



19 April 2010

File: F108-02 AR

C/o Tracey Steel
Ministry of Fisheries
PO Box 19747
WELLINGTON

Tena koe,

BLADDER KELP SEAWEED, MACROCYSTIS PYRIFERA (KBBG)

INTRODUCTION

1. In May 2010 the Ministry of Fisheries released its Initial Position Paper (IPP) on proposals to set Total Allowable Catches (TACs), Total Allowable Commercial Catches (TACCs), sector allowances, and other management controls to support the introduction of attached bladder kelp into the Quota Management System (QMS) on 1 October 2010. The Ministry of Fisheries has requested submissions from stakeholders and tangata whenua by the close of 21 April 2010. In this submission we present matters of interest to Te Ohu.

THE PURPOSE OF TE OHU KAI MOANA

2. Te Ohu is a statutory body established under s.31 of the Maori Fisheries Act 2004. The purpose of Te Ohu is to advance the interests of iwi individually and collectively, primarily in the development of fisheries, fishing, and fisheries-related activities, in order to-
 - (a) ultimately benefit the members of iwi and Maori generally
 - (b) further the agreements made in the Deed of Settlement
 - (c) assist the Crown to discharge its obligations under the Deed of Settlement and the Treaty of Waitangi
 - (d) contribute to the achievement of an enduring settlement of the claims and grievances referred to in the Deed of Settlement
3. Te Ohu must administer the settlement assets in accordance with its purpose set out in the Act, including but not limited to the following duties:
 - (e) to manage on a transitional basis, collectively or separately as Te Ohu considers appropriate, the settlement assets to be allocated to an iwi, until they are transferred to the Mandated Iwi Organisation of the iwi, and;

- (f) in relation to fisheries, fishing and fishing-related activities, act to protect and enhance the interests of iwi and maori in those activities
4. The Maori Fisheries Settlement in 1992 set out what was recognized through the Courts and agreed at a political level. The process established that Maori customary rights to fishing included both commercial and non-commercial elements. The commercial element was not just historic but also included future development dimensions. The Settlement established Te Ohu and provided recognition of the commercial dimensions by providing for transfer through Te Ohu of quota, cash and shares in fishing companies to iwi. It provided recognition of the non-commercial dimensions by agreeing to develop regulations to help recognise use and management practices and provide protection for and scope for exercise of rangatiratanga in respect of traditional fisheries including tauranga ika and mahinga mataitai.
 5. As noted above Parliament has established Te Ohu and given it responsibility to advance the agreements made in the Deed of Settlement and to assist the Crown to discharge its obligations and do so in a manner that contributes to an enduring settlement.

SUBMISSIONS

6. We endorse the submissions made by Ngati Mutunga, Moriori, Ngai Tahu, the Chatham's Enterprise Trust, and PAUAMAC4.

EXECUTIVE SUMMARY

7. The TACC setting advice in the IPP appears to be based upon the assumption that harvesting practices would be fatal or at least highly damaging to bladder kelp. The IPP contains no analysis of the sustainable harvesting methods used overseas to harvest standing stocks of *Macrosystis*. This lack of information on "non-mortal" trimming methods has led the Ministry to propose overly conservative TACs which cannot provide for sustainable utilisation. Even a rudimentary examination of known best practice harvesting methods from other jurisdictions shows that it is possible to trim standing bladder kelp in a way that has no apparent impact on the health of bladder kelp stocks.
8. As far as utilisation is concerned, commercial trials with dried bladder kelp show that a commercial operation would require a scale that is far above the TACC options contained in the IPP. A TACC of 1,000 tonnes would allow the production of approximately 100 tonnes of dried product over 12 months. Given the scale of the market for dried kelp as an ingredient for pharmaceutical and food products, this is barely enough to attract the interest of the major buyers of such products.
9. The harvesting techniques that are proposed by quota owners in KBB 3G and KBB 4G are designed to protect all sustainability values in the fishery and associated fisheries.

10. The limited TACCs proposed in the IPP are therefore an unjustified barrier to the sustainable commercial utilisation of this species, as proposed by the future quota owners. The IPP as it stands recognises that the QMS is the best framework for the commercial development of a bladder kelp industry but ironically contemplates setting TACCs that would preclude such development.

11. Te Ohu:

In relation to general aspects of the IPP

- Supports industry initiatives to work collaboratively in the development of the New Zealand kelp industry.
- Supports industry initiatives to work with iwi non commercial interests and other industry interests to ensure that harvest protocols take into account their views.
- Supports an industry Memorandum of Understanding which sets out agreements in relation to:
 - Harvesting protocols
 - Shelving arrangements
 - Pilot Areas
 - Research

In relation to the QMA3 TAC

- Rejects the proposed TACs on the grounds they are too conservative and ignore the evidence of the very large biomass of this stock.
- Recommends the IPP be withdrawn and re-consulted with higher initial TAC options
- Recommends re-consultation be undertaken in the shortest time frame possible
- Recommends a TACC of at least 800 tonne and possibly as high as 2000 tonne subject to further consultation.

In relation to the QMA4 TAC

- Rejects the proposed TACs on the grounds they are too conservative and do not enable utilisation.
- Recommends the IPP be withdrawn and re-consulted with higher TAC options
- Recommends re-consultation be undertaken in the shortest time-frame possible
- Recommends a TAC of 1000 tonnes

In relation to adding KBB 3G and KBB 4G to the Sixth Schedule

- Recommend both stocks be placed on the Sixth Schedule

In relation to amending the Fisheries (Reporting) Regulations 2001

- support amending the Fisheries (Reporting) Regulations 2001

In relation to deemed values

- Recommend setting the interim and annual deemed values for attached bladder kelp at \$4.00 per kg AND Interim deemed value of \$2.00 per kg

THE PROPOSAL

12. The Ministry of Fisheries (MFish) is consulting stakeholders on management controls for the KBB 3G and KBB 4G stocks. KBB 3G covers an area between the Clarence River and the bottom of the south island (roughly 90% of the east coast of the south island) and KBB 4G covers the entire Chatham Islands. MFish is considering the following options for proposed TACs, sector allowances and other sources of fishing-related mortality (Table 1).

Table 1. Proposed TACs, TACCs, and sector allowances for the KBB 3G and KBB 4G Stocks

Stock		TAC	Customary Allowance	Recreation Allowance	Sources of mortality	TACC
KBB 3G	Option 1	377 tonnes	0.1 tonne	0.1 tonne	1 tonne	375.8 tonnes
	Option 2	41.2 tonnes	0.1 tonne	0.1 tonne	1 tonne	40 tonnes
	Option 3	18.2 tonnes	0.1 tonne	0.1 tonne	1 tonne	17 tonnes
KBB 4G	Option 1	26.2 tonnes	0.1 tonne	0.1 tonne	1 tonne	25 tonnes
	Option 2	2.2 tonnes	0.1 tonne	0.1 tonne	1 tonne	1 tonne

13. MFish also propose the following management measures for each stock to support QMS introduction:

- Add KBB 3G and KBB 4G to the Sixth Schedule of the Fisheries Act 1996;
- Amend the Fisheries (Reporting) Regulations 2001 to outline the codes to be used by commercial seaweed fishers when completing their statutory catch returns; and
- Set the interim and annual deemed values for attached bladder kelp using one of the two options outlined below:

- i) Annual deemed value of \$4.00 per kg AND Interim deemed value of \$2.00 per kg; OR
- ii) Annual deemed value of \$1.00 per kg AND Interim deemed value of \$0.50 per kg
- iii) Standard differential deemed value rates are used in KBB 3G and KBB 4G but no overfishing thresholds will be set at this time.

COMMENTS

Industry working together

14. First of all we would like to commend and encourage the kelp industry to continue working together to develop this fishery. To develop the fishery any other way would undermine progress and significantly increase costs. Potentially, it could also lead to lower export prices or worse not developing the kelp industry at all.
15. In our opinion, a single management company for the whole of New Zealand, or at least for the South and Chatham Islands is desirable. It provides opportunities to share information and organisational overheads across combined quota management areas. There is more work to achieve this outcome but early discussions are promising.

Sustainability issues

16. Provided harvesting follows the basic harvesting protocols used in California (where they have had a kelp industry for the past 100 years), there should be no known issues around the sustainability of kelp forests. Harvesting kelp forests is like mowing a lawn, it keeps growing back. As the kelp industry is developed we would like to adopt and refine these protocols to fit the Chathams and South Island conditions.
17. We recognise that bladder kelp in both attached and unattached forms is an important source of nutrition for associated species. For instance, in Tory Channel, which is situated on the Cook Strait side of the top of the South Island, unattached kelp has been observed at a range of depths down to 80 feet being consumed by kina. Similar observations have been made with paua, although in much shallower water. There is often kelp and other marine plants stuck to the foot of paua or wrapped around kina. Clearly these fish are eating the kelp. In the case of kina they seem to work together to trap large amounts of kelp drifting in the tide. We would expect the same sorts of things to be happening in KBB 3G and KBB 4G.
18. Accordingly, in developing the kelp industry we support ongoing research into the relationship between kelp forests and associated stocks so we better understand these interactions.
19. We are pleased that the future quota owners of kelp - Ngai Tahu, Moriori, Ngati Mutunga, Chatham's Enterprise Trust, and Roger Beattie – have interests in stocks associated with kelp forests, including paua and rock lobster. These latter two stocks represent the most commercially valuable inshore fisheries in NZ and from a non commercial perspective two of the main iconic delicacies that

Tangaroa has to offer. So these quota owners and iwi have every reason to look after their existing interests.

What research is needed to support management?

20. Quota owners aim to develop an agreed research programme. Baseline studies would be a useful starting point so we at least know how much kelp is in the areas to be harvested, and what species are in and around these kelp forests. By monitoring these kelp forests over time they should be able to establish whether harvesting them is adversely impacting associated stocks. If there are adverse impacts we would expect there to be discussions and possibly negotiations between affected parties. We would expect all harvesting to stop if it is found that there will be significant adverse impacts on associated stocks.
21. The kelp industry will also need to put in place a programme aimed at collecting relevant management information at appropriate scales. We recommend industry works closely with the Ministry of Fisheries Shellfish Working Group, or other relevant group, to develop a research programme. Te Ohu would like to be involved in developing this programme and we would encourage SeaFic to do the same.
22. We acknowledge the Memorandum of Understanding which has been developed by future KBB 4G quota holders and that these issues will be dealt with as part of a broad research plan that also encompasses KBB 3G. The plan will need to explore whether the same research should be replicated in each quota management area.

Pilot Areas

23. We support KBB quota owners incrementally developing the KBB fishery and restricting scientific and commercial research to agreed pilot areas until there is reasonable evidence to show that harvesting does not adversely impact associated stocks. These pilot areas will need to be of a size that enables proper scientific and commercial research.
24. Based upon a 10 hectare kelp forest, a 1.5kg per m² harvest rate, and no more than two harvests in every 12 months you could expect to produce 30 tonne. A 70 hectare bed, which is roughly the size of a kelp forest in front of Waitangi on the Chathams, could produce 200 tonnes. In order to harvest 800 tonnes you would be looking for at least 300 hectares.
25. We acknowledge the intention of the kelp industry to work closely with other industry groups and iwi to identify appropriate pilot areas. We would expect this work to be done this year.

Shelving

26. We note that future quota owners of KBB have made provision in their Memorandum of Understanding to shelve a certain amount of KBB 4G ACE. Shelved ACE would be made available once it is better understood whether, and if so how any adverse impacts of harvesting kelp forests on associated stocks can be mitigated or managed.

Harvest Controls

27. All future quota owners have worked to develop harvest protocols along the lines that are employed in the Californian kelp industry but suitably modified for local conditions. Californian kelp forests have been successfully harvested for almost 100 years.
28. An industry Memorandum of Understanding has been drafted setting out agreed protocols associated with management controls, pilot areas, shelving, and research. The harvest controls are proposed to include:
 - No more than 50% of any one forest's canopy biomass should be harvested over a period less than 6 months.
 - The maximum cutting depth is no more than 1.2 m
 - Harvesting the canopy biomass should be carried out in strips no greater than 5 m in width
29. This Memorandum of Understanding is at this stage supported by all but one of the future quota owners in KBB 4G.
30. We believe these combined controls that are being advanced by the kelp industry will mitigate any risks, perceived or otherwise, associated with TACs that are higher than those proposed in the current IPP.
31. We encourage the adoption of these combined controls across both KBB 3G and KBB 4G.

Setting the total allowable catch

32. There has been considerable discussion amongst the kelp industry, other industry players, and customary non-commercial interests concerning the TACs proposed for KBB 3G and KBB 4G. The consensus is the proposed TACs are too low and should be increased to more appropriate levels. We have been provided with information that shows that the size of kelp beds in KBB 3G and KBB 4G are extensive.
33. In determining an appropriate TAC, the following information should be considered.
34. In KBB 3G:
 - The very extensive biomass of bladder kelp
 - The protocols proposed in the KBB 4 industry Memorandum of Understanding that will be advocated in KBB3
 - The need to provide sufficient harvesting scope for commercial scale.
35. We are mindful that the current Ministry of Fisheries proposals for KBB 3G are based only upon historical biomass estimates for 3 beds in Akaroa Harbour. The estimate ignores the existence of other known kelp forests.

36. We are aware that there are proposals that the TAC be set at 2000 tonnes and suggest this be included in a revised IPP.

37. In KBB 4G:

- The extensive biomass of bladder kelp
- The protocols proposed in the industry Memorandum of Understanding, including the agreement to mitigate any risks that are detected
- The need to provide sufficient harvesting scope for commercial scale

TAC preferences

38. Our preference is for a TAC of at least 800 tonne in KBB 3G and 1000 tonnes in KBB 4G. We consider these allowances to be conservative and at a level that would enable the fishery to be developed whilst ensuring sustainability.

39. We would expect industry to undertake a stock assessment after industry has done the research and the effects of harvesting are better understood.

Sixth Schedule matters

40. The sixth schedule relates to stocks which may be returned to the sea or other waters in accordance with stated requirements. Te Ohu supports adding KBB 3G and KBB 4G to the Sixth Schedule.

Fisheries reporting regulations

41. Te Ohu supports an amendment to the Fisheries (Reporting) Regulations 2001 as proposed.

Deemed values

42. Te Ohu recommends setting the interim and annual deemed values for attached bladder kelp at \$4.00 per kg AND Interim deemed value of \$2.00 per kg. In this instance we are unaware of any good reason for overharvesting without ACE.

Concluding comments

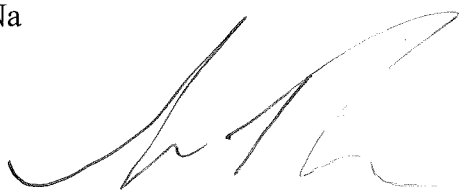
43. The Ministry of Fisheries should withdraw the current IPP and re-consult with higher TAC options. There is significant support for this.

44. In the future we would like the Ministry of Fisheries to have discussions with Iwi, Te Ohu, and SeaFic before the initial TACs are consulted under section 12 of the Fisheries Act. If there are other known quota owners, they too should be involved in such discussions.

45. We agree that for some new species entering the QMS it may be appropriate to set a very low initial TAC but this is not the case for KBB 3G and KBB 4G. Nor is it the case for a range of other species that have recently been brought into the QMS, such as surf clam, deepwater crab, and geoduc. Having the discussion will help the Ministry of Fisheries to avoid proposing inappropriate initial TACs.

46. We have mentioned sensitive areas in previous submissions on the introduction of bladder kelp to the quota management system. We support the kelp industry working with stakeholders and tangata whenua to identify sensitive areas where commercial kelp harvesting may be inappropriate. We support Ngai Tahu's wish that no commercial harvesting of kelp beds occurs within important mahinga kai areas.
47. We would appreciate the opportunity for stakeholders and tangata whenua to meet with the Ministry of Fisheries prior to the Minister being given the Final Position Paper (FPP).
48. Please contact the writer if you would like to discuss any matters raised in this submission.

Na

A handwritten signature in black ink, appearing to read 'A. T. Riwaka', written in a cursive style.

Alan T Riwaka
Senior Fisheries Management Advisor

Memorandum of Understanding

Dated this day of April 2010

PARTIES

BETWEEN **Hokotehi Moriori Trust**, the mandated iwi organisation for the iwi of Moriori under the Maori Fisheries Act 2004;

AND **Ngati Mutunga o Wharekauri Iwi Trust**, the mandated iwi organisation for the iwi of Ngati Mutunga (Chatham Islands) under the Maori Fisheries Act 2004;

AND **Chatham Island Enterprise Trust**, a charitable trust established for the benefit of the present and future inhabitants of the Chatham Islands;

(collectively the **Parties**)

BACKGROUND

- A. The Parties are committed to enhancing the economic opportunities available to the inhabitants of the Chatham Islands.
- B. The Parties have identified that bladder kelp through proper fishery management could become a valuable resource.
- C. The Parties recognise the value in putting in place harvesting protocols that ensure the sustainable harvest of kelp beds.
- D. The Parties are interested in incrementally developing the Chatham Island KBB4 bladder kelp in a way that allows for sustainable harvesting in a manner that doesn't adversely impact any associated and/or interdependent marine stocks.
- E. Accordingly the Parties agree to adopt three interim harvest protocols which are generally based upon the Californian kelp industry.

THE PARTIES AGREE:

General Principles

- 1. The Parties agree that only the canopy of the Chatham Island KBB 4 bladder kelp should be harvested in order to ensure the sustainability of the stock
- 2. The Parties further agree that during the first 3 years from QMS introduction, research shall be undertaken within the agreed Pilot areas to determine the sustainability of the stock and to ensure that harvesting does not adversely affect associated stocks.

Harvest Protocols

- 3. The Parties agree to the following harvest protocols for Chatham Island KBB 4 bladder kelp being:

- (a) no cutting any Chatham Island KBB 4 bladder kelp at a depth that is greater than 1.2 metres from the surface of the water;
- (b) harvesting the canopy biomass should be carried out in strips no greater than 5 m in width;
- (c) no more than 50% of any one forest's canopy biomass should be harvested over a period less than 6 months within the Pilot area;

Shelving [of TACC]

4. The Parties agree to shelve 800 tonne annually until satisfied that all or part of this amount should be released for harvest. The Parties agree to shelve their ACE into a mutually agreed entity.

Pilot Areas

5. The Parties agree to only harvest an agreed quantity of kelp within agreed "Pilot Areas" until there is robust evidence to show that commercial kelp harvesting is sustainable and does not adversely affect associated stocks, including but not limited to, paua, rock lobster, kina, and butterfish.
6. The Parties recognise the concerns that have been raised by industry groups, KBB quota owners, and Imi/Iwi about the potential impacts on associated stocks. The Parties will consult with stake holders and tangata whenua to identify Pilot Areas and the maximum harvest in any one year.

Research

7. Prior to initiation of a pilot programme the Parties will agree on a programme of research work to be undertaken to determine the sustainability of and future harvesting decisions of kelp. Other interested parties will have opportunity to review the programme of work, including relevant MFish and Science Working Groups.
8. The programme of research work will include:
 - Baseline information
 - Determining growth rates and other biological data for bladder kelp
 - Identifying/refining harvest protocols for Chatham Island Bladder kelp
 - Monitoring effects on interdependent species such as paua, kina, rock lobster etc
 - Determining appropriate reporting and monitoring requirements
 - Identifying market requirements and any relevant processing infrastructure.
9. The Parties will agree, in consultation with other interests, how to, sustainably develop the resource across KBB 4, in light of the results of this research.

Transfer of ACE

10. Hokotehi Moriori Trust, Ngati Mutunga o Wharekauri Iwi Trust, and Chatham Island Enterprise Trust, agree that they will only sell ACE to either party.

SIGNED BY

EXECUTED as a Deed by the Parties on the date referred to above:

SIGNED by the **Hokotehi**)
Moriori Trust by its Chair)
in the presence of)

Name:
Occupation:
Address

SIGNED by **Ngati Mutunga**)
o Wharekauri Iwi Trust by its)
Chair in the presence of)

Name:
Occupation:
Address

SIGNED by **Chatham Island**)
Enterprise Trust by its Chair)
in the presence of)

Name:
Occupation:
Address

14 April 2010-04-14
Tracey Steel
Ministry of Fisheries
PO Box 1020
WELLINGTON.

Submission: Initial Position paper Management on proposed Bladder Kelp areas 3 – 4.

***Reject the proposed TAC** on the grounds that insufficient evidence for QM4
Quote ipp 30, page 9.

*No stock assessment information to determine current stock biomass or sustainable yields.

*No long term studies on the implications of commercial harvesting to guide TAC setting.

*lack of information regarding areas in the Chatham Islands could sustain higher levels (what those might be) of bladder kelp removal in light of the seaweeds ecological role in the marine environment.

*No information (catch or research driven) to indicate what, if any areas, can sustain utilization.

*Contrary to section 71, seaweed stock is important to the customary sector, (ref 122b).

*Potential future development requires a sustainable management frame work based on scientific research regarding environmental impacts, growth cycles and effects on the associated fisheries and the wider marine environment.

Recommendation: that consideration be given to future management strategies to ensure best harvesting practices are developed.

Recommendation: That the use of a rotational harvesting strategy in identified areas and or restricting harvest to the canopy only.

Recommendation: Information specific to area 4 be available prior to setting

BJA

TAC that provides for a viable development plan.

The outcome of the foreshore and seabed debate should clarify whether the proposed management options are consistent with the provisions of the treaty of Waitangi settlement act.

Naku

BJ Thomas *Kaumātua*

Na B J Thomas

PO Box 62

W'arekauri Chatham islands.

From: Brian Thomas [Brian.Thomas@wcc.govt.nz]
Sent: Thursday, 15 April 2010 9:49 a.m.
To: Steel, Tracey
Subject: Bladder kelp introduction to quota management system

Hi Tracey

I do not support the harvesting of Bladder kelp under any circumstances. There is a total lack of evidence as to the potential effects on the marine environment of the wholesale harvesting of bladder kelp.

Regards

Brian Thomas
Park Ranger
Parks and Gardens
Wellington City Council
Ph 499-4444
Mobile 0212278394
Fax 048013155
brian.thomas@wcc.govt.nz
<http://www.Wellington.govt.nz>

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WELLINGTON
RECREATIONAL MARINE FISHERS'
ASSOCIATION (Inc)



WE RECOGNISE MANAGED FISHERIES

3 Ruskin Rd
Newlands
WELLINGTON

6 April 2010

Ms Tracy Steel
Ministry of Fisheries
P O Box 1020
WELLINGTON
E mail tracy.steel@fish.govt.nz

Submission to:

MFish proposal to set Total Allowance Commercial Catches (TACCs), sector allowances and other management controls to support the introduction of attached bladder kelp (*Macrocystis pyrifera*) into Fisheries Management Area (FMAs) 3 and 4 and into the Quota Management System QMS on October 2010.

Reason for submission:

We strongly suggest that the TACC be set at zero due to the lack of scientific research and acknowledgment of the known impacts on other fisheries.

We have in recent years seen two major events resulting in the loss of bladder kelp that has directly lead to massive impacts on marine specie therefore we cannot accept the MFish view that the introduction of commercial harvesting of bladder kelp on the scale proposed will have little impact on other marine specie including Dusky and Hector Dolphins.

Dear Tracy

The committee of the Wellington Recreational Marine Fishers Association wish to point out this Initial Position Paper (IPP) is seriously lacking in research and totally fails to describe how the removal of a major food source will impact on marine specie and marine mammals. This would have to one of the most unresearched, short sighted and money focused proposals to have ever come out of the Ministry of Fisheries in the 24 years I have been on MFish committees. In trying to talk down the impacts the IPP completely ignores how the cold sub Antarctic conveyer current replenishes our marine specie along the entire east coast and through the Cook Strait to the west as it travels up the eastern coasts of New Zealand.

We will discuss this proposal under the following headings

- **Impacts on marine specie**
- **Ecological role of bladder kelp**

- **Proposal lacks research**
- **Use of selective information to support proposal**
- **The history when bladder kelp was destroyed**

Introduction

The Wellington Recreational Marine Fishers Association is an organisation set up by Government to represent not only those of all races who individually go fishing in the greater Wellington region, but all fishing clubs and the fishing sections of workingmen's clubs. We represent these people through actively taking part in all stages of a resource consent application, submissions to the Wellington Regional Council, Wellington City Council, Hutt City Council, Porirua City Council, Department of Conservation and take part in their DOC NGO forums, Ministry of the Environment's Ocean Policy, Economic Exclusive Zone and Environmental Reporting forums. We have for over twenty four years participated on a number of MFish committees.

We have made submissions and appeared to The Board of Enquiry to Government on such matters as the review of the New Zealand Coastal Policy Statement and the Proposed National Policy Statement on Freshwater Management (PNPSFM), Marine Protected Area, Aquaculture Reform Discussion Document, Shared Fishery, Maui Dolphin threat management and recently Tourism Effects on Dusky Dolphins at Kaikoura, New Zealand. Our marine knowledge was recognised by all the recreational fishing bodies and eco groups who invited us to be one of the nine representatives to meet with the Minister of Fisheries, Phil Heatley, to put our joint alternative fishery management proposal aimed at getting more fish in the water.

We were invited to participate in the \$32 million programme run by the Foundation of Research and Science and Technology to identify Natural Ecosystems that had not been identified by science so that research money could be allocated. We were responsible for proposing, the Owhiro Bay boat ramp, selecting the site and layout, and then driving the Wellington City Council to have the boat ramp built. In doing so we asked recreational fishers for their support and received 270 replies back in three weeks, which describes our contact base.

In 1997 we provided information to the Makara Guardians who then invited us to be their marine and intertidal expert witness to describe the impacts wind turbines proposed by Meridian at West Wind would have on near shore marine ecosystems. Through the resource consent process and then the NZ Environment Court, MFish did not contribute any information. It was us who proved the value of Ohau Bay to marine species which was accepted by Meridian Energy, Wellington Regional Council, Wellington City Council and the NZ Environment Court. This resulted in our request to have Meridian build a wharf at Oteranga Bay to off load wind generator structures accepted. The Meridian original proposal was to build an environmentally detrimental breakwater wall and causeway in Ohau Bay, which already had DOC and Iwi support.

We were invited by the Ohariu Valley Preservation Society to be their marine and intertidal expert witness through the Meridian Mill Creek wind turbine proposal. The information we gathered for this resource consent, along with information and photos that we had previously presented to the Board of Enquiry to the PNPSFM was then presented to the Porirua City Council by Iwi. This resulted in the Porirua City Council embarking on a plan to remove the extra mud that has accumulated over the last thirty years in the Porirua Harbour. Our research and photos have recently been used to stop the chemical weed spraying in the Makara Estuary by the WRC and Wellington City Council.

Impacts on marine specie

The Ministry of Fisheries would like the public to think there is no information to describe the potential impacts from harvesting bladder kelp, but that is not true. MFish you have the information but your managers cling onto the belief that commercial catch history, anecdotal information, environmental factors and ocean currents cannot be looked at as being integral with each other and combined have no value in fishery management. Our submission is presenting the MFish management with a warning that harvesting bladder kelp will have an impact on a number of fish specie just as our other submission on beach cast seaweed described other impacts. After the introduction of bladder kelp harvesting other fisheries will start collapsing immediately north to the top of New Zealand, followed by Maui and Dusky Dolphins numbers taking a dive. In time this warning will be used as an example for why the MFish TAC system requires restructuring and why the Ministry of Fisheries will in future be required to accept informal ecological information and environmental marine knowledge in the absence of any other scientific information.

We note with concern the admission by the Ministry of Fisheries that they know very little about bladder kelp or what the impacts will be on marine specie by its removal. We have identified that admission in the IPP points with a comment which must be taken seriously.

MFish you have not acquired a history of describing the impacts on marine specie through resource consents. Now you have a far reaching proposal and you have not developed the skill base in which to make serious comment. MFish you never provided any information to the resource consent for the fast ferries while watching the commercial landings of blue cod fall. Now you are telling us you have no knowledge of the *impacts on associated seaweed and fish specie?* MFish you must have another agenda. You have the commercial catch history taken through the stat area and the compulsory reporting combined with the information we have been providing for years.

Environmental damage due to mud and silt run off is causing fish to move out of their traditional areas throughout New Zealand and MFish should have seen what we could see before the blue cod fishery collapsed in the Sounds. In 1997, after seeing the pilchard schools decimated in Wellington Harbour by the fast ferries, we wrote to the Minister of Fisheries advising that the fast ferries were running over important bait fish attracted feeding areas at the Falcon Shoals in Wellington Harbour, and MFish did nothing. Now you are telling us you will monitor the impacts on *best available information (Appendix 1 Section 10)* but you have a long history of ignoring information even when collected and stored in your database.

If the proposal to remove 377 tonnes of bladder kelp annually is introduced then over the following years a sequence of events will occur. The first specie to be severely reduced will be yellowed mullet as they live and feed in bladder kelp, including the life that grows in the beach cast seaweed. However to those in MFish who told us through the Soundings programme that managing the marine environment has nothing to do with fishery management you will quickly learn that destroying the prey impacts on every marine specie. If history is repeated MFish managers will not know what is happening until it is too late. Judging from the misinformation in the MFish Plenary, within MFish there is serious lack in understanding of near shore specie life cycles and their food sources so the loss of this specie will go unnoticed.

MFish you have a history, as what happened in the Marlborough Sounds when the pilchard and yellow eyed mullet schools disappeared after the fast ferries arrived and destroyed their food source, was that the cod immediately moved out of the Sounds. Once bladder kelp is removed it will only take a season for commercial catches of blue cod to show a marked decline as they will also have to migrate to find another food source that has not been destroyed. The loss of bladder

kelp will also impact on butterfish as they spawn, feed and shelter in bladder kelp and their commercial landings will also show a marked decrease immediately. This is not rocket science but the same logic applied to show why hapuku were not being caught on the North Island south eastern coastline when MFish threatened to reduce the recreational bag limit with no proof that the stock was in trouble.

As in the original call for submissions in 2003 to sort out the Marlborough Sounds blue cod we predicted that due to MFish not having the environmental marine knowledge, the proposed three fish bag limit would achieve nothing as the marine environment was not considered to have any impact. A few years later MFish introduced a total ban which proved us correct as the measures taken in 2003 achieved nothing. This time MFish management you will not be able to take the easy option and cut recreational bag limits as the blue cod and all the other specie that feed on cod will not be declining in numbers due to over fishing but from the Ministries decision to destroy their food source. Call it anecdotal information or whatever you like but we will be proven right.

This IPP is a shocking example of the lack of environmental knowledge within MFish. Along the eastern coast of New Zealand there is a current called the Sub Antarctic flow. It is described in books as the conveyer current that carries plankton all the way to the equator. This current is cold and at times extremely fast and when Canterbury rivers flood, material and street signs only take three days to arrive in Palliser Bay situated at bottom of the North Island. Recently an old ship was being sunk in Cook Strait and as it went down part of the superstructure broke off but it could not be recovered before a storm came through. It washed up on Riversdale Beach three days later after travelling over a hundred miles. It follows that the food sources found in the bladder kelp along the South Island also get carried in this current up the North Island and through the Cook Strait. The same current carried those on the upside down Rose Noel from Castlepoint to land on Great Barrier Island.

Point 60 states: *If localised depletion occurs in kelp beds where they form habitat of significance for fishery management and/or leads to impacts on associated seaweed or fish specie, this could produce adverse environment effects.* Then goes on to say: *Currently, there is no information available to quantify this risk.* This is not true and MFish knows this. There have been a number of events where this has been documented and catch history recorded in their own database.

Removing the food source of the prey for the beginning of the marine food chain will in time be recorded as the dumbest thing a Minister of Fisheries of New Zealand has ever done. The impact on all marine specie throughout New Zealand will be massive but will only begin to show in ten years time. By then the damage may be irreversible. There is a huge amount of information available to evaluate the risk once MFish realises that fishery management is just not about counting fish.

Another sign that the removal of bladder kelp is impacting on marine life will be through the actions of Dusky Dolphins. A scientific study published in the Tourism Threats to Dusky Dolphins has for a number of years plotted the migration paths of Dusky Dolphins for the Department of Conservation. The first sign these mammals are in distress will be obvious when they lose their food source as they will be forced to hunt with no set pattern or move out of the area. After the bladder kelp beds around Kaikoura have been harvested the Dusky Dolphin numbers will immediately start to decline and without Dusky Dolphins a tourist industry will collapse. This will place the Minister of Fisheries in breach of section 13(2A) of the Act *as the Minister must have regard to social, cultural and economic factors* for that region (Point 38).

Likewise an increase in bladder kelp removal from Akaroa Harbour will result in Hector Dolphins losing the prey they feed on and their numbers will decline even further. The decline of these two

specie of dolphins, brought about by the harvesting of bladder kelp, is seen by us the logical outcome as this zone provides the spawning habitat and food sources for a number of marine specie including yellow eyed mullet, butterfish, grey mullet, piper, mackerel and kahawai.

It would be most unwise for MFish to contemplate allowing commercial interests to harvest bladder kelp in the areas frequented by Dusky Dolphins as not only do yellow eyed mullet find shelter within bladder kelp but after a storm the kelp arrives on the beaches to decompose and provide a food source for the yellow eyed mullet as well. Although there is no scientific paper to support our findings we have discovered the cellulose in bladder kelp is able to be converted into protein by kelp fly maggots which is essential for the spawning requirements of all marine specie.

The Initial Position Paper names three TAC options for KBB3G which covers almost the entire east coast of the South Island including the habitat of Dusky Dolphins around the Kaikoura Coast.

These being:

Option 1 377 tonnes

Option 2 41.2 tonnes

Option 3 18.2 tonnes

Yet there is no mention of a scientific study to determine these figures. The impacts of harvesting seaweed has already been presented to MFish in a report titled New Zealand Fisheries Assessment Report 2005144 August 2005 by W. L. Zemke-White, S. R Speed, J. McClary. Of concern is the knowledge that this paper was not referenced in the MFish IPP to support the introduction of Bladder Kelp Seaweed, *Macrocystis pyrifera* (KBB), into Fisheries Management Areas 3 and 4 into the Quota Management System on 1 October 2010.

This paper described the importance of bladder kelp to marine specie as they said:

The seaweeds can support a diverse ecology of organisms through its nutrient cycling and decomposition including bacteria, yeasts, and fungi in the microflora, nematodes, invertebrate larvae and mites in the meiofauna, and numerous species of macrofaunal invertebrates of marine and terrestrial origin. If washed up high enough on the beach, the seaweed can also provide habitat for pioneering dune forming vegetation. When washed back into the sea these seaweeds become available as a food source for a variety of organisms including sea urchins and abalone.

The floating component of the drift algae may also play a significant role in the dispersal of beach invertebrate species and also appears to play a role in the dispersal of juvenile fish. Seaweed decomposition has also been identified as an important nitrogen source for coastal waters due to the relatively rapid release of nutrients during breakdown, with flow on effects to primary productivity (phytoplankton) and on up the food chain.

There are few published studies that investigate the impacts of harvesting beach-cast seaweeds on the coastal environment. Most studies completed to date indicate an immediate short-term decrease in densities of strandline species extending to fish species in estuaries. While recovery of these species occurred relatively rapidly after single events, long-term harvesting created a beach fauna and flora very similar to beaches that had no input of beach-cast seaweeds. Differences in beach topography and habitat values have also been noted between raked and unraked beaches.

While we find it unbelievable that these people thought bladder kelp *when washed back into the sea these seaweeds become available as a food source for a variety of organisms including sea urchins and abalone* as in one tonne of paua gut there was not one spec of sun dried seaweed to support that view. It may come available but there is no supporting evidence that seaweed dried in the sun has any value to marine specie. All observations of what kina and paua eat and that what is contained in their gut is always the bright green of bladder kelp is exactly what we see in the gut of the many fish that also feed on it including blue cod.

The impacts will be massive not only to other fisheries and the Dusky Dolphin tourism ventures at Kaikoura but it will seriously deny Maui and Hector dolphins their food sources at Akaroa. As their numbers continue to drop in time we will see more calls from the uninformed for action against those who net fish. While we do not support netting as such, nothing in this paper convinces us that the prediction we made some years back, that by 2020 Hector Dolphins will be extinct, has changed our view.

Ecological role of bladder kelp

Point 10a states: *Bladder kelp plays a significant ecological role... because of its... forest like structural form that provides significant habitat, food and shelter for many marine specie.* Yet the IPP paper fails to name one of these specie.

We dispute the belief that bladder kelp grows here at 1 to 15 mm day as that equates to 450mm each month and there is no evidence of that here. Along the Wellington west coast we saw how long it takes for bladder kelp to grow back after being cut back and it's well over five years. In an internet paper it is described that all harvesting be limited to one metre below the surface. It is illogical to expect a plant that relies on the sun for a food source through their ability to photosynthesise to not slow its growth rates when prevented from receiving the sun's energy. The food source in the plant is then eaten by marine specie. It then follows the longer the bladder kelp the more food it is providing.

The lack of research into the life of bladder kelp in New Zealand is again stated in Point 119(a): *Constraining harvest of each kelp bed to no more than twice a year to allow for regrowth.* Given that in Norway they found that harvesting every four years to be too excessive on other specie, and science has proved it only grows at the end of summer to obtain its food from the sun, then only at the rate of 1 to 15mm a day in New Zealand, and then MFish reports that not all beds grow at all, there appears to be a serious distortion of the life of this plant to suit another agenda.

Believing bladder kelp can be harvested twice a year was the first sign that this whole proposal has been based on fiction a lack of research and a number of estimates and "could be" statements all without any supporting information.

Point 22 states: *MFish acknowledges there may be difficulty distinguishing between cut and free-floating bladder kelp that is landed, which could lead to false reporting.* Managing this fishery is going to be impossible as *MFish considers the condition of the bladder kelp e.g. clearly manually cut stripes (central stalk) versus jagged tears from storm activity will provide an indication whether the bladder kelp was previously attached or free-floating.* At the end of the day MFish has not the resources to understand the value of the intertidal zone to marine specie let alone employ people to see if a frond of bladder kelp was cut or ripped out. *MFish will monitor this risk and apply additional education and enforcement activity, or additional management controls, if required.* This is rubbish. Has MFish the resources to justify a report or a prosecution to enforce a rule that will be open to interpretation in a court of law.

Over harvesting will also have the same result as a severe storm which results in more light coming through and in our experience once the bladder kelp is removed this allows kina to become established, this specie then eats away all new bladder kelp growth. Point 93 describes: *The biological characteristics of attached bladder kelp means this seaweed is very susceptible to localised depletion and this (Point 95) reduction of bladder kelp could lead to the appearance and /or increase in abundance of the invasive seaweed Undaria pinnatifida. This seaweed is opportunistic and colonises surfaces where little or no macro seaweeds occur.*

This proposal to harvest bladder kelp, with little scientific information to back up any of the supporting views, has the potential to create an environmental disaster that New Zealand cannot recover from, once other seaweeds with different chemical properties take hold.

The sea lettuce invading the flats and smothering the life from the sun's energy was caused by mud smothering the sea grass beds in the Marlborough Sounds and Tauranga Harbour. In our 2003 submission to the proposed three fish blue cod limit we reported: *An interesting report came out of the Tauranga Harbour when the past Minister of Fisheries Hon John Luxton selected Judge Tapsell to find a cause as to why the snapper numbers had declined. He found it was caused by the environmental damage to the snapper spawning areas and loss of native wetland plants.*

In our experience changes and impacts on the marine environment take five years before the results can be seen. How changing water temperatures cause changes in marine species locations was described in my story called *Ocean currents* published in 1997 in the NZ Seafood magazine. I have written a number of stories in the NZ Fishing Coast to Coast magazine describing what causes the faster than predicted Cook Strait currents and predicted the F69 frigate would quickly break up. Another story described why rocks have appeared above the surface when LINZ marine charts have stated they would be two metres under water. I have also identified why the LINZ marine charts are placing these rocks one hundred and fifty metres from their stated position.

In another story published in 2008 in the NZ Fishing Seafood magazine called *Being Stitched up*, I described the environmental factors in influencing why hapuku numbers were declining on the east coast and increasing on the south western coast. MFish were unable to understand what was happening as years before senior managers had made a special trip to ask me not to raise environmental factors at their recreational forums as they did not believe they had anything to do with fishery management. So ignoring my marine knowledge and shutting me out of the discussion MFish proposed a cut to the recreational bag limit for hapuku knowing that commercial landings had not altered to justify their proposal. It follows the MFish management system has not the management structure, environmental knowledge or capability to manage bladder kelp harvesting so that it is done without impacting on other marine species and mammals.

Proposal lacks research

We ask that before any TAC is set that:

1. Another paper is presented with all the information MFish possesses on the impacts on marine species when bladder kelp has been removed or destroyed.
2. Information available from Tasmania where their fisheries collapsed after they introduced the harvesting of bladder kelp is acknowledged by MFish.
3. Our informal marine knowledge describing the value of bladder kelp to marine species that we presented to MFish, Department of Conservation, resource consent and through the NZ Environment Court for the West wind turbine project is acknowledged by MFish.
4. When in its free floating state bladder kelp will wash ashore to become beach cast seaweed which has now been scientifically proven to be recognised as providing an available food source for marine species is acknowledged by MFish.
5. Science papers describing the value of live bladder kelp to the commercial marine species butterflyfish, blue cod and paua is acknowledged by MFish.

Point 10b states: *Estimates of total biomass or sustainable yield are unavailable for either KBB 3G or KBB 4g. Yet we have a proposal to remove 377 tonnes without any research to support this figure.*

Point 26 states: *Bladder kelp landings over the last six years ranged between 8 and 17 tonnes. There is failure to explain why in the years following the 17 tonnes 2004-05 harvest the landings dropped for the following three fishing seasons.*

Point 30 states: *There are no long term studies on the implication of commercial harvesting attached bladder kelp beds in New Zealand to guide TAC setting.*

While this statement is technically correct the paper ignores overseas research, fish count surveys, and commercial landing in areas where bladder kelp forests have been destroyed through shipping, man's madness, or natural events.

Note 30 also states: *There is no stock assessment information to determine current stock biomass or sustainability yield of either the KBB 3G or KBB4G stock. Therefore MFish is unable to ascertain whether the current biomass of both attached bladder kelp stocks is increasing or decreasing. Yet in Point 31 MFish state they are relying on a study that estimated a combined annual biomass of 377 tonnes for 1999.*

Point 33 states: *Canopy biomass generally peaks between autumn and spring and dies off during summer.* This is major factor and obviously MFish have failed to research and understand the life cycle of this plant. To suggest that this winter growth can be harvested without any impact on future harvests shows we have a Ministry of Fisheries lacking in environmental marine knowledge. The plant grows in winter to lie on the surface and overseas research describes it receives its food source through photosynthesis. This is logical as the days are shorter so the plant grows so that it has the ability to collect the sun's energy. There has been a huge mistake to think a plant that lies on the surface to receive its food source can have its fronds removed without any impact. Research has found those fronds do not keep growing and another starts to grow up towards the surface, which explains why when cut back they take many years before they reach the surface again.

The impact on marine species in closed water was demonstrated in the Marlborough Sounds when the bladder kelp was destroyed by the fast ferries and it took only three years from when they arrived before we could see the massive reduction in the yellow eyed mullet and pilchard schools. Then three years later the blue cod, without access to a food source moved out of the Sounds. Then in 2003 MFish produced a paper with two options which were basically the same. Both proposing bag limit cuts, TAC cuts, legal length reductions and although MFish was given environmental information it was ignored which resulted in MFish failing in its objectives. We could see the MFish proposal was going to fail and in our submission we observed *it illogical for the Ministry of Fisheries to think they can manage a fish stock without showing the least bit of interest in the marine environment in which fish live.* Today nothing has changed. MFish believe bladder kelp can be removed without any impact.

The lack of research by MFish is identified in Point 47 which is then contradicted further on in Point 48.

For example: *MFish considers Option 1 poses no sustainability risk to KBB 3G. (47 a) Biomass estimates during the survey ranged between zero and 300 tonne dependent upon site, season and year.* There was no scientific explanation for this result, no paper presented for the estimate figures and no peer review so this study should have been dismissed as being anecdotal. *(47b) There is risk that a larger TAC could result in localised depletion of beds within the QMA (and potential localised ecosystem impacts). (47c) Localised depletion could result in...depletion of beds... where they form habitat of significance for fishery management ...or leads to impacts on associated species.* There is no definition in the IPP of associated species so it would make it impossible to define the species at the greatest risk and without that knowledge the risk cannot be defined, therefore the proposal must fail.

Point 48 MFish then makes this statement: *The effect of intensity harvesting at this level has not been investigated and the potential impact on associated seaweed and fish specie is unknown.* This statement is total rubbish. MFish you do know the impacts. WRMFA told you in its submission dated 2 February 2003 on blue cod, that destroying seaweed denies fish such as blue cod their food source.

We quote from that submission.

New algae growth on rocks and new leaves on seaweed will provide a major food source for the juvenile blue cod but that is smothered so, with no food, blue cod that hatch in the Sounds must die - that is if they are not already dead or their eggs smashed onto the rocks from the wash of the fast ferries since their arrival in 1994. In May 1999 they received a greater threat with the arrival of the bigger faster ferries able to suck up 180 tonnes of sea water a second off each of their four engines which was then blasted the sea bed fifty metres down.. Research found paua was settling three metres up the rocks. So while the blue cod eggs drifted with the currents into the Sounds through the Tory Channel (Rocco and Sutton) from their spawning areas at the entrance to the Sounds (Rapson) to begin life far into the Sounds they had to be very lucky not to be sucked up or smashed onto the rocks.

This IPP paper on bladder kelp contains an unacceptable quantity of unscientific statements and is ignoring a considerable quantity of anecdotal evidence. However, this is not an isolated example of the misinformation the Minister of Fisheries is being provided with, and the following is an example.

I took the opportunity in a page set aside in the New Zealand Fishing Coast to Coast magazine issue number 52 in 2010 (page 50) to ask the past Minister of Fisheries, Phil Heatley, the following question. *Due to the misinformation in the MFish Plenary that describes yellow eyed mullet spawn out at sea, which they don't they spawn up stream rivers or stream, we are having a lot of difficulty convincing regional and local councils the value of the intertidal zone to marine specie. Likewise the Plenary does not record that grey mullet, flounder and kahawai also spawn up rivers. Could the Minister get the Plenary corrected so that councils know what they are destroying with their uncontrolled mud run off?*

His reply to my question described why MFish cannot now describe the impacts on marine specie caused by the removal of bladder kelp as they have not acquired the information to ensure future managers are working from an informative and corrected database. It must be treated with a great deal of alarm that MFish senior management have provided the Minister with their own beliefs as to where marine specie spawn that will never get scientific support.

The Minister's reply also confirms that he is being supplied with unscientific information that has ignored a considerable number of overseas and New Zealand science papers along with what MFish describes as anecdotal evidence just the same as this IPP is providing.

The Plenary describes little is known about spawning of these specie.

The sparse available evidence suggests that all four specie (yellow eyed mullet, grey mullet, flounder and kahawai) move off shore to spawn.

There is also anecdotal evidence that there may be some spawning in estuaries and even up into the mouths of rivers.

The extent to which this contributes to juvenile and adult populations is unknown.

It is unbelievable we have a Ministry employing highly paid advisors and scientists managing our fish stocks who have recorded in writing that they believe "*all four specie move off shore to spawn*". The question must now be asked is this the view of the person who wrote the reply for the Minister of Fisheries or the official view. There would not be one scientific paper written in the

World that describes marine specie move into colder water to spawn. If this is an example of the marine knowledge within MFish policy advisors and senior management then our country is in serious trouble. It certainly explains the lack of environmental knowledge presented by MFish throughout this IPP paper.

The lack of research into the life of our near shore specie is a national disaster. This lack of information led me to co-write a science paper describing the food source of yellow eyed mullet. I had already obtained the proof of where they spawned and had been asked by the Department of Conservation senior management to write about in a science paper. The resulting research identified that at least another sixteen papers could be co-written describing the value of the intertidal zone to marine specie.

We have already proven through power point presentations to the Board of Enquiry for the review of the New Zealand Coastal Policy Statement and then the Proposed National Policy Statement for Freshwater Management that yellow eyed mullet spawn, and seek their food sources in the intertidal zone and this we can back up with our information and photos. The Ministry for the Environment made our presentation publicly available when they posted our 300 slide presentation on the internet describing the value of the intertidal zone to marine specie. The submission our organisation made was the only one they received that described the value of the intertidal zone to marine specie.

We also described the impacts to marine specie from sediment run off and loss of food sources, which now has been identified as the only study made in New Zealand that identified the impacts on wild fish specie. The NIWA report titled *A review of land based effects on coastal fisheries and supporting biodiversity in New Zealand* by Morrison, Lowe, Parsons, Usmar and McLeod stated that little is known scientifically about our inter-tidal zone or the impacts of our actions upon it. On page 25, they make a very important statement which explains why MFish state they know very little about the impacts harvesting bladder kelp will have as not even the impacts of silt on marine specie is scientifically known. They say, “*most of our current knowledge concerning the effects of suspended sediments on fish are based on freshwater species*” and “*most existing information of the effects of suspended sediment is based on acute exposure laboratory experiments, with little empirical information available on chronic responses to high concentrations for extended periods, especially for marine species, or under natural field conditions*”.

In his reply the Minister also stated the Ministry of Fisheries “*can certainly examine any new information and incorporate it into future versions of the Plenary Summaries*”. The only problem with that is the Ministry of Fisheries managers are not passing on the scientific papers provided to them through official recreational advisory groups. We would hate to think those who wrote the IPP are intentionally ignoring our information. Failing to recognise and record anecdotal information by the Ministry of Fisheries has been recognised by Government as a major problem in managing our fisheries.

While we are asking for a zero TACC the method MFish allows to be used to harvest bladder kelp in the event that MFish ignores our warnings will be nothing short of a juggling act without any scientific research to back up the decision. Overseas research has found a stem cut will not keep growing but dies off. The plant then begins to grow another frond and as most bladder kelp is found in waters around ten metres deep, and only grow in winter, then take a month to grow half a metre. It follows, if they only grow for half the year, they may take 40 months to reach the surface at slack water. However there lies a major problem in designing a sustainable method to harvesting bladder kelp by machinery as if all the fronds are taken off at the holdfast the plant has lost its way of supporting itself as the fronds convert the suns energy by way of photosynthesis into the plants’ food source.

Research at Pukerua Bay has already found that areas without bladder kelp quickly become barren with stunted paua and kina. Likewise bladder kelp beds when completely smothered in silt and mud also die back and the mud run off from Porirua Harbour is already destroying bladder kelp beds to the south of Porirua with the out going tidal flow. In March 2010 huge masses of bladder kelp arrived on the Makara Beach. Areas with strong forests of bladder kelp also support big numbers of butterfish which can be seen grazing on the kelp. Harvesting bladder kelp through the butterfish spawning and juvenile stages of life will have a major impact on that commercial fishery. Areas where there are large commercial catches of crayfish are also areas with large bladder kelp forests are found so there must be a connection between the two specie.

Use of selective information to support proposal

At a recent MFish South Western recreational forum we had members describing the loss of blue cod from the Patea Reef area and thought it to be from excessive commercial pressure. When the commercial catch history was supplied by MFish it was the recreational fishers who realised it was caused by environmental factors. They saw the decrease in the commercial catch and realised it was immediately after the Wanganui floods which had smothered the kelp beds in mud and silt and denied the blue cod with their food source, exactly the same result that had caused the blue cod to move out of the Marlborough Sounds. The drop in the commercial blue cod was dramatic as prior to the flood commercial landed 33 tonne from the stat area 41 then after the floods although the commercial fleet had trebled they could only catch nine tonne.

Through the West Wind resource consent process commercial fishers and the WRMFA described bladder kelp beds at Ohau Point provided food and habitat for butterfish while we were able to describe the importance of bladder kelp beds to warehou. It has now become obvious why MFish are failing to contribute through the resource consent process as in 2006 there was no one in MFish that could describe the impacts on bladder kelp from a Meridian proposal with outcomes that could destroy them. In Point 14: We note with concern the selective use of overseas information: *that bladder kelp grows up to 300 mm per day in the Northern Hemisphere* is irrelevant when MFish knows *it only grows 1 to 15 mm a day in New Zealand*. There is considerable information on the internet describing the adverse impact of harvesting bladder kelp on marine specie yet MFish has not quoted that.

MFish, in this IPP proposal you are recommending a TACC of 377 tonnes. This places MFish in breach of The Fisheries Act 1996 No 88 as at 1 October 2009.

The Act states under Part Two Purposes and Principles:

- *All persons exercising or performing functions, duties, or powers under this Act, in relation to the utilisation of fisheries resources or ensuring sustainability, shall take into account the following environmental principles:*
 - *(a) associated or dependent species should be maintained above a level that ensures their long-term viability;*
 - *(b) biological diversity of the aquatic environment should be maintained;*
 - ***(c) Habitat of particular significance for fisheries management should be protected***

This proposal is illegal as it is proposing to set a TACC without any scientific information to support the decision. The proposal makes a mockery of the Ministry of Fisheries Deputy Chief Executive Gavin Lockwood's view of how the Ministry is managing the TACC. His press release dated 9 March 2010 was posted on the internet at 5.18pm.

<http://www.scoop.co.nz/stories/PO1003/S00142.htm>

Cautious approach central to NZ fisheries management

The Ministry of Fisheries said today that New Zealand takes a conservative approach to its fisheries management based on sound scientific research.

“We have sophisticated and well integrated fisheries research, management and monitoring systems that have been refined over the last 20 years,” said Gavin Lockwood, Ministry of Fisheries Deputy Chief Executive Fisheries Management.

“Our Quota Management System is regarded as one of the world’s best. Two notable international studies recently have confirmed this status.”

“Annual decisions on catch limits are based on the best available science,” said Mr. Lockwood. Every year some \$20 million is spent on scientific research and stock assessments.

“We must carefully prioritise that spend on research that best meets fisheries management needs, based on the value and risks within fisheries. A high proportion of catch - 70 percent by value and volume – comes from assessed fish stocks. For other stocks that attract less research spending, the QMS ensures that total allowable catch limits are in place and significant monitoring of catch and effort happens to make sure catches remain within limits.

“We invest considerable effort and resources in research and assessment,” said Mr. Lockwood.

“That information is regularly assessed by panels of scientists, fishery managers and representatives of environmental and fishery interests. “This process is open and transparent, and the information on which management decisions is based is freely available. Catch limit decisions therefore flow from top-quality independent research which is subject to rigorous independent review.

“Catch limits move up and down to take into account changes in the abundance of a fish stock and to make sure fishing is kept at sustainable levels. The hoki fishery is an excellent example of this approach working effectively.

“The QMS gets a lot of international attention because it gives fisheries managers effective tools to maintain healthy fish stocks and rebuild depleted stocks when required.”

There is a serious lack of scientific information to set any TACC and, based on Gavin Lockwood’s information as to how stocks within the QMA are set, the bladder kelp proposal should be put aside until MFish is able to produce an IPP that describes the impact it will have on marine species. It is pointless saying there is no information when we have shown that you have a considerable amount of information. This whole IPP is a history of guess work, double talk and selective use of your own information to suit yourselves so that MFish policy is not compromised.

Point 35 states: *The current status of KBB 3G in relation to Bmsy are unknown and unable to be reliably estimated using best available information.* Then the IPP paper says *The Act allows TACs to be set under section 14* then states that bladder kelp does not meet the criteria and then says it could be set *under 13(2A) of the Act*, which is at the Ministers discretion *having regard to social, cultural and economic factors.* There is nothing scientific about that to support the MFish view that *annual decisions on catch limits are based on the best available science.*

The senior management of the Ministry of Fisheries would do well to take note of the words of the past Parliamentary Commissioner for the Environment Dr John Morgan Williams in his forward to the publication called *See Change*. In it he had this to say: *New Zealanders need to take much more seriously the opportunities that lie in reshaping the whole way we provide for ourselves and*

future generations. This will require a long term process to build up knowledge and understanding across our society – a society that in many areas does not know what it does not know.

The information that we provide to the Ministry of Fisheries is marine knowledge we have acquired through experience and at this level cannot be found in books, although some of it is being presented in my stories published in the New Zealand Fishing Coast to Coast magazine. We have arrived at a very interesting point in time. We have the Ministry of Fisheries not prepared to fund research into the intertidal zone yet are quite quick to call our research into this zone anecdotal and keep informing the public with a view that has no scientific substance at all and will never have.

I have identified the science paper where the assumption came from to misinform the public that yellow eyed mullet spawn out at sea and the author stated he never found a yellow eyed mullet with ripe running roe and had no idea where they spawned. His paper was written to describe that both the New Zealand yellow eyed mullet and the Australian one were the same specie. Once published an author has no control over who reads his science paper. One reader read into a comment what he wanted to believe and his assumption was written into his book then posted on the NIWA web site. Unfortunately Mfish, also without a scrap of scientific proof, reproduced the assumption into the MFish plenary. It follows it is quite irresponsible of MFish management to continue misinforming the public as to where they think marine specie spawn if they have no supporting scientific proof.

The Parliamentary Commissioner for the Environment in December 1999 must have realised the Ministry of Fisheries was lagging behind in accepting informal marine knowledge when he published a document called *Setting Course for a Sustainable Future, The Management of New Zealand's Marine Environment*. In section 5, page 74, Adequacy of Environmental Information (5.2) "Different kinds of information" he had this to say:

However, in an information scarce environment like the marine environment, informal information will often be a resource that marine managers cannot afford to neglect or ignore.

MFish lacks a considerable amount of information and for years has provided a number of examples where they have refused to accept that factors in the marine environment can influence fish stock numbers. The intertidal zone provides a considerable quantity of food for marine specie but the Government body Foundation for Research Science and Technology that was tasked with allocating \$32 million into areas that lacked scientific knowledge stated there will be no Government funding into the intertidal zone. Today marine research costs money and funding to make these discoveries in the intertidal zone is almost impossible. Even though kahawai is a commercial specie it has not been a high enough rated fish specie to attract this research.

Bladder kelp when detached floats on the surface providing habitat for a variety of specie and on the 20 March TV3 program titled Carter Gone Fishing they played a film showing what could be caught under free floating bladder kelp seaweed. This clip showed them catching mahi-mahi but there were also other specie seeking shelter including a school of warehou and a lone spotted groper. At other times free floating seaweed also holds tuna and kingfish.

There is a statement made in Point 91: *There will be opportunities to help identify and manage any adverse effects of fishing (bladder kelp)*. This is a cop out and will not happen. Mfish have not developed the skill base to understand how environmental factors impact on marine specie and the impacts will only show ten years after harvesting begins. Then just like the impact from the fast ferries, MFish then failed to act and in their ignorance of the marine environment blamed recreational fishers for the blue cod moving out of the Sounds. In recent years MFish has been given a number of opportunities to contribute to the resource consent process and has failed to provide much needed information. Other times Mfish, when asked has not been able provide any

information on where fish spawn or the value of the intertidal zone to marine specie. The resource consent proposing current generators for the Kaipara Harbour exposed how little MFish understand the marine environment as they could not name a specie that spawned there.

The history when bladder help was destroyed

When the National Government allowed fast ferries into the quite shallow Sounds in 1994 they must have known of their destructive force as at initial berthing they increased the depth of water by over four metres. We advised the Wellington Regional Council and the then National Government in 1997 that the fast ferries were destroying spawning habitat areas for commercial specie and marine bladder kelp beds. We also made it known that the ferries decimated bait fish and plankton that warehou had been feeding on.

It was not till the impact from the first big ferry that had arrived in May of 1999, followed a year later by another, which were allowed to travel at full speed in and out of the Sounds, that the damage became unacceptable to residents as their property was washed away caused by the tidal surge from their propulsion units. Each had three sailings a day into the Marlborough Sounds and each created four tidal waves. Combined they created 48 two metre tidal waves along the beaches every day or 336 two metre tidal waves a week and Mfish said nothing. I drove my boat into the wake of one of the fast ferries and recorded, in a photo taken off my sounder, the impact to the sea bed from their jet units. The image clearly showed the under water jets from their propulsion units blasting the sea bed in forty two metres of water although later advised they impacted the sea bed to fifty metres. That photo is now the only photographic record that shows the depth the blast from the jet propulsion units of the fast ferries reached and is on record at the National Library.

Combined with the tidal surge the fast ferries' propulsion units created, they blasted the sea bed and lifted the silt and mud thereby caused the smothering of all the bladder kelp beds in the Sounds. Unable through MFish recreational advisory committees to get MFish to do something, in January 2001 I wrote to the then Minister of Conservation Sandra Lee and attaching the photo off my sounder I asked her to direct the fast ferries off the Falcon Shoals and from the proposed marine reserve which she did three months later. But it was too late to save the bladder kelp forests in Wellington Harbour or the Marlborough Sounds as the ferries wash had destroyed the beds.

The balance between blue cod, pilchards, yellow-eyed mullet and bladder kelp is critical as each marine specie at some stage in their life cycle relies on the other as a food source. The effect of continually destroying the bladder kelp beds and washing away the beach cast seaweed went unnoticed by Mfish who never raised a concern through the many resource consent hearings and not once had Government embarked on producing an environmental impact report on the impact of the fast ferries or shipping in the Sounds. In my research divers reported that the seaweed was smothered with silt and they had to shake it to see any colour. The pilchard and yellow-eyed mullet schools existing in the Marlborough Sounds through the Second World War were estimated to be many thousands of tons and were used to feed the public of Wellington as commercial fishers had their fishing areas severely restricted. Today the schools are slowly recovering but still only have schools of one or two tonne from the many thousands of tonnes seen prior to the arrival of the fast ferries and described in science papers.

Summary

Government and the Ministry of Fisheries, you have demonstrated throughout this IPP paper to harvest bladder kelp you have no understanding of the impacts that removing bladder kelp will have.

You have failed to name the marine specie that can be used to monitor the impacts.

You have failed to mention the role the sub Antarctic conveyor current plays in distributing the larvae and eggs of our inshore specie after passing through the bladder kelp forests.

You have failed to acknowledge NZ science papers describing the value of bladder kelp to marine specie.

The IPP harvesting tonnage figures have been based on an estimate that was not a scientific study and was not peer reviewed.

You have failed to acknowledge how fisheries collapsed in Norway and Tasmania after bladder kelp harvesting was introduced.

You have failed to explain that the reason that the plant grows longer in autumn is to use the sun's energy to obtain its food source and that those fronds once cut do not keep growing.

You are proposing to have two harvests a year off a plant that only grows 1 to 15 mm a day that will be unattainable now, tomorrow, or any time in the future.

It is our view that this proposal is in breach of the The Fisheries Act 1996 No 88 as at 1 October 2009.

Part Two Purposes and Principles: which states *Habitat of particular significance for fisheries management should be protected*

This IPP as proposed is contrary to the view expressed by Gavin Lockwood, Ministry of Fisheries Deputy Chief Executive Fisheries Management as to how the Ministry manages the fishery. He has been quoted as saying. *"This process is open and transparent, and the information on which management decisions is based is freely available. Catch limit decisions therefore flow from top-quality independent research which is subject to rigorous independent review.* Nowhere in this paper is there any evidence of any independent research that has been peer reviewed.

The TACC should be set at zero based on the lack of scientific information presented in this paper to support the proposal. Time will quickly prove bladder kelp can never be harvested in the quantities proposed or twice a year and any attempt to achieve that will expose our fragile marine ecosystems to the invasion of seaweeds such as *Undaria* that smother the existing marine life.

Removing the major food source of the prey of the fish that are transported in the Sub Antarctic current all the way up the top of the North Island and through the Cook Strait will put our whole commercial industry at risk now and into the future and will have major repercussions on our traditional rights to gather the fish identified as recreational fish. Call it anecdotal information or whatever you like but we will be proved right.

Yours sincerely

Jim Mikoz
Vice President
Wellington Recreational Marine Fishers Association

Tracey Steel
Ministry of Fisheries
PO Box 1020
Wellington

26th March 2010

Dear Sir/Madam,

A submission regarding the Setting of Management Controls to Support the Introduction of Attached Bladder Kelp Seaweed, *Macrocystis pyrifera* (KBBG), in Fisheries Management Areas 3 and 4 into the Quota Management System on 1 October 2010

I would like to make a submission in regard to the Ministry of Fisheries' Initial Position Paper proposing the setting of Total Allowable Catches (TAC) for giant kelp (*Macrocystis pyrifera*) in Fisheries Management Areas KGG3G and KGG4G under the Quota Management System (QMS). I am a Masters student at the University of Otago, Marine Science Department. My current masters research is looking at the linkages between macroalgae communities (including *Macrocystis* kelp forests), epifaunal invertebrates and reef fish on the North Otago coastline. My primary supervisors Associate Professor Steve Wing and Dr Christopher Hepburn are part of a group of marine ecologists who collectively work within a sub-tidal ecology lab that has studied kelp forest physiology and ecology for many years. Due to the current research being conducted within this group as well as knowledge gained from my masters research topic, I believe I can provide useful commentary on the future management plans for the harvest of *Macrocystis* kelp.

Macrocystis kelp within large dense stands plays an integral role in the lives of many organisms that exist within coastal rocky reef habitats. Giant kelp forests provide vital habitat complexity, protection from predators, shelter from predation, abundant food sources and are important ecosystem engineers. They also provide services for people including protection from coastal erosion, dissipating waves and currents. *Macrocystis* forests are sensitive to environmental degradation including sedimentation and severe weather events; which have lead to the loss of entire kelp forests, as seen in California. While knowledge of *Macrocystis* physiology and ecology is relatively well known worldwide there are still large gaps in knowledge concerning basic area, specific size and extent of forests year to year, growth rates, biomass of the species, and roles they play to specific animals that rely upon kelp forests throughout the proposed fishery areas.

The present fishery has been a small permit based system with catch levels of only 20 tonnes with an increase to 63.5 tonnes in the 2008-09 fishing year from Akaroa Harbour. It is not known whether harvesting at levels seen in KBB3G will be sustainable over multiple years. Akaroa harbour is considered to be a sheltered embayed area that would not be exposed to significant turbulence events or wave action due to storms. Sustainable kelp harvesting within this area was examined within a previous study with low kelp forest damage. However, it is questionable whether this would be viable in open coastal areas such as North Otago where periods of high turbulence due to storm action result in low light conditions in which can last for weeks. Harvesting of these areas before such storm events could lead to severe damage and loss of kelp forests.

The three options posed for TAC, with Option 1 the least cautious, set a 377 tonne limit based on the Akaroa study of three sites for only one year (1999). This was based on the combined harvestable biomass for the area at the highest level of harvest. To extend the level of harvesting of a small area to that of an entire fishery (KBB3G) harvestable area seems a foolhardy move considering the limited information available about the distribution of kelp forests, growth rates, and sustainability of harvest in areas outside Akaroa Harbour. Furthermore this study only focused

upon the affects of harvest upon the kelp and not the implications of that harvest had on the associated fish and invertebrates.

I submit that a cautious approach to the harvest of *Macrocystis* be taken with the limited information at hand to the fishery in regard to its distribution, biomass and growth throughout management areas. *Macrocystis* provides habitat and a food sources for a multitude of marine fauna such as fish and epifaunal invertebrates in which they are closely associated. The loss of kelp could lead to loss of crucial nursery and recruitment habitats that play key roles in other highly economically important commercial, recreational and customary fisheries (e.g. Crayfish, Greenbone and Blue Cod). Habitat degradation is a major threat to marine species in coastal areas. The harvest of *Macrocystis* if not managed conservatively could have devastating flow-on effects in the future, which at present may not be clear.

In conclusion, given the existing threats to kelp forests globally (Tasmanian kelp forests listed as threatened) and the lack of research in New Zealand with regard to the extent and roles it plays in the lives of flora and fauna. I have grave concerns of the wider ecological affects that the harvest of *Macrocystis* will have. I urge the Minister to take a conservative approach to the management of such a precious ecosystem-structuring component and set the TAC for KGG3G at 18.2 tonnes (Option 3) and for KGG4G at 2.2 tonnes (Option 3).

Thank you for considering my submission on this issue.

Yours sincerely,

Robert Win

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