

H0468

24 September 2009

Minister of Fisheries

Introduction of Bladder Kelp Seaweed, *Macrocystis Pyrifera* (KBB), in Fisheries Management Areas 3 and 4 into the Quota Management System on 1 October 2010

1 This Final Advice Paper (FAP) provides you with the Ministry of Fisheries' (MFish) recommendations to introduce attached bladder kelp (*Macrocystis pyrifera*) in Fisheries Management Areas (FMAs) 3 and 4 into the Quota Management System (QMS) on 1 October 2010.

2 The paper consists of the following sections:

- a) Part 1: Final Advice Paper
- b) Part 2: Summary of submissions

3 Section 18 of the Fisheries Act 1996 (the Act) states that if you determine to make a stock subject to the QMS you must, by notice in the *Gazette*, declare the stock to be subject to the QMS on and from the first day of the fishing year stated in the notice. A notice will be produced by the Parliamentary Counsel Office for this purpose.

4 Should you decide to introduce attached bladder kelp in FMA 3 into the QMS on 1 October 2010, a legal settlement entitles Mr R Beattie to receive 40% of quota for that stock. The appropriate allocation of quota in FMA 4 will be made in accordance with the Act.

PART 1: FINAL ADVICE PAPER

Executive Summary

5 MFish recommends that you make a determination under s 17B of the Act to introduce attached bladder kelp in FMAs 3 (KBB 3) and 4 (KBB 4) into the QMS on 1 October 2010.

6 If you agree to introduce the above seaweed stocks into the QMS, MFish recommends that you set a 1 October to 30 September fishing year and use greenweight as the unit of measurement to express Total Allowable Catch (TAC) and Annual Catch Entitlement (ACE).

7 MFish also recommends that the beach-cast and free-floating seaweed states of the above stocks continue to remain outside the QMS and are removed from Schedule 4C of the Act to provide for an open-access fishery.

8 MFish considers there is growing demand for attached bladder kelp in FMAs 3 and 4 and this requires active management to ensure its sustainable use. The QMS is the most appropriate mechanism to manage these seaweed stocks.

9 Additionally, a legal settlement regarding historic seaweed permit decisions requires MFish to ask you to make a determination under s 17B(1) of the Act during the 2008-09 fishing year on whether to introduce these seaweed stocks into the QMS.

10 An Initial Position Paper (IPP) was released on 21 August 2009 seeking stakeholders' views on whether to introduce bladder kelp in FMAs 3 and 4 into the QMS on 1 October 2010. MFish's preliminary recommendation was that only the attached seaweed state should be managed within the QMS to best meet the purpose of the Act.

11 A total of 26 submissions were received in response to the IPP. These submissions were received from tangata whenua and various commercial, environmental, and recreational interests.

12 The dominant theme in all submissions is the ecological importance of bladder kelp on the marine environment and the need to carefully manage the harvest of this fishery resource. Bladder kelp is a keystone species within the marine environment and significantly contributes to ecosystem function (including providing important habitat and food for many marine species), and energy and nutrient cycling.

13 Accordingly, most submissions support QMS management for attached bladder kelp in FMAs 3 and 4. MFish concurs with stakeholders that the QMS provides the best framework to manage attached bladder kelp to ensure its long-term sustainability.

14 Submissions are divided on whether the beach-cast and free-floating seaweed states for the above stocks should also be managed under the QMS. Commercial fishers contend that these states are best managed outside of the QMS, while other stakeholders consider the QMS provides a better framework to ensure sustainable use because both states are ecologically important.

15 MFish agrees with stakeholders that beach-cast and free-floating bladder kelp are important to the functioning of coastal ecosystems, but they are not as important ecologically as attached bladder kelp. The current management of beach-cast and free-floating states outside of the QMS (using s 11 sustainability measures alone) appears to be working adequately and best meets the purpose of the Act at this time. In addition, MFish has concerns that the additional costs imposed

on fishers by QMS management of the beach-cast and free-floating states may impact on the economic viability and continued use of these low value fisheries resources.

16 MFish will continue to monitor the use of free-floating and beach-cast bladder kelp in FMAs 3 and 4 and will reconsider management arrangements for these states if sustainability and/or utilisation risks are identified in the future.

17 If you agree to introduce attached bladder kelp into the QMS, the next step of the process is for MFish to consult on appropriate TACs, sector allowances, deemed values, and s 11 sustainability measures for each stock. When developing the IPP on these measures, MFish will take note of the wide range of issues raised in submissions.

18 If introduced into the QMS, a legal settlement entitles Mr R Beattie to receive 40% of quota for the FMA 3 stock. This will happen by an initial allocation of quota to the Crown and then an on-transfer of 40% of the stock to Mr Beattie. The appropriate allocation of quota in FMA 4 will be made in accordance with the Act.

The Issue

19 Over the past 10 years, MFish has undertaken a programme to introduce species into the QMS as part of its strategic direction to manage fisheries under the QMS framework and to meet its obligations to Maori under the Deed of Settlement.

20 MFish considers the QMS framework generally provides the best means of meeting the purpose of the Act – to provide for utilisation while ensuring sustainability. MFish acknowledges the QMS may not always be the most appropriate framework to manage some species and stocks, and that other methods of active management, or indeed no active management, may be more appropriate.

21 MFish considers there is growing demand for attached bladder kelp in FMAs 3 and 4 and this requires active management to ensure its sustainable use. The QMS is the most appropriate mechanism to manage these seaweed stocks in the long-term.

22 Additionally, a legal settlement regarding historic seaweed permit decisions requires MFish to ask you to make a determination under s 17B(1) of the Act during the 2008-09 fishing year on whether to introduce these seaweed stocks into the QMS.

23 The IPP recommended introducing attached bladder kelp in FMAs 3 and 4 into the QMS, as the purpose of the Act would be better met by QMS management than using s 11 sustainability measures¹ alone.

24 The IPP contended that QMS management for the attached state only is most appropriate as it will provide the best means to achieve the purpose of the Act - enabling fishers to maximise

¹ Section 11 (3) Without limiting the generality of subsection (1) of this section, sustainability measures may relate to—

- (a) The catch limit (including a commercial catch limit) for any stock or, in the case of a quota management stock that is subject to section 13 or section 14 of this Act, any total allowable catch for that stock:
- (b) The size, sex, or biological state of any fish, aquatic life, or seaweed of any stock that may be taken:
- (c) The areas from which any fish, aquatic life, or seaweed of any stock may be taken:
- (d) The fishing methods by which any fish, aquatic life, or seaweed of any stock may be taken or that may be used in any area:
- (e) The fishing season for any stock, area, fishing method, or fishing vessels.

value while ensuring sustainability. While this measure will impose higher administrative costs on fishers, these costs will be outweighed by the benefits derived in having a rights-based QMS system. Introduction to the QMS will also allow the setting of appropriate TACs to manage risks to both the sustainability of the seaweed stocks and the effects of fishing on the wider aquatic environment.

25 The IPP also recommended retaining beach-cast and free-floating bladder kelp outside of the QMS under an open-access harvest regime using s 11 measures.

Background Information

Species and state

26 Bladder kelp is a large seaweed occurring throughout New Zealand. This seaweed occurs predominately in coastal waters around southern North Island, the South Island, Chatham Islands, Stewart Island, and New Zealand's sub-Antarctic islands.

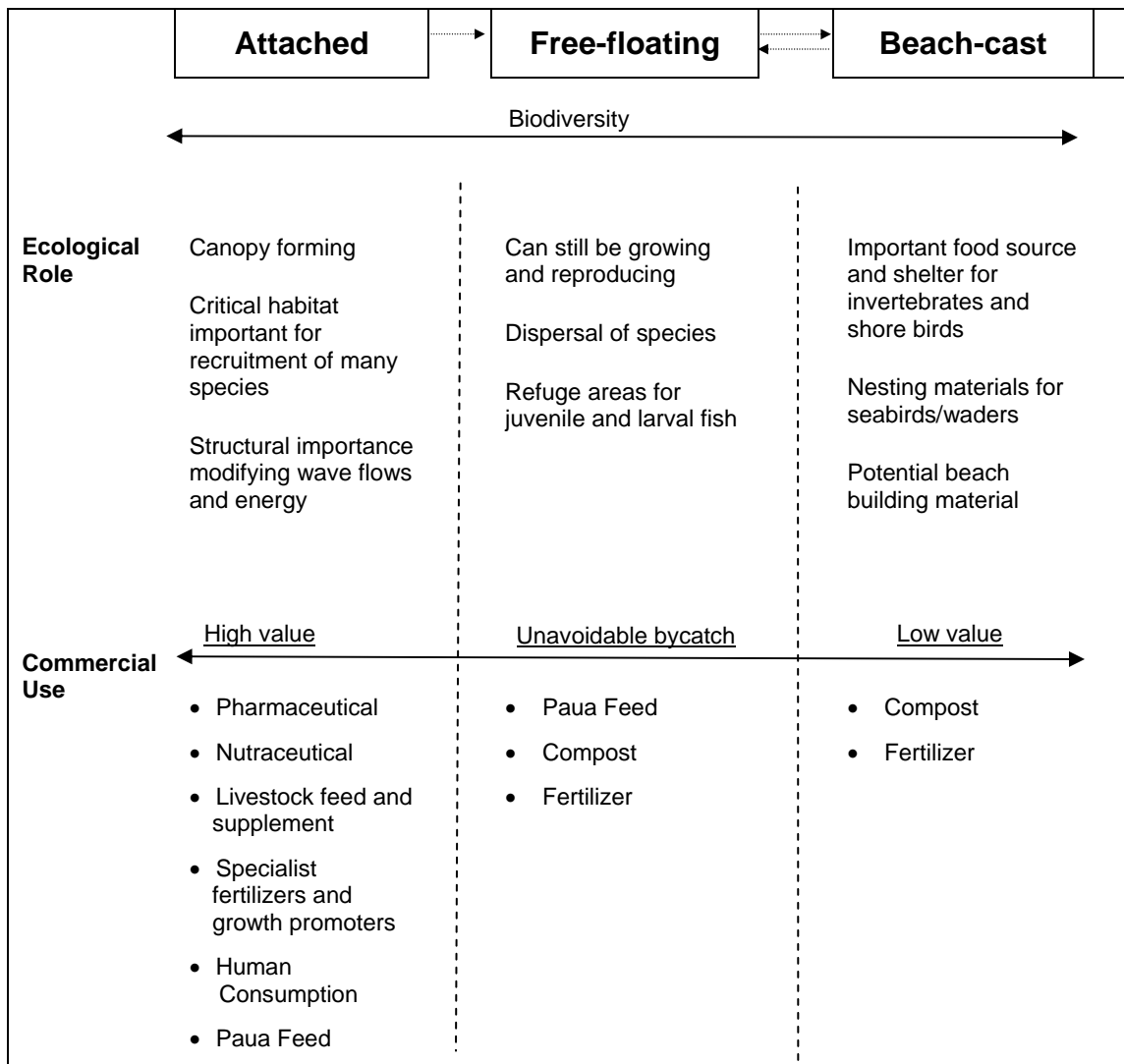
27 Individual plants can grow up to 20 metres in length and is one of the fastest growing seaweed species in New Zealand (growing in length of up to 1 metre each day). Bladder kelp typically occurs in dense stands and is the predominate habitat-forming species in many areas.

28 Bladder kelp, like all other large seaweeds, occurs in one of three states – attached (growing to the substrate), free-floating, and beach-cast.

29 Each seaweed state provides an important ecological role within the marine ecosystem. Bladder kelp forests form extremely productive communities, turning over their biomass many times each year. A significant proportion of the annual kelp production becomes free-floating and beach-cast in response to storm events, seasonal mortality, or aging.

30 The key characteristics of each seaweed state are described in Figure 1.

Figure 1 Key characteristics of each seaweed state



31 The attached state plays a critical role in coastal, inshore and estuarine ecosystems providing food, shelter and habitats for a very wide range of micro- and macro-fauna including various fish and shellfish species of high social, cultural and economic value. Kelp beds play a very important role in modifying the coastal environment by influencing water temperature, clarity, wave action, nutrient cycling, and tidal movements.

32 The free-floating state provides a food source for a variety of organisms including kina and paua. The floating stage also plays a significant role in the dispersal of invertebrates and juvenile fish.

33 The beach-cast state is either washed back into the sea over subsequent tidal cycles or remains in the beach environment, where it is incorporated into physical beach processes, or into the terrestrial or marine food webs through consumption and decomposition. Beach-cast material supports a diverse ecology of organisms through nutrient cycling and decomposition including various micro- and macro-fauna, and if washed up high enough on the beach, can aid sand dune formation.

34 Because bladder kelp is essential to the functioning of coastal and inshore marine ecosystems, the harvest of this species must be carefully managed to ensure sustainability of the seaweed species harvested and the diverse range of aquatic communities it supports.

Current Access Arrangements to Bladder Kelp

Commercial access

35 Bladder kelp (as well as all other seaweeds) is currently managed outside the QMS.

36 The statutory regime controlling the commercial harvest of bladder kelp relies on a permitting regime. The Act prescribes that no person shall take any bladder kelp for the purpose of sale unless that person does so under the authority of, and in accordance with, a current fishing permit issued under s 91² of the Act.

37 However, a moratorium³ currently applies to the issue of new fishing permits to 'target' bladder kelp (*refer* Schedule 4C of the Act). Bladder kelp is a moratorium species as it has been identified as being vulnerable to sustainability risk in an open-access permit environment, and to ensure these risks are adequately managed while being considered for QMS introduction.

38 Commercial fishers who were authorised to target bladder kelp prior to 1992 can continue to take this seaweed in accordance with fishing permits issued under s 91. There are only two commercial fishers authorised to target bladder kelp in FMA 3 and one commercial fisher authorised to target bladder kelp in FMA 4.

39 Notwithstanding the above, commercial fishers are entitled to take bladder kelp providing:

- i) It is harvested as an inevitable consequence of the taking of other fish, aquatic life or seaweed under the authority of, and in accordance with, a current fishing permit, or
- ii) It is harvested in a 'beach-cast state' only and that it is taken from within an approved commercial seaweed harvest area as defined in the *Fisheries Beach-cast Seaweed Area Prohibition Notice 2005*.

40 The following are approved commercial beach-cast seaweed harvest areas in FMA 3:

- a) The 'coastal area' between Haumuri Bluffs (approximately 42°33.9'S and 173°30.3'E) and the Waipara River (approximately 43°09.2'S and 172°48.1'E).
- b) The 'coastal area' between Akaroa Head and the Waitaki River (approximately 44°56.3'S and 171°08.9'E), excluding within 1 kilometre of the banks of Ashburton River, Rangitata River, Washdyke Lagoon and Wainono Lagoon.

² Section 89(1) of the Act provides an exemption for any seaweed species belonging to the Class Rhodophyceae (ie, red seaweeds) and is unattached and cast ashore;

³ Commercial access to bladder kelp (as well as the other main seaweed species) has historically been constrained by moratoria on new fishing permits. The most recent of these was implemented in 1992. While this moratorium was lifted for non-QMS stocks from 1 October 2004, it remains in place for a few non-QMS stocks (Schedule 4C), including bladder kelp, where there is deemed to be a level of risk with an open-access permit regime

- c) The 'coastal area' between Cape Wanbrow (approximately 45°07.7'S and 170°58.8'E) and Shag Point (approximately 45°27.9'S and 170°49.2'E).

41 There is presently no approved commercial beach-cast seaweed harvest area in FMA 4.

42 Commercial fishers must land all bladder kelp catches to a licensed fish receiver and must comply with all recordkeeping provisions.

43 The Ngai Tahu Deed of Settlement requires MFish to 'decommercialise' several specific seaweed species. Bladder kelp is not one of these species and can be taken for commercial purposes within FMAs 3 and 4.

Non-commercial access

44 The harvest of bladder kelp by customary Maori and recreational fishers is unrestricted. Any non-commercial fisher can harvest bladder kelp in any state, from any harvest area, and in any quantity. Non-commercial fishers must not sell their seaweed catch.

Current and Future Demand for Bladder Kelp

45 Commercial catches of bladder kelp in FMAs 3 and 4 are relatively small. Specific catch, effort and landing information is unable to be disclosed for privacy and commercial sensitivity reasons as it is attributed to less than three fishers.

46 There is an increasing domestic and international market demand for seaweeds, including bladder kelp. This demand for seaweed is due to the ever-increasing use of compounds derived from seaweed for a wide range of value-added products for human consumption, aquaculture, pharmaceuticals and cosmetics.

47 The value derived from seaweed is likely to fall on a continuum; with attached seaweed having the highest value and beach-cast seaweed for composting purposes having the lowest value. While much of the domestic demand for seaweed is presently supplied by beach-cast material, the demand is greatest for attached seaweeds for the following two reasons:

- The quality of beach-cast and free-floating seaweed broken from attached plants is generally not as high in comparison with attached seaweed. This is particularly the case when seaweed is required for human consumption and pharmaceutical purposes; and
- Both quantity and consistency of supply of beach-cast and free-floating seaweed is frequently sporadic and generally coincides with storm events. Seaweed-based industries generally require consistent supply of seaweed material.

48 MFish is aware of Sea-Right Investments Ltd (Mr R Beattie) intention's to develop substantial bladder kelp fisheries in FMAs 3 and 4 based on the attached state only. Presently, these fisheries are unable to develop under the current non-QMS regime where access is generally limited to the beach-cast state only.

49 Both customary and recreational fishers may consider bladder kelp to be of high importance in some areas. Maori historically used seaweeds for food and other uses. Recreational fishers typically gather seaweeds after storm events to provide fresh compost material for gardens and vegetable plots.

Consultation

50 An IPP was released on 21 August 2009 seeking tangata whenua and stakeholders' views on whether to introduce bladder kelp in FMAs 3 and 4 into the QMS on 1 October 2010.

51 Submissions on the IPP were received from:

- Department of Conservation (Otago Conservancy)
- East Otago Taiapure Management Committee
- Bill Hartley
- Hokianga Accord/Option4
- Kaikoura Boating Club
- Kati Huirapa Runaka ki Puketeraki
- Dr Wendy Nelson
- New Zealand Conservation Authority
- New Zealand Marine Sciences Society
- New Zealand Recreational Fishing Council
- New Zealand Rock Lobster Industry Council
- New Zealand Seafood Industry Council Ltd
- New Zealand Underwater
- Ngā Motu Marine Reserve Society Inc.
- Otago Conservation Board
- PAUAMAC 4 Industry Associated Incorporated
- Royal Forest and Bird Protection Society of New Zealand Inc.
- Colin Ryder
- Kuini Scott
- Sea-Right Investments Ltd
- Seaweed Association of New Zealand Inc
- Te Korowai o Te Tai o Marokura
- Te Ohu Kaimoana
- Te Runanga o Ngai Tahu
- University of Auckland (Leigh Marine Laboratory)
- Wellington Recreational Marine Fishers' Association (Inc)

Summary of submissions

52 This section provides a summary of the main issues raised in submissions. A more comprehensive summary is provided in Part 2 of this document.

53 There is general support to manage bladder kelp in FMAs 3 and 4 within the QMS on the basis that the alternative 'open-access' harvest regime (ie, non-QMS management) could lead to rapid depletion of the seaweed resource and lead to an onset of a broad range of significant and adverse coastal ecosystem responses.

54 Submissions are divided on which seaweed states should be introduced into the QMS. Commercial fishers agree with MFish's initial position that only the attached state should be introduced, while other groups consider all seaweed states should be managed under the QMS.

55 The majority of submissions support QMS management but within the context of TACs set at zero for each stock. The support for this approach reflects an overwhelming desire to prohibit the harvest of this seaweed within FMAs 3 and 4, as well as nationally. The rationale for this position is that bladder kelp plays a critical role in the coastal and inshore aquatic environment, and there are substantial risks associated with commercial harvesting including loss of important habitat and food supply, increasing coastal erosion, and direct and indirect adverse impacts on a wide range of fisheries resources.

56 Submissions in support of this approach are received from Bill Hartley, Kati Huirapa Runaka ki Puketeraki, Dr Wendy Nelson, Nga Motu Marine Reserve Society Inc, New Zealand Conservation Authority, New Zealand Marine Sciences Society, New Zealand Recreational Fishing Council, New Zealand Underwater, Otago Conservation Board, Royal Forest and Bird Protection Society of New Zealand Inc, Colin Ryder, Te Runanga o Ngai Tahu, and the Wellington Recreational Marine Fishers' Association Inc. The Seaweed Association of New Zealand Inc also raises the above concerns and supports either a zero TAC or at levels no higher than existing catch levels.

57 The fishing industry supports managing bladder kelp in FMAs 3 and 4 within the QMS with higher TACs set to reflect sustainable yields. These submissions are received from the New Zealand Rock Lobster Industry Council, New Zealand Seafood Industry Council Ltd, PAUAMAC 4 Industry Associated Incorporated, Sea-Right Investments Ltd, and Te Ohu Kaimoana.

58 These submitters generally support QMS because harvest of this seaweed has economic potential for New Zealand and advances in harvest technology provide confidence that this species can be harvested sustainably. The submissions contend that the QMS provides the best framework to manage sustainability risks, as it enables the setting of appropriate TACs, and provides rights-holders with incentives to invest in research, technology and management initiatives to ensure sustainable development.

59 The industry also supports retaining the beach-cast and free-floating states outside the QMS as their demand will remain low and the administrative costs of managing these states within the QMS framework outweigh any benefits to commercial fishers.

60 Several submissions (East Otago Taiapure Management Committee, Hokianga Accord/Option4, Kaikoura Boating Club, Kati Huirapa Runaka ki Puketeraki, Kuini Scott, Te Korowai o Te Tai o Marokura, and the University of Auckland (Leigh Marine Laboratory)) oppose introducing bladder kelp within the QMS outright. Some of these however, note a preference for QMS management with zero TACs if non-QMS remains an unviable option.

Introducing bladder kelp in FMAs 3 and 4 into the QMS

61 Section 17B of the Act sets out the criteria for assessing whether a species or stock should be managed under the QMS.

62 In the case of bladder kelp in FMAs 3 and 4 (which is on schedule 4C), s 17B provides that you must determine to make these stocks subject to the QMS, unless you determine that the purpose of the Act would be better met by setting one or more sustainability measures under s 11 (other than a TAC set under s 13 or s 14).

63 If you decide not to introduce the above bladder kelp stocks into the QMS, then you are required to remove these stocks from the permit moratorium and provide for open-access. One

submitter contends that bladder kelp should remain under moratorium and be totally protected. However, the Act cannot consider this as an option, as there are no provisions for species to remain on Schedule 4C in the long-term.

64 The primary rationale for introducing attached bladder kelp in FMAs 3 and 4 into the QMS is to ensure sustainable use – maximising utilisation opportunities while constraining catches to a sustainable level and managing the effects of fishing on the associated aquatic environment.

65 Managing the above bladder kelp stocks within the QMS provides the best long-term use and sustainability outcomes. This framework enables appropriate TACs and other sustainability measures (set under s 11 of the Act) to be set to reflect the vulnerability of the stock to overfishing and manage fishing effects. This mechanism enables conservative TACs to be set initially in the absence of robust scientific information on sustainable catch levels or where the effects of fishing are deemed unacceptable.

66 MFish recognises the QMS may not always be suitable and that s 11 management measures alone may better meet the purpose of the Act for some species or stocks. This is particularly the case for low value species where both demand and sustainability risk are low, and where the additional administrative costs imposed on fishers by the QMS (ie, ACE balancing and additional reporting) do not warrant the benefits of QMS entry and may in fact impede utilisation.

67 In light of submissions received, MFish assesses below each of the bladder kelp states (attached, free-floating and beach-cast) against the legislative criteria for introduction into the QMS. This approach is necessary because the different states have different sustainability risks and use opportunities, and may benefit from different management approaches.

Assessment of attached bladder kelp

MFish's final view

68 MFish recommends that you agree to introduce attached bladder kelp in FMAs 3 and 4 into the QMS. MFish considers that the purpose of the Act would be better met by introducing attached bladder kelp into the QMS than using only s 11 sustainability measures alone.

69 MFish notes that stakeholders generally support managing attached bladder kelp within the QMS.

Discussion

70 MFish agrees with stakeholders that attached bladder kelp is a critical component of the marine ecosystem. Bladder kelp is a keystone species because of its productivity, forest-like structural form and ecological characteristics (including providing important habitat and food for many marine species), its significant contribution to ecosystem function, energy and nutrient cycling, and modifying wave action and coastal erosion. The large scale removal of bladder kelp beds can lead to significant risks to localised commercial, customary, and recreational fisheries.

71 MFish believes the management of these risks is best achieved through the QMS framework through the setting of appropriate TACs and creation of incentives for rights-holders to develop best fishing practices to maintain sustainability while ensuring maximum yield. The submission from Sea-Right Investments Ltd (Mr Beattie) demonstrates the willingness for rights-holders to develop good fishing practices. This submission outlines the following initial proposed harvest plan to mitigate the effects of commercial harvest activities and have been developed following the

completion of a research programme on bladder kelp in FMA 3.

- No more than 50% of the canopy is harvested at any one time;
- No one area is harvested more than twice a year;
- Maximum cutting depth to restricted to 1.2 metres; and
- Harvest strips are no greater than 5 metres in width.

72 Such harvest plans will inform TAC decisions (if you agree that bladder kelp in FMAs 3 and 4 should be introduced into the QMS). Harvest plans would likely be implemented by way of voluntary arrangements with commercial fishers.

73 The alternative to QMS management for attached bladder kelp is open-access under the non-QMS framework. MFish contends that an open-access competitive fishery will not provide the same incentives to develop best fishing practices to ensure good sustainable use outcomes, as fishers will race for a share of the overall catch.

74 MFish agrees with industry submissions that access to seaweeds (including bladder kelp) is necessary to develop a wide range of high-value products for both national and international markets, and that the demand for attached seaweeds is likely to increase. The existing management framework for attached seaweeds is constraining economic development, particularly the lack of secure access to the necessary commercial quantities required to meet market demand.

75 To achieve the value potential of this fishery, a robust management framework is necessary to create incentives and confidence for business to invest in the following:

- Research necessary to prove up the fishery to maximise sustainable yield;
- Infrastructure to efficiently harvest and process the product;
- Market development and R&D to improve the value of production; and
- Appropriate and conservative harvest plans adhered to by commercial fishers.

76 The rights associated with the QMS framework create better incentives and confidence for business to invest than an open-access fishery managed using s 11 measures. Under open-access, businesses cannot ensure consistency of supply because fishers are competing to take the total catch limit. Without certainty of supply, the incentives to invest in developing the value of a fishery are greatly lessened.

77 Introducing attached bladder kelp into the QMS will impose higher administrative costs on commercial fishers than s 11 measures (eg, the need to balance catches with ACE). However, these costs in this case are outweighed by the benefits derived in having a rights-based QMS system.

78 Given the above considerations, MFish considers the purpose of the Act is better provided for by managing attached bladder kelp in FMAs 3 and 4 within the QMS because:

- There are sustainability risks associated with the harvest of attached seaweeds,

- The demand for this resource is likely to grow; and
- There is potential to develop additional value in this fishery.

Assessment of free-floating bladder kelp

MFish's final position

79 MFish recommends that you retain free-floating bladder kelp outside the QMS because the purpose of the Act would be better met by setting sustainability measures under s 11.

80 The current management of free-floating seaweed using s 11 measures appears to be adequate at this time. MFish is also concerned that the additional costs imposed by QMS introduction on commercial fishers may impact on the economic viability and continued use of this low value resource.

Discussion

81 MFish agrees with stakeholders that free-floating bladder kelp is an important source of detritus in marine ecosystems and ultimately the source of beach-cast seaweed (which is an important part of beach ecology). However, the risks to sustainability of harvesting free-floating bladder kelp are less than for the harvest of attached bladder kelp. MFish also expects the demand to harvest free-floating bladder kelp in FMAs 3 and 4 will be low because:

- The value of free-floating bladder kelp is low and generally would only be used to make compost and fertiliser;
- It is difficult to develop a business around a resource with unpredictable supply and quality; and
- It will be more cost effective to harvest detached bladder kelp from the beach (where it becomes concentrated) rather than targeting free-floating weed using a boat or net.

82 MFish is also concerned that the additional administrative costs imposed by QMS introduction (ie ACE balancing and additional reporting) may impact on the future economic viability and use of this low value resource.

83 Introducing free-floating bladder kelp into the QMS would also likely increase costs for near shore trawl and set net fisheries because of bycatch issues. Fishers who incidentally catch free-floating bladder kelp in their nets could be required under the QMS to balance free-floating bladder kelp against ACE.

84 Given the above considerations, MFish considers the purpose of the Act is better provided for by managing free-floating bladder kelp in FMAs 3 and 4 outside the QMS at this time. MFish will continue to manage this resource using s 11 measures.

85 MFish will continue to monitor the use of free-floating bladder kelp in FMAs 3 and 4 and will reconsider introducing the free-floating state into the QMS if sustainability and utilisation risks are identified in the future.

Assessment of beach-cast bladder kelp

MFish's final position

86 MFish recommends that you retain beach-cast bladder kelp outside the QMS because the purpose of the Act would be better met by setting sustainability measures under s 11.

87 The current management of beach-cast seaweed using s 11 measures appears to be adequate at this time. MFish is also concerned that the additional costs imposed by QMS introduction on beach-cast seaweed fishers may impact on the economic viability and continued use of this low value resource.

Discussion

88 Beach-cast seaweed is a low value fishery primarily used to make compost and fertiliser. This seaweed is cheaply harvested and simply scooped off the beach following storm events with little in the way of sorting or identification. Demand is currently low to medium and there is little known competition between fishers for catch. Moreover, demand is not expected to increase significantly because of the difficulties of developing a business around a resource with unpredictable supply and quality.

89 MFish currently manages all beach-cast seaweed, regardless of species, as a single management unit using s 11 measures (ie, commercial fishers report beach-cast seaweed catches under a single reporting code 'SEO' regardless of species composition).

90 It would be administratively difficult to separate the management of beach-cast bladder kelp from the management of beach-cast seaweed generally. Separating bladder kelp would raise issues of seaweed identification and would increase harvest costs for fishers taking beach-cast seaweed due to the need to sort seaweeds. Costs would also increase if beach-cast bladder kelp is introduced in the QMS due to additional administrative costs (ie, ACE balancing and additional reporting).

91 MFish considers the current management of beach-cast seaweeds nationally using s 11 measures has worked since its inception in 2002 and the risks of not providing for use or sustainability are low at this time.

92 Introducing beach-cast bladder kelp into the QMS would add additional costs to fishers that may impede utilisation opportunities for this low value resource (ie, increasing costs could impact on the economic viability of the current businesses using beach-cast seaweed).

93 Given the above considerations, MFish considers the purpose of the Act is better provided for by managing beach-cast bladder kelp in FMAs 3 and 4 outside the QMS at this time. MFish will continue to manage this resource using s 11 measures.

94 MFish can consider again QMS introduction if the future demand for beach-cast seaweed increases.

Proposed Quota Management Areas

95 The Act sets out two statutory obligations that must be considered when defining QMAs:

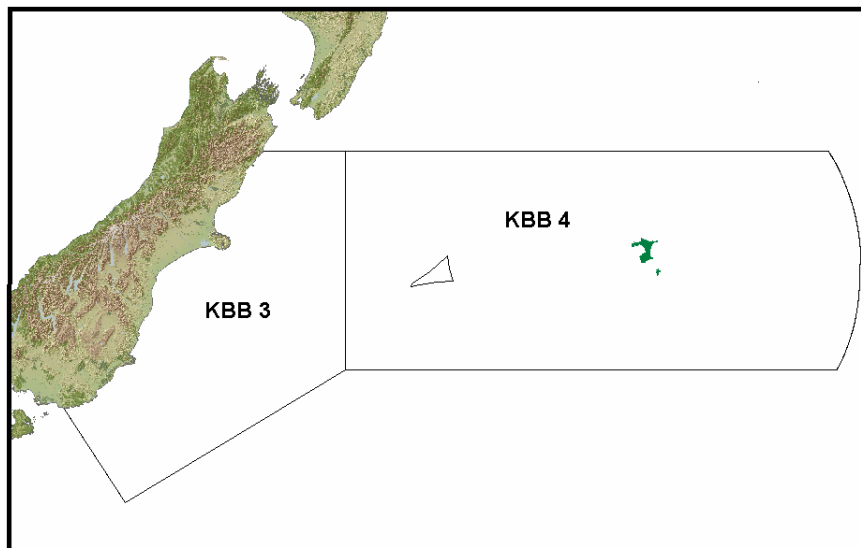
- As far as practicable, the same QMAs should be maintained for different species (s19(2)); and

- A separate QMA may be set for the waters around the Chatham Islands if the stock can be managed effectively as a unit (s 19(3)).

96 MFish agrees with several submissions that attached bladder kelp stocks should be managed on a small spatial scale due to its vulnerability to localised over-harvesting. However, MFish considers that initial QMAs for these stocks should provide boundaries within which quota owners and stakeholders can practice small-scale management and adaptively move to smaller stock management over time, using fisheries plans, alteration of QMAs and other measures within the Act.

97 In considering these statutory obligations, MFish recommends QMAs for attached bladder kelp stocks under review are based on standard FMAs 3 and 4 boundaries. The proposed QMAs are shown in Figure 2.

Figure 2 Proposed QMAs for attached bladder kelp in FMAs 3 and 4



98 The proposed QMAs align to existing FMAs 3 and 4 boundaries for the other seaweed species listed on Schedule 4C.

Fishing Year

99 MFish recommends the proposed fishing year for attached bladder kelp is from 1 October to 30 September.

100 Submissions support the proposed fishing year.

Unit of Measure

101 MFish recommends using greenweight as the unit of measure to express TACs and ACE.

102 Submissions support the proposed unit of measure.

Other Issues Raised In Submissions

103 The majority of submissions raise a wide range of concerns about the potential impacts of harvesting bladder kelp on the seaweed stocks, associated and dependent species, and the wider

marine environment. These submissions generally request that TACs be set at zero for each stock to prohibit the harvest of this seaweed species.

104 Several submissions highlight that any future TAC reviews to provide for access must be based on robust scientific information to establish sustainable harvest levels (including a requirement to obtain environmental impacts assessments), appropriate commercial harvest plans, and the setting aside of no-take areas in both representative and sensitive areas.

105 MFish agrees that setting of future TACs for attached bladder kelps stocks in FMAs 3 and 4 require careful consideration to ensure long-term sustainable harvest and mitigate the effects of fishing on the aquatic environment. In addition, other s 11 measures may also be necessary (such as closed areas, method restrictions, seasons, etc) to achieve the above desired outcomes.

106 The setting of TACs and other management controls are outside the scope of your decision to introduce bladder kelp in FMAs 3 and 4 into the QMS. Rather, these considerations will be the focus of a second consultation process to establish appropriate TACs, sector allowances, s 11 measures, deemed values, etc, to support QMS management. In addition, MFish intends to work closely with rights-holders to ensure the adoption of sustainable harvesting practices is supported by research plans.

Recommendations

107 MFish recommends that you:

- a) **Approve** the introduction of attached bladder kelp in FMAs 3 and 4 into the QMS on 1 October 2010; and
- b) **Agree** to continue to manage beach-cast and free-floating bladder kelp in FMAs 3 and 4 outside the QMS using s 11 measures; and
- c) **Note** that MFish will continue to monitor the use of beach-cast and free-floating seaweeds in FMAs 3 and 4 and will reconsider introducing these states into the QMS if sustainability and utilisation risks are identified in the future.

AND

- d) **Approve** the fishing year for attached bladder kelp for the above stocks is 1 October to 30 September; and
- e) **Approve** the use of greenweight as the unit of measure for the above stocks;



Daniel Lees
For Chief Executive

APPROVED / NOT APPROVED / APPROVED AS AMENDED



Hon Phil Heatley
Minister of Fisheries

PART 2: SUMMARY OF SUBMISSIONS

108 The **Department of Conservation (Otago Conservancy) (DoC)** state that it has been mapping bladder kelp beds as an important marine habitat within the Otago region in preparation for the Marine Protected Area programme. DoC highlights that bladder kelp is a keystone species because of its productivity, forest-like structural form and ecological characteristics, including providing important habitat and food for many marine species. It notes that bladder kelp significantly contributes to ecosystem functioning, and energy and nutrient cycling, and its management warrants cautious consideration.

109 DoC believes information on the the ecological importance and value of bladder kelp must be properly understood before any harvest is contemplated. This includes information on seasonality and natural biomass cycles (research suggests that kelp beds demonstrate significant fluctuations over time), and identifying other threats to beds such as climate change, reduced water quality, predator-prey relationships, and competition with *Undaria*. DoC contends that baseline monitoring of unharvested beds is necessary to assess the impacts of fishing on production cycles. DoC believes it is important that the MPA forum for the Southern Biogeographical Region be given an opportunity to address the biodiversity values associated with bladder kelp before widespread harvesting occurs.

110 The **East Otago Taiapure Management Committee (EOTMC)** strongly oppose any commercial harvesting of bladder kelp within the East Otago Taiapure and associated kelp forests on the North Otago coast due to the critical role of this species in coastal fisheries. The EOTMC states that the key difference between bladder kelp and other QMS species is that the seaweed is a “habitat” and the basis of customary, recreational and commercial fisheries. It notes that bladder kelp forests have provided the basis for fisheries that have sustained the Kati Huirapa ki Pukerteraki Runaka for at least 800 years. Today, the forests are key nursery areas for a wide range of coastal species and there this is a demonstrated link between successful recruitment of juvenile crayfish and the presence of kelp canopies.

111 The EOTMC state that bladder kelp forests support biodiversity and influence the biophysical environment by reducing nutrient levels in coastal waters and dampening wave action and coastal erosion. It also notes that the removal of bladder kelp canopies could enable the invasive kelp *Undaria* to be established within the East Otago Taiapure.

112 The EOTMC advise that bladder kelp should become a protected species at least for the North Otago coast (Otago Peninsula to Oamaru) to support key customary, recreational, and commercial fisheries. It requests that if bladder kelp is to be introduced into the QMS, then evidence must be provided that any harvest is sustainable, adoption of small QMAs (including a separate QMA between the Waikati rivermouth to Otago Peninsula), and TACs set at zero until there is evidence that harvesting will not adversely affect this resource.

113 **Bill Hartley** opposes any commercial harvest of attached bladder kelp along the Kaikoura coastline as it provides very important habitat and food source for the local fisheries, as well as providing coastal protection. He notes difficulties in setting TACs to reflect changing weather patterns, climate change, etc, and requests that MFish proceeds with caution in managing this fisheries resource.

114 The **Hokianga Accord/Option4** opposes introducing bladder kelp into the QMS. It states that while the QMS provides a convenient administrative framework, it provides insufficient protection to this species of such ecological and cultural significance. It highlights that bladder kelp is taonga and disagrees with creating property rights for such an important species with very high ecological, environmental, social and cultural values. It also highlights that introducing bladder kelp into the QMS conflicts with Ministry for the Environment's guidelines on managing coastal areas.

115 The **Kaikoura Boating Club** opposes introducing bladder kelp into the QMS because it does not support the commercial harvest of this species. It notes that if this species is managed within the QMS, then TACs should be set at zero, or at the very least set to existing commercial harvest levels.

116 **Kati Huirapa Runaka ki Puketeraki** opposes introducing bladder kelp into the QMS because this seaweed is an important habitat for juvenile recruitment of key mahika kai species. They note that if this seaweed is managed within the QMS, then TACs should be set at zero. They note that the seaweed cannot be managed sustainably under the QMS as the ecosystem is too dynamic using a system that focuses on setting output controls for single species on large spatial scales. They highlight that effective management of the seaweed is beyond MFish's capabilities given the loss of a significant component of its inshore analyst capacity through the recent restructure.

117 The **Nga Motu Marine Reserve Society Inc** supports managing bladder kelp within the QMS to "prevent this kelp being openly harvested commercially". It states the TACs should be zero until key scientific information is available on the role of the species on the marine ecosystem, its role as habitat and food source, and its vulnerability to overharvesting, pollution, water temperature, predation, and disease. It also contends that kelp beds of national significance are protected from harvesting in reserve areas. It highlights that declines in some overseas paua and finfish fisheries are linked to declines to associated kelp forests.

118 **Dr Wendy Nelson** supports managing bladder kelp within the QMS and setting TACs at zero. Dr Nelson urges a precautionary approach in managing this resource given the significant role this seaweed plays within the aquatic environment, the lack of scientific information on the effects of fishing within a New Zealand perspective, and experiences of overseas commercial seaweed harvesting. Dr Nelson highlights the need to undertake more scientific investigation on the likely impacts of commercial harvesting, protection of representative areas, the necessity to provide ecological risk assessments and effective management harvest plans.

119 Dr Nelson recommends that harvesting must be limited using an adaptive management approach, and should only occur where there is good evidence that harvesting is likely to be sustainable.

120 The **New Zealand Conservation Authority (NZCA)** support introducing bladder kelp into the QMS because it provides a statutory mechanism to ensure sustainability. It does not support an open-access fishery because of the vulnerability of the attached seaweed state and the potential for demand to exceed a sustainable harvest. NZCA notes that bladder kelp is a highly important ecological component and there is no assessment of the economic value of the species for its habitat values and role in the food chain.

121 NZCA advocates a precautionary approach to manage bladder kelp and supports investigating the farming of this species for economic use. It also supports the use of smaller quota

management areas to manage the fishery on a micro-scale and the need to collect a full stock assessment before setting TACs. It also states that any initial harvest should be on an experimental (adaptive) basis with appropriate monitoring. It states that any harvest proposals must be linked to the protection of significant and representative areas.

122 The **New Zealand Marine Sciences Society (NZMSS)** support managing bladder kelp within the QMS with TACs set at zero. The NZMSS raises concerns about the potential impacts of harvesting bladder kelp on both the standing stock and the aquatic environment. It highlights the lack of scientific information on these impacts from a New Zealand perspective, and cautions against using overseas examples of commercial seaweed fisheries as examples of sustainable fisheries. It contends that commercial fishing should only occur following comprehensive, independent environment and socio-economic risk assessments, management plans to minimise adverse effects of commercial harvesting on bladder kelp and its associated values, and protection of kelp forests of rare, distinctive and outstanding value. The NZMSS recommends smaller QMAs than proposed in the IPP.

123 **New Zealand Recreational Fishing Council** supports in principle the submissions provided by the Wellington Recreational Marine Fishers' Association (Inc) and the Non-Commercial Fishing And Environmental Interests Alliance.

124 **New Zealand Rock Lobster Industry Council (NZRLIC)** supports the introduction of attached bladder kelp in FMAs 3 and 4 into the QMS. The NZRLIC notes its endorsement of submissions from the New Zealand Seafood Industry Council Ltd and the Paua Industry Council (not received). It states that it also supports the proposed QMA boundaries, fishing year and unit of measure. NZRLIC recommends that MFish engages with the full range of relevant rights-holders to develop appropriate management measures for bladder kelp within the QMS including commercial harvest areas, methods and timing.

125 The NZRLIC opposes managing beach-cast and free-floating seaweeds under the QMS as it will increase costs for most inshore commercial fishers (including rock lobster fishers) if there is a requirement to balance catches with ACE. It also recommends that rights-holders are given an active role to determine harvest plans and considers there are no reasons why the commercial development of a bladder kelp fishery should not proceed.

126 **New Zealand Seafood Industry Council Ltd (SeaFIC)** supports introducing attached bladder kelp into the QMS in FMAs 3 and 4. SeaFIC supports this approach because the harvest of this species has economic growth potential for New Zealand and that advances in harvest technology provide confidence that the seaweed can be harvested sustainably. This potential cannot be realised unless the permit moratorium is removed. SeaFIC believes that managing the species under open-access will create sustainability risk and this is unacceptable to the seafood industry because the critical role the seaweed plays as a food source, habitat, and lifecycles of commercially harvested species.

127 SeaFIC believes the QMS provides a better management regime for managing sustainability risks as it enables the setting of TACs and provides quota owners with incentives to invest in research and management programmes to ensure the sustainable development of the fishery. The QMS also provides a sound basis to develop a economically valuable fishery as secure rights enable quota owners to invest with confidence in value-enhancing incentives.

128 SeaFIC also supports retaining the free-floating and beach-cast bladder kelp states outside the QMS as the current access arrangements are adequate and there is no significant demand for

utilisation of these states at this time. It believes the costs of managing these states within the QMS would outweigh any real benefits, and in particular the costs of most inshore commercial fishers to balance seaweed bycatch against ACE.

129 SeaFIC supports the proposed QMAs, unit of measure, and fishing year as presented in the IPP. It recommends that MFish must engage with the full range of relevant rights-holders to develop appropriate management measures for bladder kelp within the QMS including commercial harvest areas, methods and timing.

130 **New Zealand Underwater** supports introducing bladder kelp into the QMS and setting TACs at zero across all FMAs until research information becomes available to set sustainable catch levels. It notes that all policy and management decisions must be made with accurate information and through robust consultation and risk assessment process. It highlights the importance of bladder kelp to the marine environment and raises several concerns about harvesting including loss of habitat, food and shelter to various marine species, increased coastal erosion, and the need to establish a fully comprehensive network of marine protected areas.

131 The **Otago Conservation Board (OCB)** supports the inclusion of bladder kelp into the QMS with TACs set at zero. It highlights the ecological importance of this seaweed and considers the QMS will provide greater control to manage the effects of fishing. It highlights the removal of kelp beds will have a detrimental impact on the Otago coast. The OCB states that canopy harvesting would reduce the productivity of the coastal system and likened it to clear felling of native forest. It also believes that QMAs should be small in size as fishers could concentrate their catches to very localised areas. It believes that good management of bladder kelp requires risk assessment analysis, research on the likely impacts of fishing, management plans to minimise fishing impacts, and protection of areas of outstanding ecological and biological value.

132 **PAUAMAC 4 Industry Associated Incorporated** supports the introduction of attached bladder kelp in FMAs 3 and 4 into the QMS. It states that QMS management provides the best way to ensure bladder kelp is commercially harvested in a sustainable manner while minimising impacts on paua populations. It supports the creation of a separate QMA for the Chatham Islands, and considers that quota shares should be invested with local Chatham Islands iwi and the Chatham Islands Enterprise Trust either directly or by granting first right of refusal should the Crown be the initial quota owner. It notes that initial TACs should be extremely conservative and that research is necessary to 'prove up' the fishery.

133 The **Royal Forest and Bird Protection Society of New Zealand Inc (F&B)** supports managing bladder kelp within the QMS across all FMA with TACs set at zero. F&B highlights the many values bladder kelp brings to the aquatic environment and the risks associated with harvesting including loss of important habitat and food supply, increasing coastal erosion, and role on a wide range of fisheries communities.

134 F&B does not support managing seaweeds under open-access as this could lead to rapid depletion of the seaweed resource and lead to an onset of a broad range of adverse coastal ecosystem responses. While F&B acknowledges the proposal concerns FMAs 3 and 4 only, it believes that bladder kelp in all areas should be managed under the QMS.

135 F&B states that setting TACs greater than zero must be based on comprehensive, independent environment and socio-economic risk assessments and management plans to minimise adverse effects of commercial harvesting on bladder kelp and its associated values, and protection of kelp forests of rare, distinctive and outstanding value.

136 **Colin Ryder** supports introducing bladder kelp into the QMS and setting TACs at zero. He notes that higher TACs are dependent on verifiable evidence that a commercial bladder kelp fishery would have clear economic benefits, and that these benefits outweigh any environmental risks. He also notes that fishing management plans and protected areas are necessary under higher TACs.

137 **Kuini Scott** opposes introducing bladder kelp into the QMS. She notes that bladder kelp is an essential habitat and should not be simply treated as a fishery. She states that QMS management will struggle with temporal and spatial changes of kelp beds, which fluctuate greatly over time. She highlights that a very cautious approach should be adopted to managing this resource.

138 **Sea-Right Investments Ltd (R Beattie Managing Director) (SRI)** supports managing attached bladder kelp within the QMS. It notes that SRI holds fishing permits to commercial harvest bladder kelp in FMAs 3 and 4 and has been actively promoting the sustainable use of this resource for the past 20 years. SRI states that it is developing new bladder kelp-based products and markets and these are currently being sold to a number of national and international markets.

139 SRI highlights that the main constraint to develop both national and international markets for bladder kelp-based products is the difficulty to access seaweeds. It states the lack of secure access arrangements to commercial quantities of seaweed means that opportunities to build and market products are lost. It notes that present seaweed access arrangements are a “stop-gap” only, and long-term investments require long-term management strategies.

140 SRI agrees that different bladder kelp require different levels of management and that managing the attached state within the QMS remains the priority within all FMAs. It states that uncontrolled harvest of this seaweed state will cause significant risks to both the standing stock and the aquatic environment. It supports managing the free-floating and beach-cast state outside the QMS at this time.

141 SRI proposes the following arrangements to ensure a sustainable harvest regime:

- No more than 50% of the canopy harvested at any one time;
- No one area is harvested more than twice a year;
- Maximum cutting depth to restricted to 1.2 metres; and
- Harvest strips no greater than 5 metres in width;

142 SRI contends that adopting these measures will not occur under a open-access harvest regime as fishers will compete for a share of the overall catch. It notes that the focus of sustainability considerations and associated best fishing practices requires setting appropriate TACs.

143 SRI also supports the proposed QMAs presented in the IPP to enable quota owners to develop appropriate scale management strategies.

144 The **Seaweed Association of New Zealand Inc (SANZ)** supports introducing bladder kelp into the QMS with either TACs set at zero or no higher than existing catch levels. It notes that open access is not a viable option. SANZ identifies a number of concerns that require addressing to enable the setting of appropriate TACs for bladder kelp. These concerns include recognition of the

ecological importance of this seaweed to the marine ecosystem, absence of information to set sustainable catch limits (including spatial and temporal changes across FMAs), identification of ways to mitigate impacts of fishing on associated species, protection of areas of exceptional high value and biological diversity, and development of a fisheries plan for seaweed management. SANZ urges a precautionary approach when setting TACs.

145 **Te Korowai o Te Tai o Marokura** opposes the harvesting of bladder kelp from the Kaikōura region. They highlight that the management of bladder kelp must take into account the ecological and cultural importance of kelp beds to this region and its role in providing habitat and food source for many marine species. They believe monitoring of harvest and unharvest areas must accompany any commercial activities and that the area between the Conway and Clarence rivers must be excluded from any commercial harvest area.

146 **Te Ohu Kaimoana (TOKM)** supports introducing bladder kelp into the QMS as this framework and its associated rights provide the best long-term use and sustainability outcomes, and enable the Crown to meet its obligations to Maori under the Deed of Settlement. Under QMS management, TOKM expects that research will be undertaken to determine appropriate TACs, management areas, harvest areas, and that special permits will be issued to assist quota owners to undertake research. TOKM also expects MFish to develop plans with tangata whenua and stakeholders to manage seaweed gathering in sensitive areas.

147 TOKM believes future research should focus on estimating seaweed biomass and growth rates, harvest technology, and potential and actual impacts of harvest on the marine environment. TOKM supports adopting conservative initial TACs providing quota owners have a mechanism (ie, special permits) to prove up the seaweed resource. TOKM also expects research to be undertaken to address potential conflict issues between commercial fishers and other stakeholders in areas where there are important traditional fishing and paua grounds, and rock lobster harvesting and settlement grounds.

148 **Te Runanga o Ngai Tahu** support introducing bladder kelp into the QMS and setting TACs at zero. They highlight the ecological importance of this seaweed and believe that the QMS is inadequate to effectively manage its commercial harvest on a sustainable basis. They note that ecosystems are too dynamic to be managed using a system that relies primarily on output controls. They highlight that effective management of the seaweed is beyond MFish's capabilities given the loss of a significant component of its inshore analyst capacity through the recent restructure.

149 The **University of Auckland (Leigh Marine Laboratory)** highlights the importance of bladder kelp to the marine ecosystem and considers that harvesting should be kept at a bare minimum. It notes that if this species is managed within the QMS, then TACs should be set at zero to maintain valuable ecosystem services. It notes that an industry based on this species is unlikely to be both unsustainable and unprofitable given the specific characteristics of New Zealand's kelp beds.

150 The **Wellington Recreational Marine Fishers' Association (Inc) (WRMFA)** supports managing bladder kelp within the QMS but strongly opposes any TAC limits for all stocks. The WRMFA states that all bladder kelp stocks must be totally protected from any current and future harvesting. It highlights that the cutting of bladder kelp conflicts with both the environmental principle under the Act to protect habitats of particular significance for fisheries management and advice prepared by the Ministry for the Environment regarding the importance of protecting natural coastal margins.

151 The WRMFA highlights evidence in Tasmania about the decline in kelp beds in response to commercial harvesting and the associated decline in associated abalone and finfish fisheries. It notes that kelp forests in New Zealand have disappeared due to land run-off, fast ferries, waste water discharge into coastal areas, etc, and that these forests now require total protection. Examples of these disappearances within the Wellington region were provided.

152 The WRMFA states the harvest of bladder kelp will have a devastating impact on a huge number of marine species that use kelp beds for food and shelter. These species include dolphins, finfish (warehou, trevally, mackerel, hāpuku) and shellfish (paua, kina, crayfish).

153 The WRMFA states the IPP fails to recognise the role of beach-cast seaweeds on the aquatic environment. It notes that beach-cast material provides an important food source for many invertebrate species, which in turn are food for many fish and marine mammal species.