Fiordland Marine Guardians provide a good model for achieving community and stakeholder involvement,⁴³ both of which are described under ‘Collaboration and partnerships’ in the ‘Resources’ section of this guidance note. In addition, the Top of the North initiative, which involves the four northernmost regional councils exploring the development of an Inter-regional Marine Pest and Pathways Plan, provides a more recent example.

Scientific data on harmful organisms in the marine environment can be lacking and very expensive to obtain. However, collaboration between local authorities and agencies to share existing information as well as the costs of gathering new information can be a good means of bridging these gaps and is strongly encouraged. The process of strategic assessment is discussed further below.

⁴² www.marinebiosecurity.co.nz/

⁴³ www.fmg.org.nz

Marine Biosecurity Tools



The aquaculture, fishing, shipping and tourism industries and recreational boating sector have roles in preventing the introduction and spread across all four spheres

Adapted from a diagram from the Ministry of Primary Industries by the Department of Conservation, July 2019

Strategic assessment

Strategic assessments of the effects, risks and options for harmful aquatic organisms can benefit their management in the coastal environment and are encouraged. These assessments can inform the development of appropriate regional policy statement and plan provisions, as well as other tools that seek to control activities that could cause harmful aquatic organisms to be released or otherwise spread in the coastal environment.

The risk of releasing or spreading harmful aquatic organisms to an area needs to be carefully managed. Policy 12 directs local authorities to consider such risks when assessing the effects of activities in or near the coastal marine area.

The resilience of marine areas that are at risk should be maintained and, where possible, enhanced. The implementation of Policy 12 should involve identifying high-risk and high-value areas and considering the management strategy that is required to maintain these areas. Both Minister of Conservation's Regional Coastal Plan: Kermadec and Subantarctic Islands⁴⁴ and Environment Southland's Fiordland Marine Regional Pathway Management Plan⁴⁵ are good examples of managing the risks of introducing or spreading harmful aquatic organisms in high-value areas (see the 'Resources' section of this guidance note for further information).

A strategic assessment should:

- identify which harmful aquatic organisms are currently present in, or pose a threat to, the local coastal environment
- identify which harmful aquatic organisms are present elsewhere in New Zealand but have not established in the region
- provide baseline information to establish the extent of any current problems – the region's pest management plan prepared under the Biosecurity Act could be a useful source of information, as well as the Marine Biosecurity Porthole,⁴⁶ which is the most complete source of information on the national distribution of non-native marine species in New Zealand (refer to the 'Resources' section for more information)
- identify any activities that have the potential to introduce or spread harmful aquatic organisms and the way(s) in which this could occur to allow mitigation measures to be put in place (eg cleaning vessel hull biofouling)
- recognise that unlike in the terrestrial environment, neighbouring regions are not contiguous boundaries, so trends and risks across the country should be taken into account – for example, in the marine environment, Northland can be considered a neighbour to Southland

⁴⁴ Department of Conservation 2017: Regional Coastal Plan: Kermadec and Subantarctic Islands. Department of Conservation, Wellington. 148 p. www.doc.govt.nz/globalassets/documents/getting-involved/consultations/2017/regional-coastal-plan-kermadecs-subantarctics.pdf

⁴⁵ Environment Southland 2017: Fiordland Marine Regional Pathway Management Plan. Environment Southland, Invercargill. 16 p. www.es.govt.nz/document-library/plans-policies-and-strategies/regional-plans/Pages/Fiordland-Marine-Pathway-Plan.aspx

⁴⁶ www.marinebiosecurity.org.nz/sources-of-data/

- identify how the introduction or exacerbation of harmful aquatic organisms occurs
- identify marine areas that are particularly sensitive to impacts from harmful aquatic organisms – these may be high-value areas or degraded areas that have low resilience (eg areas where pests are already established or ports), with these differences potentially resulting in different levels of risk management being required
- recognise that invasion by harmful aquatic organisms is often part of a bigger issue of degraded environmental values due to cumulative human-caused stressors
- include rules and related provisions to reduce other pressures on ‘at risk’ marine environments that would reduce their resilience
- manage the risks of introducing known and unknown harmful aquatic organisms associated with vessel biofouling – specifically, having regard to relevant guidelines, such as the IMO Guidelines 2011⁴⁷ and the Anti-fouling and In-Water Cleaning Guidelines 2013⁴⁸
- have regard to relevant Codes of Practice – for example, the aquaculture industry’s A+ programme⁴⁹
- design and implement a regular monitoring programme to detect the arrival of new organisms in a timely manner, which would improve the chances of eradication measures being successful if implemented (eg a consent condition for occupation by marine farms could require that regular monitoring is carried out) – this would be in addition to and complementary to MPI’s annual Marine High Risk Site Surveillance Programme, which targets ports and marinas
- develop/employ a risk assessment process to assess the risks associated with biofouling organisms on the hulls of fouled vessels or marine structures (both fixed and moveable) – a risk assessment process can be used to inform decisions on whether a particular vessel or structure can be consented to clean biofouling. MPI has produced some high-level guidance on this for international vessels that could be modified for domestic vessels.⁵⁰

Policy 12 sets out some activities that could lead to the release or spread of harmful aquatic organisms in the coastal environment. Collaborative or partnership approaches could be used to assist a strategic assessment for implementing Policy 12, examples of which are provided in the ‘Resources’ section of this guidance note. Applicants who are planning to undertake such activities should be encouraged to work with councils and affected parties to identify the risks of their proposed activity ahead of time and to develop solutions to manage such risks.

⁴⁷ www.imo.org/en/OurWork/Environment/Biofouling/Pages/default.aspx

⁴⁸ www.biosecurity.govt.nz/dmsdocument/32641-australia-nz-anti-fouling-guidelines-june-2013

⁴⁹ www.aplusaquaculture.nz/

⁵⁰ www.mpi.govt.nz/dmsdocument/27915-guidelines-for-assessing-the-bio-security-risk-of-vessels-arriving-to-new-zealand

Regional policy statement and plan preparation

Policy 12(1) directs local authorities to provide in their regional policy statement and plans, 'as far as practicable', for the control of activities in or near the coastal marine area that could cause the release or spread of harmful aquatic organisms. This recognises that regional councils can control some sources of organisms (such as those identified in 12 (2)(a) to (d)). However, the term 'as far as practicable' recognises that not all activities in or near the coastal marine area can be controlled under the RMA.

Implementing Policy 12 involves:

- identifying relevant issues and evaluating management options
- considering the inclusion of objectives, policies and rules and related provisions to control activities in or near the coastal marine area that could lead to the release or spread of harmful aquatic organisms
- considering appropriate permitted activity performance standards
- formulating and applying consistent resource consent conditions where relevant.

Policy and plan provisions may, for example:

- require that a precautionary approach is adopted towards proposed activities that could cause the release or spread of harmful aquatic organisms within or near the coastal marine area
- require that the likely risk of introducing or spreading harmful aquatic organisms as a result of an activity, and any associated risks, are assessed and determined
- require the collation of good information on the movement of aquaculture stock and equipment to determine and mitigate possible pathways of spread
- require that vectors (eg dredge material, structures, equipment and vessels) be inspected, cleaned and declared free of any harmful aquatic organisms before they are moved between or within regions
- encourage the regular monitoring of structures, equipment and vessels to check for the presence of harmful aquatic organisms
- restrict the disposal of contaminated dredge material, such that it would be disposed of only on land and in a location or a containment that prevents any organisms from entering the coastal marine area
- promote and incentivise good hull maintenance for vessels and biofouling management practices for vessels, structures and equipment
- enable the maintenance of vessel hulls and structures provided that specified standards are met to minimise the spread of harmful aquatic organisms
- establish a risk-based approach that regulates maintenance of the hull and structure of vessels based on the nature and extent of hull fouling.

Vector management is important for reducing the risk of spreading harmful aquatic organisms. It may involve approaches such as requiring the regular application and maintenance of antifouling paint, providing incentives to maintain low levels of fouling on vectors or removal of the vector from the water and cleaning on land, carrying out regular inspections of the surface of the vector, monitoring and compliance. Vector management may also involve setting allowable levels of fouling for vessels to access a region or certain areas.

Different types of vessels will have different operating profiles and face different challenges in managing biofouling. The larger Navy ships are typically on a 3–5-year antifoul cycle and may dry dock once they are midway through that period. However, it is more difficult for

larger vessels to access dry dock facilities, with the larger Navy ships and the Cook Strait ferries being too big to dry dock in Devonport or Lyttelton (New Zealand's largest dry dock facilities) and consequently having to go offshore to do so. Such vessels can and should be encouraged or incentivised to undertake hull hygiene maintenance in-water in between times, such as by providing for in-water cleaning to take place in low-risk circumstances. A number of councils currently incorporate such an approach into their regional coastal plan provisions at various stages of the plan review process.

Regional coastal plans can, amongst other things, specify outcomes for the management of marine pests, and regional pest management and pathway plans can be a legitimate way to achieve those outcomes. Both Northland Regional Council and Marlborough District Council are using an integrated approach to manage the risk of introducing or spreading harmful aquatic organisms by including policies and rules for the management of discharges in their regional coastal plans and rules setting a fouling threshold in marine pathways plans.

A more detailed discussion of the implementation of Policy 12, particularly the matters raised in 12(2), is provided in later sections in relation to the management of particular activities. These activities include the management and maintenance of structures (eg moorings, marinas, jetties and wharves) and vessels that discharge or dispose of organic material, and the establishment and relocation of equipment and stock related to aquaculture. In addition, examples of the various approaches that have been taken by different councils are provided in the 'Resources' section.

Regulatory decision-making

Resource consent decision-making must have regard to Policy 12 of the NZCPS 2010. When assessing the effects of activities located in or near the coastal marine area, decision makers are directed, under Policy 12(1), to consider the risks that harmful aquatic organisms will be released or spread and cause adverse effects on the coastal environment and, where relevant, to include consent conditions to manage those risks.

The Anti-fouling and In-Water Cleaning Guidelines 2013 will assist councils in their RMA planning and consenting role to manage activities such as those highlighted in Policy 12(2). For example, these guidelines provide information on how vessel maintenance facilities should operate to minimise the release of biofouling into the environment and considerations for determining the risks posed by in-water hull cleaning, among other things.

When considering resource consent applications for the activities noted in Policy 12 (2), councils could impose conditions that require consent holders to:

- have vectors, materials and stock inspected before they are introduced to the coastal marine area or relocated to a new area to ensure they are clean and free from any harmful aquatic organisms (eg oil drilling rigs and similar vessels that spend extended periods in one location are at higher risk of accumulating biofouling, with more diverse biofouling posing a greater risk, but managing

biofouling is not a priority for vessels that sit in one place for extended periods for fuel efficiency reasons)⁵¹

- notify the regional council when relevant structures are going to be relocated (eg marine farming structures or drilling platforms)
- adopt maintenance practices to prevent the establishment of harmful aquatic organisms on other organisms (eg aquaculture stock), structures and equipment
- carry out self-monitoring to check for the presence of harmful aquatic organisms (on structures, vessels, equipment, etc) and send the results to a certified laboratory at various intervals, which will issue the certified results to both the applicant and the relevant council
- develop surveillance programmes in and around the consent area in the case of high-risk sites (eg marinas and ports)
- for dredge disposals, establish a programme to sample the sediments before they are dumped to determine whether harmful aquatic organisms are present in the material
- undertake monitoring for any potential adverse effects on indigenous ecology, ecosystems and recreational amenities of introduced species that have been purposely transferred into an area (eg the movement of mussel spat from one area to another)
- clean marine farming equipment and keep it free of fouling
- monitor the stock health in marine farms (early detection of stock illness and pest species reduces the risk of the release or spread of harmful aquatic organisms) and implement agreed management protocols
- ensure stock is free from pests before introducing or relocating it
- cease cleaning and notify the regional council when unusual or suspected harmful organisms are discovered, particularly those that are unwanted or notifiable (refer to the Biosecurity Act section under 'Legislation' above).
- specify that cleaning methods should not compromise antifouling coatings
- capture and remove fouling debris from the coastal marine area if it is above a specified threshold (eg macrofouling)
- have an antifouling system on-board vessels and avoid in-water cleaning of vessels where this system has exceeded its service life.

Management of the activities set out in Policy 12(2)

Policy 12(2) identifies four categories of activities that are relevant to Policy 12(1) and can be controlled under the RMA to prevent the release or spread of harmful aquatic organisms. The activities that are included in this list, which is not exclusive, fall under the following broad headings.

- Introduction of structures.
- Discharge or disposal of organic material (including biofouling).
- Provision and ongoing maintenance of moorings, marina berths, jetties and wharves.
- Establishment and relocation of equipment and stock related to aquaculture.
- Other activities.

⁵¹ Marlborough District Council imposed a condition on an application for offshore oil exploration in the coastal marine area that limited the drilling rig to one that was already operating in New Zealand waters (Tuatara well decision).

Each of these activities is discussed below, alongside guidance on possible management options that could be put in place to manage them. Integrated management continues to be important in managing these activities. Any efforts to prevent the release or spread of harmful aquatic organisms need to be mindful of the efforts being made in neighbouring regions (as invasive species readily cross between regions as long as there is suitable habitat on the other side) and by other management agencies, particularly MPI. As noted above, neighbouring regions do not have to be contiguous in the marine environment, as a vector moving between two geographically distant regions (eg Northland and Southland) makes the two councils neighbours.

Introduction of structures

Both fixed and moveable structures can become contaminated with harmful aquatic organisms which, in the case of moveable structures, could result in harmful aquatic organisms being released into new areas. A structure may be introduced from overseas, a different region or to a new location within the same region. Such structures can include wharves and jetties, breakwaters or artificial reefs⁵² and platforms; floating barges and platforms used in vessel maintenance, cleaning or waste disposal; equipment associated with aquaculture; and oil and gas drilling rigs. It should also be noted that mooring lines, chains and anchors that are associated with such structures will also be a biosecurity risk.

Possible management options may include:

- the inspection of structures before they are introduced to the coastal marine area or region to ensure they are clean and free from any harmful aquatic organisms – this could be a requirement in a resource consent condition (eg a resource consent for the placement of a structure in the coastal marine area) or managed in a regional coastal plan through the regulation of the erection/placement of structures in the coastal marine area
- information on where invasive organisms are likely to spread to (the distribution of organisms) based on habitat suitability – such information is valuable to councils as it can allow robust controls to be used to manage the introduction of structures in areas that are identified as ‘at risk’ or particularly vulnerable.

Discharge or disposal of organic material

The discharge or disposal of organic material from dredging or from vessels and structures (during maintenance, cleaning or otherwise) into the coastal marine area or on land may include:

- discharges into the coastal marine area of organic material (ie biofouling) that has been removed from ship hulls during cleaning, either on land (eg on tidal grids or hardstands) or in water – these discharges have the potential to contain harmful aquatic organisms

⁵² Section 2 of the RMA defines ‘structure’ as ‘any building, equipment, device or other facility made by people and which is fixed to land; and includes any raft’, where ‘raft’ means ‘any moored floating platform which is not self-propelled; and includes platforms that provide buoyancy support for the surfaces on which fish or marine vegetation are cultivated or for any cage or other device used to contain or restrain fish or marine vegetation; but does not include booms situated on lakes subject to artificial control which have been installed to ensure the safe operation of electricity generating facilities’.

- dredging and disposal processes that can transport and release harmful aquatic organisms (in the dredge spoil) from one area to another – for example, parchment-like tubeworms (*Chaetopterus* spp.) can be spread to a larger area through dredging operations and are capable of forming dense aggregations that dominate the benthic substrate.

Possible management options for dredge material include the requirement in plans and resource consents to:

- consider options for disposing of dredged material on land or testing the material prior to marine disposal and disposing of it on land if it exceeds a set contaminant level⁵³
- undertake modelling of the currents to ensure that larvae, etc cannot return to inshore waters if dredged material is being dumped outside these waters
- sample dredge sediments as part of the assessment process to determine whether harmful aquatic organisms are present in the material.

Harmful aquatic organisms that are attached to hulls and niche areas⁵⁴ can be dispersed into the marine environment either accidentally (eg through spawning or by being knocked off) or deliberately when the hull is cleaned. Antifouling coatings and other management practices can reduce the development of hull-fouling communities. However, while antifouling coatings are the best defence against fouling, they cannot guarantee that no fouling will occur and they can be compromised in a number of ways (eg by impact damage, inadequate preparation or application and through the use of the incorrect product for the vessel). There are several possible options for managing discharges associated with the maintenance of vessels and structures and for the maintenance and management of biofouling.

- Managing hull cleaning to minimise the risk of harmful aquatic organisms being released into the coastal environment. Controls can be established and enforced through policy and plan provisions and resource consent conditions.
- Taking into account the IMO Biofouling Guidelines 2011 and the Anti-fouling and In-Water Cleaning Guidelines 2013 (refer to the ‘Resources’ section of this guidance note) when plan reviews and/or consenting functions are being carried out by local authorities in relation to the cleaning and maintenance of vessels and structures. Note, however, that some maintenance activities may take place out of the water but still have the potential to impact on the coastal marine area, so councils should consider whether the words ‘in-water’ are necessary or too limiting when writing policies and rules.
- Designing RMA controls to ensure that macrofouling organisms (any fouling beyond microfouling or a slime layer) are contained, treated and properly

⁵³ ANZECC has derived low and high interim sediment quality guideline values (ISQG-Low and ISQG-High, respectively) for certain trace elements and organic compounds that could have toxic effects on sediment-dwelling organisms. www.mfe.govt.nz/publications/fresh-water/australian-and-new-zealand-guidelines-fresh-and-marine-water-quality

⁵⁴ Niche areas are those parts of a vessel or movable structure that are more susceptible to biofouling accumulation due to different hydrodynamic forces, susceptibility to antifouling coating wear or damage, or an absence of antifouling coatings. They include, but are not limited to, waterline, sea chests, bow thrusters, propeller shafts, inlet gratings, jack-up legs, moon pools, bollards, braces and dry-docking support strips.

disposed of (outside the coastal marine area). No fragments should be released into coastal waters.

- Employing one of the range of on-shore vessel cleaning methods that are available to avoid harmful aquatic organisms being released into the coastal environment (eg appropriate slipway design that results in all contaminants being trapped in sumps). All waste generated from vessel cleaning and maintenance activities should be contained for proper treatment and disposal (ie on land). Runoff must be prevented from entering coastal waters.
- Considering the best methods and actions to avoid, remedy or mitigate the adverse effects of the unavoidable discharge of materials containing harmful aquatic organisms from non-moveable structures that cannot be removed from the coastal marine area to land to be cleaned, as well as any monitoring that may be appropriate.
- Only using tidal grids⁵⁵ to clean a vessel when microfouling (or a slime layer) and no macrofouling is present on the hull. The Anti-fouling and In-Water Cleaning Guidelines 2013 provide recommendations on the disposal of residues or wastes, and MPI commissioned a detailed report on this in 2013.⁵⁶

Any activities that are associated with in-water vessel hull and niche area maintenance will involve a discharge. This can include:

- an associated discharge of biological material – even when some effort is made to capture and remove the material, there cannot be an 100% guarantee that all of the material is captured
- discharge from an appropriate treatment method that is used to kill the harmful aquatic organism (ie one that is known to be effective for the species being targeted) – treatment methods include (but are not limited to) encapsulating and filling a vessel (eg an inflatable floating dock) or ‘blanking’ and flooding niche areas (eg sea chests) with a treatment solution, such as fresh water, chlorine or acetic acid (eg Mediterranean fanworm cannot tolerate fresh water⁵⁷).

It is recommended that the discharge of biological materials be dealt with in plans and consents in relation to Policy 12. For example, permitted activity rules that allow the cleaning or removal of biofouling, subject to conditions (such as the level of biofouling and/or its origin), should provide for the associated discharge of biological materials. However, any activity of treating biofouling that involves the discharge of a contaminant should be considered on a case-by-case basis as a discretionary activity, and both Policies 12 and 23 of the NZCPS 2010 will be relevant.

⁵⁵ Tidal grids are used to careen vessels (beach the vessel at high tide), so that maintenance can be performed on the vessel when the tide goes out. Tidal grid structures comprise a row of piles for vessels to tie up to so that they remain upright as the tide goes out. The floor can be concrete or have rails to keep the base of the keel above the seabed.

⁵⁶ Morrissey, D.; Gadd, J.; Page, M.; Floerl, O.; Woods, C.; Lewis, J.; Bell, A.; Georgiades, E. 2013: In-water cleaning of vessels: biosecurity and chemical contamination risks. *MPI Technical Paper No: 2013/11*. Ministry for Primary Industries, Wellington. 265 p. www.mpi.govt.nz/dmsdocument/4092/loggedIn

⁵⁷ Jute, A.; Dunphy, B. 2016: The potential efficacy and application of freshwater and hypersaline immersion to control the spread of a marine invasive species. *Biological Invasions*. DOI:10.1007/s10530-016-1350-8. www.researchgate.net/publication/311527121

A recent case regarding a marina application on Waiheke Island put in place a very restrictive regime for managing the potential adverse effects of vessel biofouling and contaminants from antifouling coatings, which included prohibiting in-water cleaning.⁵⁸ However, this approach was justified given the size of the vessels and access to haul-out facilities (see the ‘Resources’ section later in this guidance note for further details).

Another example of the inclusion of restrictive coastal plan provisions can be found in the Regional Coastal Plan: Kermadec and Subantarctic Islands, which were put in place due to the outstanding natural character and remoteness of these two groups of islands.

Provision and ongoing maintenance of moorings, marina berths, jetties and wharves

Moorings, marina berths, jetties and wharves are exposed to visiting vessels and can provide ideal habitats for biofouling species, allowing organisms that escape from vessels to become established and then transferred to other vessels.

Possible management options may include:

- undertaking surveillance programmes to check for the presence of any harmful aquatic organisms at such high-risk coastal structures (eg a resource consent for a mooring, marina berth, jetty or wharf structure could include a consent condition that requires a surveillance programme to be carried out, which may be detailed in the regional pest management plan)
- seeking advice from MPI on the best way to safely remove and dispose of any harmful aquatic organism that is detected during surveillance or at any other time
- requiring that the structure is maintained in a sound and suitable condition (eg through the management of biofouling of the structure) and undertaking monitoring inspections to support compliance.

NIWA is contracted to MPI to undertake the Marine High Risk Site Surveillance (MHRSS) programme, which targets the early detection of marine non-indigenous species (NIS). The primary objective of the MHRSS programme is to detect incursions of New-to-New Zealand non-indigenous organisms listed on the Unwanted Organisms Register in New Zealand ports and marinas that have previously been identified as the highest risk for the introduction and establishment of marine NIS. The project involves undertaking surveys of key ports and marinas around the country, during which divers inspect port structures, as well as performing dredge tows and deploying crab traps in key risk areas. Any suspect organisms and potential range expansions by known invaders are reported to MPI. This information will also be valuable to regional councils, as it could be used to help develop necessary management practices to prevent the spread of harmful aquatic organisms to other areas in the region.

Establishment and relocation of equipment and stock related to aquaculture

Marine farm activities (eg the movement of equipment, stock and spat) can potentially transport pests and diseases around New Zealand. Marine farms can also provide ideal habitats for biofouling species, so there is the potential for marine pests to become established on a marine farm and then multiply and subsequently spread into the surrounding environment. Therefore, it is important to minimise the risk of a potential pest

⁵⁸ *SKP Inc and RA Walden v Auckland Council* [2018] NZEnvC 081.

outbreak and to prevent any spread to wild populations and between marine farms. MPI works with the aquaculture industry to try to address this.⁵⁹

Vector management is an effective tool for managing some of these risks. The management of aquaculture occurs at the regional level through regional policy statements and regional coastal plans, with the latter being particularly relevant for setting out the management requirements for aquaculture activities. It could also be managed by marine pathways plans.

There are several possible management options.

- Including relevant consent conditions, such as the requirement that a biosecurity management plan is prepared for the marine farm.
- Specifying in the resource consent conditions that in the event of any previously unidentified harmful aquatic organism being identified in the region (by the consent holder or the council's biosecurity officer), the consent holder may be required to collect a sample of the organism and forward it to the council's biosecurity officer who will arrange for identification. The council may then direct the consent holder to undertake any actions that are reasonably necessary to minimise the spread of any such organism.
- Regularly inspecting equipment and requiring treatment to kill organisms before equipment is introduced to the area or relocated. For example, resource consent conditions could require the consent holder or council's biosecurity officer to inspect farm structures to identify the presence of any harmful aquatic organism that has not previously been identified in the region.

The A+ programme can assist both applicants and councils in relation to applications involving the establishment or relocation of aquaculture equipment or stock. (See the 'Strategies, conventions and guidelines' and 'Resources' sections of this guidance note for further information on this programme and examples of regulatory decisions involving aquaculture.)

Other activities

Examples of other activities that could be controlled to prevent the release or spread of harmful aquatic organisms include the:

- relocation of floating structures that are likely to be already contaminated with harmful aquatic organisms (these are particularly likely to spread organisms if towed wet to the site)
- relocation of vessels such as, but not limited to, fishing boats, mooring ropes and lines, and anchor chains if there is an opportunity to do so under plans or consents or, if not, to raise awareness of the risk and advocate cleaning
- requirement for maintenance/diving gear to be cleaned when moving between areas (ie when companies are carrying out survey work and using gear in different marinas each day or moving between areas or regions) if there is an opportunity to do so under plans or consents or, if not, to raise awareness of the risk and advocate cleaning
- establishment of a new port or marina that may focus more vessel activity into an area that has previously been quite isolated from sources of harmful organism introductions.

⁵⁹ www.mpi.govt.nz/protection-and-response/readiness/aquaculture-biosecurity-readiness//

Vessels that are moored in one location for a period of time (eg barges) can become heavily fouled. For example, the carpet sea squirt (*Didemnum vexillum*) was transferred from Tauranga Harbour to the Marlborough Sounds on a barge that was transferred there to act as a helipad for a forestry operation and has now spread through the Marlborough Sounds and beyond. Requirements can be imposed on vessel movements, depending on the activity. For example, two small-scale management programmes that were developed under the Biosecurity Act (s.100v) by Bay of Plenty Regional Council for two unwanted organisms enabled that council to require that a barge which was being relocated from Auckland to Tauranga had to be free of unwanted organisms before it entered the Bay of Plenty region.⁶⁰

The establishment and relocation of equipment and stock that is required for or associated with fishing and will be used in the coastal marine area could also potentially result in the release or spread of harmful aquatic organisms. This can include seeding for wild shellfish fisheries, set nets and pots (eg contaminated fishing nets are thought to have spread the South American alligator weed (*Alternanthera philoxeroides*) to parts of Waikato). Therefore, educating recreational fishers about the potential for fishing equipment and stock to spread harmful aquatic organisms can also be valuable.

⁶⁰ www.boprc.govt.nz/environment/pests/marine-pests/

Resources

Collaborations and partnerships

Fiordland Marine Guardians

www.fmg.org.nz

The Fiordland Marine Guardians, in association with the Ministry for the Environment, DOC, MPI and Environment Southland, have developed four implementation plans to assist with management of the Fiordland area.

- Marine Biosecurity Plan.
- Communication and Education Plan.
- Compliance Plan.
- Monitoring Plan.

The Fiordland Marine Biosecurity Plan⁶¹ provides a framework for agencies to work together on operational activities that relate to marine biosecurity. It outlines biosecurity measures to reduce the risk of invasive organisms that could adversely affect Fiordland's marine environment and sets out steps to implement these measures.

Environment Southland, the Guardians, DOC, MPI and Te Rūnanga o Ngāi Tahu also developed the Fiordland Marine Regional Pathway Management Plan, which was formally adopted in 2017.⁶² This plan requires that vessels travelling to Fiordland must have a clean vessel pass (CVP), obtaining which involves a vessel hull inspection. MPI assists with the implementation of this plan.

Top of the North Marine Biosecurity Partnership

<http://marinepests.nz/>

The Top of the North Marine Biosecurity Partnership is a regionalised partnership that is concerned with marine biosecurity in the Northland, Auckland, Waikato, Bay of Plenty and Hawke's Bay regions.

The top four regional councils (Northland, Auckland, Waikato and Bay of Plenty), with support from MPI – Biosecurity New Zealand and DOC, are exploring whether it would be better to have hull-fouling rules that are applied consistently across several regions in the future. They produced a discussion document for consultation, which was notified in March 2019, and asked for feedback by 24 May 2019.⁶³

⁶¹ Ministry for Primary Industries; Ministry for the Environment; Department of Conservation; Environment Southland; Fiordland Marine Guardians 2016: Fiordland Marine Biosecurity Plan: 2015/16–2020/21. Ministry for Primary Industries, Wellington. 17 p. www.mpi.govt.nz/protection-and-response/long-term-pest-management/fiordland-marine-biosecurity/

⁶² Environment Southland; Department of Conservation; Fiordland Marine Guardians; Ministry for Primary Industries; Te Rūnanga o Ngāi Tahu 2017: Fiordland Marine Regional Pathway Management Plan. Environment Southland, Invercargill. 16 p. www.es.govt.nz/document-library/plans-policies-and-strategies/regional-plans/Pages/Fiordland-Marine-Pathway-Plan.aspx

⁶³ www.bionet.nz/control/marine-pests/marinepests/

Top of the South Marine Biosecurity Partnership

www.marinebiosecurity.co.nz/

www.bionet.nz/control/marine-pests/top-of-the-south-biosecurity-partnership/

The Top of the South Marine Biosecurity Partnership is a regionalised partnership that is concerned with marine biosecurity. It involves Nelson City Council, Marlborough and Tasman district councils, tangata whenua (through the Te Tau Ihu Customary Forum), MPI, DOC, the local aquaculture industry, and port companies.

Marine Biosecurity Porthole

www.marinebiosecurity.org.nz/

The Marine Biosecurity Porthole is the most complete source of information on the national distribution of marine NIS in New Zealand. It was created in 2010 as a collaboration between MPI and NIWA to provide greater public access to information and data on marine NIS in New Zealand. This will be a valuable source of information for strategic assessments.

Bionet

www.bionet.nz

Bionet is a collaborative partnership between MPI – Biosecurity New Zealand, DOC, Land Information New Zealand and regional councils. The purpose of Bionet is to provide best practice biosecurity information for all New Zealanders by connecting information across the biosecurity system. It aims to improve capability in biosecurity and to connect professionals working in pest management.

Examples of integrated approaches

Northland Regional Council's 'three-pronged approach'

Northland Regional Council has taken a 'three-pronged approach' to the management of marine biosecurity in its region by recognising that marine pests can be managed through the application of three tools: controls in RMA regional coastal plans (discharges); regional pest management plans to deal with identified and/or pest species that are already present; and pathway management plans to reduce the spread of marine pests.

The Northland Regional Pest and Marine Pathway Management Plan 2017–2027⁶⁴ is now operative and sets out a pre-determined level of fouling for vessels moving between certain areas that the Council considers acceptable to reduce the risk of spreading harmful aquatic organisms. The regional coastal plan provisions of the proposed Resource Management Plan for Northland are currently under development.

In addition, Northland marinas have put a number of measures in place to ensure their structures are protected against marine pests. To visit a marina in Northland, boat owners need to provide evidence of complying with a 'six or one' requirement: an antifoul within the previous 6 months or a lift-and-wash within 1 month of leaving an area infected with marine

⁶⁴ Northland Regional Council 2017: Northland Regional Pest and Marine Pathway Management Plan 2017–2027. Northland Regional Council, Whangārei. 138 p.

www.nrc.govt.nz/media/10715/northlandregionalpestandmarinepathwaymanagementplan20172027.pdf

pests. Receipts are the best form of evidence, but some marinas may also accept date-stamped photographs of a clean hull.⁶⁵

Marlborough District Council

Marlborough District Council is also taking an integrated approach to managing marine biosecurity risk using both the RMA and the Biosecurity Act tools. This Council has an operative Regional Pest Management Plan 2018⁶⁶ that was developed under the Biosecurity Act. Within this plan is an exclusion programme for Mediterranean fanworm, which includes rule 5.18.2.1 requiring any vessels entering the Marlborough region to ensure that the hull and niche areas do not exceed 'light fouling'.⁶⁷ The regional coastal plan provisions in the Proposed Marlborough Environment Plan, which place restrictions on in-water cleaning activities, are currently under development.

⁶⁵ www.nrc.govt.nz/maritime/our-marine-environment/visiting-a-northland-marina-this-summer/

⁶⁶ Marlborough District Council 2018: Regional Pest Management Plan 2018. Marlborough District Council, Blenheim. 109 p.
www.marlborough.govt.nz/repository/libraries/id:lw1mps0ir17q9sgxanf9/hierarchy/Documents/Environment/Regional_Pest_Management_Plan_2018_WEB_signed.pdf

⁶⁷ Defined in the Regional Pest Management Plan's Glossary as meaning 'small patches (up to 100 millimetres in diameter) of visible fouling, totalling less than 5% of the hull and niche areas. A slime layer and/or goose barnacles are included in this definition'.

Management of biosecurity risks to high-value areas

Fiordland

The collaborative approach between the Fiordland Marine Guardians, Environment Southland, Ngai Tāhu and the New Zealand Government noted above is an example of how the biosecurity risk to Fiordland – a UNESCO World Heritage Area – is being managed.

Kermadec and Subantarctic Islands

The Regional Coastal Plan: Kermadec and Subantarctic Islands⁶⁸ requires that any vessel that is intending to go inside 1000 metres from mean high water springs of any of the Kermadec and Subantarctic Islands has a clean hull. This plan contains detailed provisions, including inspection requirements that use the level of fouling (LOF) ranking system (see NIWA's template for vessel hull inspections and assessments of biosecurity risks in this region⁶⁹).

Regional coastal plan provisions

Several regional councils are at a review stage with their second-generation regional coastal plans. The first-generation plans were prepared against a different international and domestic policy background, including the previous NZCPS 1994, during which time the ANZECC Code of Practice for Antifouling and In-water Cleaning 1997 would have been the key guiding document. The underlying philosophy of the 1997 Code of Practice was that the in-water cleaning of biofouling from vessels was not recommended due to the risks associated with releasing invasive species and contaminants from the antifouling coatings. However, as outlined in the 'Strategies, conventions and guidelines' section above, this policy has shifted so that it is now recommended that vessel hulls and niche areas should be regularly maintained to prevent the growth of macrofouling, and it is acknowledged that there are circumstances where in-water cleaning to achieve this is appropriate (as noted in the IMO Guidelines and the Anti-fouling and In-water Cleaning Guidelines 2013).

Councils around the country are at various stages of reviewing their regional coastal plans (or the coastal marine environment component of combined plans) since the NZCPS 2010 was gazetted (eg Auckland Council provisions relating to Policy 12 are now operative). The following councils have reviewed their coastal plan provisions in light of Policy 12, taken the 2013 guidelines into account, and tailored the policies and rules to the circumstances in their respective regions.

- Northland Regional Council.
- Auckland Council.

⁶⁸ Department of Conservation 2017: Regional Coastal Plan: Kermadec and Subantarctic Islands. Department of Conservation, Wellington. 148 p. www.doc.govt.nz/get-involved/have-your-say/all-consultations/2011/regional-coastal-plan-kermadec-and-subantarctic-islands/

⁶⁹ Floerl, O.; Wilkens, S.; Inglis, G. 2010: Development of a template for vessel hull inspections and assessment of biosecurity risks to the Kermadec and sub-Antarctic islands regions. *NIWA report no. CHC2010-086*. Prepared for the Department of Conservation by the National Institute for Water and Atmospheric Research Ltd, Christchurch. 55 p. www.doc.govt.nz/documents/getting-involved/consultations/current-consultations/vessel-hull-inspections-assessment.pdf

- Taranaki Regional Council.
- Greater Wellington Regional Council.
- Marlborough District Council.

It is recommended that the various plans are viewed on the council websites.

Examples of regulatory decisions

SKP Inc and RA Walden v Auckland Council [2018] NZEnvC 081

www.nzlii.org/cgi-bin/disp.pl/nz/cases/NZEnvC/2018/81.html?stem=0&synonyms=0&query=SKP

This decision, regarding a new marina at Waiheke Island, contains a comprehensive set of conditions of consent that ‘innovatively’ control the nature of antifouling paints and other potential contaminants in the marina. Various management plans are required (to be approved by Auckland Council), including pest management plans (marine as well as terrestrial), as well as the development and approval by Auckland Council of a set of marina rules binding all berth holders. The pest management plan is required to set out measures to avoid the introduction of any unwanted or high-risk marine species, including wakame, sea squirts and Mediterranean fanworm, into the bay. The marina rules require berth holders to use low-impact antifouling products, prohibit in-water cleaning, and outline various other matters in relation to discharges and noise. The in-water cleaning prohibition is justified because the marina berths only small vessels and has haul-out facilities.

Biomarine Limited v Auckland Regional Council A068/2007 [2007] NZEnvC 245

[www.nzlii.org/cgi-bin/sinodisp/nz/cases/NZEnvC/2007/245.html?query=title\(Biomarine%20Limited%20and%20Auckland%20Regional%20Council%20\)](http://www.nzlii.org/cgi-bin/sinodisp/nz/cases/NZEnvC/2007/245.html?query=title(Biomarine%20Limited%20and%20Auckland%20Regional%20Council%20))

This decision includes ‘Biosecurity Management’ consent conditions for the operation of Biomarine Limited’s oyster farm operation in the Kaipara Harbour (refer consent conditions 29A–37).

Jackson Bay Mussels Limited v West Coast Regional Council C14/2005 [2005] NZEnvC 32

[www.nzlii.org/cgi-bin/sinodisp/nz/cases/NZEnvC/2005/32.html?query=title\(Jackson%20Bay%20Mussels%20Limited%20and%20West%20Coast%20Regional%20Council%20\)%20](http://www.nzlii.org/cgi-bin/sinodisp/nz/cases/NZEnvC/2005/32.html?query=title(Jackson%20Bay%20Mussels%20Limited%20and%20West%20Coast%20Regional%20Council%20)%20)

This decision concerns an application for mussel farming at Jackson Bay/Okahu and biosecurity consent conditions, including requiring the consent holder to:

- thoroughly clean the hull and inspect for wakame infestation on any vessel that is brought in from outside Jackson Bay/Okahu to work on the marine farm prior to departure of the vessel for Jackson Bay/Okahu
- lodge a wakame management plan with West Coast Regional Council prior to the installation of structures, which addresses measures to avoid the introduction of wakame through the mussel farming activity and to minimise its impact through propagation on the marine farm if it should be introduced, and includes details regarding the cleaning and inspection of vessels brought in from outside Jackson Bay/Okahu to work on the marine farm.

Invasive clubbed tunicate and the management of barge traffic into Tauranga harbour

Environment Bay of Plenty was alerted of a planned barge relocation from Auckland to Tauranga. The barge was heavily infested with the clubbed tunicate, an unwanted organism that is well-established in the Hauraki Gulf but previously unrecorded in the Bay of Plenty region. Environment Bay of Plenty requested that the hull be cleaned prior to transfer. Policies 16.2.3(f) and 16.2.3(g) of the Environment Bay of Plenty Regional Coastal Environment Plan help to prevent the introduction of exotic plants into the region. When resource consents are required, wording has been placed in conditions to the effect that 'Any vessel entering the Bay of Plenty marine area must be free of all unwanted organisms or other harmful marine species'. The Council has developed a fact sheet to raise public awareness⁷⁰. The Council also established two small-scale Management Programmes to stop Mediterranean fanworm and clubbed tunicate from establishing in the bay of Plenty⁷¹

*Nelson City Council v Diamond Offshore Netherlands BV DC Nelson
CRN08042500436, 25 March 2009*⁷²

This decision concerns in-water cleaning of the *Ocean Patriot* mobile platform. The decision found that the Resource Management (Marine Pollution) Regulations 1998 deemed the dumping of dredge material and organic materials of natural origin as a discretionary activity.

⁷⁰ www.boprc.govt.nz/media/374300/boprc-thfs5-biosecurity-web.pdf

⁷¹ www.boprc.govt.nz/environment/pests/marine-pests/

⁷² www.westlaw.co.nz/maf/wlnz/app/document?docguid=16db437359f1d11e0a619d462427863b2&tocDs=AUNZ_CASES_TOC&isTocNav=true&startChunk=1&endChunk=1

Reports, websites and additional information

Department of Conservation

- Biosecurity.
www.doc.govt.nz/our-work/biosecurity/
- Floerl, O.; Wilkens, S.; Inglis, G. 2010: Development of a template for vessel hull inspections and assessment of biosecurity risks to the Kermadec and sub-Antarctic islands regions. *NIWA report no. CHC2010-086*. Prepared for the Department of Conservation by the National Institute for Water and Atmospheric Research Ltd, Christchurch. 55 p.
www.doc.govt.nz/documents/getting-involved/consultations/current-consultations/vessel-hull-inspections-assessment.pdf
- Dodgshun, T.J.; Taylor, M.D.; Forrest, B.M. 2007: Human-mediated pathways of spread for non-indigenous marine species in New Zealand. *DOC Research & Development Series 266*. Department of Conservation, Wellington. 44 p.
www.doc.govt.nz/upload/documents/science-and-technical/drds266.pdf
- Asian seaweed *Undaria pinnatifida*.
www.doc.govt.nz/nature/pests-and-threats/common-weeds/asian-seaweed/

Ministry for Primary Industries – Biosecurity New Zealand

- Marine pest management.
www.biosecurity.govt.nz/protection-and-response/long-term-pest-management/marine-pest-management/
This webpage explains how MPI is working with local government and others to slow the spread and impact of harmful pests and diseases around New Zealand's coastline.
- National Policy Direction for Pest Management 2015.
www.mpi.govt.nz/news-and-resources/media-releases/government-delivers-national-policy-direction-for-pest-management/
This direction sets out the overarching requirements for national and regional pest and pathway management plans and small-scale management programmes.
- Ocean pests and diseases (not yet in New Zealand).
www.biosecurity.govt.nz/protection-and-response/finding-and-reporting-pests-and-diseases/priority-pests-plant-aquatic/ocean-pests/
- Unwanted Organisms Database.
www1.maf.govt.nz/uor/searchframe.htm
- Marine Biosecurity Porthole.
www.marinebiosecurity.org.nz/
MPI and NIWA have launched a web portal that provides information on the marine pests that have been recorded in New Zealand's waters and threaten New Zealand's marine environment.
- Woods, C.; Seaward, K.; Pryor Rodgers, L.; Inglis, G. 2018: Marine High Risk Site Surveillance Programme: annual synopsis report for all high risk sites 2017-18 (SOW18048). *MPI Technical Paper No: 2018/45*. Ministry for Primary Industries,

Wellington. 209 p.

www.mpi.govt.nz/dmsdocument/30381/loggedIn

The primary objective of the MHRSS programme is to detect incursions of New-to-New Zealand non-indigenous organisms that are listed on the Unwanted Organisms Register in New Zealand ports and marinas that have previously been identified as the highest risk for the introduction and establishment of marine NIS. The project involves surveying key ports and marinas around the country, including the inspection of port structures by divers. NIWA is contracted to MPI to undertake the programme, and any suspect organisms and potential range expansions by known invaders are reported to MPI. The above link is to the 2017/18 survey.

- Department of Agriculture, Fisheries and Forestry; Department of Sustainability, Environment, Water, Population and Communities; New Zealand Ministry for Primary Industries 2013: Anti-fouling and in-water cleaning guidelines. Department of Agriculture, Fisheries and Forestry, Canberra. 22 p.
www.biosecurity.govt.nz/dmsdocument/32641-australia-nz-anti-fouling-guidelines-june-2013
The Antifouling and In-Water Hull Guidelines 2013 provide guidance on the appropriate use of antifouling systems and the best practice for the in-water cleaning and maintenance of vessels.⁷³ They also provide guidance on the management of biofouling on moveable structures.
- International Maritime Organisation Guidelines for the control and management of ships' biofouling to minimize the transfer of invasive aquatic species (July 2011).
www.imo.org/en/OurWork/Environment/Biofouling/Documents/RESOLUTION%20MEPC.207%5b62%5d.pdf
- Biosecurity New Zealand – Biofouling management.
www.biosecurity.govt.nz/importing/border-clearance/vessels/arrival-process-steps/biofouling/biofouling-management/
This webpage includes links to New Zealand's new biosecurity requirements, including the CRMS-BIOFOUL and associated guidance.
- Risk analysis: vessel biofouling (February 2011).
<https://www.mpi.govt.nz/dmsdocument/2863-vessel-biofouling-risk-analysis-february-2011>
- Cawthron Institute 2010: Vessel biofouling as a vector for the introduction of non-indigenous marine species to New Zealand: slow-moving barges and oil platforms. *MAF Biosecurity New Zealand Technical Paper No: 2010/12*. Ministry of Agriculture and Forestry, Wellington. 40 p.
www.mpi.govt.nz/dmsdocument/7332
- Biosecurity 2025 Direction Statement.
www.mpi.govt.nz/protection-and-response/biosecurity/biosecurity-2025/biosecurity-2025/
- Biodiverse Limited 2010: Slowing pest spread – domestic pathways of human mediated pest spread and opportunities for their management. *MAF Biosecurity*

⁷³ www.agriculture.gov.au/biosecurity/avm/vessels/biofouling/anti-fouling-and-inwater-cleaning-guidelines

New Zealand Technical Paper No: 2010/22. Ministry of Agriculture and Forestry, Wellington. 69 p.

www.bionet.nz/assets/Uploads/2010-22-slowing-pest-spread.pdf

Aquaculture Unit, Fisheries New Zealand

- Aquaculture biosecurity readiness.
www.biosecurity.govt.nz/protection-and-response/readiness/aquaculture-biosecurity-readiness/
This webpage provides biosecurity guidance for fish farmers, including a biosecurity handbook for farmers and a biosecurity management technical reference document.

Aquaculture New Zealand

- A+ New Zealand sustainable aquaculture voluntary programme.
www.aplusaquaculture.nz/#a-plus-home

Environmental Protection Authority

- New organisms.
www.epa.govt.nz/industry-areas/new-organisms/

Biodiversity New Zealand

- Biodiversity New Zealand resources.
www.doc.govt.nz/nature/biodiversity/biodiversity-new-zealand-resources/

NIWA

- Aquatic biodiversity & biosecurity.
www.niwa.co.nz/our-science/aquatic-biodiversity-and-biosecurity/our-services

Marina operators

- New Zealand Clean Marina Programme.
www.cleanmarinas.org.nz/
The New Zealand Marine Operators Association has produced best practice guidelines for running marinas, including biosecurity measures.
- Visiting Northland waters and marinas?
www.nrc.govt.nz/maritime/our-marine-environment/visiting-a-northland-marina-this-summer/
This webpage outlines Northland Regional Council's 'six or one' requirement for boat owners visiting marinas in the Northland region, whereby their vessels need to have been antifouled within the previous 6 months or lifted and cleaned within the previous 1 month.

Environment Guide

- Marine biosecurity.
www.environmentguide.org.nz/issues/marine/marine-biosecurity/
This succinct guide provides a useful introduction to marine biosecurity.

Glossary of terms and definitions

NZCPS 2010 glossary:

Harmful aquatic organisms Aquatic organisms which, if introduced into coastal water, may adversely affect the environment or biological diversity, pose a threat to human health, or interfere with legitimate use or protection of natural and physical resources in the coastal environment.