NZCPS 2010 guidance note

Policy 11: Indigenous biological diversity (biodiversity)

May 2019

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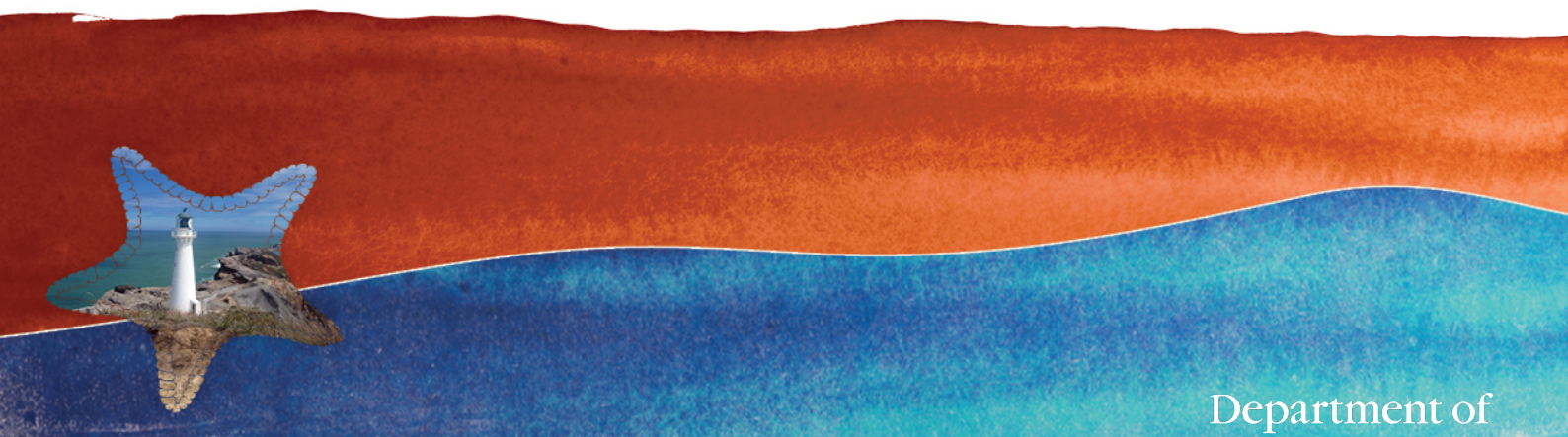

Department of

Policy 11 Indigenous biological diversity (biodiversity)

To protect indigenous biological diversity in the coastal environment:

(a) avoid adverse effects of activities on:

(i) indigenous taxa[1] that are listed as threatened[2] or at risk in the New Zealand Threat Classification System lists;

(ii) taxa that are listed by the International Union for Conservation of Nature and Natural Resources as threatened;

(iii) indigenous ecosystems and vegetation types that are threatened in the coastal environment, or are naturally rare[3];

(iv) habitats of indigenous species where the species are at the limit of their natural range, or are naturally rare;

(v) areas containing nationally significant examples of indigenous community types; and

(vi) areas set aside for full or partial protection of indigenous biological diversity under other legislation; and

(b) avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on:

(i) areas of predominantly indigenous vegetation in the coastal environment;

(ii) habitats in the coastal environment that are important during the vulnerable life stages of indigenous species;

(iii) indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification, including estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh;

(iv) habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes;

(v) habitats including areas and routes, important to migratory species; and

(vi) ecological corridors, and areas important for linking or maintaining biological values identified under this policy.

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[1] Taxa are defined as named biological classification units that are assigned to individuals or sets of species (eg species, subspecies, genus, order, variety) (NZCPS 2010 Glossary).

[2] Examples of taxa that are listed as threatened include Maui's dolphin (*Cephalorhynchus hectori maui*), Hector's dolphin (*C. hectori*), New Zealand fairy tern (*Sternula nereis*) and southern New Zealand dotterel (*Charadrius obscurus obscurus*).

[3] A naturally rare species was rare in New Zealand before the arrival of humans (NZCPS 2010 Glossary).

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

Policy 11 of the New Zealand Coastal Policy Statement (NZCPS) 2010[4] addresses New Zealand's indigenous[5] biological diversity[6] (biodiversity) in the coastal environment.

The policy approach has three levels. The highest level requires that adverse effects of activities on indigenous ecosystems and vegetation types that are threatened in the coastal environment and on the habitats of indigenous species that are at the limit of their natural range be avoided (ie not allowed[7]). The next level requires that significant adverse effects of activities on other defined categories of indigenous vegetation, habitats and ecosystems be avoided. The third level states that where those adverse effects are not significant, all other adverse effects of activities on indigenous biodiversity should be avoided, remedied or mitigated.

Readers of this policy guidance note should also refer to the NZCPS Implementation Guidance Introductory Note,[8] which contains general information and guidance that is important for implementing all of the objectives and policies in the NZCPS 2010. The introductory note also discusses the Supreme Court decision in the *King Salmon* case,[9] which considered Policy 13 but is also highly relevant to decision-making in

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

[5] 'Indigenous' is not defined in the Resource Management Act 1991 (RMA) or the NZCPS 2010. The New Zealand Biological Strategy 2000 provides the following definition: 'a plant or species that occurs naturally in New Zealand. A synonym is "native"'. [Department of Conservation; Ministry for the Environment 2000: The New Zealand Biodiversity Strategy. Department of Conservation, Wellington. 146 p. www.doc.govt.nz/globalassets/documents/conservation/new-zealand-biodiversity-strategy-2000.pdf]

Indigenous species are species that have arrived in New Zealand naturally without any form of human assistance and include migratory species. 'Endemic species' are species that breed or reproduce only in New Zealand but may disperse to other countries during the non-breeding season or as sub-adults. The Draft National Policy Statement for Indigenous Biodiversity, as recommended by the Biodiversity Collaborative Group (October 2018; www.biodiversitynz.org/), also does not contain a definition of 'indigenous' or 'indigenous biodiversity' but does define 'indigenous vegetation' as 'vascular and non-vascular plants that are native to the ecological district or marine biogeographic region'.

[6] 'Biological diversity' is defined in section 2 of the RMA as 'the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species, and of ecosystems'.

[7] As identified by the Supreme Court in *Environmental Defence Society Inc. v The New Zealand King Salmon Company Ltd* [2014] NZSC 38. www.courtsofnz.govt.nz/cases/environmental-defence-society-incorporated-v-the-new-zealand-king-salmon-company-limited-ors

[8] Department of Conservation 2018: NZCPS 2010 implementation guidance introductory note. Department of Conservation, Wellington. 12 p. 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/

[9] *Environmental Defence Society Inc. v the New Zealand King Salmon Company Ltd* [2014] NZSC 38. www.courtsofnz.govt.nz/cases/environmental-defence-society-incorporated-v-the-new-zealand-king-salmon-company-limited-ors

relation to Policy 11, as both policies use the phrase 'avoid adverse effects of activities on'.

This guidance note should also be read alongside the *Indigenous Biodiversity* section on the Quality Planning website,[10] which applies to all environments of New Zealand, including the coastal environment. This webpage provides an overview of what biodiversity is and why it is important; the different types of ecosystems; roles and responsibilities; methods of describing and evaluating biodiversity values; and an evaluation of the strengths and weaknesses of various regulatory and non-regulatory regional and district plan methods for managing indigenous biodiversity.

Rationale

Healthy, functioning ecosystems are an integral component of the coastal environment, and indigenous biodiversity contributes to the quality and quantity of ecosystems, as well as amenity values that are enjoyed by New Zealanders. In the coastal environment, indigenous vegetation provides natural defences against coastal erosion, and indigenous flora and fauna provide other important products and services, such as resources for cultural use, recreational opportunities, natural character, and a sense of identity and place.

The use and development of natural and physical resources in the coastal environment has consequences for New Zealand's indigenous biodiversity and ecosystems. There has been substantial loss of indigenous habitat in New Zealand's coastal environment since human settlement, with the drainage of 90% of New Zealand's freshwater wetlands (many of which were in the coastal environment) and the loss of 70% of dunelands.[11] Furthermore, approximately one-third (32 of 92) of New Zealand's resident indigenous seabird taxa and more than half (8 of 14) of the resident shorebird taxa are currently threatened with extinction.[12]

The degree of threat to indigenous ecosystems, habitats and species in the coastal environment varies considerably, often being dependent on the level of human activity. Several key pressures can affect indigenous biodiversity.

- **Habitat loss and modification:** Examples include coastal development and reclamation; clearance of vegetation; draining of wetlands; dredging, trawling and other activities on the seabed; and disturbance of breeding grounds.
- **Harvesting of species for food:** This includes commercial and recreational fishing (including bycatch) and shellfish gathering.

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[10] http://qualityplanning.org.nz/qp-resources-qp-library-old/qp-library-old-0

[11] http://qualityplanning.org.nz/qp-resources-qp-library-old/qp-library-old-0

[12] Ministry for the Environment; Department of Statistics 2015: Bycatch of protected species. *New Zealand's Environmental Reporting Series: environmental indicators Te Taiao Aotearoa.* http://archive.stats.govt.nz/browse_for_stats/environment/environmental-reporting-series/environmental-indicators/Home/Marine/bycatch-seabirds.aspx

- **Introduced pests and diseases:** Exotic organisms may compete with and prey on indigenous species or degrade their habitat.
- **Poor water quality and sedimentation:** Discharges of contaminants (both point-source and diffuse) can adversely affect coastal biodiversity. This includes discharges of sediment suspended in the water column and the accumulation of sediment causing smothering[13] (sedimentation).
- **Coastal squeeze:** Intertidal and coastal margin habitats and ecosystems can become reduced in size and may disappear with increased urban and rural development, being replaced by artificial shorelines and hard protection structures. Sea level rise due to climate change may also result in coastal squeeze if habitats are unable to migrate inland due to existing development or hard protection structures.
- **Elevated ocean temperature and levels, and ocean acidification** as a result of climate change.

[13] See the Policy 22 (Sedimentation) guidance note (www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/coastal-management/guidance/policy-22.pdf). The term 'sediment' as used in the NZCPS 2010 refers to the discharge of a contaminant (section 15 of the RMA), while the term 'sedimentation' refers to the deposit (accumulation) of a substance (sediment) (section 12 of the RMA).

Related objectives, policies and provisions

This section covers the links between the various provisions of the NZCPS 2010, the RMA,[14] other legislation, other strategies and conventions, and some national policy statements in terms of indigenous biodiversity.

NZCPS 2010

The implementation of Policy 11 of the NZCPS 2010 requires careful consideration of all of the NZCPS objectives and policies. The table below lists the key objectives and policies in relation to indigenous biodiversity, as well as other provisions that are relevant.

Key related objectives and policies	Other related objectives	Other related policies
Objectives 1, 2, 6 and 7 Policies 1, 4, 5, 6, 7, 12, 13, 14, 15, 20, 21, 22, 23 and 26	Objective 3	Policies 2, 3 and 19

Objective 1

Objective 1 focuses on safeguarding the integrity, form, functioning and resilience of the coastal environment, and sustaining its ecosystems, including marine and intertidal areas, estuaries, dunes and land. An important component of this involves protecting representative or significant natural ecosystems and sites of biological importance, and maintaining the diversity of New Zealand's indigenous coastal flora and fauna.

Policy 11 is directly related to Objective 1, as it directs the avoidance of adverse effects of activities on the most valuable and vulnerable components of New Zealand's indigenous biodiversity.

Objective 2

Objective 2 seeks to preserve the natural character of the coastal environment and to protect its natural features and landscape values. This involves recognising the characteristics and qualities that contribute to natural character, and identifying and protecting those areas where various forms of subdivision, use and development would be inappropriate. Since indigenous biodiversity forms part of the biophysical and ecological aspects of natural character and natural landscapes, Policy 11 is relevant to achieving this objective.

[14] www.legislation.govt.nz/act/public/1991/0069/latest/DLM230265.html

Objective 6

Objective 6 enables individuals and communities to provide for their wellbeing, health and safety through subdivision, use and development in appropriate locations and within appropriate limits, while recognising that the protection of the habitat of living marine resources contributes to wellbeing. The objective also notes that the proportion of the coastal marine area that is currently under any formal protection is small and therefore management under the RMA is an important means of protecting the natural resources of the coastal marine area. Giving effect to Policy 11 is one way of achieving Objective 6 in the coastal marine area.

Objective 7

Objective 7 is concerned with ensuring that management of the coastal environment recognises and provides for New Zealand's international obligations regarding the coastal environment.

Relevant international obligations for the protection of indigenous biodiversity include the United Nations' Convention on Biological Diversity 1992,[15] the Convention on Migratory Species of Wild Animals 1983 (Bonn Convention) and the Convention on Wetlands of International Importance 1971 (Ramsar Convention).[16] New Zealand is a signatory to each of these conventions, which demonstrates an international commitment to the conservation of species, ecosystems and habitats.

The New Zealand Government is also a State Member of the International Union for Conservation of Nature (IUCN), with the Department of Conservation (DOC) acting as the State Party representative. The IUCN is a global environmental organisation that conducts research and education to promote biodiversity conservation and sustainable development.

Policy 1: Extent and characteristics of the coastal environment

Policy 1 sets out the matters to be considered when determining the extent and characteristics of the coastal environment. Those matters that are of direct relevance to Policy 11 include coastal vegetation and the habitat of indigenous coastal species, including migratory birds (Policy 1(2)(e)); and elements and features that contribute to natural character (Policy 1(2)(f)). It is important that the extent of the coastal environment is delineated in planning documents because Policy 11 only applies within the coastal environment.

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[15] www.cbd.int/intro/

[16] www.ramsar.org/

Policy 4: Integration

Policy 4 provides for integrated management of both the natural and physical resources in the coastal environment and any activities that affect that environment. Species, ecosystems and habitats often span land and marine boundaries.

Under the RMA, regional and district councils have shared responsibilities to maintain indigenous biodiversity, and the Minister of Conservation and Director-General of Conservation have responsibilities under other legislation. To achieve efficient and effective indigenous biodiversity outcomes, an integrated approach is essential.

Policy 5: Land or waters managed or held under other Acts

Policy 5 focuses on considering and managing effects on coastal land or waters that are held or managed under Acts other than the RMA for conservation or protection purposes.

Relevant statutes for managing land primarily for biodiversity purposes include the Reserves Act 1977 (particularly nature, scenic and scientific reserves), National Parks Act 1980 and Conservation Act 1987 (particularly protected areas, such as wilderness, ecological and sanctuary areas). The Marine Reserves Act 1971 also provides for declared marine reserves to be preserved in a natural state and for the natural habitat of marine life to be maintained.

Policy 11(a)(vi) is linked to Policy 5 because it directs the avoidance of adverse effects of activities on areas that have been set aside for the full or partial protection of indigenous biodiversity under other legislation.

Policy 6: Activities in the coastal environment

Policy 6 is concerned with the provision of activities in the coastal environment, such as infrastructure, energy generation and transmission, mineral extraction, built development, and renewable energy generation. This policy also outlines principles about the location and scale of these activities. Priority is given to activities that have a functional need to be located and to operate in the coastal marine area, and providing for those activities in appropriate places. Policy 6 also encourages the consideration of particular coastal values where appropriate, including buffers for areas and sites of significant indigenous biodiversity.

Policy 11 is related to Policy 6 because the effects on indigenous biodiversity should be considered when making decisions on activities in the coastal environment.

Policy 7 Strategic planning

Policy 7 promotes strategic planning for the coastal environment in the preparation of regional policy statements, regional plans and district plans. This includes identifying areas where subdivision, use and development in the coastal environment

is inappropriate or requires a more considered resource consent process. Policy 7 also highlights the importance of identifying values (eg biodiversity) that are under threat or at significant risks from adverse cumulative effects.

Policy 11 is of relevance because it is important to have regard to indigenous biodiversity when undertaking strategic planning within the coastal environment and identifying areas that are inappropriate for particular activities.

Policy 12: Harmful aquatic organisms

Policy 12 considers activities that could have adverse effects on the coastal environment by causing the release or spread of harmful aquatic organisms, such as the clubbed tunicate (*Styela clava*), the Asian kelp *(Undaria pinnatifida),*[17] the Mediterranean fan worm (*Sabella spallanzanii*) and eudistoma (*Eudistoma elongatum*).

Since harmful aquatic organisms can have significant adverse effects on indigenous biodiversity in the coastal environment, Policy 12 is relevant to Policy 11.

Policies 13 and 14: Preservation and restoration of natural character

Policy 13 requires that natural character is assessed and provisions are included in planning documents to preserve the natural character of the coastal environment, avoiding adverse effects on any areas that are identified as outstanding. The assessment of natural character requires consideration of the biophysical and ecological aspects of natural character.[18]

Policy 14 also supports the restoration or rehabilitation of the natural character of the coastal environment, including, where practicable, setting conditions on resource consents that require the restoration of indigenous habitats and ecosystems, encouraging natural regeneration of indigenous species supported by effective weed control and animal pest management, and creating or restoring habitat for indigenous species.[19] Since indigenous biodiversity is a major contributor to natural character, Policy 11 is of direct relevance to this policy.

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[17] Pests such as *U. pinnatifida* and other fouling species can hitchhike to new locations on fouled boat bottoms and marine equipment (Department of Conservation 2010: Asian seaweed *Undaria pinnatifida* found in Fiordland - Factsheet).

[18] Policy 13(2)(b). www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/new-zealand-coastal-policy-statement-2010/policy-13-preservation-of-natural-character/

[19] Policy 14(c)(i), (ii) and (iii). www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/new-zealand-coastal-policy-statement-2010/policy-14-restoration-of-natural-character/

Policy 15: Natural features and landscapes

Policy 15 protects natural features and landscapes from inappropriate subdivision, use and development. Policy 15(c) requires natural features and landscapes to be identified, having regard to ecological components, vegetation and the presence of wildlife. Policy 15 supports Policy 11 by being an additional instrument that enables councils to protect biodiversity.

Policy 20: Vehicle access

Policy 20 directs that vehicle use on beaches, the foreshore, the seabed and adjacent public land should be controlled where this will cause harm to ecological systems or indigenous flora and fauna. Inappropriate vehicle use, including the disturbance of roosting or nesting shorebirds of threatened species, can directly impact on indigenous biodiversity, highlighting the links with Policy 11.

Policy 21: Enhancement of water quality

Policy 21 requires that where water quality in the coastal environment has deteriorated and is having a significant adverse effect on ecosystems and natural habitats, it should be restored where practicable to at least a state that can support ecosystems and natural habitats. The degraded water quality in the coastal environment can have a significant adverse effect on threatened indigenous tax, ecosystems and habitats and hence is directly relevant to Policy 11.

Policy 22: Sedimentation

Policy 22 directs the assessment and monitoring of sedimentation levels and impacts on the coastal environment. Sedimentation can have adverse effects on ecosystems and habitats, particularly in areas that are vulnerable to modification, including estuaries, lagoons, coastal wetlands, seagrass meadows and saltmarshes. Policy 22 outlines approaches for reducing sedimentation in the coastal marine area through controlling the impacts of land-based activities such as vegetation removal. Giving effect to Policy 11 may in some instances require controls under Policy 22 to reduce sedimentation and sediment loadings from land use activities.

Policy 23: Discharge of contaminants

Policy 23 covers discharges to water and requires that particular regard be given to the sensitivity of the receiving environment, the type and concentration of the contaminant, and the capacity of the receiving environment to assimilate the contaminant. Policy 23 relates to Policy 11 because discharges must avoid significant adverse effects on ecosystems and habitats after reasonable mixing. Mixing zones are

to be as small as necessary to achieve the required water quality and should minimise adverse effects on the life-supporting capacity of the water within the mixing zone.

Policy 26: Natural defences against coastal hazard

Policy 26 seeks the protection, restoration or enhancement of natural defences as a way to protect coastal land use from coastal hazards. This policy includes a requirement to provide for the protection, restoration or enhancement of natural defences that protect sites of significant biodiversity from coastal hazards where appropriate.

Policy 26 recognises the natural defences provided by beaches, estuaries, wetlands, intertidal areas, coastal vegetation, dunes and barrier islands, many of which are vulnerable ecosystems and provide habitat for indigenous biodiversity, including rare or threatened species, highlighting its links with Policy 11.

Resource Management Act 1991

Under the RMA, decision-makers must recognise and provide for various matters of national importance that relate to biodiversity. These matters include safeguarding the life-supporting capacity of ecosystems (section 5(2)(b)), preserving the natural character of the coastal environment, protecting outstanding natural landscapes, and protecting areas of significant indigenous vegetation and the significant habitats of indigenous fauna (section 6(a), (b) and (c)). Particular regard is also to be had to the intrinsic values of ecosystems (section 7(d)).

Section 30 of the RMA sets out the functions of regional councils, which include controlling the use of land for the purpose of maintaining and enhancing ecosystems in water bodies and coastal waters (section 30(1)(c)(iiia)), and establishing, implementing and reviewing objectives, policies and methods for maintaining indigenous biodiversity (section 30(1)(ga)).

Section 31 of the RMA sets out the functions of territorial authorities, which include controlling any actual or potential effects of the use, development or protection of land, natural and physical resources, including for the purpose of maintaining indigenous biodiversity (section 31(1)(b)(iii))

Unlike rules in district plans that are intended to protect indigenous biodiversity, rules in regional plans for the same purpose continue to apply if a designation is granted for a project or work and do not have the same limitations in respect of existing use rights (section 10 of the RMA). Where there is an option for similar rules to be included in different plans, a section 32 analysis could assist.

Section 62 of the RMA sets out the contents of regional policy statements, which include stating which local authority is responsible for specifying the objectives, policies and methods for controlling the use of land to maintain indigenous biodiversity in the whole region or any part of it (section 62(1)(i)(iii)).

Section 76(4A) to (4D) requires that district plan rules that are intended to prohibit or restrict the felling, trimming, damage or removal of trees or groups of trees in urban areas identify the tree or trees by providing the street address or a legal description (or both) in the district plan. Therefore, giving effect to Policy 11 in relation to stands of indigenous trees in urban areas of the coastal environment will require schedules to be included in plans in addition to any identification on maps.

An integrated approach across the regional policy statement, regional plans (especially the regional coastal plan) and relevant district plans is particularly important for providing policy settings to maintain indigenous biodiversity across the whole coastal environment. When developing the indigenous biodiversity provisions for those RMA documents, councils should also have regard to the indigenous biodiversity policies and implementation methods that are set out in the relevant conservation management strategy or plan prepared under the Conservation Act 1987 or an Act specified in Schedule 1 to that Act.

Strategies and conventions

Objective 7 of the NZCPS 2010 seeks to ensure that New Zealand's international obligations are recognised and provided for in the management of the coastal environment. New Zealand is a signatory to a number of international agreements that relate to biodiversity, brief descriptions of which are set out in Appendix 1.

Relevant national directions

National Policy Statement for Freshwater Management 2014 (NPS-FM) (amended 2017)[20]

The NPS-FM, as amended in August 2017, covers all aspects of water, including quality, quantity, ecosystems, integrated management, tangata whenua interests. The NPS-FM is relevant to the NZCPS 2010 because it applies to freshwater resources in the coastal environment and because freshwater inputs to the coast have the potential to influence the health of estuarine and coastal ecosystems.

Sections A and B of the NPS-FM relate to water quality and quantity, respectively. Objectives A1 and B2 both aim 'to safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water …'. Objective A2 seeks to maintain or improve the overall quality of fresh water within a freshwater management unit while protecting the natural values of outstanding freshwater bodies, protecting the significant values of wetlands and improving the quality of fresh water that has been degraded by human activities to the point of over-allocation. Similar objectives also exist under Section B.

Outstanding freshwater bodies, wetlands and other areas to be managed under the NPS-FM may be located in the coastal environment and are therefore also subject to Policy 11 of the NZCPS 2010. This may result in a differentiated approach to the management of water bodies in the coastal environment and those found elsewhere.

The NPS-FM establishes a national objectives framework and requires regional councils to identify 'freshwater management units'. For each unit, the relevant council is required to identify the values and develop objectives with timeframes that are in accordance with processes and considerations set out in the NPS-FM. The NPS-FM sets compulsory national values and numeric attribute states for lakes and rivers.

Objective C1 of the NPS-FM is also relevant to implementation of the NZCPS 2010. This objective aims 'To improve integrated management of fresh water and the use and development of land in whole catchments, including the interactions between fresh water, land, associated ecosystems and the coastal environment'. Objective C1 also requires regional councils to 'avoid, remedy or mitigate adverse effects,

[20] Ministry for the Environment 2017: National Policy Statement for Freshwater Management 2014 (amended 2017). Ministry for the Environment, Wellington. 47 p. www.mfe.govt.nz/publications/fresh-water/national-policy-statement-freshwater-management-2014-amended-2017

including cumulative effects' and 'to provide for the integrated management of the effects of the use and development of land on fresh water'.

The NPS-FM sets out a progressive implementation programme (Policy E1) for full implementation by 31 December 2025, with an extension under defined criteria to 31 December 2030.

National Policy Statement on Electricity Transmission 2008 (NPS-ET)

The objective of the NPS-ET is 'to recognise the national significance of the electricity transmission network by facilitating … (its) operation, maintenance and upgrade and establishment of new transmission resources while manging the adverse environmental effects of the network and the adverse effects of other activities on the network'.

Policy 6 of the NPS-ET requires that 'upgrades of the transmission infrastructure should be used as an opportunity to reduce existing adverse effects of transmission … as appropriate'.

Policy 8 requires that 'in rural environments, planning and development of the transmission system should seek to avoid adverse effects on outstanding natural landscapes, areas of high natural character …'.

While the NPS-ET does not specifically refer to Significant Ecological Areas, any upgrades or new transmission infrastructure in areas in the coastal environment that have been identified as such would need to be assessed having regard to Policy 11 of the NZCPS 2010.

National Policy Statement for Renewable Electricity Generation 2011 (NPS-REG)

The NPS-REG has a number of objectives and policies that relate to providing for and managing renewable electricity generation activities in the coastal environment. For any residual environmental effect that cannot be avoided, remediated or mitigated, consideration is to be given to offsetting measures or environmental compensation that benefit the local environment and community (Policies C1 and C2).

NZCPS Policy 6(1)(g) (Activities in the coastal environment) recognises that the coastal environment contains renewable energy resources such as wind, waves, currents and tides that could meet the reasonably foreseeable needs of future generations. However, activities such as coastal wind farms can cause bird strike, especially where they are located on bird migratory routes, and marine turbines can generate underwater noise and displace marine mammals from their habitat. Therefore, in managing renewable electricity generation activities in the coastal environment, both the NPS-REG and the NZCPS 2010 must be given effect to in regional policy statements and regional and district plans, and regard must be had to both when considering resource consent applications and notices of requirement for renewable energy proposals.

National Policy Statement on Urban Development Capacity 2016 (NPS-UDC)

The NPS-UDC sets out policies in relation to the outcomes for planning decisions in urban environments that are expected to experience growth. It requires that urban environments are able to develop and change, and that there is sufficient development capacity to meet the needs of people and communities as well as future generations in urban environments. The outcome associated with objective OA1 is 'effective and efficient urban environments that enable people and communities and future generations to provide for their social, economic, cultural and environmental wellbeing'.

Both the NPS-UDC and the NZCPS 2010 must be given effect to in plans (sections 67(3) and 75(3) of the RMA).

NZCPS Policy 7 (Strategic planning) requires that 'in preparing regional policy statements, and plans: (a) consider where, how and when to provide for future residential, rural residential. urban development and other activities in the coastal environment at a regional and district level'. Policy 7(b) requires that regional policy statements and plans identify areas in the coastal environment that are inappropriate for particular activities and forms of subdivision, use and development.

Thus, any tensions between the NPS-UDC and the NZCPS 2010, including considerations in relation to Policy 11, should be resolved through the strategic planning approach of NZCPS Policy 7.

Proposed National Policy Statement on Indigenous Biodiversity

A stakeholder-led collaborative process for the development of a new National Policy for Indigenous Biodiversity commenced in March 2017. The Biodiversity Collaborative Group delivered a draft National Policy Statement (NPS) and recommendations for complementary measures in October 2018.[21] Ministers are currently considering these recommendations and a public consultation process is likely to commence in 2019.

When completed, the new NPS will replace the proposed National Policy Statement on Indigenous Biodiversity that was produced in 2011 but never gazetted. Once the NPS is operative it will be very relevant to Policy 11 of the NZCPS.

Resource Management (National Environmental Standards for Plantation Forestry) Regulations 2017 (NES-PF)

The NES-PF came into force on 1 May 2018. This NES generally prevails over local government RMA plan rules for managing the environmental effects of plantation forestry, except where councils have the ability to have more stringent plan rules where necessary to manage unique local conditions and sensitive receiving environments. Circumstances where this applies are outlined in Regulation 6 of the NES-PF and include rules that give effect to any of Policies 11, 13, 15 and 22 of the NZCPS 2010.

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[21] www.biodiversitynz.org/

Origins of the policy

The NZCPS 1994[22] addressed the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna, as well as the protection of the integrity, functioning and resilience of natural biodiversity, productivity and biotic patterns, and the intrinsic values of ecosystems, all within the context of preserving the natural character of the coastal environment.

The Board of Inquiry that recommended the NZCPS 2010 considered that the NZCPS should include a dedicated indigenous biodiversity policy rather than dealing with biodiversity under the heading 'natural character'. Policy 11 of the NZCPS 2010 provides clearer direction and a greater level of detail on the management of New Zealand's indigenous biodiversity than the equivalent NZCPS 1994 policies.[23] In particular, the NZCPS 2010 includes:

- more specific criteria to identify priorities, including reference to the New Zealand Threat Classification System (NZTCS) lists[24] and the IUCN Red List of Threatened Species (Red List)[25]
- a clause to recognise areas that have been set aside for the full or partial protection of indigenous biodiversity.

For further information, refer to Volume 2 of the NZCPS Board of Inquiry report.[26]

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[22] 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/

[23] Policies 1.1.2 and 1.1.4 'National Priorities for the preservation of the natural character of the coastal environment including protection form inappropriate subdivision, use and development'.

[24] www.doc.govt.nz/about-us/science-publications/conservation-publications/nz-threat-classification-system/

[25] www.iucnredlist.org/

[26] Board of Inquiry 2009: Proposed New Zealand Coastal Policy Statement (2008). Board of Inquiry report and recommendations. Volume 2: Working papers. Pp. 185–197. 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 11, it is necessary to consider the entire NZCPS 2010 as well as the guidance provided here. Therefore, please also refer to the NZCPS Implementation Guidance Introductory Note,[27] which covers the matters that are relevant in giving effect to the NZCPS 2010.

Policy 11 is concerned with managing the effects of activities on indigenous biodiversity in the coastal environment. Relevant activities that could impact the coastal environment may occur on land, in fresh water, in the marine environment and/or on the seabed. Therefore, it is the joint responsibility of local and regional government, as well as relevant government agencies (where appropriate) to manage these impacts.

The degree to which Policy 11 needs to be considered when undertaking the strategic planning required by Policy 7 (Strategic planning) to develop regional policy statements and plans will depend on matters such as the indigenous biodiversity values that are present, their threat ranking, the types of activities that are considered to be appropriate and the potential effects of those activities. Giving effect to Policy 11 will involve the following processes.

- **Listing indigenous species and habitats:** Specify the indigenous taxa, ecosystems and habitat types of relevance to Policy 11 that are present in a particular region or district. This information can inform policy statements/plans and regulatory decision-making.
- **Listing/mapping areas:** Determine the locations where threatened and other taxa, ecosystems and habitats of relevance to Policy 11 are known to exist, paying particular attention to sites of regional or national significance.
- **Listing/mapping protected areas:** Identify areas that have been set aside for the full or partial protection of indigenous biodiversity under other legislation.
- **Specifying the adverse effects of activities that are to be avoided in relation to matters listed in Policy 11(a) and the significant adverse effects that are to be avoided in relation to Policy 11(b).** The emphasis of Policy 11 is on controlling the effects of activities. This may require consideration of particular threats to identified species. For instance, some threatened species, such as migratory seabirds, may only be present seasonally, so it may be possible to limit the avoidance of adverse effects to those times through plan rules or conditions of consent. However, in other instances, such as residential development adjacent to the habitat of a threatened species, the potential threats (eg noise, dogs, cats and human disturbance) may be so wide ranging and difficult to control through rules in plans or conditions of consent that it is simpler to list the activity and its

[27] www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/coastal-management/guidance/introductory-note.pdf

appropriate activity status and consider measures to avoid those effects through the consenting process.

It is necessary to identify natural values (eg indigenous biodiversity) that are under threat or at significant risk from adverse cumulative effects and to include provisions in plans to manage those effects to give effect to Policy 7.

- **Specifying in policies the criteria that will be used to assess the significance of ecological areas**. Should new or different indigenous ecosystems, ecological areas or indigenous species habitats from those listed in Policy 11 be found during the life of the plan, the significance criteria can be applied to assess the necessity for and support a plan change.

These matters are discussed further in the following sections.

- Management approach.
- RMA planning documents.
- Regulatory decision-making.
- Integrated management.

Terminology

'Ecosystem' is not defined in the NZCPS 2010 and is also not specifically defined in the RMA. However, 'environment' is defined in the RMA to include 'ecosystems and their constituent parts, including people and communities'. Since the term 'ecosystem' can mean different things to different people and is often dependent on the scale and context, it may be appropriate to clarify what this term means in any particular planning document.

The terms 'ecosystem', 'habitat' and 'community type' are often used interchangeably by people who are not trained ecologists. While these terms are closely intertwined, ecologists consider them to mean different things. 'Ecosystem' is an overall term that is used to refer to the communities of organisms within a particular area, the biological interactions of these organisms with each other and the physical features of the area, and the flows of energy and matter through the system. 'Habitat' refers to the place in which an organism usually lives – some marine organisms are able to create biogenic habitat themselves through their physical forms and functions (eg bryozoan corals and horse mussels). Finally, 'community type' refers to the specific group of species that interact in a particular area. Thus, any one ecosystem may contain many habitats for the different organisms that live there and a number of different community types.

Because these three ecological terms are highly interdependent and intertwined, they should be interpreted and applied broadly and collectively. For instance, after their annual migration to New Zealand, threatened (Nationally Vulnerable) red knots/huahou (*Calidris canutus*) depend on the presence of small bivalve shellfish such as pipi and cockles in their tidal wetland habitats. Therefore, avoiding adverse effects on red knots requires the avoidance of adverse effects on their feeding habitats from pressures such as sedimentation in the wider ecosystem.

Management approach

Policy 11 applies only in the coastal environment. Therefore, the first step in giving effect to this policy (and most other NZCPS policies) is to define the extent (particularly the inland extent) and characteristics of the coastal environment. Under Policy 1 (Extent and characteristics of the coastal environment), one of the criteria that is to be used when defining the coastal environment is the presence of coastal vegetation and the habitat of indigenous coastal species, including migratory birds.[28]

Policy 11 adopts a tiered approach for the management of indigenous biodiversity in the coastal environment:

Policy 11(a) - The first tier applies to indigenous taxa, ecosystems, vegetation types, habitats and areas that are threatened or most at risk of extinction and provides that the appropriate management response is the avoidance of adverse effects of activities on those taxa, ecosystems, vegetation types, habitats and areas.

Policy 11(b) - The second tier applies to indigenous ecosystems, habitats and areas more common or less at risk from imminent loss (i.e. still valuable but not threatened or rare). This second tier has two levels. The first level is the avoidance of significant adverse effects. The second level is to avoid, remedy or mitigate other adverse effects of activities.

The Supreme Court has determined that the word 'avoid' means 'not allow or prevent the occurrence of'.[29]

Policy 11(a) – avoid adverse effects of activities

When giving effect to Policy 11(a) in the development of plans or when making decisions with regard to this policy, it is important that the presence of the following features is first identified: relevant threatened or at risk taxa and threatened, naturally rare ecosystems and vegetation; habitats where indigenous species are at the limits of their natural range; nationally significant examples of community types; and areas that have been protected for biodiversity under other legislation.

The second step is to then consider what the actual and potential relevant adverse effects are, which activities may cause those effects for that species, habitat or area, and how those effects could be avoided (not allowed).

The avoidance of adverse effects will be specific to each species and type of adverse effect. For instance, marine mammals may be excluded from foraging habitat by both structures and underwater noise. While it may not be possible to avoid habitat

[28] www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/new-zealand-coastal-policy-statement-2010/policy-1-extent-and-characteristics-of-the-coastal-environment/

[29] *Environmental Defence Society v The New Zealand King Salmon Company Limited* [2014] NZSC 38 (paragraph 96).

exclusion in the case of large, permanent, sub-surface physical structures, avoidance of the effects of underwater noise may be achieved by reducing the noise from the activity to a level that is below that which would cause the displacement of that particular threatened species.

The direction provided in Policy 11(a) acknowledges that where there is a risk of extinction or irreversible loss, any adverse effects will be significant. This reflects the precautionary approach of Policy 3 (Precautionary approach).[30]

For guidance on how the courts have dealt with Policy 11(a) and the concept of risk, see the precis of the various decisions in *RJ Davison Family Trust v Marlborough District Council* in the 'Relevant case law' section below.[31]

The implementation of Policy 11(a) will involve including provisions in regional policy statements and plans to avoid the adverse effects of activities on those taxa, ecosystems, habitats and areas that are identified under Policy 11(a).

The status and biodiversity components that are referred to in Policy 11(a) reflect current terminology and tools, such as the NZTCS and the IUCN Red List. These rankings are discussed further in Appendix 2.

Policy 11(b) – avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities

Policy 11(b) has two levels – it directs that the significant adverse effects of activities be avoided and requires the consideration of methods for avoiding, remedying or mitigating other adverse effects of activities. The implementation of Policy 11(b) will involve including provisions in regional policy statements and plans to achieve these levels of management.

Criteria used in the *Bay of Plenty Regional Policy Statement* (Operative 1 October 2014)[32] to assess whether subdivision, use or development is inappropriate for areas that are considered to warrant protection under section 6 of the RMA (including significant indigenous vegetation and habitats of indigenous fauna) can be used as guidance for determining the extent to which an adverse effect is 'significant'. The following matters are of particular relevance.

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[30] www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/new-zealand-coastal-policy-statement-2010/policy-3-precautionary-approach/

[31] Helen Atkins of Atkins Holm Majurey was also engaged by the Department of Conservation to provide a summary of the impact of the *King Salmon* decision and subsequent case law, including the *Davidson* decisions, on the interpretation of the NZCPS 2010. That January 2019 analysis can be found at www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/coastal-management/guidance/king-salmon-guidance-note-full.pdf.

[32] See Appendix G of the *Bay of Plenty Regional Policy Statement* at www.boprc.govt.nz/plans-policies-and-resources/policies/operative-regional-policy-statement/.

- **Status of resources:** The importance of the area both locally and regionally. Effects on rare or limited resources are usually considered more significant than impacts on common or abundant resources.
- **Proportion of resource affected / area of influence / magnitude or scale of effect:** The size of the area affected by the activity will often influence the degree of impact, ie an activity that affects a large area will generally be significant. An activity that affects a large proportion of a limited area or resource will also tend to be significant.
- **Persistence of effect:** The duration and frequency of the effect – eg long-term or recurring effects will tend to be more significant, as permanent or long-term changes are usually more significant than temporary changes. The ability of the resource to recover after the activity is complete is related to this effect.
- **Sensitivity of resources:** The effect on the area and its resilience to change. Impacts to sensitive resources are usually more significant than impacts to resources that are relatively resilient to change.
- **Reversibility or irreversibility:** Whether the effect is reversible or irreversible. Irreversible effects will generally be more significant (depending also on the nature and scale of the effects).
- **Probability of effect:** The likelihood of an adverse effect resulting from the activity. Unforeseen effects can be more significant than anticipated effects. (Adopting a precautionary approach may reduce the likelihood of adverse effects occurring.)
- **Cumulative effects:** The accumulation of impacts over time and space resulting from the combined effects of one activity/development or a number of activities. Cumulative effects can be more significant than any individual effect from an activity (eg the loss of multiple important indigenous habitats).
- **Degree of change:** The character and degree of modification, damage, loss or destruction that will result from the activity. Activities that result in a high degree of change are generally more significant.
- **Magnitude of effect:** The scale and extent of the possible effects caused by an activity (eg the number of sites affected, the spatial distribution of those sites). Activities that have a large magnitude of effect are generally more significant.

Work is currently underway (April 2019) at a national level to develop significance criteria as part of the development of the proposed National Policy Statement on Indigenous Biodiversity.

A number of matters are listed for consideration in the implementation of the requirement of Policy 11 to protect indigenous biodiversity. Tables 1 and 2 provide comments and resources to aid interpretation of the matters listed in Policy 11(a) and (b), respectively.

Table 1. Indigenous biodiversity in the coastal environment – interpretative aids for Policy 11(a).

Policy 11(a) Avoid adverse effects of activities on:	Comments	Information sources and notes
i. indigenous taxa that are listed as threatened or at risk in the New Zealand Threat Classification System lists	The Department of Conservation's (DOC's) New Zealand Threat Classification System (NZTCS) places taxa in particular categories that indicate their level of threat of extinction. Taxa that are facing a higher risk of extinction are considered 'Threatened' and are grouped into one of three categories. • Nationally Critical. • Nationally Endangered. • Nationally Vulnerable. Taxa that do not meet the criteria for any of the 'Threatened' categories but are declining, biologically scarce, recovering from a previously threatened status or survive only in relictual populations (ie less than 10% of their former range) are considered 'At Risk' and are grouped into one of four categories. • Declining. • Recovering. • Relict. • Naturally Uncommon, Please refer to Appendix 2 of this guidance note for more details on the NZTCS.	New Zealand Threat Classification Series[33] NZTCS manual[34] NZTCS data[35] Appendix 2 of this guidance note

[33] https://www.doc.govt.nz/about-us/science-publications/series/new-zealand-threat-classification-series/

[34] Townsend, A.J.; de Lange, P.J.; Duffy, C.A.J.; Miskelly, C.M.; Molloy, J.; Norton, D.A. 2008: New Zealand Threat Classification System manual. Department of Conservation, Wellington. 35 p. https://www.doc.govt.nz/about-us/science-publications/conservation-publications/nz-threat-classification-system/nz-threat-classification-system-manual-2008/

[35] https://www.doc.govt.nz/about-us/science-publications/conservation-publications/nz-threat-classification-system/

Policy 11(a) Avoid adverse effects of activities on:	Comments	Information sources and notes
ii. taxa that are listed by the International Union for Conservation of Nature and Natural Resources (IUCN) as threatened	The IUCN Red List of Threatened Species (Red List) is an international system for evaluating the conservation status of plant and animal species **in the global context**. 'Threatened' taxa are grouped into one of three categories. • Critically Endangered. • Endangered. • Vulnerable. The different contextual scales of the IUCN Red List and the NZTCS means that a taxon may rank differently under the two systems. For example, the killer whale (*Orcinus orca*) is considered Nationally Critical under the NZTCS but Data Deficient in the Red List. Conversely, the humpback whale (*Megaptera novaeangliae*) is Migrant under the NZTCS but Endangered in the Red List. Please refer to Appendix 2 of this guidance note for more details about the IUCN Red List.	IUCN Red List[36] Appendix 2 of this guidance note
iii. indigenous ecosystems[37] and vegetation types[38] that are threatened in the coastal environment, or are naturally rare[39]	Naturally rare ecosystems are systems that would have naturally occurred over a small area in the absence of human activity and have previously been termed historically rare, originally rare or naturally rare. Such ecosystems tend to be small and are often threatened but contribute disproportionately to the biodiversity of New Zealand.	Williams et al. 2007[42] Manaaki Whenua – Landcare Research's Threatened Environment Classification[43] Manaaki Whenua – Landcare Research's *Naturally uncommon ecosystems* webpage[44]

[36] www.iucnredlist.org/

[37] Refer to the 'Terminology' section above for a discussion on the meanings of 'ecosystem', 'habitat' and 'community type'.

[38] 'Vegetation types' is the ecological term that is used to denote plant communities and assemblages (eg beech forest).

[39] 'Naturally rare' is defined in the NZCPS 2010 Glossary as 'Originally rare: rare before the arrival of humans in New Zealand'.

Policy 11(a) Avoid adverse effects of activities on:	Comments	Information sources and notes
	Manaaki Whenua – Landcare Research previously used the term 'naturally rare' to describe ecosystems that were rare before the arrival of humans and typically arose due to a combination of unusual environmental circumstances. However, the term 'naturally uncommon' is now preferred by Landcare Research as it equates to the NZTCS.[40] Landcare Research provides information on 'threatened environments' and 'naturally uncommon ecosystems' that have been identified in New Zealand. The Threatened Environment Classification provides geographic information system (GIS) maps of New Zealand and identifies areas in which much indigenous vegetation has been cleared and only small proportions of the land are legally protected. Thirteen naturally uncommon ecosystems have been identified in the coastal environment.[41] Coastal ecosystems and/or vegetation types that are particularly vulnerable to modification and, therefore, may also be threatened within a region could include estuaries, lagoons, coastal wetlands, dunelands, rocky reefs, biogenic systems, eelgrass (seagrass) and saltmarsh.	*Protecting our places* report[45] Note: While threatened and naturally rare terrestrial ecosystems and vegetation types have been identified, information on marine ecosystems remains incomplete for all of New Zealand and an assessment of the threat status of seaweeds is yet to be undertaken. Biogenic systems are natural marine habitats and communities that are created by the physical structure of living or dead organisms or by their interaction with the substrate. Biogenic habitats occur in a wide variety of environments and may be associated with hard (reef) or soft (sediment) substrates. They include: areas of biogenic 'reef' formed by rigid or semi-rigid organisms (eg beds of horse mussels, bryozoans, sponges, larger hydroids, rhodoliths, shell hash); seaweed and seagrass beds; and irregular seabed

[42] Williams, P.A.; Wiser, S.; Clarkson, B.; Stanley, M.C. 2007: New Zealand's historically rare terrestrial ecosystems set in a physical and physiognomic framework. *New Zealand Journal of Ecology 31*: 119–128. https://newzealandecology.org/nzje/2829

[43] www.landcareresearch.co.nz/resources/maps-satellites/threatened-environment-classification

[44] www.landcareresearch.co.nz/science/plants-animals-fungi/ecosystems/rare-ecosystems

[40] www.landcareresearch.co.nz/publications/factsheets/rare-ecosystems

[41] www.landcareresearch.co.nz/publications/factsheets/rare-ecosystems/coastal

[45] https://www.doc.govt.nz/about-us/our-policies-and-plans/biodiversity-guidance-for-private-land/

Policy 11(a) Avoid adverse effects of activities on:	Comments	Information sources and notes
	However, an ecosystem that is vulnerable to modification is not automatically threatened in a regional or district context. Indigenous ecosystems and vegetation types need to be assessed as threatened or naturally rare to be managed in accordance with Policy 11(a) (ie avoid adverse effects of activities on). Indigenous ecosystems and vegetation types that are assessed as vulnerable but not threatened will be managed under Policy 11(b). The Ministry for the Environment and DOC report *Protecting our Places* provides national priorities for protecting rare and threatened biodiversity on private land.	created by burrows and bioturbation. Holdaway et al. 2012[46]
iv. habitats of indigenous species where the species are at the limit of their natural range, or are naturally rare	The natural range of a species/taxon is determined by the biophysical environment, so species may be more common in some regions than others – for example, they may be regionally rare where they are near their limit while being more common elsewhere. This may warrant different conservation effort.[47] The NZTCS distinguishes 'non-resident' indigenous taxa (Migrant, Vagrant and Coloniser classifications) from the broad grouping of 'resident' indigenous taxa.[48] Resident taxa are those that breed in New Zealand or spend at least 50% of their life cycle here. Thus, godwits (*Limosa* spp.) are admitted as resident taxa even though	NZTCS manual[50] Verified distribution records for each species/taxon, which can be used to identify the limits of their natural range[51]

[46] Holdaway, R.J.; Wiser, S.K.; Williams, P.A. 2012: Status assessment of New Zealand's naturally uncommon ecosystems. *Conservation Biology 26*: 619–629. https://onlinelibrary.wiley.com/doi/10.1111/j.1523-1739.2012.01868.x/pdf

[47] An example is bottlenose dolphins (*Tursiops truncatus*) in Fiordland, which are living at the limit of their known worldwide temperature range, and the protection given them by the Doubtful Sound Dolphin Protection Zone. www.doc.govt.nz/nature/native-animals/marine-mammals/dolphins/bottlenose-dolphin/doubtful-sound-bottlenose-dolphins/

[48] Refer to Figure 1 'Structure of the New Zealand Threat Classification System' in the NZTCS manual. www.doc.govt.nz/globalassets/documents/science-and-technical/sap244.pdf

Policy 11(a) Avoid adverse effects of activities on:	Comments	Information sources and notes
	they do not breed in New Zealand. The 'Naturally Uncommon' (ie Range Restricted and Sparse) category in the NZTCS includes taxa whose distributions are naturally confined to specific substrates, habitats or geographic areas, or taxa that occur within naturally small and widely scattered populations.[49] Manaaki Whenua – Landcare Research provides information about the rare indigenous flora and fauna that are found in each type of environmental area/habitat, including range restricted species.	
v. areas containing nationally significant examples of indigenous community types	Some areas contain nationally significant examples of indigenous community types, making their management important. The Freshwater Ecosystems of New Zealand (FENZ) geo-database provides a national representation of the biodiversity values and pressures on New Zealand's rivers, lakes and wetlands, some of which are located in the coastal environment. This database helps to build a robust, objective picture of New Zealand's fresh water to inform decisions around its use and conservation. DOC recently commissioned the National Institute of Water and Atmospheric Research (NIWA) to identify and collate datasets that may be useful for identifying ecologically important areas in the marine environment. Using the Convention on Biological Diversity's criteria for	The FENZ geo-database[53]

[50] www.doc.govt.nz/globalassets/documents/science-and-technical/sap244.pdf

[51] See https://avh.chah.org.au/ for plants; http://nzbirdsonline.org.nz/ for birds; www.doc.govt.nz/our-work/reptiles-and-frogs-distribution/atlas/ for amphibians and reptiles.

[49] See page 24 of the NZTCS manual. www.doc.govt.nz/globalassets/documents/science-and-technical/sap244.pdf

Policy 11(a) Avoid adverse effects of activities on:	Comments	Information sources and notes
	identifying 'ecologically and biologically significant areas',[52] a broad range of datasets from across New Zealand were collated, which may be useful for councils' planning processes. This report is available on request to DOC and is expected to be available on the DOC website by mid-2019.	
vi. areas set aside for full or partial protection of indigenous biological diversity under other legislation.	Areas may be set aside for the full or partial protection of indigenous biodiversity under the following Acts. • National Parks Act 1980: All indigenous flora and fauna within a national park is fully protected. • Conservation Act 1987: This Act provides for specially protected areas, such as conservation parks, sanctuaries, and ecological and wilderness areas, all of which provide protection for indigenous biodiversity. Specially protected areas set aside under the Conservation Act are administered by DOC. • Reserves Act 1977: There are seven classifications of reserves under this Act: recreation, historic, scenic, nature, scientific, government purpose and local purpose. The primary purpose of nature and scientific reserves is the protection	Reserves managed by DOC[55] and other reserves controlled and managed by councils or other agencies for purposes that include wildlife or indigenous biodiversity purposes Marine Reserves under the Marine Reserves Act 1971[56] Queen Elizabeth II National Trust reserves/covenants[57]

[53] www.doc.govt.nz/conservation/land-and-freshwater/freshwater/freshwater-ecosystems-of-new-zealand/

[52] www.cbd.int/intro/

[55] See www.doc.govt.nz/our-work/maps-and-data/; www.doc.govt.nz/about-doc/role/maps-and-statistics/map-of-marine-conservation-areas/; and www.doc.govt.nz/nature/habitats/marine/marine-reserves-a-z/.

[56] www.legislation.govt.nz/act/public/1971/0015/22.0/DLM397838.html

[57] www.openspace.org.nz/

Policy 11(a) Avoid adverse effects of activities on:	Comments	Information sources and notes
	of indigenous biodiversity. Under the Reserves Act, scenic reserves are to be managed to preserve indigenous flora and fauna and ecological associations, and so are 'partially protected'. For the other categories of reserves, it may be necessary to refer to the relevant conservation management strategy or plan (for DOC-administered reserves) or management plan (for other reserves) to determine the indigenous biodiversity values of the reserve and the level of protection intended by the management of it. • Marine Reserves Act 1971: The primary purpose of a marine reserve is to fully protect the marine life and habitat within it. • Marine Mammals Protection Act 1978: The Minister of Conservation may declare marine mammal sanctuaries for the protection of nominated species of marine mammals and may impose restrictions on what activities may take place within the sanctuary (eg banning set netting). The sanctuary provides partial protection for the nominated species of marine mammals. • Wildlife Act 1953: Under this Act, an area may be declared a Wildlife Sanctuary, in which all wildlife is absolutely protected, a Wildlife Refuge or a Wildlife Management Reserve. • Reserves Act 1977: Indigenous biodiversity on private land is protected through conservation covenants under section 77 of the Reserves Act 1977 and Ngā Whenua Rāhui kawenata under section 77A of that Act. Protection may also be afforded through Queen Elizabeth II	

Policy 11(a) Avoid adverse effects of activities on:	Comments	Information sources and notes
	National Trust open space covenants.[54]	

Table 2. Indigenous biodiversity in the coastal environment – interpretative aids for Policy 11(b).[58]

Policy 11(b) Avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on:	Comments	Resources
(i) areas of predominantly indigenous vegetation in the coastal environment	The term 'predominantly' is not defined in the NZCPS 2010. An assessment of whether an area is of predominantly indigenous vegetation should be made by a qualified ecologist, having regard to all relevant matters, including both vertical (viewed from above) and horizontal considerations.[59] Some areas of predominantly exotic vegetation may also have high value as habitat for indigenous species, which can	Protected Natural Area (PNA) survey reports Significant Natural Area (SNA) reports Sites of Special Wildlife Interest Land Environments of New Zealand (LENZ) maps[60] Botanical species lists and

[54] Section 22 of the Queen Elizabeth the Second National Trust Act 1977. http://legislation.govt.nz/act/public/1977/0102/10.0/DLM8801.html

[58] Note: The first level of Policy 11(b) directs the avoidance of **significant** adverse effects, so it is recommended that plans list criteria to assess the 'significance' of an adverse effect. The second level requires consideration of methods to avoid, remedy or mitigate adverse effects that are not significant.

[59] A horizontal assessment will be applicable to bluffs and other steep coastal areas. It may also be relevant to situations where the predominant ground cover is low-growing exotic weeds but the overall impression when viewed from a distance at ground level is of indigenous vegetation. One such example is a sparse indigenous coastal ribbonwood (*Plagianthus divaricatus*) shrubland, where the ribbonwood does not form a closed canopy but is the tallest and most dominant species in that area when viewed horizontally, whereas the same forest when viewed vertically from above would indicate that low-growing exotic weeds are the predominant ground cover.

[60] www.landcareresearch.co.nz/resources/maps-satellites/lenz

Policy 11(b) Avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on:	Comments	Resources
	be considered under Policy 11(b)(ii)–(v). Areas that are predominantly in indigenous vegetation include terrestrial and wetland ecosystems with a high proportion of native vegetation cover. These systems may have varying degrees of weed invasion and/or modification due to the pressures that are inherent in many terrestrial coastal sites. It is important to protect and manage effects on indigenous biodiversity that is characteristic and representative of the diversity of a region, ecological district or similar marine biogeographic area, and to protect ecological functions and processes.	reports – see Todd et al. (2016)[61] and the New Zealand Plant Conservation Network website[62] High-resolution aerial photographs
(ii) habitats in the coastal environment that are important during the vulnerable life stages of indigenous species	Indigenous species can be vulnerable: • when breeding (nesting, spawning) • as juveniles • during migration. Coastal environments can provide breeding sites for coastal birds, spawning sites for marine and freshwater fishes, nursery grounds for juvenile fishes, and migration routes for birds, marine mammals and fishes. The protection of these habitats may require temporal restrictions, eg during breeding or migration. For example, colonies of the 'Naturally Uncommon' royal spoonbill	DOC and some regional councils have identified fish spawning sites and breeding locations for birds and marine mammals. Ornithological Society of New Zealand reports and databases[63] Specialist scientific reports High-resolution aerial photographs

[61] Todd, M.; Kettles, H.; Graeme, C.; Sawyer, J.; McEwan, A.; Adams, L. 2016: Estuarine systems in the lower North Island/Te Ika-a-Māui: ranking of significance, current status and future management options. Department of Conservation, Wellington. 400 p.
www.doc.govt.nz/Documents/conservation/estuaries/lower-north-island-estuaries-report.pdf

[62] www.nzpcn.org.nz – go to Publications > Plant lists > Search for a plant list.

[63] www.osnz.org.nz/

Policy 11(b) Avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on:	Comments	Resources
	(*Platalea regia*) are sensitive to disturbance during their October–February breeding season. Sites that are important for other indigenous species may require year-round restrictions on use. Biogenic habitats (eg bryozoan, horse mussel and seagrass beds) are an important nursery habitat for juvenile marine fishes as they provide structure and refuges. However, these systems are also highly vulnerable to damage, including from the effects of sedimentation, trawling, dredging, aquaculture and mooring/anchoring.	
(iii) indigenous ecosystems and habitats that are only found in the coastal environment and are particularly vulnerable to modification, including estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh	Estuaries, lagoons, coastal wetlands, dunelands, intertidal zones, rocky reef systems, eelgrass and saltmarsh (and associated communities and ecological sequences) represent ecosystems and habitats that only occur within the coastal environment. Some of these are naturally rare ecosystems and/or support threatened species. These ecosystems and habitats can also be under significant development pressure. Activities that affect these specific habitat types directly (eg coastal subdivision and infrastructure) or indirectly (eg sedimentation or nutrient inputs) may require more stringent control. Policy 11(b)(iii) provides an inclusive list of ecosystems and habitats that are particularly vulnerable to modification.	National Institute of Water and Atmospheric Research's (NIWA's) *Valuing New Zealand's marine environment* project report and maps[64] Manaaki Whenua – Landcare Research's Threatened Environment Classification[65] Manaaki Whenua – Landcare Research's *Naturally uncommon ecosystems* webpage[66] Land Environments of New Zealand (LENZ) maps[67] Protected Natural Area and Significant Natural Area reports

[64] www.niwa.co.nz/our-science/coasts/research-projects/valuing-new-zealands-marine-environment

[65] www.landcareresearch.co.nz/resources/maps-satellites/threatened-environment-classification

[66] www.landcareresearch.co.nz/publications/factsheets/rare-ecosystems

[67] www.landcareresearch.co.nz/resources/maps-satellites/lenz

Policy 11(b) Avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of activities on:	Comments	Resources
	Two biogenic habitats are listed – eelgrass (seagrass) and saltmarsh. Other examples of biogenic habitats that this policy could also apply to are bryozoan, horse mussel, sponge, hydroid, rhodolith and algal beds.	Specialist scientific reports High-resolution aerial photographs
(iv) habitats of indigenous species in the coastal environment that are important for recreational, commercial, traditional or cultural purposes	The protection of habitats of indigenous species that are used for recreational, commercial, traditional or cultural purposes will help to ensure that these resources remain in the long term. This can include the protection of specific areas from use, development, degradation and/or overharvesting. These habitats can include (but are not limited to) shellfish beds, rocky reefs, estuaries and open water. Uses may include customary harvesting, recreational fishing, commercial fishing, tourism activities and diving.	NIWA's *Valuing New Zealand's marine environment* project report and maps[68] Fisheries New Zealand maps of commercial inshore fishing activity[69] Ministry for Primary Industries / Fisheries New Zealand maps of mātaitai, taiāpure and rāhui areas Local iwi and hapū
(v) habitats, including areas and routes, important to migratory species	Migratory species are those that move within New Zealand and/or internationally as part of their life cycle. Migratory species can include birds (eg international wading species), sharks and cetaceans (in particular humpback whales). Also included are diadromous fishes that migrate between the sea and fresh water (eg eels). Migratory species are particularly vulnerable to loss of habitat and/or obstructions along their migratory routes.	New Zealand native species identified in the Bonn Convention on the Conservation of Migratory Species[70] Ornithological Society of New Zealand reports and databases Freshwater fish migration calendars (note times can vary between regions)[71] Specialist scientific reports

[68] www.niwa.co.nz/our-science/coasts/research-projects/valuing-new-zealands-marine-environment

[69] www.fish.govt.nz/en-nz/Aquaculture/Maps+of+Commercial+Inshore+Fishing+Activity/default.htm

[70] www.doc.govt.nz/about-us/international-agreements/migratory-species/

[71] Hamer, M. 2007: The freshwater fish spawning and migration calendar report. *Environment Waikato Technical Report 2007/11*. Environment Waikato, Hamilton. 17 p.

(vi) ecological corridors, and areas important for linking or maintaining biological values identified under this policy	An ecological corridor is 'a narrow strip of habitat connecting two or more larger areas of similar habitat and potentially used by wildlife so allowing movement between primary habitats. Corridors have been considered important for migration and to reduce extinction rates in a fragmented landscape'.[72] Ecological corridors may connect areas of habitat on land or sea, and may include areas of public and/or private land. Such corridors may or may not be outstanding in their own right but provide linkages between habitats to assist the movement and survival of species. Ecological corridors can also be created and improved through restoration efforts such as planting, fencing, and weed and pest control. Migratory routes (see Policy 11(b)(v)) are a type of ecological corridor.	Quality Planning guidance note on indigenous biodiversity[73] Protected Natural Area and Significant Natural Area reports Specialist scientific reports High-resolution aerial photographs

RMA planning documents

To implement Policy 11, regional policy statements, regional plans (including regional coastal plans) and district plans will need to include clear objectives and policies in relation to:

- the location and extent of areas in the coastal environment where indigenous biodiversity values of relevance to Policy 11 are known to be present, recognising that mapping such areas may be imprecise or impracticable in the case of highly mobile threatened species
- assessment criteria to ascertain the significance of an ecological area or habitat
- areas where indigenous biodiversity values of relevance to Policy 11 may be present but are currently degraded, under-researched or unknown, and the methods proposed to address those information gaps
- provisions to avoid the adverse effects of activities on the matters listed in Policy 11(a)

[72] http://qualityplanning.org.nz/qp-resources-qp-library-old/qp-library-old-0

[73] http://qualityplanning.org.nz/qp-resources-qp-library-old/qp-library-old-0

- differentiating between matters that are to be protected under Policy 11(a), where the adverse effects need to be avoided (eg habitat of threatened indigenous taxa), and matters that are relevant under Policy 11(b), where significant adverse effects are to be avoided and other adverse effects are to be avoided, remedied or mitigated
- criteria to determine whether the adverse effects of a proposed activity on indigenous biodiversity are likely to be significant
- provisions to manage the adverse effects of activities on the matters identified under Policy 11(b).

Location and extent of special areas

While Policy 11 does not require identification (including mapping) of the location and extent of those areas in the coastal environment where indigenous biodiversity values of relevance to Policy 11 are present, it is recommended that such areas, where known, are mapped or otherwise identified. Such identification would assist in providing certainty for those wishing to undertake activities in those areas and for the management of the natural values of those areas.

While mapping is appropriate for identifying localised Significant Ecological Areas, a different policy approach may be required for highly mobile threatened or at risk species, such as some species of whales, dolphins and seabirds that occupy large, dispersed habitat areas. For example, the Auckland Unitary Plan contains policies that recognise the national and international importance of much of the Auckland coastal marine area as habitat for certain threatened and at risk seabird and marine mammal species, but does not map these areas, while discrete Significant Ecological Areas are identified by mapping. Different values require different types of identification and different policy and management responses.

Section 62(1) of the RMA sets out the contents of regional policy statements, which 'must state':

> (i) the local authority responsible in the whole or any part of the region for specifying the objectives, policies and methods for the control of land …
>
> (iii) to maintain indigenous biodiversity.

Thus, whether the identification of indigenous biodiversity values in the terrestrial part of the coastal environment is undertaken through the relevant regional or district plan, or a combination of the two, should be resolved in the regional policy statement. The relevant regional coastal plan should identify these areas and values in the coastal marine area.

Because new or different significant areas may be found during the life of the plan, giving ongoing effect to Policy 11(a) may require periodic plan changes to include newly identified significant areas or the amendment of existing ones.

In relation to the identification of Significant Ecological Areas in the Auckland Unitary Plan, the Environment Court stated:

> If areas of significance gain no protection because they have not been mapped, this would not only be contrary to the decisions of the High Court in relation to these issues, but also contrary to the clear obligations under Policy 11 and Part 2 of the Act.[74]

As with the guidance on implementing NZCPS Policy 1 (Extent and characteristics of the coastal environment), the following elements are expected to be common to the identification of special areas within the coastal environment.

- **Communication:** Some communities and stakeholders may be wary of the identification of special areas and the intended use of such information. Therefore, clear explanations of the reasons for the identification and the source of the information should be an important part of the identification and assessment process. One-on-one discussions with landowners are recommended.
- **Transparency:** Clear acknowledgement of the relationship between the technical assessment and the intended use of the information is recommended, including whether development controls are likely to be proposed. The technical assessment of special areas and the RMA planning responses that flow from this assessment can occur separately or concurrently. The difference between the two processes needs to be clearly identified.
- **Assessment by qualified specialists:** Specialist input will be required to assess many of the matters identified in Policy 11. Adequate peer review of this assessment is recommended, which may also help gain public confidence about the independence of the assessment process and the relative significance of the values that are identified through the assessment process.

In some areas, there is currently limited knowledge on indigenous biodiversity values in the coastal environment, especially in regard to marine values and some fresh waters in the coastal environment. Tools such as the Freshwater Ecosystems of New Zealand (FENZ) geo-database[75] and Land Environments of New Zealand (LENZ)[76] are available and can be used to help identify the location and extent of these special areas within the coastal environment.

Regional policy statements, and regional and district plan provisions

Regional policy statements, and regional and district plan provisions in relation to particular activities will depend on a number of matters, including the nature and effects of the particular activities and the vulnerability of special areas to these effects. As with all cases where natural and physical resources are being managed, particular situations must be looked at in context.

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[74] *Cabra Rural Developments Limited and Ors v Auckland Council* [2018] NZEnvC 90 at paragraph 167.

[75] www.doc.govt.nz/conservation/land-and-freshwater/freshwater/freshwater-ecosystems-of-new-zealand/

[76] www.landcareresearch.co.nz/resources/maps-satellites/lenz

In *King Salmon*[77] and subsequent case law, the Supreme Court reinforced the importance of certainty, or at least clarity, in planning documents. Disciplined drafting is required to ensure that there is clarity around the policy direction and outcomes that are being sought, as well as which adverse effects or inappropriate activities are to be avoided, where and under what circumstances.

The concept of recognising indigenous biodiversity is not new – there is a lot of existing good practice and good practice guidance on how to do this. For example, see the Quality Planning guidance on indigenous biodiversity.[78] It is particularly useful to read that guidance alongside this Policy 11 guidance note when developing regional policy statements and regional and district plans.

There are some challenging areas, however, particularly in relation to gaps in marine information. DOC recently commissioned the National Institute of Water and Atmospheric Research (NIWA) to identify and collate datasets that may be useful for identifying ecologically important areas in the marine environment. Using the Convention on Biological Diversity's criteria for identifying 'ecologically and biologically significant areas',[79] a broad range of datasets from across New Zealand were collated, which may be useful for councils' planning processes. This report is available on request to DOC and is expected to be available on the DOC website by mid-2019.

Decisions about future development and the management of existing development need to consider the needs of indigenous biodiversity. In areas that are subject to coastal erosion or rising sea levels, indigenous biodiversity is likely to be subjected to coastal squeeze[80] and may not be able respond naturally by migrating inland.

Decisions under the RMA are not the only matter influencing New Zealand's indigenous biodiversity in the coastal environment. Other relevant matters include decisions made under other natural resource legislation, such as the Conservation, Reserves and Fisheries Acts, as well as predator control programmes and community restoration projects. Together, these methods are critical to addressing species loss and ecosystem degradation.

Regulatory decision-making

Applicants and decision-makers will need to consider the potential impacts of an activity on those indigenous species, habitats and ecosystems that are outlined in Policy 11. Having regard to Policy 11 may result in appropriate conditions being imposed or, in some instances, a consent being declined. When dealing with activities that have uncertain, unknown or little-understood adverse effects on threatened species, including in combination with other existing adverse effects, a

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[77] *Environmental Defence Society v The New Zealand King Salmon Company Limited* [2014] NZSC 38.

[78] http://qualityplanning.org.nz/qp-resources-qp-library-old/qp-library-old-0

[79] www.cbd.int/convention/

[80] Refer to the 'Glossary of terms and definitions' at the end of this report for a definition of 'coastal squeeze'.

precautionary approach should be adopted, as stated in NZCPS Policy 3 (Precautionary approach).[81]

Rules can manage or limit the effects of activities on the environment. Examples may include standards set for discharges to water, or rules concerning earthworks, land disturbance and the clearing of indigenous vegetation. Rules and resource consent conditions can also recognise that certain species will have different sensitivities at different times of the year – for example, requiring in-stream work within waterways in the coastal environment to occur outside the whitebait spawning season.

Cumulative impacts on indigenous biodiversity can arise from a number of RMA-regulated activities in the coastal environment, such as the loss of foraging habitat and modification of the benthic environment from multiple marine farms; and the cumulative effects of point-source stormwater discharges and sedimentation from land use activities on water quality. The effective management of cumulative effects will require policy analysis of response options and ongoing monitoring including, in some cases, monitoring of the population dynamics of threatened species to determine the effectiveness of response actions. It is important that such monitoring and the development of policy responses are informed by research and expert opinion.

When dealing with the decline of threatened species populations or ecosystems, it can be difficult to establish cause-and-effect relationships. In many instances there may be multiple pressures (stressors) on species and habitats, only some of which can be controlled through RMA processes.

In relation to resource consent decision-making, case law has established that where the rules in a plan are settled and clear, there is little room for the wider considerations of Part 2 of the RMA to influence the outcome.[82] Consideration of the NZCPS 2010 should provide the same clear direction as evidenced in the plan.

In some instances, a well-considered, staged adaptive management approach may be justified where decision-makers are satisfied that all four of the following factors identified by the Supreme Court are satisfied.

(a) There will be good baseline information about the receiving environment.

(b) The conditions provide for effective monitoring of adverse effects using appropriate indicators.

(c) Thresholds are set to trigger remedial action before the effects become overly damaging.

(d) Effects that might arise can be remedied before they become irreversible.[83]

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[81] Also see *RJ Davidson Family Trust v Marlborough District Council* [2016] NZEnvC 81 (in particular paragraphs 278–281) and, on appeal to the High Court, *RJ Davidson Family Trust v Marlborough District Council* [2017] NZHC 52.

[82] Court of Appeal: *RJ Davidson Family Trust v Marlborough District Council* [2018] NZCA 316.

[83] *Sustain Our Sounds v The New Zealand King Salmon Company Limited* [2014] NZSC 40 at paragraph 133.

Information gaps and mobile species

A particular challenge when giving effect to Policy 11 is dealing with situations where there is incomplete knowledge to map or otherwise identify with confidence the full habitat range of a threatened or at risk species that is mobile, such as birds or marine mammals. An example is the threatened king shag (*Leucocarbo carunculatus*), which has recently been observed to abandon existing colonies and establish new ones at sites that were previously not known to have been occupied by this species. While this particular example could be addressed by way of a plan change, species for which there is incomplete knowledge are more problematic, such as snapper nursery areas, which are known in general but have not been mapped with accurate boundaries.

A possible approach in these situations is to include in the relevant plan a policy noting that information on the habitat range of the species is incomplete and that a plan change will be proposed to include that information in the relevant planning document when there is greater certainty. Consideration should also be given to including a condition in relevant coastal permits and discharge permits that provides an opportunity for the consent authority to review the conditions of the consent under section 128 of the RMA to deal with any adverse effect of the activity on that species should further information become available about its habitat or the adverse effect of the consented activity on that species. A review condition cannot have the effect of cancelling or frustrating the exercise of the consent, but it may allow more appropriate mitigation measures to be put in place.

Integrated management

Coastal management requires an integrated approach, as the use of land and waters along and upstream of the coast can affect other coastal uses, processes and species due to the interconnected nature of natural and physical resources, including ecosystems, as they adjust to changes. Those changes may be constant and cumulative, both as a consequence of natural processes and in response to human activities, including climate change. Integrated management encourages the complementary management of the coastal marine area, coastal resources and the adjacent land by all of the statutory organisations involved. An integrated approach is also required for the effective management of the cumulative impacts of activities on the coastal environment. Because the changes in coastal processes and ecosystems can be difficult to predict within the timeframes of regional and district plans, an adaptive management approach may be necessary. Such an approach would typically include plan provisions for regular monitoring and reporting, and the establishment in the plan of triggers and thresholds which, if reached, would bring additional plan provisions already set out in the plan into effect.

Regard must also be given to the functions of other agencies in respect of the coastal marine area (or involved in management that could affect the coastal marine area), as well as the social, economic and cultural objectives and interests of the community.

The Minister of Conservation and the Director-General of Conservation have statutory responsibilities in respect of indigenous species. Those responsibilities are

for the protection of indigenous species generally under the Wildlife Act 1953 and the Marine Mammals Protection Act 1978 and the preservation of their habitat on land and waters administered by DOC under various Acts.[84] Conservation management strategies and plans set out the policies, priorities and implementation methods for DOC's functions, including for indigenous biodiversity. Ideally, policies and implementation methods in relation to the protection of indigenous biodiversity should be integrated and consistent across the relevant regional policy statements, regional plans, district plans, and conservation management strategies and plans.

The integrated planning and management of biodiversity can be usefully supported by good strategic planning. This is related to Policy 7 (Strategic planning),[85] particularly in regard to marine spatial planning.

[84] Primarily the Reserves Act 1977, National Parks Act 1980, Conservation Act 1987, Marine Reserves Act 1971 and Wildlife Act 1953.

[85] www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/new-zealand-coastal-policy-statement/new-zealand-coastal-policy-statement-2010/policy-7-strategic-planning/

Related and ongoing national or cross-regional work

Marine Protected Areas Policy and Implementation Plan, December 2005

www.doc.govt.nz/about-us/science-publications/conservation-publications/marine-and-coastal/marine-protected-areas/marine-protected-areas-policy-and-implementation-plan/

This non-statutory document was developed by DOC in 2005 and remains in effect today. The purpose of this policy is 'to protect New Zealand's marine biodiversity by establishing a comprehensive and representative network of marine protected areas'. Key components of the policy are to establish a consistent approach to classifying marine habitats and ecosystems; develop mechanisms to coordinate multi-agency approaches to marine protected areas; establish an inventory of existing marine protected areas and assess whether the level of protection is sufficient; and outline consistent processes for planning and establishing new marine protected areas.

In 2016, the Government consulted on a proposal for new marine protected areas legislation.

www.doc.govt.nz/get-involved/have-your-say/all-consultations/2016/new-marine-protected-areas-act/

At the time of drafting this guidance, the current Government is still considering options for marine protected areas reform.

Hauraki Gulf Forum

www.aucklandcouncil.govt.nz/en/aboutcouncil/representativesbodies/haurakigulfforum/Pages/home.aspx

The Hauraki Gulf Forum is a statutory body that facilitates the integrated management, protection and enhancement of the Hauraki Gulf under the Hauraki Gulf Marine Park Act 2000. Forum members include representatives of the Minister of Conservation, the Minister of Fisheries, the Minister for Māori Development, Auckland Council, Waikato Regional Council, Thames-Coromandel District Council, Hauraki District Council, Waikato District Council, Matamata-Piako District Council and tangata whenua. The Forum meets quarterly to examine issues related to protection and enhancement of the Hauraki Gulf, and currently[86] has three priority topics and associated strategic issues.

- Improving integrated management through collaborative planning, informed decision-making and credible action.
- Restoring water quality values by addressing land use activities that degrade those values.

[86] As adopted by the Forum on 20 August 2018.

- Recognising critical marine values and ecosystems by advocating for the protection, restoration, enhancement and regeneration of areas.

The Forum promotes community advocacy, education, monitoring, research, and tangata whenua and community support.

Hauraki Gulf Marine Spatial Plan 2016

www.seachange.org.nz/assets/Sea-Change/5584-MSP-summary-WR.pdf

The Sea Change – Tai Timu Tai Pari Marine Spatial Plan was released in December 2016. Marine spatial planning is used around the world but this is the first marine spatial plan to have been developed in New Zealand. The development of the plan was led by a working group consisting of stakeholders from a range of backgrounds, including mana whenua, environmental, conservation, fishing, boating, aquaculture and land use. DOC, the Ministry for Primary Industries, Auckland Council and Waikato Regional Council were involved throughout the process, providing scientific, technical, financial and administrative support. However, these agencies did not have a role in drafting the plan.

This non-statutory plan contains over 180 interrelated recommended actions with the aim of creating a shared vision and securing a healthy, productive and sustainable resource that can be shared by all. At the time of drafting this guidance, the Government and councils are considering the best way of progressing the plan's proposals.

Resources

Examples of recent[87] operative regional and unitary plan provisions

Auckland Council – Auckland Unitary Plan

http://unitaryplan.aucklandcouncil.govt.nz/Images/Auckland%20Unitary%20Plan%20Operative/Chapter%20D%20Overlays/1.%20Natural%20Resources/D9%20Significant%20Ecological%20Areas%20Overlay.pdf

The Auckland Unitary Plan, operative in part November 2016, identifies Significant Ecological Areas by way of terrestrial and marine overlays. The Significant Ecological Areas in the marine environment are divided into two categories – those areas that are most vulnerable to any adverse effects of inappropriate subdivision, use or development; and those areas that are of regional, national or international significance but warrant a lower level classification as they are more robust. Several of these areas are also identified as significant wading bird habitat.

Schedules set out the factors that were used to determine the Significant Ecological Areas and the values of the scheduled areas.

Plan objectives seek to protect the areas of significant ecological values from the adverse effects of subdivision, use and development; enhance the indigenous biodiversity values; and recognise and provide for the relationship of mana whenua and their customs and traditions with indigenous vegetation and fauna.

Detailed policies, including those that are specific to the coastal environment, support the objectives. The policies include provisions in relation to cumulative effects, mangrove removal, the fragmentation of values, ecological corridors and water quality in relation to natural ecological functioning.

Manawatu-Wanganui Region – Horizons One Plan

www.horizons.govt.nz/Publications-Feedback/One-Plan

This combined plan combines the regional policy statement and regional plans, including the regional coastal plan, and became operative in December 2014. The regional policy statement identifies threatened indigenous biodiversity as one of the 'big four' issues facing the region. A schedule to the plan identifies 'threatened' and 'at risk' habitat types by type for terrestrial habitats (including in the coastal environment) and by name for water bodies (including river mouths in the coastal marine area). Rules restrict the discharge of contaminants, vegetation clearance and drainage or diversion of water in the identified rare or threatened habitats. In order to proactively manage the best representative examples of rare and threatened habitats, including coastal ecosystems, individual management plans and programmes are to

[87] Developed since the decision of the Supreme Court on *Environmental Defence Society Inc v The New Zealand King Salmon Company Ltd* [2014] NZSC 40.

be developed. Implementation methods listed in the One Plan include fencing for stock exclusion, pest plant and animal control, planting, and legal options to ensure ongoing protection.

Relevant case law since the *King Salmon* decision[88]

Review of the implications of the King Salmon decision on the resource management framework

www.doc.govt.nz/globalassets/documents/conservation/marine-and-coastal/coastal-management/guidance/king-salmon-guidance-note-full.pdf

In February 2018, DOC commissioned Helen Atkins from Atkins Holm Majurey to write a 'think piece' review of the implications of the *King Salmon* decision on the resource management planning framework and practice. This review identified implications for the interpretation of the NZCPS 2010 and was updated in January 2019 to have regard to more recent court decisions.

RJ Davidson Family Trust v Marlborough District Council [2016] NZEnvC 81

www.epa.govt.nz/assets/FileAPI/proposal/NSP000039/Hearings-Week-01/Bundle-of-Authorities-08-RJ-Davidson-Family-Trust-v-Marlborough-District-Council-2016-NZEnvC-81.pdf

In this case, the Environment Court was considering a non-complying coastal permit application for an additional 8.9-ha mussel farm in a bay that already contained 37 consented mussel farms. The bay is foraging habitat for the threatened and very rare (less than 1000 birds) king shag (*Leucocarbo carunculatus*).

The New Zealand king shag is endemic to the Marlborough Sounds and classified as 'Nationally Endangered' under the NZTCS. 'Nationally Endangered' is the second of three threat categories in the national classification system of 'threatened species' (Nationally Critical, Nationally Endangered and Nationally Vulnerable).

The decision examined in detail the known population, geographic range, prey and foraging depths of king shag, as well as the effects of mussel farms on their habitat. Adopting an international 'Likelihood Scale' of quantified uncertainty, the majority of the Court concluded that 'there is a low probability (it is very unlikely but possible) that the King Shag will become extinct as a result of this application'.[89]

In terms of Policy 11(a)(iv), the Environment Court also considered the birds to be at the limit of their habitat in this bay, as they are unable to fly far from their breeding colonies and forage in a relatively narrow range of water depths.

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[88] *Environmental Defence Society Inc v The New Zealand King Salmon Company Limited* [2014] NZSC 40.

[89] *RJ Davidson Family Trust v Marlborough District Council* [2016] NZEnvC 81 at paragraph 206.

Due to the lack of a baseline, uncertainty over the extent to which marine farms are stressors of king shag and the fact that the IUCN considers it inappropriate to rely on an adaptive management approach for very small populations, the Court rejected adaptive management. Therefore, noting the strong direction in Policy 11 and applying the precautionary approach required under Policy 3 of the NZCPS 2010, the Court declined consent.

RJ Davidson Family Trust v Marlborough District Council [2017] NZHC 52

https://forms.justice.govt.nz/search/Documents/pdf/jdo/e6/alfresco/service/api/node/content/workspace/SpacesStore/95f02442-fd96-4243-958b-c360aac63925/95f02442-fd96-4243-958b-c360aac63925.pdf

On appeal of the above case, the High Court undertook an analysis of New Zealand and international legal authority of the required standard of proof for future effects, examined how future effects should be predicted and reviewed the matters considered by the Environment Court, and concluded that 'the Environment Court did not err in finding that the adverse effect on King Shag habitat under the proposed site will be minor but that the cumulative adverse effects (in combination with other existing mussel farms) could be serious'.[90]

RJ Davison Family Trust v Marlborough District Council [2018] NZCA 316

https://forms.justice.govt.nz/search/Documents/pdf/jdo/81/alfresco/service/api/node/content/workspace/SpacesStore/920e614c-7799-40b9-a23c-db37f24edcce/920e614c-7799-40b9-a23c-db37f24edcce.pdf

The subsequent question of law that was considered on appeal of the above case to the Court of Appeal was in respect of the application of 'subject to Part 2' when considering applications for resource consents under section 104(1) of the RMA.

The Court of Appeal held that:

> … it would be inconsistent with the scheme of the Act to render those plans ineffective by general recourse to pt 2 in deciding resource consent applications providing the plans have been properly prepared having in accordance with pt 2. We do not however consider that *King Salmon* prevents recourse to pt 2 in the case of applications for resource consent. Its implications in this context are rather that genuine consideration and application of relevant plan considerations may leave little room for pt 2 to influence the outcome.[91]

The High Court decision was confirmed and the appeal dismissed.

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[90] *RJ Davison Family Trust v Marlborough District Council* [2017] NZHC 52 at paragraph 150.

[91] *RJ Davidson Family Trust V Marlborough District Council* [2018] NZCA 316 at paragraph 82.

Royal Forest and Bird Protection Society of New Zealand Inc. v Auckland Council [2017] NZHC 1606

The proposed Auckland Unitary Plan as adopted by the Auckland Council included 'exclusion indicators' that were intended to exclude any area from being identified as a Significant Ecological Area in the plan if the exclusions applied. Prior to the hearing, the Council recognised that this was not appropriate and the Court agreed. Applying the principle that was used in the Court of Appeal decision in *Man O' War,*[92] where it was argued that determining 'whether land has attributes sufficient to make it an outstanding landscape requires an essentially factual assessment based upon the inherent quality of the landscape itself', the High Court held that exclusion indicators would cut across section 6(c) of the RMA and would also potentially be contrary to Policy 11 of the NZCPS 2010, stating that 'An area may still qualify for protection under s 6(c) notwithstanding modification'.[93]

Friends of Nelson Haven and Tasman Bay Inc v Marlborough District Council [2016] NZEnvC 151

http://www.nzlii.org/cgi-bin/disp.pl/nz/cases/NZEnvC/2016/151.html?stem=0&synonyms=0&query=Friends of Nelson Haven

This decision relates to non-complying activity consent applications for the seaward extension of existing marine mussel farms in Admiralty Bay in the outer Marlborough Sounds. This bay provides significant seasonal habitat for the dusky dolphin (*Lagenorhynchus obscurus*) and year-round foraging habitat for the king shag, both of which are threatened species. As directed by the Court in an earlier interim decision, the marine farmer applicants conducted an extensive 3-year study to determine the months of the year in which the dolphins were likely to be present. Based on those studies, the applicant more than halved the total area of its proposed farms and proposed a staged adaptive management approach to gradually extend the farms if there were no observable effects on the dolphin population. The Court noted that a precautionary approach was required and rejected the proposed adaptive management approach on the basis that the baseline information with regard to dolphin population dynamics was insufficient to allow a cause-and-effect relationship from any farm extension to be established with confidence. Consequently, the appeal was allowed and the consents declined.

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[92] *Man O'War Station Ltd v Auckland Council* [2017] NZCA 24.

[93] *Royal Forest and Bird Protection Society Inc v Auckland Council* [2017] NZHC 1606 at paragraph 19.

A Pierau v Auckland Council [2017] NZEnvC 090

www.nzlii.org/cgi-bin/disp.pl/nz/cases/NZEnvC/2017/90.html?stem=0&synonyms=0&query=pierau

In this case, the Environment Court was considering a discretionary activity resource consent application to hold music festivals and other events at three different scales on a site adjacent to freshwater dune lakes. The dune lakes and wetlands support populations of bird species that are considered threatened under the NZTCS and the Court found the dune lake complex to be of significant conservation value as habitat. The Court considered the various risks of the festivals on ecology and biodiversity, including noise (from music and people), lighting and dogs.

The decision discusses in detail the legal approach the Court took in having regard to NZCPS Policy 11(a) and analyses the use of a precautionary approach under the NZCPS 2010 with an overall assessment under Part 2 or the RMA. On the facts of the case, the Court found the outcome to be the same with both approaches and concluded that consent should not be granted for the large and medium festivals.

Recognising that the existing environment (but not the permitted baseline) allowed the applicant to hold up to two temporary activity events per year, and having regard to its conclusion with respect to NZCPS Policy 11(a) and Part 2 of the RMA, the Court indicated that consent could be granted for up to 20 events per year, each of which could be up to 2 days in duration and should have no more than 200 people attending, no amplified music, and strict conditions in relation to the time of the activity, outdoor lighting, and a prohibition on outdoor fires and fireworks.

Okura Holdings Ltd v Auckland Council [2018] NZEnvC 87

www.environmentcourt.govt.nz/assets/Documents/Decisions/2018-NZEnvC-087-Okura-Holdings-Limited-v-Auckland-Council.pdf

The Environment Court declined appeals that sought to allow urban development adjacent to the Okura Estuary, which is part of a marine reserve. The Court found that the proposed development would be either directly contrary to or fail to give effect to various relevant objectives and policies in the Auckland Unitary Plan, including policies that give effect to Policy 11 of the NZCPS 2010.

Cabra Rural Developments Ltd & Ors v Auckland Council [2018] NZEnvC 90

www.nzlii.org/cgi-bin/disp.pl/nz/cases/NZEnvC/2018/90.html?stem=0&synonyms=0&query=cabra

This decision is in respect of the Auckland Unitary Plan's subdivision rules to promote the protection of Significant Ecological Areas of indigenous vegetation and wetlands, including in the coastal environment. The core issue was the indigenous biodiversity objectives, policies and rules of the Auckland Unitary Plan, including those that give effect to Policy 11 of the NZCPS 2010. The decision includes a relatively detailed analysis of the applicable statutory planning framework and

relevant case law, including High Court decisions on related provisions of the proposed Auckland Unitary Plan.

The decision notes that if new or different areas of significant indigenous biodiversity are found after the plan becomes operative, they will need to be protected under section 6(c) of the RMA and Policy 11 of the NZCPS 2010. The Court endorsed a policy approach of including assessment criteria for determining significance in the plan and concluded that mapping alone should not be relied on to identify areas of significant ecological value.[94] The Court noted that it was the Council's intention to introduce a plan change should further Significant Ecological Areas be identified during the period of the plan.

This decision highlights the fact that biodiversity can be dynamic. The risk classification of species may change, additional species may be added, habitats may alter and new information may become available on the range, distribution and threats to species, habitats and ecosystems. Thus, it becomes incumbent on the council to not only map or identify significant indigenous ecosystems and habitat when the plan is prepared, but also to provide policies in the plan to monitor changes in the status of those areas and values and to introduce plan changes as necessary.

A Burgoyne / Te Taumata o Taumata Ngati Kuir Research Trust v Northland Regional Council [2019] NZEnvC 028

www.nzlii.org/cgi-bin/disp.pl/nz/cases/NZEnvC/2019/28.html?stem=0&synonyms=0&query=burgoyne

This resource consent decision is in relation to the taking of water from an aquifer and the potential adverse effects of that abstraction on an important 4,000-ha wetland and peat bog. Approximately one-quarter of the wetland is protected and managed as a Scientific Reserve under the Reserves Act 1977 and 2,312 ha is managed as a Conservation Area under the Conservation Act 1987.

There was no dispute by the experts that the wetland was within the coastal environment. In respect of the Scientific Reserve and Conservation Area, it was also not disputed that Policy 11(a) of the NZCPS 2010 was engaged. It was also accepted that there were values and attributes that were recognised under Policy 11(b) of the NZCPS 2010 outside those areas, despite part of that area having been subject to fire.

Having satisfied itself, on the basis of expert evidence, that water could be abstracted without any adverse effects on the significant values and attributes recognised under NZCPS Policy 11(a), the Court proceeded to grant the consent subject to a comprehensive set of adaptive management conditions. An exceedance of trigger levels set in the groundwater monitoring and contingency plan requires an immediate 50% reduction in the daily consented abstraction and the conditions provide for a review of the allocations.

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[94] *Cabra Rural Developments Ltd & Ors v Auckland Council* [2018] NZEnvC 90 at paragraphs 166 and 167.

Reports, websites and additional information

International Union for Conservation for Nature (IUCN)

- IUCN Red List of Threatened Species.
  www.iucnredlist.org/
- IUCN 2009: Red List brochure.
  https://www.iucnredlist.org/resources/brochure

Ramsar Convention on Wetlands

- A range of publications are available for download, including the *Wise Use of Wetlands* handbooks, the *Ramsar Technical Report* series and *The Annotated Ramsar List*.
  www.ramsar.org/search

Department of Conservation

- The New Zealand Threat Classification System.
  www.doc.govt.nz/publications/conservation/nz-threat-classification-system/

  The long-term goal of the NZTCS is to list all extant species that exist in New Zealand according to their threat of extinction. The system is made up of manuals and corresponding taxon status lists. Lists are reviewed on a regular basis for each taxonomic group.

- Duffy, C.A.J.; de Lange, P.J.; Miskelly, C.M.; Molloy, J.; Norton, D.A.; Townsend, A.J. 2008: New Zealand Threat Classification System manual, 2008. Department of Conservation, Wellington. 36 p.
  www.doc.govt.nz/upload/documents/science-and-technical/sap244.pdf

  This manual provides guidelines on how to use the NZTCS, and outlines the processes by which candidate taxa and informal entities will be listed.
- Department of Conservation; Ministry for the Environment 2000: The New Zealand Biodiversity Strategy. Department of Conservation, Wellington. 146 p.
  www.doc.govt.nz/globalassets/documents/conservation/new-zealand-biodiversity-strategy-2000.pdf

  This strategy establishes a framework for action to conserve and sustainably use and manage New Zealand's biodiversity.
- About biodiversity.
  https://www.doc.govt.nz/our-work/biodiversity-projects-database/
- Ramsar Convention on Wetlands.
  www.doc.govt.nz/about-us/international-agreements/ramsar-convention-on-wetlands/

- New Zealand Ramsar wetlands.
  www.doc.govt.nz/upload/documents/about-doc/concessions-and-permits/conservation-revealed/ramsar-wetlands-lowres.pdf
- Natural Heritage Management System (NHMS).
  www.doc.govt.nz/about-us/our-role/managing-conservation/natural-heritage-management/

  To help manage natural heritage (native species and places), DOC has developed NHMS, which has involved collating natural heritage information into a biodiversity inventory. The information is being used to create maps of indigenous species. DOC is also developing an 'ecosystem optimisation tool' and ranked lists to support threatened species management.
- New Zealand's threatened birds.
  www.doc.govt.nz/nature/conservation-status/threatened-birds/
- The Freshwater Ecosystems of New Zealand (FENZ) geo-database.
  www.doc.govt.nz/conservation/land-and-freshwater/freshwater/freshwater-ecosystems-of-new-zealand/

  This geo-database provides a national representation of the biodiversity values and pressures on New Zealand's rivers, lakes and wetlands.
- Biodiversity funds.
  www.doc.govt.nz/get-involved/funding/biodiversity-funds/
- Nature Heritage Fund.
  www.doc.govt.nz/get-involved/funding/nature-heritage-fund/
- Ngā Whenua Rāhui Fund.
  www.doc.govt.nz/get-involved/funding/nga-whenua-rahui/nga-whenua-rahui-fund/

Manaaki Whenua – Landcare Research

- Naturally uncommon ecosystems.
  www.landcareresearch.co.nz/publications/factsheets/rare-ecosystems

  These pages provide information about each system (including coastal and wetland systems), a description of current threats, lists of notable flora and fauna, and key references.
- Land Environments of New Zealand (LENZ).
  www.landcareresearch.co.nz/resources/maps-satellites/lenz

  LENZ is a classification of New Zealand's terrestrial environments that assists biodiversity conservation and natural resources management.

Ministry for the Environment

- Biodiversity. www.mfe.govt.nz/issues/biodiversity/
- Land classifications. www.mfe.govt.nz/more/science-and-data/classification-systems/land-classification-systems
- Ministry for the Environment; Department of Conservation 2007: Protecting our places: information about the Statement of National Priorities for protecting rare and threatened biodiversity on private land. Ministry for the Environment, Wellington. 57 p. www.mfe.govt.nz/sites/default/files/protecting-our-places-detail.pdf
- Ministry for the Environment; Department of Conservation 2007: Protecting our places: introducing the national priorities for protecting rare and threatened indigenous biodiversity on private land. Ministry for the Environment, Wellington. 8 p. www.doc.govt.nz/contentassets/13f28b4f23de4a2f9659390da194f902/protecting-our-places-brochure.pdf

Ministry for Primary Industries

- Morrison, M.A.; Lowe, M.L.; Parsons, D.M.; Usmar, N.R.; McLeod, I.M. 2009: A review of land-based effects on coastal fisheries and supporting biodiversity in New Zealand. *New Zealand Aquatic Environment and Biodiversity Report No. 37*. Ministry of Fisheries, Wellington. 100 p. https://fs.fish.govt.nz/Doc/22003/AEBR_37.pdf.ashx

New Zealand Ecological Society

- Williams, P.A.; Wiser, S.; Clarkson, B.; Stanley, M.C. 2007: New Zealand's historically rare terrestrial ecosystems set in a physical and physiognomic framework. *New Zealand Journal of Ecology 31*: 119–128. https://newzealandecology.org/nzje/2829.pdf

The New Zealand Plant Conservation Network

www.nzpcn.org.nz/

The New Zealand Plant Conservation Network website provides information on the threat status of indigenous plants.

Quality Planning – the RMA Quality Planning resource

http://qualityplanning.org.nz/qp-resources-qp-library-old/qp-library-old-0

The Quality Planning website provides guidance on a wide range of planning topics. The comprehensive information provided in the section on indigenous biodiversity is particularly relevant and useful in respect of Policy 11 of the NZCPS 2010.

Bay of Plenty Regional Council

- Dahm, J.; Jenks, G.; Bergin, D. 2005: Community-based dune management for the mitigation of coastal hazards and climate change effects: a guide for local authorities. 36 p.
  www.boprc.govt.nz/media/32260/ClimateChange-0505-CoastalhazardsandclimateReport.pdf

  This guide focuses on improving dune resilience and stability, as well as biodiversity values.

Greater Wellington Regional Council

Greater Wellington Regional Council has produced several restoration publications, including the following.

- Protecting Paraparaumu dune plantings.
  www.gw.govt.nz/assets/council-publications/Rabbit%20fact%20sheet%20_Protecting%20Paraparaumu%20dunes_.pdf

  This publication describes work that is being carried out to protect and restore local coastal sand dunes.

- A beginner's guide to wetland restoration.
  www.gw.govt.nz/document-library-2/detail/883

  This guide explains why wetlands are important, what lives in them, and how to look after and restore them.

Marlborough District Council

- Davidson, R.; Duffy, C.; Gaze, P.; Baxter, A.; DuFresne, S.; Courtney, S.; Hamill, P. 2011: Ecologically significant marine sites in Marlborough, New Zealand. Marlborough District Council and Department of Conservation. 172 p.
  www.marlborough.govt.nz/environment/coastal/ecologically-significant-marine-habitats

Glossary of terms and definitions

NZCPS 2010 glossary

Intertidal zone or area The landward boundary of the intertidal zone or area is the extreme high water of spring tides, which is the average of the two highest tides at the period of the year when the range of the tides is greatest. The seaward boundary of the intertidal zone or area is the extreme low water of spring tides, which is the average of the two lowest tides at the period of the year when the range of the tides is greatest.

Naturally rare Originally rare: rare before the arrival of humans in New Zealand.

Taxa Named biological classification units assigned to individuals or sets of species (eg species, subspecies, genus, order and variety).

Other definitions

At Risk

> Taxa that qualify as 'At Risk' do not meet the criteria for any of the 'Threatened' categories. However, they are declining (though buffered by large total population size and/or a slow decline rate), biologically scarce, recovering from a previously threatened status, or survive only in relictual populations.
> Four 'At Risk' categories exist: 'Declining', 'Recovering', 'Relict' and 'Naturally uncommon'.
>
> (Townsend et al. 2008[95])

Biological diversity (biodiversity)

> ... the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species, and of ecosystems.
>
> (Section 2 of the RMA)

Coastal squeeze Where natural coastal features, habitats and ecosystems are 'squeezed', and can disappear, between the waves and an armoured shoreline (ie hard protection structures), especially when there is a trend of erosion and/or sea level rise that causes the shoreline profile and natural features to migrate inland. (Abbreviated from the glossary of Jacobson (2004).[96])

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[95] Townsend, A.J.; de Lange, P.J.; Duffy, C.A.J.; Miskelly, C.M.; Molloy, J.; Norton, D.A. 2008: New Zealand Threat Classification System manual. Department of Conservation, Wellington. 35 p. www.doc.govt.nz/upload/documents/science-and-technical/sap244.pdf. Please also refer to this manual for definitions of the four 'At Risk' categories.

[96] Jacobson, M. 2004: Review of the New Zealand Coastal Policy Statement – Coastal Hazards. Volume 1 – Report. Department of Conservation, Wellington. 121 p. www.doc.govt.nz/documents/conservation/marine-and-coastal/coastal-management/nzcps-hazards-review-1.pdf

Indigenous species

A plant or animal species which occurs naturally in New Zealand. A synonym is "native".

(New Zealand Biodiversity Strategy 2000[97])

Threatened species

A species or community that is defined as vulnerable, endangered or presumed extinct.

(New Zealand Biodiversity Strategy 2000[98])

[97] Department of Conservation; Ministry for the Environment 2000: The New Zealand Biodiversity Strategy. Department of Conservation, Wellington. 146 p. www.doc.govt.nz/globalassets/documents/conservation/new-zealand-biodiversity-strategy-2000.pdf

[98] Ibid.

Appendix 1

International conventions in relation to biodiversity to which New Zealand is a signatory

Ramsar Convention on Wetlands 1971

The Convention on Wetlands of International Importance,[99] which is also known as the Ramsar Convention, is an intergovernmental treaty for the conservation and wise use of wetlands. The Convention uses a broad definition of wetlands, including lakes and rivers, swamps and marshes, wet grasslands and peatlands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fish ponds, rice paddies, reservoirs and salt pans. Ramsar Sites are selected on account of their international significance in terms of ecology, botany, zoology, limnology and/or hydrology.

New Zealand became a party to the Convention in 1976 and has listed six Ramsar Sites[100] covering almost 55,112 ha, four of which extend into the coastal environment. The four Ramsar sites that include coastal ecosystems are:

- Firth of Thames, Waikato
- Manawatu River Estuary, Manawatu
- Farewell Spit, Tasman
- Awarua Wetland/Waituna Lagoon, Southland.

Convention on the Conservation of Migratory Species 1979

The Convention on the Conservation of Migratory Species of Wild Animals (CMS),[101] which is also known as the Bonn Convention, aims to conserve terrestrial, aquatic and avian migratory species throughout their range. The CMS addresses the issue that while individual countries can pass legislation to protect species within their jurisdiction, agreements between countries are needed to extend protection along migratory routes that cross national boundaries.

A number of seabirds, wading birds and marine animals that are indigenous to New Zealand are identified in the CMS.[102] These include species of whales, dolphins, porpoises, turtles, seabirds, aquatic birds and sharks. CMS Parties are to protect listed

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[99] www.ramsar.org

[100] www.doc.govt.nz/about-us/international-agreements/ramsar-convention-on-wetlands/nz-wetlands-of-international-importance/

[101] www.cms.int/

[102] www.doc.govt.nz/about-us/international-agreements/migratory-species/nzs-migratory-species/

species and their habitats, including by mitigating obstacles to migration and controlling other factors that might endanger them.

Convention on Biological Diversity 1992

New Zealand is a signatory to the Convention on Biological Diversity 1992 (CBD),[103] an international treaty resulting from the 1992 United Nations Conference on Environment and Development.

The objectives of the CBD are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising from the commercial and other utilisation of genetic resources. The agreement covers all ecosystems, species and genetic resources. The CBD requires signatory nations to prepare national strategies to conserve and sustainably use biodiversity.

New Zealand Biodiversity Strategy 2000

The New Zealand Biodiversity Strategy 2000[104] fulfils, in part, the commitments New Zealand made under the CBD. This strategy establishes a framework for action to conserve and sustainably use and manage New Zealand's biodiversity. DOC coordinates the implementation of the strategy, with support from the Ministry for the Environment, Ministry for Primary Industries, Te Puni Kōkiri/Ministry for Māori Development, Ministry of Business, Innovation and Employment, and Ministry of Foreign Affairs and Trade.

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[103] www.cbd.int/convention/

[104] Department of Conservation; Ministry for the Environment 2000: The New Zealand Biodiversity Strategy. Department of Conservation, Wellington. 146 p. www.doc.govt.nz/globalassets/documents/conservation/new-zealand-biodiversity-strategy-2000.pdf

Appendix 2

Threat classification systems

New Zealand Threat Classification System

The New Zealand Threat Classification System (NZTCS)[105] is used to place New Zealand's indigenous species in particular categories that indicate the level of their threat of extinction. DOC's *New Zealand Threat Classification System* factsheet[106] states that:

> The New Zealand Threat Classification System can be used to assess the status of any plant, animal or fungus that has a wild population established in New Zealand and for which there is sufficient information available. It uses the best available information on the population trend (rate of decline or increase) and the size of the population (or, if population size cannot be measured, the area occupied by the population) to place each taxon into a category that directly reflects the risk of extinction it faces. All listings are reviewed about every 3 years to detect changes in status over time.

DOC is responsible for developing and reviewing the NZTCS and ensuring the creation of ranked listings. However, the listings draw upon the knowledge of the entire community of relevant scientific and conservation experts in the country. The first version of the NZTCS was published in 2002.[107] Following rigorous review, a revised manual was published in 2008.[108]

The following diagram from the most recent version of the NZTCS manual shows the threat classification system structure.

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[105] www.doc.govt.nz/publications/conservation/nz-threat-classification-system/

[106] www.doc.govt.nz/upload/documents/science-and-technical/bbb8.pdf

[107] Molloy, J.; Bell, B.; Clout, M.; de Lange, P.; Gibbs, G.; Given, D.; Norton, D.; Smith, N.; Stephens, T. 2002: Classifying species according to threat of extinction. A system for New Zealand. *Threatened Species Occasional Publication 22*. 26 p. www.doc.govt.nz/globalassets/documents/science-and-technical/tsop22.pdf

[108] Townsend, A.J.; de Lange, P.J.; Duffy, C.A.J.; Miskelly, C.M.; Molloy, J.; Norton, D.A. 2007: New Zealand Threat Classification System manual. Department of Conservation, Wellington. 35 p. www.doc.govt.nz/globalassets/documents/science-and-technical/sap244.pdf

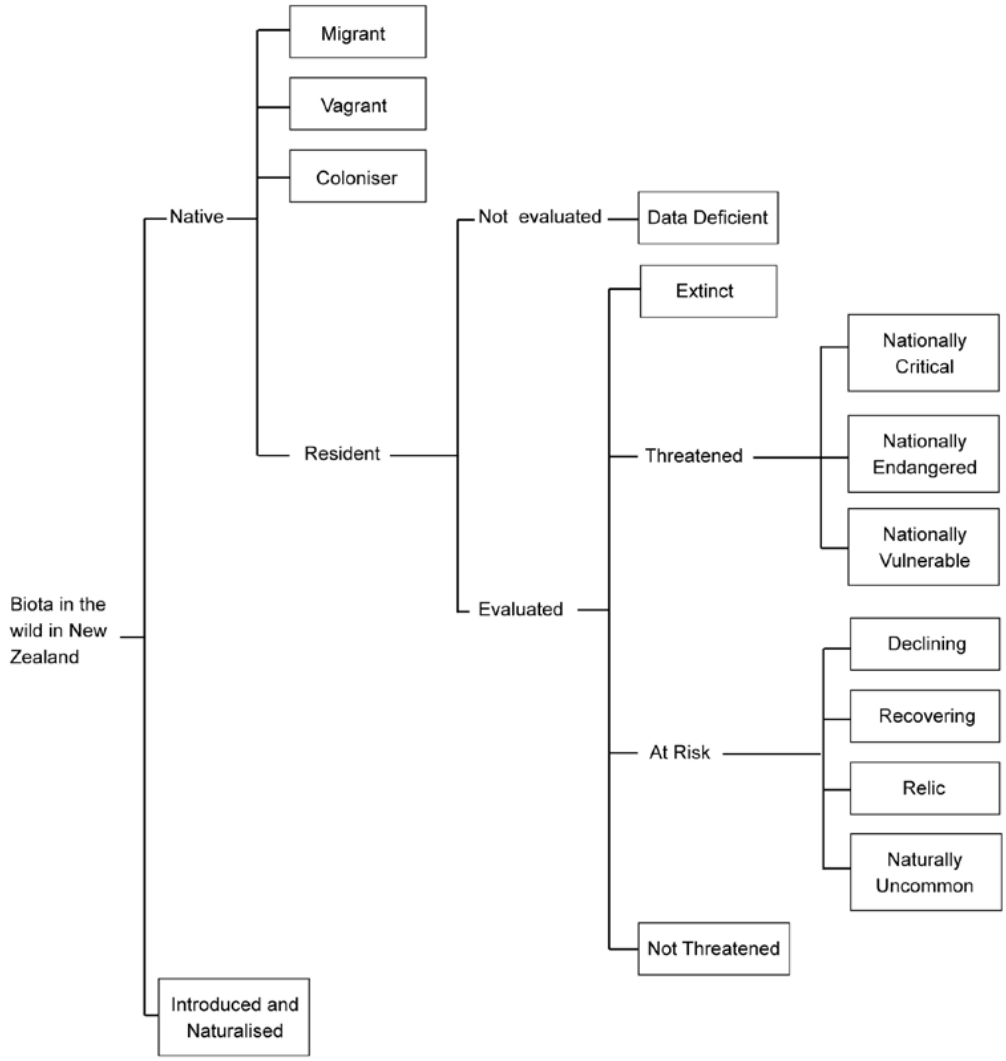

Figure A2.1. Structure of the New Zealand Threat Classification System.

The NZTCS is made up of manuals and corresponding taxon status lists, which can be found on the DOC website.[109] NZTCS lists from the 2008–2018 listing cycle were published in independent peer-reviewed scientific journals, which are also listed on the DOC website and can be used to find the status of a species.

The NZCTS structure consists of a number of categories, the majority of which are included in the 'Threatened' and 'At Risk' supercategories. The 2008 manual[110]

[109] www.doc.govt.nz/about-us/science-publications/conservation-publications/nz-threat-classification-system/

[110] Pages 13–16. www.doc.govt.nz/globalassets/documents/science-and-technical/sap244.pdf

outlines the process to be used when listing taxa according to their threat status, and explains the criteria for each 'Threatened' and 'At Risk' category.

Taxa are classified using one or more of the following criteria, depending on the category.

- Total number of mature individuals.
- Ongoing or predicted population trend (due to existing threats).
- Total number of populations.
- Number of mature individuals in the largest population.
- Area of occupancy of the total population.

The 'Threatened' supercategory includes taxa that are facing imminent extinction and consists of three categories: Nationally Critical, Nationally Endangered and Nationally Vulnerable.

'Threatened' category	Criteria
Nationally Critical	Very small population (natural or unnatural). Small population (natural or unnatural) with a high ongoing or predicted decline. Population (irrespective of size or number of sub-populations) with a very high ongoing or predicted decline (>70%). Note: Taxa with populations that are small (< 250 mature individuals) are considered highly susceptible to stochastic (unpredictable) events and so are listed as 'Nationally Critical', regardless of whether their small population size is due to human-induced or natural causes. See page 18 of the 2008 manual for further details.
Nationally Endangered	Small population (natural or unnatural) with a low to high ongoing or predicted decline. Small stable population (unnatural). Moderate population and high ongoing or predicted decline. See page 19 of the 2008 manual for further details on these criteria.
Nationally Vulnerable	Small, increasing population (unnatural). Moderate, stable population (unnatural). Moderate population, with population trend that is declining. Moderate to large population and moderate to high ongoing or predicted decline. Large population and high ongoing or predicted decline. See pages 20 and 21 of the 2008 manual for further details.

The NZCPS 2010 notes examples of taxa listed as 'Threatened', which include Maui's dolphin, Hector's dolphin, New Zealand fairy tern and southern New Zealand dotterel.

Taxa that qualify as 'At Risk' do not meet the criteria for any of the 'Threatened' categories. However, they are declining (though buffered by a large total population size and/or a slow decline rate), biologically scarce, recovering from a previously threatened status, or survive only in relictual populations. 'At Risk' taxa are grouped into four categories: Declining, Recovering, Relict and Naturally Uncommon.

'At risk' category	Criteria
Declining	Taxa not deemed to be seriously threatened, but which may become so over time if population trends continue on their current trajectory.
Recovering	Previously threatened taxa that are now undergoing population recovery (through recent or past conservation management). In many cases, their populations are still relatively small and therefore the taxa are considered 'At Risk'.
Relict	Taxa that have been eliminated from large parts of their range, but now exist in stable populations within secure habitats.
Naturally Uncommon	Taxa that are range restricted and biologically sparse.

The NZTCS is intended to complement the world view provided by the IUCN Red List of Threatened Species (see below).

International Union for Conservation of Nature (IUCN) Red List of Threatened Species

The IUCN Red List of Threatened Species (Red List)[111] is the international system for classifying the status of threatened taxa and provides the most comprehensive inventory of the global conservation status of biological species. The Red List is a tool that provides information on the population sizes and trends, geographic ranges, and habitat needs of species, and assesses the extinction risk of species. In-depth analyses of the data contained in the Red List are published periodically (usually at least once every 4 years). The New Zealand Government is a State Member of the IUCN,[112] with DOC acting as the State Party representative.

[111] www.iucnredlist.org/

[112] www.doc.govt.nz/about-us/international-agreements/international-union-for-conservation-of-nature/

The Red List provides taxonomic, conservation status and distribution information on plants and animals that have been globally evaluated using the IUCN Red List categories and criteria. According to the Red List categories, 'Threatened taxa' are those assessed as:

- Critically Endangered
- Endangered
- Vulnerable.

The definitions and criteria for these groups can be found on the IUCN Red List website[113] and further information on how to use the Red List website is available at 'A users' guide to The IUCN Red List website'.[114]

The NZTCS has been specifically developed to classify New Zealand taxa according to their threat of extinction using criteria that are appropriate for New Zealand conditions (eg a geographically diverse, small country that has taxa with naturally restricted distributions). The NZTCS is intended to complement, not compete with, the IUCN system and is tailored to New Zealand's unique ecology.

The NZTCS lists more taxa than the IUCN Red List simply because effort has been made to include as many species as possible and there are regular triennial updates when new species can be added.

[113] https://www.iucnredlist.org/

[114] https://www.iucnredlist.org/resources/brochure