



**DRAFT: Guidelines for the identification of habitat of particular significance for fisheries management**

***These will support taking account of section 9(c) (Environmental Principle) of the Fisheries Act 1996: Decisions under the Act in relation to the utilisation of fisheries resources or ensuring sustainability must take into account that habitat of particular significance for fisheries management should be protected***



*Juvenile 0+ snapper subtidal seagrass Rangaunu Harbour feeding on zooplankton © M Morrison*



## GLOSSARY OF TE REO TERMS USED IN THIS REPORT

Te Reo Term	English Translation
Iwi, hapu	Tribe, subtribe,
Kaimoana	Seafood, food of the sea
Kaupapa	Principles and ideas which act as a base or foundation for action
Kaitiakitanga	Guardianship
Kete	Woven basket
Ki uta ki tai	From the mountains to the sea
Mātauranga	Knowledge
Tāngata whenua	People of the land (New Zealand indigenous people)
Tāngata tiaki/kaitiaki	Guardian/trustee
Taonga	Treasured
Te Ao Māori	Māori world view
Tikanga	Customary practices or behaviours
Tohu	Traditional indicators
Waimataitai	Lagoon

## GLOSSARY OF ACRONYMS USED IN THIS REPORT

Acronym	Full Title	Acronym	Full Title
AEWG	Aquatic Environment Working Group	HoS	Habitat of Particular Significance for Fisheries Management



BRAG	Biodiversity Research Advisory Group	IUCN	International Union for Conservation of Nature
CMECS	Coastal and Marine Ecological Classification Standard	LINZ	Toitū Te Whenua Land Information New Zealand
DOC	Department of Conservation	MPI	Ministry for Primary Industries
FNZ	Fisheries New Zealand	MSAG	Marine Protected Areas Science Advisory Group

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## 1. Purpose of these guidelines

Decisions under the Fisheries Act 1996 (the Act) in relation to the utilisation of fisheries resources or ensuring sustainability must take into account that habitat of particular significance for fisheries management should be protected (s 9(c)).

Taking s 9(c) into account in fisheries management decisions requires understanding which habitats are habitats of particular significance for fisheries management, where they are, and what they are sensitive to. FNZ has developed these guidelines to identify 'habitat of particular significance for fisheries management' (hereafter habitats of significance (HoS)). HoS will be included in a register of HoS to support taking into account that HoS should be protected when developing fisheries management advice and making decisions.

These guidelines provide:

- An overview of the environmental principle s 9(c) of the Act
- An initial working definition of HoS
- A process to identify HoS
- A process to identify adverse effects on HoS

Proposals for how we use HoS to take s 9(c) into account in decision making, including how adverse effects on HoS will be considered, is provided in [HoS in practice](#)

## 2. Supporting an ecosystems approach to fisheries management

Healthy marine ecosystems provide essential benefits such as supporting kaimoana, filtering pollutants, and providing resilience to the effects of climate change. The goal of an ecosystems approach to management is to maintain a healthy, productive, and resilient ecosystem that provides for the needs and values of current and future generations; it takes a holistic and inclusive approach to managing activities and the effects they have on the environment, aligning with the Te Ao Māori view of coastal ecosystems. Improving our knowledge of these habitats (e.g., through Mātauranga and western science), their sensitivity to impacts, connectivity across time and space, and relationship to fisheries productivity will support taking account of potential adverse effects from fishing activity when making fisheries management decisions.

An ecosystems approach to fisheries management relies on coordination across complementary work programmes that support the different components of marine governance. The present guidelines are one of a number of initiatives that consider different elements of an ecosystems approach to management (e.g., biodiversity, climate change,



habitat restoration). This includes initiatives delivered under the Oceans and Fisheries work programme and *Te Mana o te Taiao – Aotearoa New Zealand Biodiversity Strategy*. Together, these work programs support progress towards ecosystems approaches to fisheries management.

Taking HoS into account recognises that some species have specific habitat requirements at different life history stages (e.g., during egg laying or when they are juveniles). These habitats provide food and shelter and protect these fish from predators while they are vulnerable (see [HoS register examples](#)). Loss of habitat and changes in habitat quality can affect juvenile fish production, and their relative abundances. Maintaining habitat distribution and connectivity is important for juveniles as they move to adulthood, and for adults when they breed, which all contribute to productivity. Further understanding of non-fishing impacts on HoS (e.g., ocean acidification, pollution) will also assist fisheries managers in managing the cumulative effects of fishing alongside other stressors.

This information will support fisheries managers when developing fisheries management advice on how to take into account that HoS should be protected. It will also support us in our collaborations with other agencies, such as Regional Councils, who may have obligations to consider the effects of land-based impacts and other diffuse stressors on these habitats, supporting a ki uta ki tai, mountains to sea, approach to looking after the moana.

### *3. Background – taking account of s 9(c): Habitat of particular significance for fisheries management should be protected*

The purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability (s 8 (1)). The Act defines utilisation as conserving, using, enhancing, and developing fisheries resources to enable people to provide for their social, economic, and cultural well-being. Ensuring sustainability is defined as:

*“maintaining the potential of fisheries resources to meet the reasonably foreseeable needs of future generations, and avoiding, remedying, or mitigating any adverse effects of fishing on the aquatic environment (s 8(2)).”*

Section 9 of the Act sets out three environmental principles which all persons exercising or performing functions, duties, or powers under the Act in relation to the utilisation of fisheries resources or ensuring sustainability must take into account. This means that all decisions such as setting catch limits, fishing method controls, seasonal and area measures, and fish size limits must take into account these environmental principles.



The three environmental principles are:

- (a) associated or dependent species should be maintained above a level that ensures their long-term viability
- (b) biological diversity of the aquatic environment should be maintained
- (c) habitat of particular significance for fisheries management should be protected.

While there is significant overlap between the three environmental principles, and their role in developing an ecosystems approach to fisheries management, this document focuses on environmental principle 9(c) and provides guidance on its interpretation and how these areas will be identified. Sections (a) and (b) will be addressed in other work programmes being developed by Fisheries New Zealand.

The obligation under s 9(c) is to take into account the protection of these habitats in decisions but does not create an obligation to protect them. If adverse effects of fishing on the habitats are identified, a decision on appropriate measures to avoid, remedy, or mitigate those adverse effects will be made under s 8 of the Act. This may involve modifying the decision or considering application of sustainability measures under s 11 of the Act, including catch limits, method controls, etc, to give effect to any identified need for protecting habitat of particular significance for fisheries management.

Examples of existing s 11 sustainability measures that recognise the environmental principle in s 9(c) include the exclusion of bottom-contacting fishing gear from many estuaries and harbours known to be critical habitat for several inshore species; distance from shore trawl restrictions that also exclude bottom-contact methods from nearshore areas known to be important habitat; and Motu river trawl restrictions to protect a significant spawning area for snapper in the Bay of Plenty.

HoS may also be affected by other activities and decisions (e.g., those made under the Resource Management Act 1991). Fisheries New Zealand is collaborating with other agencies who manage non-fishing activities to raise the awareness of any identified effects on HoS. Working with Regional Councils will be particularly important in this regard.

Further guidance on how s 9(c) will be taken account of in fisheries management decision making is provided in [HoS in practice](#).



#### 4. *What is a habitat of particular significance for fisheries management?*

HoS is not defined in the Act. There is scope for a broad range of interpretations being applied to this principle. Our initial working definition for HoS is “*an area or areas of particular significance in supporting the productivity of fisheries resources*”.

Our initial priority for HoS identification is nursery and spawning or egg laying habitat due to the particularly significant role these habitats play in supporting productivity of fisheries resources and their sustainability. It recognises species preferences for specific habitats in specific areas for nurseries and spawning or egg laying, due to attributes of the habitat in that location. This working definition sets these habitats apart from other habitats that species may utilise for other reasons (e.g., adult habitat, feeding grounds). It recognises the particularly significant role HoS have in enhancing and developing fisheries resources and providing for ongoing utilisation while ensuring sustainability.

Appendix One provides a few examples of potential HoS, which an expert assessment of the best available information indicates are likely to meet the current working definition of HoS.

Some habitat-forming species, for example kelp, provide ecosystem services and habitat for many marine species at a range of spatial scales. While these services are important in a wider fisheries context, under the current definition of HoS, it would require evidence of the habitat’s particular significance as nursery and spawning or egg laying for the habitat to be considered a HoS. However, consideration of adverse effects of fishing or other activities on broader scale habitats and the wider aquatic environment will continue to be a consideration when preparing fisheries management advice.

Identification of an area as a HoS will be on the basis that it is currently particularly significant in supporting the productivity of fisheries resources. Degraded areas that have been significant in the past, and have the potential to be significant if restored, would not meet our working definition of a HoS, as it is uncertain whether these disturbed habitats, their ecosystem functions, and the fisheries they once supported could be restored. If a habitat’s particular significance in supporting the productivity of fisheries resources is restored, it may later be considered to determine whether it is a HoS.

A habitat does not need to be exposed to adverse effects to be considered a HoS. Our working definition is that the function of the habitat in supporting fisheries resource productivity determines its particular significance for fisheries management, not the threat status of the habitat. Potential stressors and adverse effects on the habitat will be considered when developing management advice ([HoS in practice](#)).



We will continue to refine our interpretation of this environmental principle as we progress the identification of HoS and how we take into account that they should be protected in fisheries management decisions. As more information becomes available (e.g., Mātauranga, western science), we may identify additional locations that fit the current definition of HoS or redefine the definition to include other areas that support fisheries productivity in other ways, such as providing habitat corridors.

FNZ has begun the process of identifying HoS, focusing on specific locations where there is expert knowledge indicating habitats particularly important to the productivity of fisheries resources. This approach acknowledges that the same type of habitat may serve a different function for species in different locations. For example, seagrass meadows in the north of the North Island provide an important nursery function for multiple species, but this same function may not be as important to fisheries' productivity further south. This assessment will be a case-by-case assessment based on expert knowledge using information described in the following section.

***Question for consultation: what are your views on the purpose of these guidelines and the working definition to support identification of HoS?***

***5. What information is used to identify a habitat of particular significance for fisheries management?***

We will use the best available information to support our identification of HoS. FNZ is working with experts recognised within New Zealand for their understanding of the biology of fisheries resources and dependence of species on specific habitat types during critical life stages. Where available, expert knowledge will be supported with published reports and papers.

We will use knowledge of a species' life history and habitat attributes to determine whether habitats are particularly significant. Information to support the identification of these habitats includes:

- the type and location of the habitat
- the association between the species and the habitat (e.g., if there are particular life history aspects associated with the habitat such as spawning ground, juvenile fish nursery area) and timing of the species' reliance on a specific habitat (e.g., seasonal or permanent)
- the spatial extent and distribution of the habitat (i.e., if the habitat is unique, rare, or common, connection of the habitat with other habitats important to other life stages)
- the specific attributes of the habitat on which species rely (e.g., refugia, settlement substrate).





Information on the types of human activities or physical changes which these habitats may be sensitive to will be collated to inform future management considerations. This information may include:

- any temporal factors that might be implicated in creating threats (seasonal factors or river sediment discharges after flooding events)
- the sensitivity of the habitat to stressors (fishing and non-fishing).

Experts in New Zealand are undertaking work to understand fisheries species' life histories and their spatial variation, connectivity across areas, and how to integrate this knowledge into fisheries management. We are using the growing body of knowledge to identify habitats used by many species at critical life stages and the threats these habitats face. Research projects can provide further helpful insights and information to support the identification and protection of habitat of particular significance for fisheries management.

***Question for consultation: what are your views on the evidence required for habitat areas to be considered HoS?***

## *6. Provision for tāngata whenua input into identification and management of habitat of particular significance for fisheries management*

Mātauranga Māori is an important knowledge system that will help identify HoS and understand how to manage adverse effects to support their protection. FNZ recognises that there is a package of work needed to support identification of HoS informed by mātauranga, and to support fisheries managers' understanding of which habitats are particularly significant to tāngata whenua and for taonga species.

Seeking input and participation of Māori is not discretionary but arises as a legal obligation from section 10 of the Treaty of Waitangi Fisheries Claims Settlement Act of 1992 and section 12 of the Fisheries Act 1996. The Minister is required to have particular regard for Kaitiakitanga from the perspective of tāngata whenua.

We will seek input and participation from Treaty partners, whānau, hapū, iwi and Māori organisations, initially through Iwi Fisheries Forums which have been established for that purpose, on how HoS of taonga species could be identified, how to best recognise their role as rangatira and kaitiaki, and how mātauranga can inform consideration of how protection of HoS should be taken account of in fisheries management decisions. This process will be determined by tāngata whenua and revised as necessary to meet the needs of our Treaty partners.



Ensuring that suitable mechanisms are developed to protect information that is sensitive to tāngata whenua will be a critical component of this work.

## 7. Identifying habitat of particular significance for fisheries management

FNZ will work with experts (e.g., from iwi, the Department of Conservation (DOC), research providers, industry, and Regional Councils) to apply a systematic assessment of available information described in section 5 of the guidelines.

Our approach to recognising habitat areas as HoS takes account of the information principles in the Act (s10). Identification is based on the best available information on the relationship between habitat attributes and the species the habitat supports. When undertaking this evidence assessment, experts will record the level of confidence they have in the information available that the habitat in a location is particularly significant in supporting the productivity of the species (Table 1). This may be different to the confidence in the spatial distribution of the habitat; a lower level of confidence regarding the spatial distribution of the HoS will not exclude locations from the register. The assessment of evidence for each potential HoS will be made available to ensure transparency.

Table 1: confidence assessment categories

Confidence in supporting evidence (from McDiamid et al (2012) NZBR 3)	
Level	Description
None – 0	Vague hunch or gut feeling only
Low – 1	No empirical work exists of this interaction specifically, perhaps some general knowledge
Medium – 2	Some empirical work exists but it is associated with high uncertainty or expert has some personal knowledge
High – 3	Body of empirical work exists but it is associated with some uncertainty or the expert has direct personal research experience
Absolutely certain – 4	Extensive empirical work exists with high certainty or the expert has extensive personal research knowledge

This information will also help identify where further information and research may be useful to better understand species-habitat relationships.

A key component for consideration by experts is the function the habitat provides that makes it particularly significant for the species, and how that habitat is distinguished from other habitats in the marine ecosystem that also may be utilised by the species. Where available and relevant, peer reviewed definitions, such as those used to describe nursery habitats (particular habitats that provide a significant proportion of recruits to the adult



population)<sup>1</sup>, will be used to determine whether a habitat area is particularly significant for productivity of the species.

The significance of a habitat will be influenced by the relationship between habitat attributes and the species the habitat supports; no one habitat attribute guarantees its significance (see example regarding seagrass meadows in section 4). There are also locations with a mosaic of habitat types whose different attributes are particularly significant for some species. An example is the large Kaipara Harbour. The harbour offers an extensive mosaic of subtidal biogenic habitats providing the structure identified as important as a juvenile nursery area for species such as snapper, parore and trevally. The muddy upper reaches of the Kaipara Harbour provide particularly significant juvenile nursery area for grey mullet and rig/spotted dogfish<sup>2</sup>. See [HoS register examples](#) for examples of further information regarding habitat attributes that may contribute to the particular significance of a habitat.

Establishing the appropriate scale for assessing this information and developing consistent approaches for presenting it (e.g., through habitat mapping and juvenile fish surveys where possible) will be an important component of this work to ensure the habitat is identified at a scale that is relevant to the species and the management decision.

Mapping of these areas will occur where there is sufficient information to delineate the habitat distribution, and made available via an online portal wherever possible. However, defining and mapping the spatial distribution of the habitat is not a prerequisite for an area to be identified as a HoS.

***Question for consultation: what are your views on the information assessment for identifying HoS?***

***Question for consultation: what are your views on the expert led approach we are proposing to identify HoS?***

## ***8. Identifying potential for adverse effects on habitat of particular significance for fisheries management***

Expert advice and best available information will be used to build an understanding of the sensitivity of habitats to fishing-related adverse effects and other stressors (e.g., climate change, sedimentation). Experts will also consider temporal factors that might be implicated

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<sup>1</sup> E.g., Beck et al. (2001), Dalhgren et al. (2006)

<sup>2</sup> Morrison et al., 2012, 2014a,b,c



in adverse effects on habitats and where these may occur, such as seasonal factors or river sediment discharges after flooding events.

This information will support assessment of the adverse effects current or future activities may have on the habitats and when taking into account that HoS should be protected when preparing fisheries management advice. It will also inform discussions with other agencies with a role in managing the effects of non-fishing activities on HoS.

Information on how this information on HoS sensitivity to stressors will be considered in a management context is discussed in [HoS in practice](#).

***Question for consultation: what are your views on the approach proposed to identify adverse effects on HoS?***

### *9. Documenting and notifying habitat areas as habitat of particular significance for fisheries management*

Following expert assessment of the available evidence, potential HoS for which experts have a high or very high level of confidence will be provided to the FNZ science working groups, the Biodiversity Research Advisory Group (BRAG) or the Aquatic Environment Working Group (AEWG), who will review the following:

- the list of potential HoS;
- the expert assessment of available evidence; and
- the supporting evidence used to identify the HoS.

The BRAG/AEWG will consider whether there is sufficient evidence to recommend a habitat area is proposed for approval and sign-off within Fisheries New Zealand as a HoS, the protection of which must be taken into account when making fisheries management decisions.

The review may recommend gathering of additional evidence before these areas can be proposed as HoS. Proposals for generating further evidence will be included for consideration during research planning and prioritisation.

HoS will be published on the FNZ website in a register of HoS and updated as new information becomes available and is reviewed by the BRAG/AEWG.

Following review of the effectiveness of this approach, FNZ may propose including these areas in fisheries plans (for example) to be signed off by the Minister. This would require the Minister sign off any updates to the register of HoS appended to fisheries plans.



***Question for consultation: what are your views on the approach proposed to establish and publish habitat areas as HoS whose protection must be taken account of?***

## *10. A draft register of potential HoS*

Examples of potential HoS identified as a result of an initial expert assessment of best available information for a limited number of inshore species are available in this link: [HoS register examples](#). The examples provided show how it may be a single attribute of a habitat (e.g., habitat type, complexity) that is particularly significant to a single fished species (e.g., blue cod at Chetwode Bank). Other HoS may be comprised of a number of habitat attributes (e.g., many habitat types, differing levels of complexity), each important to a different fished species (e.g., habitat mosaics within Kaipara Harbour).

Entries within the draft register of potential HoS will be updated following delivery of additional assessment by experts currently underway, after which we will refer the draft register to the BRAG/AEWG for their review. Following the outcome of their review, and approval within FNZ, the updated register will be uploaded to the FNZ website, noting when it was updated.

***Question for consultation: what are your views on the information included in the example register entries of potential HoS?***

## *11. Identifying HoS is an ongoing process*

The HoS register will be a living document. New information that informs understanding of habitat-species relationships will be regularly assessed against the guidelines and potential HoS reviewed by the BRAG/AEWG who will advise whether they should be included on the HoS register.

Existing HoS may require review over time, for example where there may be ecosystem shifts due to climate driven changes. Evidence of changes in the ecosystem function provided by HoS will be assessed by experts and recommendations for HoS being removed of the register, along with supporting evidence, provided to the BRAG/AEWG for review.

Other parties, independent of the government process for identifying HoS, may want to propose habitat areas as HoS. We propose these areas can be notified to FNZ via a monitored email mailbox. Proposed areas and their supporting evidence base can be incorporated into the review of potential HoS that will be undertaken by the BRAG/AEWG.



***Question for consultation: what are your views on how habitat areas can be proposed as HoS?***

## *12. Filling information gaps and improving our understanding*

There will be gaps in our knowledge of species' habitat dependence during stages in their life cycle. There are also many species for which there is some understanding of the type of habitat, or habitat attributes, they depend upon during critical life stages, but where more information may be required before we can determine the spatial distribution of these habitat areas. The level of information currently available varies by species. In some cases, further research might be necessary to identify the habitat and attributes that are critical to supporting stocks' productivity.

Several research projects are underway that will help improve our knowledge for a range of species. These projects, the lead agencies, the delivery timeframes and topics of interest are summarised in this list of [research projects](#). Other research, including that led by industry on habitat of particular significance for species of special interest to them, will provide a valuable contribution to the knowledge base. As new information is delivered through these projects, we can use it to inform identification and refinement of our understanding of HoS.

FNZ will work with other government departments, in particular DOC, and research providers, to build on existing work. Our improved understanding of HoS for different life stages of a range of species, the connections between HoS, and the adverse effects on these habitats will strengthen ecosystem approaches to fisheries management.

Prioritisation of new projects will be influenced by:

- Improving confidence in the evidence we have for potential HoS, for example information to delineate HoS
- Status of stocks, in particular rebuilding stocks
- Significance of the fisheries resources to treaty partners
- Knowledge gaps on links between spawning areas and nursery grounds
- Understanding of HoS sensitivity to disturbance
- Indications of ecosystem shifts including climate driven changes
- Available expertise and resourcing

***Question for consultation: what are your views on matters that should inform research priorities for HoS?***



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