

BEACH CAST SEAWEED HARVESTING AREAS - FINAL ADVICE PAPER

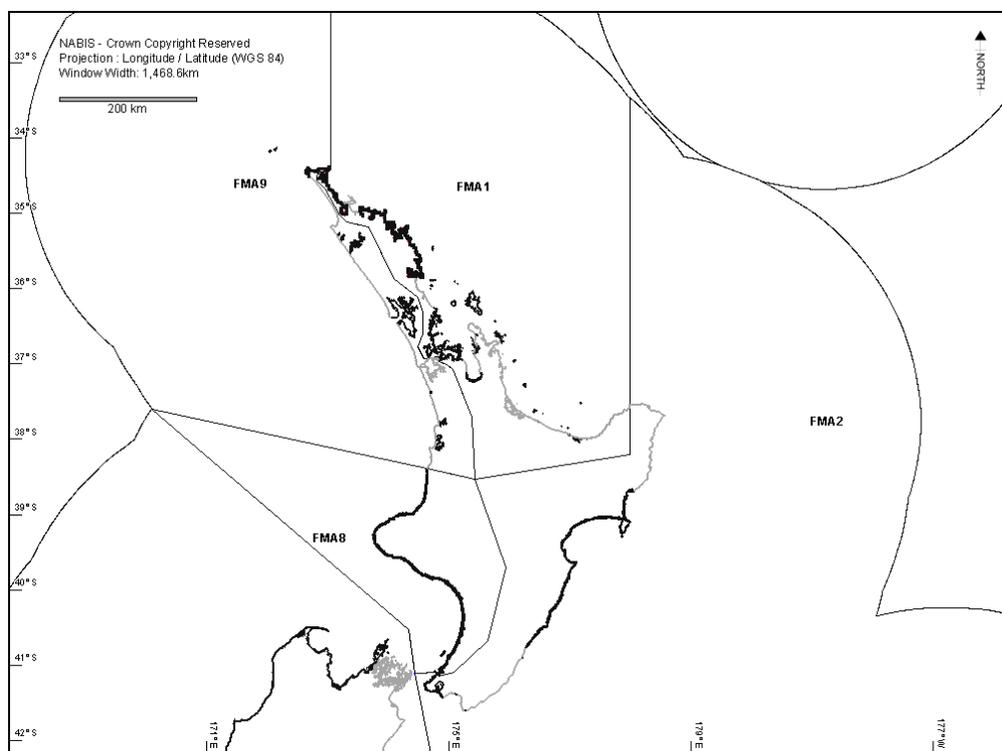


Figure 1. Location of coastal areas currently closed to commercial harvest of green and brown beach cast seaweeds (denoted by heavy black lines).

Executive Summary

- 1 MFish recommends that you agree to the amendment of the Fisheries (Beach Cast Seaweed Area Prohibition) Notice 2002 ('Prohibition Notice') to expand the areas open to commercial harvesting of brown and green beach cast seaweeds in the North Island. The expansion will include areas currently of interest to commercial operators, except where prohibited by regulation and excluding ecologically sensitive areas.
- 2 The Initial Position Paper (IPP), released 29 June 2009, proposed three options regarding commercial beach cast seaweed harvesting areas in the North Island:
 - Option 1: Retain the *status quo* - the current area restrictions for the commercial harvest of brown and green beach cast seaweeds (Figure 1);
 - Option 2: Expand the areas open to commercial harvesting of brown and green beach cast seaweeds to include coastal areas currently of interest to commercial operators (except where prohibited by regulation); and

Option 3: Expand the areas open to commercial harvesting of brown and green beach cast seaweeds to include all coastal areas in the North Island (except where prohibited by regulation).

- 3 MFish received eight submissions strongly supporting retaining the *status quo* stating the risks and uncertainties associated with harvesting impacts on other marine organisms and potentially sensitive coastal habitats were too high. Five submitters strongly support expanding the commercial harvesting areas to include all coastal areas in the North Island because this would improve the utilisation opportunities of commercial harvesters who consider their activities to be low impact on the surrounding environment. Two submitters support expanding the commercial harvesting areas to include only those areas currently of interest to commercial operators. One submitter opposes all the options presented and called for a complete ban on the removal of beach cast seaweed. One submitter did not indicate a preference for any of the options.
- 4 In this paper, MFish recommends a modified Option 2 (being Option 2b) that would open some North Island coastal areas currently of interest to commercial harvesters, but would keep areas considered ecologically sensitive within the areas of interest closed. MFish recommends this option because:
- a) The utilisation opportunities of the commercial sector would be greatly improved without compromising the utilisation values of the other sectors;
 - b) Beach cast seaweed is a renewable resource and current and expected volumes of commercial harvest are low compared to the likely abundance of the resource;
 - c) A number of submitters cited concerns over the potential impact of beach cast seaweed removal on the marine food web (particularly in ecologically sensitive areas), and the lack of information currently available on these impacts;
 - d) Not all beach cast seaweed is suitable for commercial harvest, nor are all coastal areas easily accessible to commercial harvest;
 - e) Although risk at the regional scale is low in the medium term, the risk may increase in particularly sensitive and static local sites if intense harvesting were to be focused in those areas;
 - f) Many sensitive environmental areas are less desirable for utilisation because they are often located in estuarine systems where beach cast seaweed can become heavily laden with sand;
 - g) Many areas identified as ecologically important are already protected by regulation, and other areas identified during the analytical process would remain closed to commercial harvest under this option. Prohibitions on commercial beach cast seaweed harvesting in existing regulations would not be affected by changes to the Prohibition Notice.

Reason for Reviewing Beach Cast Seaweed Harvesting Areas

- 5 Commercial permit holders and processors have requested that additional coastal areas in the North Island be open to commercial beach cast seaweed harvest to

provide for better utilisation of the resource. Commercial stakeholders consider existing area prohibitions on harvesting brown and green beach cast seaweeds to be constraining the ability of industry to maximise value in these fisheries. After considering current use of areas open to commercial harvesting and commercial harvesting practices, MFish agreed a review of the current prohibitions was warranted.

- 6 Currently no fishery plan exists for beach cast seaweeds, however MFish considers this review is consistent with the purpose of the *Fisheries Act 1996* ('the Act') to provide for the utilisation of fishery resources while ensuring sustainability.¹ For instance, the review takes into account existing use of beach cast seaweeds by tangata whenua and recreational stakeholders, and explores ways in which commercial stakeholders can maximise value in these fisheries, while ensuring sustainability of the resource.
- 7 The South Island and the Chatham Islands are not considered in this review because no requests were received from commercial operators to expand commercial harvesting areas in these regions.

Initial MFish View

- 8 MFish's initial view on amending the Prohibition Notice was to expand the areas open to commercial harvesting of brown and green beach cast seaweeds to include all coastal areas in the North Island (except where prohibited by regulation) – Option 3.
- 9 The best available information at the time suggested:
 - Beach cast seaweed is a renewable resource and current harvesting practices are low impact on the surrounding environment;
 - Current commercial harvest of beach cast seaweed is low compared with the likely abundance of the resource;
 - Not all beach cast seaweed is suitable for commercial harvest, nor are all coastal areas easily accessible to commercial harvest;
 - Many areas identified as ecologically important are already protected by regulation. Prohibitions on commercial beach cast seaweed harvesting in existing regulations would not be affected by the change to the Prohibition Notice;
 - The utilisation opportunities of the commercial sector would be greatly improved without compromising the utilisation values of the other sectors; and
 - Beach cast seaweed removal practices of territorial and regional authorities would be more credible and the authorities undertaking such practices would have the option of selling some of their harvest to recover the cost of their activities.

¹ Section 8, Fisheries Act 1996.

Consultation

- 10 MFish released an IPP for public consultation on 29 June 2009 on behalf of the Minister with persons and organisations MFish considers are representative of persons having an interest in the stock and/or the effects of fishing on the aquatic environment in the areas concerned, including tangata whenua, recreational, environmental and commercial interests. The IPP was distributed to national and regional stakeholder groups, published on the MFish website, and distributed to iwi and recreational forums. The IPP was also discussed in detail with the Department of Conservation, with a particular focus in identifying areas of ecological importance.

Submissions Received

- 11 MFish received 17 submissions on this IPP. The submitters are listed below:

- AgriSea/Ocean Organics
- Rob Edward
- Environment and Conservation Organisations of NZ Inc. (ECO)
- Peter Humphris
- Kaitaia Spat Ltd. (Kaitaia)
- Robin Neely
- New Zealand Recreational Fishing Council (NZRFC)
- New Zealand Seafood Industry Council (SeaFIC)
- Laura and Vaughan Robertson (Robertson)
- Royal Forest and Bird Protection Society (Forest and Bird)
- Sanford Limited (Sanford)
- Seaweed Association of New Zealand (SANZ)
- Te Hika a Papauma (Te Hika)
- Te Ohu Kai Moana (Te Ohu)
- Te Rūnanga-ā-Iwi o Ngāti Kahu (Ngāti Kahu)
- Te Rūnanga o Te Rarawa (Te Rarawa)
- Wellington Recreational Marine Fishers' Association (WRMFA)

Overview of Submissions

- 12 Eight of the 17 submitters (ECO, Edward, Forest and Bird, Humphris, NZRFC, Te Hika, Ngāti Kahu, and Te Rarawa) strongly support retaining the *status quo*. The majority of these submitters emphasise the importance of maintaining and protecting the role of beach cast seaweeds in the marine food web. Ngāti Kahu questions whether a full review of the impacts of beach cast seaweed removal on the environment in New Zealand has ever been conducted. Both ECO and Forest and Bird call on MFish to conduct a thorough review of the impacts of beach cast seaweed harvesting. ECO also suggests instituting a comprehensive monitoring system to assess current removal impacts and compare that with closed areas.
- 13 The WRMFA does not support any of the proposed options, and instead propose banning all removal of beach cast seaweed. Their submission was endorsed by the New Zealand Big Game Fishing Council, the New Zealand Angling and Casting Association, the option4 team, and supported in principle by the NZRFC. WRMFA emphasises that beach cast seaweed provides an important food source for marine species, including the endangered Hector dolphins, and provide unpublished evidence of large amounts of kelp flies (that inhabit stands of beach cast seaweed) in the stomachs of yellow-eyed mullet.
- 14 Five submitters (AgriSea/Ocean Organics, Kaitaia, Neely, SANZ and SeaFIC) strongly support Option 3 – to open all coastal areas in the North Island to the commercial harvest of brown and green beach cast seaweeds. AgriSea/Ocean Organics explain a large geographical spread is required to ensure supply of beach cast seaweed for the production of fertilisers can meet demand. They note that their commercial harvesters voluntarily ensure 10% of beach cast seaweed is left on any beach after any collection. Neely explains that in the Hawkes Bay region (FMA 2), access to the coastline is a significant factor that limits harvesters’ current ability to commercially harvest beach cast seaweed. Neely estimates that based on low tide access and the use of a quad and trailer to access the coast, only about 50% of the southern Hawkes Bay region would be easily accessible for commercial harvest. Kaitaia submits that the commercial harvest of brown and green beach cast seaweeds should fall under the same management regime (unconstrained harvest) as red seaweed, particularly if no sustainability issues involving red beach cast seaweeds have been identified to-date.
- 15 Both Robertson and Te Ohu both support Option 2. Te Ohu supports this option subject to the identification and setting aside of areas of customary significance. Robertson supports proceeding with a cautious approach involving the expansion of coastal areas open to commercial harvest, so that the industry can be monitored and managed in smaller steps to ensure its long term sustainability.
- 16 Sanford did not indicate specific support for any option presented. They expressed concern regarding mussel spat and its association with beach cast seaweed collection

MFish Discussion of Issues Raised

- 17 *Review of the impacts of beach cast seaweed removal:* MFish acknowledges there has not been a single thorough study into the impacts of beach cast seaweed removal in New Zealand. Such a study would likely not be cost effective in the short-medium

term because of the small size of the commercial fishery. MFish has relied on small scale New Zealand studies and studies from other countries to determine what the impacts of removal might be on the marine ecosystem. MFish considers that the results in the available studies are the best available information on hand to you in the context of this proposal. Under section 10 of the Act, you may provide for utilisation in the absence of information, or where such information is uncertain. In doing so, you should be cautious and consider the potential level of risk involved, with a view to mitigate any potential adverse effects on the surrounding environment. MFish considers the general risk associated with commercial harvesting at the regional scale is likely to be low in the short-medium term because of the level of harvesting compared to the likely abundance of beach cast seaweed deposition in New Zealand.

- 18 New Zealand studies have estimated seaweed deposition as ranging between 14 and 2000 kilograms per linear meter of coastline per year (kg/m/yr) depending on the coastal area². For example, along the Wairarapa coast (a distance of ~ 100 – 120 km) research has estimated beach cast seaweed deposition to be 2000 kg/m/yr, which equates to a total of approximately 200,000 – 240,000 t/yr. Annual commercial harvest of beach cast seaweeds in the whole of FMA 2 (from Cape Runaway to Titahi Bay, which includes the Wairarapa coast) has not exceeded more than 4 tonnes since 2001/02. This represents 0.002% of estimated annual beach cast seaweed deposits for the Wairarapa alone.
- 19 If commercial harvest in FMA 2 increased 20 fold in the next 2 – 5 years, the harvest would represent 0.03 - 0.04% of estimated annual depositions, respectively. Even if beach cast seaweed deposition estimates along the Wairarapa were only 1,400 t/yr (calculated using the lowest deposition rated measured in NZ coastal regions), a 20 fold increase in commercial harvest for the whole of FMA 2 would equate to ~ 6% of the annual seaweed deposition for the Wairarapa alone.
- 20 Commercial harvest is not expected to grow 20 fold in the next 2 – 5 years. At this time, seaweed harvesting is still largely a ‘boutique’ industry. Harvest levels are, however, closely monitored and additional constraints would be considered if harvest levels grew at unexpectedly high rates. MFish also notes that similar concerns over commercial harvesting levels have not eventuated since the development of the Prohibition Notice in 2001 or the last review in 2005.
- 21 *Recognition of ecologically sensitive habitats:* MFish recognises that beach cast seaweed is an important component of marine food webs, particularly in ecologically sensitive habitats³. Beach cast seaweeds are regularly used by a variety of fish species, invertebrates, and birds for feeding, nurseries, and shelter, and play an essential role in the near shore nutrient cycling in coastal systems. At this time, the risk or potential impact of beach cast seaweed removal on these systems is unquantifiable. Based on the current and expected levels of harvesting and the likely

² For example: Estimated volumes of seaweed washed up along the Wairarapa coast were ~ 2000 kg/m/yr (unpublished data, Zemke-White, W.L., Speed, S.R., and D.J. McClary. (2005) Beach-cast seaweed: a review. NZ Fisheries Assessment Report 2005/44)

Estimated volumes of brown seaweeds deposited along the Canterbury coast were ~14 kg/m/yr (Inglis, G. (1989) The colonisation and degradation of stranded *Macrocystis pyrifera*. Journal of Experimental Marine Biology and Ecology 125: 203 – 218);

³ Including, but not limited to inlets, estuaries, dune habitats, harbours, and the inter-tidal zone.

abundance of the resource, MFish considers the risk low for most areas. However, in response to the concerns highlighted in the IPP submissions and through discussion with DOC, MFish recommends proceeding with a cautionary approach and retain existing prohibitions on commercial harvesting of beach cast seaweeds in ecologically sensitive areas. It is unlikely that exclusion of these sensitive areas from the proposal would unduly constrain the utilisation opportunities of the commercial sector at this time, as these areas are mainly estuarine systems and are likely less desirable for harvesting activities because the seaweed is often heavily sand laden or difficult to access by vehicles onshore.

- 22 *Vehicle access to coastal areas during harvest:* MFish recognises the concern with commercial vehicles (e.g. quads and trailers) used to collect beach cast seaweeds in coastal areas and their potential impacts on the low intertidal zone. MFish considers this activity is similar to other activities already occurring in many coastal areas including commercial and recreational launching of boats (with the use of tractors and trucks), recreational vehicle use on beaches (e.g. quads, buggies, trucks), and existing customary and recreational harvesting of beach cast seaweeds. MFish believes the potential impact of commercial harvester vehicles on the coastline is low risk at this time based on the small number of participants in the commercial beach cast seaweed fishery. MFish supports any efforts⁴ by territorial or regional councils to regulate proper vehicle use on beaches, including the avoidance of dune areas, bird nesting areas, and operating at slow speeds. The proposals in this paper will not affect existing restrictions on the use of the coastal marine area, for instance rules in regional plans or requirements for resource consents under the *Resource Management Act 1991* (RMA).
- 23 *Use of mechanical harvesting techniques:* In FMAs 2 and 8, commercial harvesters are required to only use hand-gathering methods when collecting seaweed.⁵ There are no such restrictions on the harvesting methods used in FMA 1 or 9. Kaitia noted in their submission they use a mechanical harvesting method for spat collection in FMA 9. New regulations would be considered in FMA 1 or 9 if issues were raised with the use of mechanical harvesters.
- 24 The use of heavy machinery for beach cleaning and grooming activities by territorial authorities and regional councils is not a commercial fishing activity and therefore, is not constrained by the Prohibition Notice. As such, the methods used during these activities fall outside the scope of fisheries management. The proposed amendments to the Prohibition Notice will not affect council beach cleaning activities. Beach cleaning and grooming does fall under the relevant provisions of the RMA and requires resource consent. However, in the event that territorial authorities and regional councils seek to sell beach cast seaweed harvested during such activities, a commercial fishing permit is required under section 89 of the Act.
- 25 *Potential Utilisation Conflicts:* Ngāti Kahu questions whether proper consideration was given to the potential “conflict of interest” between the general public that may collect beach cast seaweed for compost or fertiliser and the commercial operators. MFish considers the volumes harvested by customary, recreational fishers and

⁴ For example, city and regional councils bylaws, rules in regional coastal plans, requirements for resource consents, or prosecution under the *Reserves Act 1977*.

⁵Regulation 14H, Fisheries (Central Area Commercial Fishing) Regulations 1986.

commercial operators to be small compared to the potential volumes of beach cast seaweed stands along the coastline. Therefore, conflicts of interest are unlikely to arise. In addition, a number of areas would remain closed to commercial harvesters but will still be accessible to both customary and recreational participants. MFish notes no inter-sector utilisation issues have been identified regarding the harvest of red beach cast seaweed, which has been completely unconstrained since the Second World War.

26 MFish considers the following issues raised by submitters to be either incorrect or fall outside the immediate scope and intention of the IPP proposal.

- *Closure of currently open areas:* Ngāti Kahu and Te Hika requested that certain area currently open to commercial harvest of beach cast seaweed be closed. The closure of currently open areas was not a part of the consultation proposal. In order to be considered as part of a future review, evidence would have to be provided to show there has been a negative impact on the marine environment in that area due to the collection of beach cast seaweed. No such evidence has been put forward at this time.
- *Potential impacts on mussel spat collectors:* Kaitaia and Sanford highlight their concerns about the harvest of beach cast seaweed from which mussel spat is collected. If beach cast seaweeds are targeted for other purposes (e.g. fertiliser), Kaitaia submit that spat collectors in FMA 9 may have difficulty accessing sufficient seaweed with spat attached. The majority of the FMA 9 coastline has been open to commercial harvest of beach cast seaweed since 2005. There has been no evidence presented to date that suggests spat collectors in the area are having difficulty accessing sufficient amounts of seaweed with spat attached for their operations. SeaFIC notes that if the FMA 8 coastline is open to commercial harvest, there would be no ACE available to cover any possible bycatch of mussel spat. Mussel spat is not a quota managed species in FMA 8 so ACE is not required. Also, proposed changes to the regulations concern brown and green seaweed, while most mussel spat comes from red seaweeds that are exempt from the Prohibition Notice.
- *Current permit moratorium under Schedule 4C of the Fisheries Act 1996:* All commercial fishers harvesting brown and green beach cast seaweeds must hold a valid commercial fishing permit under section 89 of the Act. Fishers are permitted to gather any seaweed (including 4C species) providing it is taken in a beach-cast state and from those areas not prohibited under the Prohibition Notice. Seaweed taken in this state is recorded as SEO (and not using specific seaweed species codes). SeaFIC considers that it would be more appropriate to develop a framework for seaweed management that encourages reporting at a species level. MFish is working on a wider review of the seaweed management framework that aims to address such issues. However, MFish does not believe this proposal needs to be delayed until this wider review is completed because volume of current and expected harvest is low.
- *Costs associated with potential QMS management:* Kaitaia submits that because the seaweed fisheries lie outside the QMS, the requirement or incentive for good fishing practises are unlikely to occur. They question whether consideration has been given to the more hands on management and associated costs that would be

required as a consequence. MFish is working on a wider review of the seaweed management framework that aims to address such issues.

- *Commercial access within a rohe*: Ngāti Kahu requests that in the event Option 2 or 3 is chosen that they are consulted about licenses distributed to commercial fishers within their rohe. MFish may issue a fishing permit to every person who applies under section 91 of the Act, except where prohibited, and this process does not specifically involve consultation with iwi unless such consultation is required on the basis of specific settlement obligations with the iwi concerned. In any event, MFish actively encourages any harvester (commercial or otherwise) to introduce themselves and work with local iwi when collecting beach cast seaweeds. MFish will facilitate such interactions if requested by either party.
- *Toxins in beach cast seaweeds*: WRMFA raised concerns about potential toxins present in beach cast seaweeds. The issue of toxins in any potential food source (human or animal) is outside the scope of the Act and regulations made under the Act. Instead, such issues are addressed and administered by the appropriate food authorities in New Zealand. MFish is not aware of any toxin issues with respect to beach cast seaweed based products.

Background Information

The Beach Cast Seaweed Fishery

- 27 Demand for seaweed is growing in the commercial development of fertiliser, aquaculture, food, medicinal and pharmaceutical products, and agar manufacturing. According to harvesters and suppliers, the rate at which current supply could meet this demand would be improved if more coastal areas were available for harvest.
- 28 The commercial harvest of beach cast seaweed currently occurs outside of the Quota Management System (QMS) and is therefore not subject to the setting of an annual total allowable catch (TAC)⁶.
- 29 Management of the commercial harvest of various types of beach cast seaweed (i.e. red, green, brown) is inconsistent. Under the Act⁷, red seaweeds (Class Rhodophyceae) can be harvested for commercial purposes without a fishing permit and are not subject to the Prohibition Notice. This exemption originated during the Second World War when New Zealand was isolated from its regular suppliers of agar (extracted from red seaweeds) and the government promoted the development of this domestic industry. Brown (Class Phaeophyceae) and green (Class Chlorophyceae) beach cast seaweeds cannot be commercially harvested without a fishing permit and cannot be commercially harvested in areas prohibited by the Prohibition Notice.
- 30 The Prohibition Notice was created to support the lifting of the fishing permit moratorium on the commercial harvest of brown and green beach cast seaweed (hereafter referred to as beach cast seaweed) in 2001. The Prohibition Notice also

⁶A TAC is set under section 13, Fisheries Act 1996.

⁷ Section 89(2)(f) of the Fisheries Act 1996 provides that a current fishing permit is not required for the taking of red seaweed while it is unattached and cast ashore. Restrictions on the commercial harvesting of seaweed under Area Regulations do not apply to red seaweed while it is unattached and cast ashore.

addressed stakeholder concerns that the removal of the permit moratorium could result in the commercial harvest of beach cast seaweed beyond ecologically sustainable levels.

Ecological Characteristics

- 31 Beach cast seaweed is an important contributor to the health of marine ecosystems but there is still limited information available to adequately describe its role and contribution to the coastal marine environment.
- 32 Beach cast seaweeds are a renewable resource and replenishment occurs relatively rapidly in coastal areas, particularly after storm events. The sustainability of beach cast seaweed (i.e. the regularity of deposits and abundance of those deposits) is not affected by the areas open to harvesting, but by seasonal mortality or senescence of live attached seaweeds and storm events. However, the amount of beach cast seaweed that remains onshore can be influenced by harvesting in addition to tidal cycles, sea conditions, and removal activities by other organisms.
- 33 Long-term intensive harvesting practices could create coastal area habitats similar to beaches with no beach cast seaweed inputs, but this effect would likely depend more on the quantity of beach cast seaweed removed and harvesting methods used, rather than harvesting location. However, MFish notes that ecologically sensitive areas would be more vulnerable to harvest than others, including estuaries, inlets, and harbours that are used by many fish, birds and invertebrates species for feeding, nurseries and shelter. MFish considers that open coastal zones with regular exposure to wave and tidal action are more resistant to disturbance and potential removal of beach cast seaweeds because of the dynamic nature of these systems.
- 34 Various micro- and macro-fauna (e.g. invertebrates, birds, reptiles) on the beach obtain their food, nutrients, nesting material and/or shelter from beach cast seaweed. If beach cast seaweed washes back into the sea it can: provide an important habitat for juvenile fishes (e.g. bluenose); be consumed by various herbivores (e.g. paua, urchins), omnivores (various fish species), filter feeders, and primary producers; and/or be decomposed and consumed by detritivores. WRMFA provides unpublished evidence that yellow-eyed mullet find a major proportion of their food in beach cast seaweed. MFish note that yellow-eyed mullet is one of a number of fish species that obtain some of their prey, including (but not limited to) kelp flies and amphipods, from beach cast seaweed.
- 35 Beach cast seaweed is particularly important in the early formation of dune habitat. Limiting areas of beach cast seaweed removal may protect dune formation and improve beach stability, but may in turn cause localised dune instability where harvesting occurs.
- 36 Through discussion with DOC and analysis of regional coastal plans, a number of areas were identified as potentially ecologically sensitive and vulnerable to the commercial harvest of beach cast seaweed. MFish has considered these areas and included a more precautionary expansion option (Option 2b), which excludes the following types of areas identified as being potentially sensitive to intensive beach cast seaweed harvesting:

- Areas with important nesting or spawning sites, or where rare and/or nationally critical species have been described, that are potentially more vulnerable to disturbance;
- Areas with both high levels of biodiversity and high use by a number of nationally rare and/or critical species;
- Harbours, estuaries and inlets where information on the potential impact of localised removal is currently limited because they are important nursery and nesting areas for a variety of species, and can be more vulnerable to environmental disturbance than open coastal areas because they are less exposed;
- Areas where access is currently restricted so any disturbance would have a greater impact than areas where human activities are less controlled.

37 MFish did not include areas identified as potentially vulnerable if:

- The areas are already exposed to moderate or high use by a variety of human activities;
- The areas are regularly exposed to high levels of natural disturbance in the environment (e.g. wave and tidal action during storms);
- The areas may only be moderately or occasionally utilised by vulnerable species;
- The vulnerability of associated species' is considered low based on current and expected harvest in an area.

38 Keeping such areas closed until tools are available to manage intensity and distribution of harvest to levels appropriate to the environment may be warranted if there is a risk of intensive harvesting occurring in the short-medium term in these areas, or if retaining the closures would not adversely affect short-medium term utilisation by commercial fishers.

Stock Status

39 A review of the Prohibition Notice in 2005 resulted in four new areas in FMAs 1, 2, 3 and 7 being opened to commercial harvest. The additional areas were opened to provide for reasonable use of beach cast seaweed while exercising caution regarding any potential impacts on organisms and ecosystems that utilise beach cast seaweed. The increase in the number of harvesters and reported harvest of beach cast seaweed in the North Island since 2005 has been moderate, but overall harvest remains low (Table 1) in comparison with the likely abundance of beach cast seaweed⁸.

40 The observed increase in commercial landings of beach cast seaweed in FMA9 (SEO9) is due to the reporting of harvest associated with green-lipped mussel (GLM) spat collection (since GLM introduction into the QMS in 2004) rather than

⁸ Ibid, no. 2.

Single wash up events along Ninety Mile Beach can contain ~ 70 t of beach cast seaweeds (Alfaro, A.C., and A.G. Jeffs (2002) Small-scale mussel settlement patterns within morphologically distinct substrata at Ninety Mile Beach, northern New Zealand. *Malacologia* 44: 1 – 15).

interests in beach cast seaweed specifically. The majority of beach cast seaweeds harvested for the purpose of spat collection are red seaweeds, which would not be affected by changes to the Prohibition Notice.

Table 1. Reported commercial landings of beach cast seaweed (species code SEO) in FMAs 1, 2, 8 and 9 (SEO1, SEO2, SEO8 and SEO9, respectively) since the 2001/02 fishing year.

Fishing Year	Commercial landings (t) of beach cast seaweed in each Fisheries Management Area			
	SEO1	SEO2	SEO8	SEO9
2001/02	0.05	3.67	0	0
2002/03	1.42	3.29	0	5.24
2003/04	5.68	3.44	0	3.25
2004/05	37.74	2.76	0	92.54
2005/06	51.74	1.87	0	90.17
2006/07	87.64	0.41	0	144.98
2007/08	71.40	3.18	0	133.41

Management Options

Summary of Options

- 41 MFish consulted on three management options for expanding North Island areas open to commercial harvesting of brown and green beach cast seaweeds, and is providing an additional option (Option 2b – a variation on Option 2) for consideration by the Minister.

Option	Description
Option 1	<i>Status quo.</i>
Option 2	Expand the areas open to commercial harvesting of brown and green beach cast seaweeds to include coastal areas currently of interest to commercial operators (except where already prohibited by regulation).
Option 2b	Expand the areas open to commercial harvesting of brown and green beach cast seaweeds to include coastal areas currently of interest to commercial operators (except where already prohibited by regulation and in areas considered ecologically sensitive).
Option 3	Expand the areas open to commercial harvesting of brown and green beach cast seaweeds to include all coastal areas in the North Island (except where already prohibited by regulation).

Option 1 – Status Quo

- 42 Option 1, the *status quo*, would retain current areas open to commercial harvesting of brown and green beach cast seaweeds in the North Island (Figure 1).

Option 2 – Expansion of Commercial Beach Cast Seaweed Harvesting Areas

- 43 Under Option 2, the Prohibition Notice would be amended to expand the areas open to commercial harvesting of brown and green beach cast seaweed in the North Island to include areas of interest to commercial stakeholders (refer to Figure 2 below). These areas are:

FMA 1

- The ‘coastal area’ between North Cape (at the FMA 1 and FMA 9 boundary) and Blackney Point, Rangaunu Bay.
- The ‘coastal area’ between the eastern end of Coopers Beach (Doubtless Bay) and Marsden Point (Whangarei).
- The ‘coastal area’ between the Pakiri River (north of Leigh) and Orere Point (Auckland).
- The ‘coastal area’ surrounding Great Barrier Island (Auckland).

FMA 2

- The ‘coastal area’ between Mahia and the Mataikona River.

FMA 8

- The ‘coastal area’ between Tirua Point (Taranaki) and the Patea River.

FMA 9

- The ‘coastal area’ between the northern end of Kahokawa Beach (north of Ninety-Mile Beach) and North Cape (at the FMA 1 and FMA 9 boundary).

- 44 The proposed amendments to the Prohibition Notice will not affect the existing prohibitions set by MFish on beach cast seaweed harvesting as contained in the *Fisheries (Auckland and Kermadec Areas Commercial Fishing) Regulations 1986* or *Fisheries (Central Area Commercial Fishing) Regulations 1986*, as well as any other prohibitions or restrictions put in place by MFish⁹ other Government agencies (for example, DOC¹⁰). Details on the MFish prohibitions in the Auckland and Kermadec Areas and Central Area are set out in Appendix 1.

Option 2b – Limited Expansion of Commercial Beach Cast Seaweed Harvesting Areas – [MFish’s Preferred Option]

- 45 Under Option 2b, the Prohibition Notice would be amended to expand the areas open to commercial harvesting of brown and green beach cast seaweed in the North

⁹For example, mātaītai reserves and temporary closures under s 186A Fisheries Act 1996.

¹⁰For example, marine reserves under the Marine Reserves Act 1971

Island to include areas of interest to commercial stakeholders, while excluding areas considered ecologically sensitive (refer to Figure 3 below). These areas are:

FMA 1

- The ‘coastal area’ between Houhora Heads (western end of East Beach) and Cape Wiwiki (Bay of Islands), excluding Rangaunu Harbour, Mangonui Harbour, Whangaroa Harbour, and any area within 1 km of Takou River.
- The ‘coastal area’ between Cape Brett and Marsden Point (Whangarei), excluding Whangaruru Harbour, Whananaki estuary, Matapouri Bay, Whangarei Harbour, and any areas within 1 km of the Ngunguru River, Horahora River, Pataua River, and Taiharuru River.
- The ‘coastal area’ between Toroa (Gull) Point and Cockle Bay (Auckland).
- The ‘coastal area’ around Great Barrier Island, excluding Whangapoua harbour, Kiwiriki Bay, and any area within 1 km of Awana Stream and Kaitoke Stream.

FMA 2

- The ‘coastal area’ between the western end of the Wairoa Estuary and the Mataikona River, excluding the Mohaka Estuary, Ahuriri Estuary, Waitangi Estuary, and the coastal area between Blackhead and Blackhead Point.

FMA 8

- The ‘coastal area’ between Tirua Point (Taranaki) and the Patea River, excluding any area within 1 km of the Mokau River, Mohakatino Estuary, Tongaporutu River, Mimi estuary, Urenui Estuary, Waitara Estuary, Waiwhakaiho Estuary, Komene Road Beach and Oaonui Beach.

- 46 The proposed amendments to the Prohibition Notice will not affect the existing prohibitions set by MFish on beach cast seaweed harvesting as contained in the *Fisheries (Auckland and Kermadec Areas Commercial Fishing) Regulations 1986* or *Fisheries (Central Area Commercial Fishing) Regulations 1986*, as well as any other prohibitions or restrictions put in place by MFish¹¹ other Government agencies (for example, DOC¹²). Details on the MFish prohibitions in the Auckland and Kermadec Areas and Central Area are set out in Appendix 1.

Option 3 – Open Entire North Island to Commercial Beach Cast Seaweed Harvesting

- 47 Under Option 3, the Prohibition Notice would be amended to expand the areas open to commercial harvesting of brown and green beach cast seaweeds to include all coastal areas in the North Island.
- 48 As with Options 2 and 2b, the amendments proposed under Option 3 would not affect area prohibitions on beach cast seaweed harvesting set out in the

¹¹Ibid, no. 9.

¹² Ibid, no. 10.

Auckland/Kermadec and Central Area commercial regulations or prohibitions and restrictions put in place by MFish¹³ and other Government agencies¹⁴.

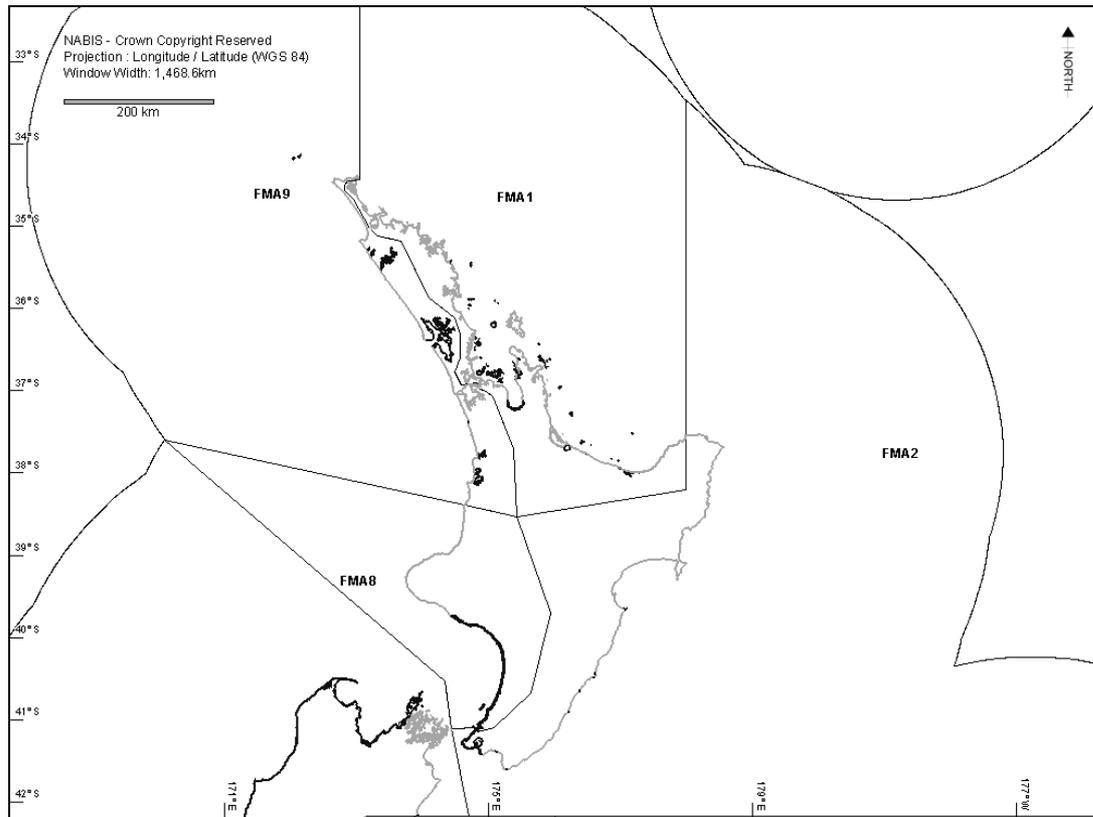


Figure 2. The proposed locations of coastal areas closed to commercial harvest of green and brown beach cast seaweeds (denoted by heavy black lines) if current permitted commercial harvesting areas were expanded as per Option 2.

Rationale for Management Options

- 49 Since the lifting of the moratorium in 2001, and the review of the Prohibition Notice in 2005, concerns that demand and commercial harvest of beach cast seaweed would exceed beach cast seaweed abundance and negatively affect organisms and ecosystems that utilise beach cast seaweed have not eventuated.
- 50 The current harvesting area prohibitions for beach cast seaweed may be overly restrictive given the renewable nature of the resource. The level of current harvest compared to likely abundance is considered low, and likely to remain low in the short to medium term.
- 51 Reviewing the current notice may improve opportunities for commercial harvesters to maximise the utilisation value of the resource.
- 52 In addition, many communities find the amount of beach cast seaweed washing up on their shores to be significant and detrimental to community values. As a consequence a number of Regional and Territorial Authorities have developed beach cast seaweed removal plans and/or regularly remove seaweed from beaches (e.g. in

¹³ Ibid, no. 9.

¹⁴ Ibid, no. 10.

Auckland, Hutt, Manukau, North Shore, Far North, and Gisborne). A review of commercial beach cast seaweed harvesting areas and other removal activities may therefore help to align current rules with common practice, and provide incentive for authorities to develop more sustainable harvesting practices.

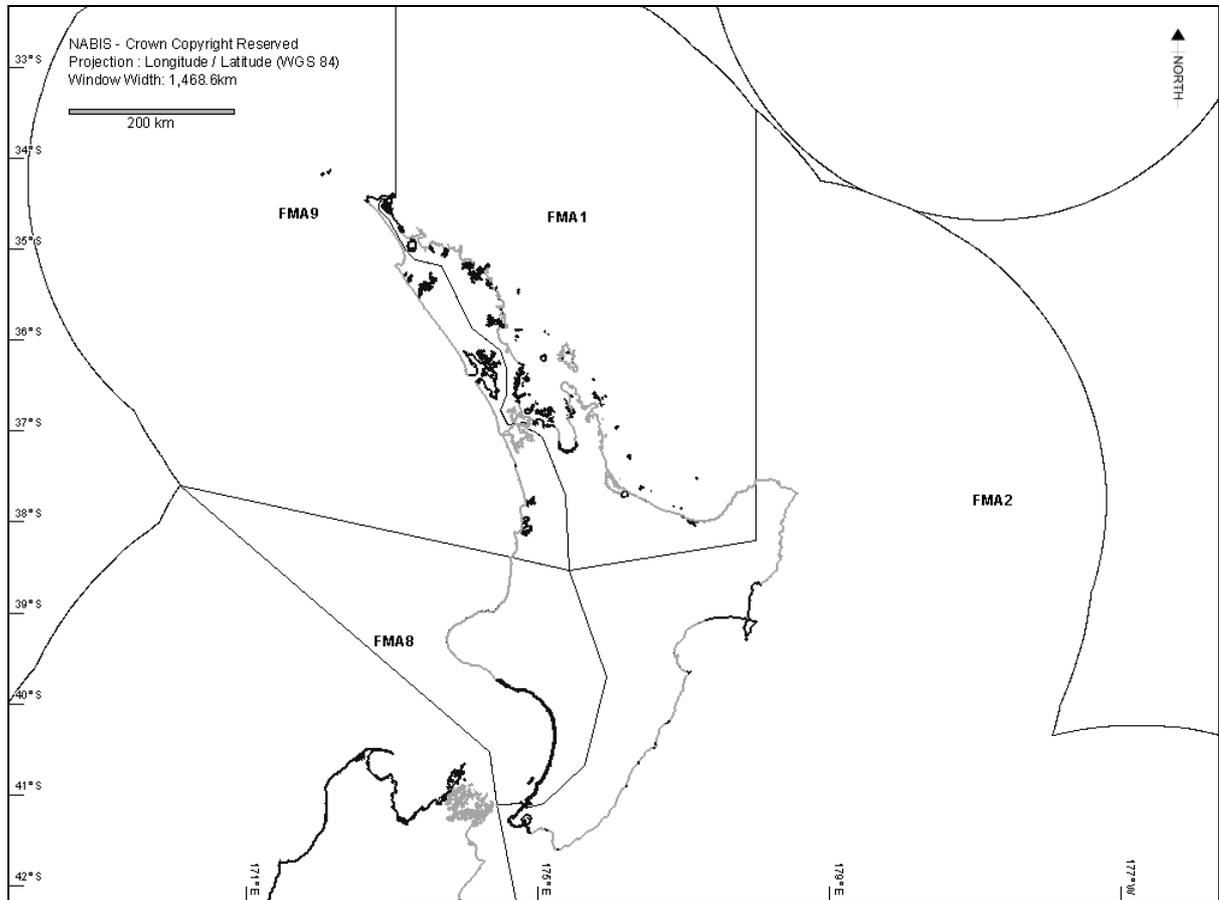


Figure 3. The proposed locations of coastal areas closed to commercial harvest of green and brown beach cast seaweeds (denoted by heavy black lines) if current permitted commercial harvesting areas were expanded as per Option 2b.

Assessment of Management Options

Option 1 – Status Quo

Sustainability and Environment

- 53 Maintaining the *status quo* may result in increased localised impacts on organisms and ecosystems that utilise beach cast seaweed as harvesting increases in the limited areas currently open to harvesting. MFish’s initial view is that this impact is likely to be small in the short term, as beach cast seaweed is a renewable resource and harvest is low compared to the likely abundance of the resource.
- 54 Maintaining the *status quo* may continue to provide protection to currently unidentified, ecologically sensitive, locales inside the areas where beach cast seaweed harvesting is currently prohibited.

Utilisation Value

- 55 Under the *status quo*, access to suitable beach cast seaweed for commercial harvest would continue to be limited by the current Prohibition Notice. Commercial suppliers and processors state they have difficulty sourcing suitable seaweed to meet their current supply demands, and difficulty planning for the future growth of their industry.
- 56 The *status quo* would not provide for some regional and territorial authorities removing beach cast seaweed from beaches for cosmetic purposes the option of recovering some of the costs associated with their beach cast seaweed removal practices. However, if these authorities were to operate as commercial harvesters, commercial regulations would apply, i.e. the use of hand gathering harvesting methods in FMA 2 and 8, the requirement for such authorities to obtain a commercial fishing permit under section 89 of the Act, and reporting of take to MFish.
- 57 The *status quo* would not impact on the utilisation opportunities of either the Maori customary or recreational fishing sectors.

Credibility and Acceptance

- 58 Input controls such as area prohibitions may not be the most effective way to ensure sustainability of the seaweed resource at a general level, and may be better used to protect areas of ecological importance. Monitoring of harvest activity, and the application of harvest strategies and output controls (e.g. catch limits), may better address risks to sustainability when they arise. However, MFish recognises the need to protect ecologically sensitive habitats, and those designated as significant to tangata whenua, which may best be achieved through the use of the Prohibition Notice at this time.
- 59 The beach cast seaweed removal practices of some regional and territorial authorities fall within prohibited commercial harvesting areas, which weakens the credibility of the *status quo*. However, MFish has concerns over the use of mechanical means to strip beach cast seaweeds and other debris from beaches, and would encourage territorial authorities to modify their grooming methods.

Option 2 – Expansion of Commercial Beach Cast Seaweed Harvesting Areas

Sustainability and Environment

- 60 Opening additional coastal areas to commercial beach cast seaweed harvest may spread harvesting pressure over a wider geographical area and reduce risks of localised depletion. Short-term harvest of beach cast seaweed can change beach species composition and abundance, however, recovery time to pre-harvest conditions has been known to occur in as little as 2 months¹⁵.

¹⁵ Lavery, S.P., and P.J. Godfrey. (1979) Ecological effects of macroalgal harvesting on beaches in the Peel-Harvey Estuary, Western Australia. *Estuarine, Coastal and Shelf Science* 49: 295-309.

- 61 Best available information suggests that beach cast seaweed is a renewable resource and current harvesting practices and levels are low impact on the surrounding environment; therefore potential sustainability concerns relate to volumes of beach cast seaweed harvested, rather than the geographical locations of that harvest. However the timing of harvest and quantity of beach cast seaweed removed may affect some species' abundance and sustainability if it occurs during the nesting and breeding periods of birds or settlement period of juvenile fishes. Ecologically important bird nesting areas occur within the zones currently open to commercial beach cast harvesting. To date there is no information to suggest that removal of beach cast seaweed has caused negative impacts on the sustainability and productivity of the bird population in these areas.
- 62 MFish recognises the importance of protecting ecologically sensitive areas, particularly estuaries and harbours which are used by a number of species for feeding, nurseries and shelter. As noted, ecological risks to species that utilise beach cast seaweeds, and overall ecosystem processes, may not arise so much based on where harvesting occurs, but rather how much seaweed is removed from an area and over what time frame. At this time current and expected levels of commercial harvesting are considered low compared to estimated volumes of beach cast seaweeds deposited along the New Zealand coasts.
- 63 Option 2 addresses access to areas to harvest beach cast seaweed and not quantity of harvest. However, short-medium term risks regarding quantity or harvest are considered small because:
- a) There have been no sustainability issues identified involving the commercial harvest of red beach cast seaweed although its harvest has been completely unconstrained since the Second World War.
 - b) Not all beach cast seaweed is suitable for commercial harvest, nor are all coastal areas easily accessible to commercial harvest. Seaweeds unsuitable or inaccessible for commercial use are left on the beach providing habitat, food and structure to the coastal ecosystem.¹⁶
 - c) The quantities of beach cast seaweed removed in any coastal area can be monitored through statutory reporting of commercial catch.
 - d) Many areas identified as ecologically important are already protected under Auckland/Kermadec and Central Area commercial regulations and via prohibitions or restrictions put in place by MFish and other Government agencies. These prohibitions and restrictions will not be affected by the change to the Prohibition Notice.
- 64 Longer-term risks should be addressed by the wider review of the management framework for all states of seaweed to be completed in the short-medium term future by MFish.

¹⁶ Some areas are physically inaccessible others are not cost-effective to access. Also, harvesting is targeted towards quality product (clean and free of debris); many commercial harvesters also have a standard operating practice of leaving 10% of harvestable seaweed behind (in addition to the poor quality seaweed).

Utilisation Value

- 65 Opening up more coastal areas to commercial beach cast seaweed harvest would provide harvesters a wider geographical area from which to obtain the resource, and allow them to distribute growth in harvesting so that ease of collection, quality of product, and therefore profit, are maximised. Enabling more areas for commercial harvest may also increase employment opportunities in small North Island communities as processors look to identify local individuals able to monitor, harvest and supply beach cast seaweed harvest from newly opened areas.
- 66 Beach cast seaweed areas of significance to tangata whenua have not been formally assessed. Initial conversations with tangata whenua groups (for example the Te Kupenga Whiturauroa a Maui customary forum) identified that beach cast seaweed is a valuable food, medicinal and fertiliser source for Maori and also provides a valuable commercial crop for some local Maori communities. The opening of more coastal areas may assist iwi, hapu and whānau in further development of commercial interests.
- 67 MFish has little information on recreational harvesting of beach cast seaweed but understands recreational take is used primarily as fertiliser. MFish does not believe this proposal will impinge on existing recreational harvesting.
- 68 MFish's view is that opening additional areas is unlikely to have a significant impact on customary Maori or recreational harvesting interests as commercial harvest is low compared with likely abundance of the resource.

Credibility and Acceptance

- 69 Option 2 will contribute to credible fisheries management by increasing commercial harvesters' accessibility to a wider geographical area to harvest beach cast seaweed. Previous concerns over the 'race for catch' after the lifting of the moratorium in 2001 and the expansion of permitted harvesting zones in 2005 have never actualised, and harvesting levels are not expected to increase to unsustainable levels in the medium term.
- 70 Option 2 will allow some regional and territorial authorities practices of removing beach cast seaweed for cosmetic purposes to fall within permitted commercial harvesting areas, and provide them the option of recovering some of the costs associated with their activities.
- 71 Removal of some area prohibitions will provide for some alignment between the harvest of green and brown beach cast seaweeds, and the unconstrained commercial harvest of red beach cast seaweeds.
- 72 Any decisions to expand the areas available to the commercial harvest of beach cast seaweed do not pre-empt decisions that may be made under a future review of the wider seaweed management framework. MFish's intention to complete a wider review of the framework is not a reason to prevent current rules for beach cast seaweed from being amended to reflect current risks, uses and demands.

Option 2b – Expansion of Commercial Beach Cast Seaweed Harvesting Areas

Sustainability and Environment

- 73 Through discussions with DOC and analysis of regional coastal plans, MFish has identified a number of areas it considers ecologically sensitive and more vulnerable to localised removal of beach cast seaweeds. In recognition of the lack of quantitative information currently available on the level of impact this activity may have in these and other areas, Option 2b provides a more conservative and proactive approach to potential ecological concerns than Option 2:
- a) Risks of localised depletion in currently open areas would be less as the area over which future growth in harvest can be spread is greater; and
 - b) Risks to unidentified areas of ecological significance would be less because areas considered sensitive would continue to be protected.
- 74 The short-medium term ecological risks associated with Option 2b are considered smaller than in Option 2 because:
- a) The current and short-medium levels of harvest in the future are minimal compared to the likely abundance of the resource along the coast of the North Island.
 - b) There have been no sustainability issues identified involving the commercial harvest of red beach cast seaweed although its harvest has been completely unconstrained since the Second World War.
 - c) Not all beach cast seaweed is suitable for commercial harvest, nor are all coastal areas easily accessible to commercial harvest. Seaweeds unsuitable or inaccessible for commercial use are left on the beach providing habitat, food and structure to the coastal ecosystem.
 - d) The quantities of beach cast seaweed removed in any coastal area can be monitored through statutory reporting of commercial catch.
 - e) Many areas identified as ecologically important are already protected under Auckland/Kermadec and Central Area commercial regulations and via prohibitions or restrictions put in place by MFish and other Government agencies. These prohibitions and restrictions will not be affected by the change to the Prohibition Notice.
- 75 Longer-term risks should be addressed by the wider review of the management framework for all states of seaweed to be completed in the short-medium term future by MFish.

Utilisation Value

- 76 Utilisation opportunities under Option 2b are unlikely to be more restrictive on commercial harvesters than Option 2, considering the ecologically sensitive areas identified are likely less desirable harvesting locations (e.g. estuaries). Option 2b does provide more flexibility to commercial harvesters than the *status quo* in terms of available areas to undertake harvesting activity to maximise commercial value; and

- 77 As with Option 2, MFish’s initial view is that opening additional areas is unlikely to have a significant impact on customary Maori or recreational harvesting interests as commercial harvest is low compared with likely abundance of the resource.

Credibility and Acceptance

- 78 Credibility and acceptance under Option 2b are the same as for Option 2 but Option 2b:
- a) Is more conservative to ensure commercial harvest does not exceed ecologically sustainable levels. MFish notes that previous concerns over the ‘race for catch’ after the lifting of the moratorium in 2001 and the expansion of permitted harvesting zones in 2005 have never actualised, and harvesting levels are not expected to increase to unsustainable levels in the medium term.
 - b) Provides protection of known ecologically sensitive areas, or areas where limited information is available, from commercial harvest of beach cast seaweed is consistent with an approach of slow and steady economic development of this fishery but not at the expense of the wider environment.

Option 3 – Open Entire North Island to Commercial Beach Cast Seaweed Harvesting

Sustainability and Environment

- 79 Option 3 focuses on potential risks at the large scale (i.e. whole of North Island) and may be considered a more reactive approach in that it doesn’t address potential local vulnerabilities where potential risks may be increased. This could result in a response to address sustainability only after an impact was observed. The impacts on sustainability and environment are the same as for Option 2 but:
- a) Risks of localised depletion in currently open areas would be less as the area over which future growth in harvest can be spread is greater; and
 - b) Risks to unidentified areas of ecological significance would be more because the area being opened is greater and encompass more ecologically significant areas.
- 80 As with Option 2, the short-medium term risks associated with Option 3 are considered small because:
- a) There have been no sustainability issues identified involving the commercial harvest of red beach cast seaweed although its harvest has been completely unconstrained since the Second World War.
 - b) Not all beach cast seaweed is suitable for commercial harvest, nor are all coastal areas easily accessible to commercial harvest. Seaweeds unsuitable or inaccessible for commercial use are left on the beach providing habitat, food and structure to the coastal ecosystem.
 - c) The quantities of beach cast seaweed removed in any coastal area can be monitored through statutory reporting of commercial catch.
 - d) Many areas identified as ecologically important are already protected under Auckland/Kermadec and Central Area commercial regulations and via

prohibitions or restrictions put in place by MFish and other Government agencies. These prohibitions and restrictions will not be affected by the change to the Prohibition Notice.

Utilisation Value

- 81 The impacts on utilisation under Option 3 are the same as for Option 2 but Option 3 provides the greatest flexibility to commercial harvesters in terms of areas to undertake harvesting activity to maximise commercial value; and
- 82 As with Option 2, MFish's initial view was that opening additional areas is unlikely to have a significant impact on customary Maori or recreational harvesting interests as commercial harvest is low compared with likely abundance of the resource.

Credibility and Acceptance

- 83 Credibility and acceptance under Option 3 are the same as for Option 2 but:
- a) Option 3 would allow all regional and territorial authorities practices of removing beach cast seaweed for cosmetic purposes to fall within permitted commercial harvesting areas, and provide them the option of recovering some of the costs associated with their activities.
 - b) Option 3 provides the greatest alignment between the harvest of green and brown beach cast seaweeds, and the unconstrained commercial harvest of red beach cast seaweeds in the North Island.

Statutory Considerations

- 84 Statutory considerations relevant to the proposed amendments to the Prohibition Notice are discussed in Appendix 2.

Conclusion

- 85 MFish recommends that you expand the coastal areas available to the commercial harvest of brown and green beach cast seaweeds in the North Island (except where prohibited by regulation and considered ecologically sensitive). MFish recommends this Option 2b because:
- a) The utilisation opportunities of the commercial sector would be greatly improved without compromising the utilisation values of the other sectors;
 - b) Beach cast seaweed is a renewable resource and current and expected volumes of commercial harvest are low compared to the likely abundance of the resource;
 - c) A number of submitters cited concerns over the potential impact of beach cast seaweed removal on the marine food web (particularly in ecologically sensitive areas), and the lack of information currently available on these impacts;
 - d) Not all beach cast seaweed is suitable for commercial harvest, nor are all coastal areas easily accessible to commercial harvest;

- e) Although risk at the regional scale is low in the medium term, the risk may increase in particularly sensitive and static local sites if intense harvesting were to be focused in those areas;
- f) Many sensitive environmental areas are less desirable for utilisation because they are often located in estuarine systems where beach cast seaweed can become heavily laden with sand;
- g) Many areas identified as ecologically important are already protected by regulation, and other areas identified during the analytical process would remain closed to commercial harvest under this option. Prohibitions on commercial beach cast seaweed harvesting in existing regulations would not be affected by changes to the Prohibition Notice.

Recommendation

86 MFish recommends that you:

- a) **agree** to amend the Fisheries (Beach Cast Seaweed Prohibition) Notice 2002 to:
 - i) expand the areas open to commercial harvesting of brown and green beach cast seaweed in the North Island to include areas of interest to commercial stakeholders (except where prohibited by regulation and considered ecologically sensitive, refer to Figure 3). These areas are:

FMA 1

- The ‘coastal area’ between Houhora Heads (western end of East Beach) and Cape Wiwiki (Bay of Islands), excluding Rangaunu Harbour, Mangonui Harbour, Whangaroa Harbour, and any area within 1 km of Takou River.
- The ‘coastal area’ between Cape Brett and Marsden Point (Whangarei), excluding Whangaruru Harbour, Whananaki estuary, Matapouri Bay, Whangarei Harbour, and any areas within 1 km of the Ngunguru River, Horahora River, Pataua River, and Taiharuru River.
- The ‘coastal area’ between Toroa (Gull) Point and Cockle Bay (Auckland).
- The ‘coastal area’ around Great Barrier Island, excluding Whangapoua harbour, Kiwiriki Bay, and any area within 1 km of Awana Stream and Kaitoke Stream.

FMA 2

- The ‘coastal area’ between the western end of the Wairoa Estuary and the Maitakona River, excluding the Mohaka Estuary, Ahuriri Estuary, Waitangi Estuary, and the coastal area between Blackhead and Blackhead Point.

FMA 8

- The ‘coastal area’ between Tirua Point (Taranaki) and the Patea River, excluding any area within 1 km of the Mokau River, Mohakatino Estuary, Tongaporutu River, Mimi estuary, Urenui Estuary, Waitara Estuary, Waiwhakaiho Estuary, Komene Road Beach and Oaonui Beach.

SUMMARY OF RECOMMENDATIONS

Final Proposal

87 MFish recommends that you:

agree to amend the Fisheries (Beach Cast Seaweed Prohibition) Notice 2002 to:

- i) expand the areas open to commercial harvesting of brown and green beach cast seaweed in the North Island to include areas of interest to commercial stakeholders (except where prohibited by regulation and considered ecologically sensitive, refer to Figure 3). These areas are:

FMA 1

- The ‘coastal area’ between Houhora Heads (western end of East Beach) and Cape Wiwiki (Bay of Islands), excluding Rangaunu Harbour, Mangonui Harbour, Whangaroa Harbour, and any area within 1 km of Takou River.
- The ‘coastal area’ between Cape Brett and Marsden Point (Whangarei), excluding Whangaruru Harbour, Whananaki estuary, Matapouri Bay, Whangarei Harbour, and any areas within 1 km of the Ngunguru River, Horahora River, Pataua River, and Taiharuru River.
- The ‘coastal area’ between Toroa (Gull) Point and Cockle Bay (Auckland).
- The ‘coastal area’ around Great Barrier Island, excluding Whangapoua harbour, Kiwiriki Bay, and any area within 1 km of Awana Stream and Kaitoke Stream.

FMA 2

- The ‘coastal area’ between the western end of the Wairoa Estuary and the Maitakona River, excluding the Mohaka Estuary, Ahuriri Estuary, Waitangi Estuary, and the coastal area between Blackhead and Blackhead Point.

FMA 8

- The ‘coastal area’ between Tirua Point (Taranaki) and the Patea River, excluding any area within 1 km of the Mokau River, Mohakatino Estuary, Tongaporutu River, Mimi estuary, Urenui Estuary, Waitara Estuary, Waiwhakaiho Estuary, Komene Road Beach and Oaonui Beach.

Appendix 1.

Existing Prohibitions in the Commercial Area Regulations

88 Regulation 23(1) of the Fisheries (Auckland and Kermadec Areas Commercial Fishing) Regulations 1986 provides that:

“No commercial fisher may take fish or seaweed by any fishing method, or be in possession of fish or seaweed taken, from the following waters:

- (a) Tawharanui Peninsula: the waters lying on the northern side of Tawharanui Peninsula inside an area enclosed by—
 - (i) a straight line drawn from a point 36°21.8'S and 174°49.3'E in a northerly direction to a point 36°21.4'S and 174°49.6'E; then
 - (ii) in a generally easterly direction, a line every point of which is one-half nautical mile from the mean high-water mark to a point 36°21.3'S and 174°51.7'E; then
 - (iii) a straight line due South to the point of commencement:
- (b) Mimiwhangata Peninsula: as described in Schedule 3:
- (c) Tauranga Harbour: the waters of Tauranga Harbour, which lie south of the Tauranga-Taneatua railway bridge (at 37°41.33'S and 176°10.23'E to 37°41.22'S and 176°10.5'E).”

89 Regulation 13A(1) of the Fisheries (Central Area Commercial Fishing) Regulations 1986 provides that:

“No commercial fisher shall take or have in possession any seaweed taken from any of the following areas:

- (a) *Cape Kidnappers*: Within a 1 nautical mile radius of Cape Kidnappers (at 30 degrees 38.6'S and 177 degrees 42.1'E):
- (b) *Porongahau Estuary*: Within a 3 nautical mile radius of Porongahau Estuary (at 40 degrees 15.4'S and 176 degrees 42.1'E):
- (c) *Herbertville Beach*: Within a 2 nautical mile radius of Wainui River Mouth (at 40 degrees 29.8'S and 176 degrees 33.7'E):
- (d) *Owahanga River Mouth and beach*: Within a 2 nautical mile radius of Owahanga River Mouth (at 40 degrees 40.8'S and 176 degrees 21.2'E):
- (e) *Castlepoint*: Within a half nautical mile radius of the Castlepoint basin (at 40 degrees 54.7'S and 176 degrees 13.4'E):
- (f) *Cape Palliser*: Within a 1 nautical mile radius of the Cape Palliser lighthouse (at 41 degrees 36.9'S and 175 degrees 17.3'E).”

Appendix 2.

Statutory Considerations

90 The following statutory considerations have been taken into account when forming the proposed amendments to the Fisheries (Beach Cast Seaweed Area Prohibition) Notice 2002.

91 **Section 5** of the Act requires the Minister to act in a manner consistent with New Zealand's international obligations and the provisions of the *Treaty of Waitangi (Fisheries Claims) Settlement Act 1992*. The proposed regulatory amendments to the Area Prohibition Notice do not have implications for, or effects on, MFish's ability to meet any specific international obligations and do not affect any obligations related to the *Treaty of Waitangi (Fisheries Claims) Settlement Act 1992*.

92 **Section 8** states the purpose of the Act is to provide for the utilisation of fisheries resources while ensuring sustainability, and defines the meanings of "utilisation" and "ensuring sustainability". The proposed management options to the Area Prohibition Notice seek to ensure that any amendments are both sustainable and provide opportunity for the development and maximisation of utilisation benefits.

93 **Section 9** of the Act requires the Minister to take into account the following environmental principles:

- **Section 9(a)** requires associated or dependent species (i.e. those that are not harvested) to be maintained above a level that ensures their long-term viability. Any changes in dependent species abundance of those associated with beach cast seaweed harvest and the geographical locations of harvest are likely to be short-term. Best available information suggests that associated or dependent species abundances return to pre-beach cast seaweed harvest conditions within two months.

There are a number of coastal areas around the North Island where significant bird colonies are established. Many of these bird species use seaweed in either their feeding or nesting behaviours. These areas include, but are not limited to: FMA1 - Tauranga Harbour, Maketu Estuary and Kaituna River mouth, Waihi Estuary and Pukehina Spit, Ohiwa Harbour (Ohope Spit/Ohiwa Spit), Firth of Thames, Mangawhai Sandspit to Te Arai Point; FMA 2 – Cape Kidnappers; FMA 9 – Kaipara Harbour, Manukau Harbour. Some of these areas are currently open to commercial beach cast seaweed harvest, others are not. Although these colonies require access to and use of beach cast seaweed, there is no evidence to suggest that in areas of commercial harvest, removal of beach cast seaweed has caused any significant impact on their long-term viability.

A number of fish species obtain some of their prey from organisms that reside on beach cast seaweed in the inter-tidal zone, within estuaries and harbours. Juvenile fish also use floating seaweed for shelter and food in nursery areas. Some estuaries and harbours are currently open to commercial beach cast seaweed harvest, others are not. Although these species use beach cast seaweed, there is no evidence to

suggest that in current areas of commercial harvest, removal of beach cast seaweed has caused any significant impact on their long-term viability.

Commercial harvest does not involve the complete removal of all available beach cast seaweed on shore, and the resource is regularly replenished after storm or high wind events. Some coastal areas do (and will) remain untouched by commercial harvesters to provide habitat for bird colonies, fish, and invertebrates because not all areas are easily accessible or desirable.

- **Section 9 (b)** requires biological diversity of the aquatic environment to be maintained. The decision to expand the geographical areas of beach cast seaweed harvest is unlikely to directly impact on the long term viability and biological diversity within the aquatic environment.
- **Section 9(c)** requires habitat of particular significance for fisheries management to be protected. Based on submissions received MFish proposes to limit the expansion of the commercial harvesting areas to exclude a number of estuaries and harbours that have been highlighted as ecologically sensitive.

94 **Section 10** of the Act sets out information principles, which require that decisions be based on the best available information, taking into account any uncertainty in that information, and applying caution when information is uncertain, unreliable, or inadequate. We have reviewed all of the information before us and the best available information has been used to evaluate the management options presented. Uncertainties in information make it difficult to accurately quantify costs and benefits to access to the fishery and stakeholder value; these uncertainties are identified and discussed. MFish has included matters relating to uncertain information to provide opportunities for discussion with fishery stakeholders and receive additional information and supporting evidence where available.

95 **Section 11** of the Act sets out matters the Minister must take into account when modifying the areas from which any fish, aquatic life, or seaweed of any stock may be taken.

- **Section 11(1)(a)** requires the Minister to take into account any effects of fishing on any stock and the aquatic environment. MFish considers the options presented in this paper will not contribute or detract from the sustainability of beach cast seaweed stocks. The potential environmental impacts of beach cast seaweed harvest on the aquatic environment are considered.
- **Section 11(1)(b)** requires the Minister to take into account any existing controls under the Act that apply to the stock or area concerned. All matters relating to existing controls for the harvest of beach cast seaweed in the North Island are considered and discussed in the paper.
- **Section 11(1)(c)** requires the Minister to take into account the natural viability of the stock concerned. The options presented in this paper will not contribute or detract from the sustainability of beach cast seaweed. The natural variability of beach cast seaweed is considered in the paper.
- **Section 11(2)(a)** requires the Minister to have regard to regional policy statement, regional plan, or proposed regional plan under the Resource Management Act 1991. Relevant regional policy statements, regional plans and proposed regional

plans have been considered in the preparation of this paper. The options presented in this paper will not affect existing restrictions on use of the coastal marine area, for instance, rules in regional plans or requirements for resource consents under the *Resource Management Act 1991* (RMA).

- **Section 11(2)(b)** requires the Minister to have regard to any management strategy or management plan under the Conservation Act 1987. There are no management strategies or plans under the Conservation Act 1987 that are relevant to the management options proposed.
- **Section 11(2)(c)** requires the Minister to have regard to sections 7 and 8 of the Hauraki Gulf Marine Park Act 2000. The options consider the potential effects on the natural and physical resources of the environment, on tangata whenua (for the entire North Island, which would include the Hauraki Gulf), and the potential economic opportunities.
- **Sections 11(2A)(a) and (c)** require the Minister to take into account any conservation services or fisheries services, and any decisions not to require conservation services or fisheries services. The management options proposed in this paper will not be affected by, or require conservation or fisheries services.
- **Section 11(4)(b)(i)** of the Act allows the Minister, by notice in the *Gazette*, to implement or vary any sustainability measure – including the Prohibition Notice – as set or varied under s 11(1).