

Kenepuru & Central Sounds



Kenepuru & Central Sounds Residents Association Inc.

Manager, Resource Consents
Marlborough District Council
PO Box 443
Blenheim 7240
Email: mdc@marlborough.govt.nz

*Ross Withell
(President)
Kenepuru Road
RD 2
Picton 7282*

29 Apr 2014

Dear Sir/Madam

**Kenepuru and Central Sounds Residents' Association
Submission on Resource Consent Application U140175
Marlborough Aquaculture Limited
Whakamawahi Point – Beatrix Bay**

I write in my capacity as President of the Kenepuru and Central Sounds Residents' Association Inc.

1. Introduction

- 1.1 The Association was established in 1991 and currently has 260 household members whose residents live full time or part time in the Kenepuru and Pelorus Sounds. The Association's objects include, among others, to coordinate dealings with central and local government and promote the interests of residents of Kenepuru Sound and adjacent areas and to promote and act in the best interests of residents, ratepayers and persons associated with the Kenepuru and Central Sounds area. AGMs of the Association are well attended.
- 1.2 The Association has built up a knowledge and understanding of issues concerning the sustainability of marine farming in the Sounds including through its substantive involvement with the King Salmon Board of Inquiry. The Association is now not comforted by the so called assurances from the marine farm industry that this is a benign activity with little or no impact on the

Kenepuru & Central Sounds Residents Association Inc.

President	Ross Withell	withell@clear.net.nz
Vice President	Adrian Harvey	mountstokes@xtra.co.nz
Vice President	Andrew Caddie	andrew.caddie@xtra.co.nz
Secretary		
Treasurer	Stefan Schulz	kcsra@pws.co.nz
Chairman Roding Committee	Robin Bowron	info@thenikaus.co.nz

immediate environment and is sustainable. The Association is concerned at the seemingly headlong rush from mussel farmers to expand operations through acquiring new public space area or increasing the size or density of lines in existing farms. Beatrix Bay is unfortunately a prime example of what some refer to as the Tragedy of the Commons. “If I do not make a grab for extra area then someone else will and whilst yields will decline overall I will get a marginal increase”. This cannot be allowed to go on unchallenged.

2. Decline application

- 2.1 The Association is of the view that the Applicant has not met the requirements and that the application should be declined.

3. Request to Appear

- 3.1 The Association confirms that it would like to present/talk to this submission at the public hearing.

4. The Association’s Concerns

- 4.1 The Association is concerned at the continuing flow of applications for additional marine farming space within the Marlborough Sounds absent any assessment of cumulative environmental impact.

- 4.2 The Association submits that, unfortunately, this application highlights these and related issues.

- 4.3 The Association is concerned at the seemingly limitless sprawl of mussel farms that this application and others like it are now representing. **This can only be answered by reference to the cumulative environmental impact of all existing mussel farm activity - aesthetically, recreationally, navigationally, and ecologically.** If the cumulative impact of existing activity is already at or above acceptable thresholds then all of the impact of an additional farm will be of an unacceptable level, irrespective of how it stands relative to the level of existing activity.

- 4.4 The Association of the view that the cumulative impact of marine farming in the Beatrix Bay area is clearly already at or above acceptable levels from an aesthetic, recreational, navigational and ecological perspective. As such any further applications for the embayment, including this application, should be declined.

5. Ecological Cumulative Impact – Analysis

- 5.1 The Marlborough Regional Policy Statement (‘MRPS’) acknowledges the potential for cumulative ecological impact at Section 3:

“Marine farming competes with indigenous stock for nutrients and could therefore disrupt the marine ecosystem....The community relies on the quality of the marine ecosystem for cultural, social, and economic wellbeing. Many activities take place in the coastal marine area. ... As pressures for community use and development increase these known areas must be restored and further degradation prevented...”

Little is known about the cumulative or long term effects of some activities. For example, there is little known about the long term effects of farming filter feeding shellfish on the habitat of indigenous species.”

5.2 Fortunately the Association’s research reveals that the cumulative ecological impact of mussel farms within the Marlborough Sounds has been considered in a recent report by the Cawthron Institute¹ consolidating research and information on sustainable aquaculture in New Zealand. This report acknowledges that even small scale developments will have an effect on ecological processes, species, population or communities in the growing environment². It concludes³:

- *“that growth in the aquaculture industry as anticipated over the next 15 years (NZAS 2006) will in turn require a better understanding of the wider ecosystem effects of shellfish aquaculture, particularly with regard to the cumulative effects of additional and aquaculture development (along side other anthropogenic stressors) within the context of ecological carrying capacity. Research to address wider ecological issues where information is relatively sparse will require understanding of complex ecosystem processes, many of which occur beyond the immediate environment of the cultivation area (e.g. changes to food web pathways).”*
- *“that there is little known about the effects of aquaculture and associated biodeposits on high value reef communities that can be found in close proximity to some farm areas. This study also identified a notable dearth of information surrounding the effects of marine farms on the wider food web and in particular, wild fish assemblages. However, we know little regarding the effects of bivalve aquaculture on the composition of plankton communities, which in turn may have wider ecological effects on the food web.”*

¹ Sustainable Aquaculture in New Zealand: Review of the Ecological Effects of Farming Shellfish and Other Non-fish Species April 2009

² At subsection 2.4.4

³ At section 8

- “Included in this information gap is the **general lack of research surrounding the potential consumption of larval zooplankton species (e.g. fish, crustaceans) and the subsequent ramifications for their recruitment success**”

- 5.3 It is noted by Cawthron¹ that where growing areas represent only a very small area of an embayment then it seems unlikely that there would be any bay-wide scale breach of ecological carrying capacity.
- 5.4 Of course ecological impact is not uniform across a bay. The Association submits that areas close to mussel farms will be ecologically impacted far more and much earlier than the wider bay area in its entirety. More particularly, the strip of area inshore of and immediately adjacent to mussel farms is likely to be ecologically impacted through biodiversity changes and particulate feed and energy depletion far worse and far more quickly than the wider bay area in general.
- 5.5 Significantly, the areas inshore of mussel farm ribbons (generally a 50 meter strip) house most of the reefs, substrata and courser sediment bottom areas of a bay that are the source of and home to most of the indigenous species and habitat that is highly valued by residents, holidaymakers, tourists and other Sounds stakeholders.
- 5.6 It is acknowledged that where food depletion occurs, cultured mussels could theoretically out-compete other suspension-feeders (e.g. zooplankton and benthic shellfish) for particulate food, or exceed what is termed the ecological carrying capacity of a marine farmed area (see Cawthron Section 2.4.4).
- 5.7 A major concern for the Association with all of this is that there is a dearth of knowledge and a lack of due consideration given to what is a relatively clear ecological cumulative impact, through biodiversity changes and food and energy depletion, that is already occurring in these confined and highly valued areas inshore of marine farms. The absence of prescribed standards for measuring acceptable cumulative impact in these areas is no reason to ignore it.
- 5.8 There is both scientific and anecdotal evidence of a cumulative and material impact on these highly valued inshore areas from existing levels of mussel farming activity.
- 5.9 The Association is concerned that scientific information on ecological impact is being presented in an imbalanced way. For example, a selective emphasis on the potential for phytoplankton stimulation through mussel nitrogen release absent any acknowledgement that concentrated mussel culture husbandry is still, nonetheless, after self-fertilisation (as for any animal husbandry activity), a net

¹ Cawthron Para 2.4.4

energy extraction from the water column environment. And without any assessment of the mix or composition of the resultant net balance of phytoplankton that is left by mass mussel culture and the impact of this on indigenous specie activity.

- 5.10 The Association is also concerned that assessments of levels of phytoplankton extraction through concentrated areas of mussel culture are being made without regard to bay wide cumulative effects in areas such as Beatrix Bay, e.g. where coastal water is flushed through multiple farms as currents circulate the coastline.
- 5.11 Indigenous specie ecological impact can be correlated to marine farm productive carrying capacity. Cawthron describe the productive carrying capacity of an area as the stocking density of bivalves at which harvesting yields are maximised. It is generally accepted, and indeed rational, that by this point there will have been a much more material impact on the indigenous ecological system¹.
- 5.12 Declining net yields of mussel farms as more mussel farms are added within a given area is increasingly being raised. However, for obvious reasons, applicants seeking water space have been reluctant to acknowledge this, or even deny it. However, the Association believes that a correlation between increasing farm density in an area and declining farm yields is both rational and is becoming more openly accepted. It appears to be well known that outside lines on mussel farms far outperform inside lines. And it is now common to hear reports that in some Marlborough Sounds areas mussels can take up to twice as long to grow as they have historically.
- 5.13 Whilst there may well be seasonal farm yield variations, including due to weather patterns, the emerging longer term picture, the Association submits, appears to be that mussel farm growing yields in more densely farmed areas have, over all, reduced.
- 5.14 Hand in hand with this is the much greater magnitude of impact that appears to be occurring on the indigenous ecosystems, particularly the highly valued areas inshore of mussel farms. As noted, it is suggested that ecological carrying capacity limits may be much lower than production carrying limits² - meaning that by the time the point is reached that mussel farms are noticeably impacting on each other from energy and particulate food limitations (whether or not weather pattern or seasonally caused), the local indigenous ecological system will have been much more seriously impacted.
- 5.15 This means that mussel farms will negatively impact on the indigenous ecosystem, through nutrient competition, even if they are not impacting on each other (which we would deny). For instance, the record low growth experienced by many growers in 2013 (attributed to an extended drought that led to low

¹ Jiang W, Gibbs MT 2005. Predicting the carrying capacity of bivalve shellfish culture using a steady, linear food web model

² Jiang and Gibbs Supra

nutrient runoff into the Marlborough Sounds¹) would have had a magnified effect on indigenous ecosystems due to the nutrient competition from the mussel farm stocks².

- 5.16 Many long term local residents of the Marlborough Sounds (and members of the Association) have observed an obvious decline in shoreline and sub-shoreline indigenous specie activity inshore of mussel farms which has correlated with the intensification of mussel farming. Some shorelines and sub-shore areas in heavily marine farmed areas are now alarmingly naked of visible indigenous ecological activity. Suggestions that such has coincided with land based forestry or farming activities are not in any way collaborated. In many affected areas there is limited, if any, forestry and/or agricultural activities.
- 5.17 Our research also reveals a body of literature (both published studies and grey literature) suggesting that the ecosystem carrying capacity of Beatrix Bay and similarly stocked areas has probably already been exceeded.³

6. Relevance of Cumulative Impact

6.1 The Association submits that the applicable law requires regard to be had to cumulative impact when assessing marine farm applications. Section 104 of the Resource Management Act 1991 ('RMA') requires a consent authority to have regard to environmental standards, regulations, national policy statements, the New Zealand Coastal Policy Statement, the Marlborough Policy Statement, as well as the MSRMP.

6.2 The No 1 policy of the New Zealand Coastal Policy Statement ('NZCPS') reads as:

"To safeguard the integrity, form, functioning and resilience of the coastal environment and sustain its ecosystems, including marine and intertidal areas, estuaries, dunes and land, by:

- *maintaining or enhancing natural biological and physical processes in the coastal environment and recognising their dynamic, complex and interdependent nature.."*

6.3 Policy 3 requires the adoption of a **precautionary approach** towards proposed activities whose effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse.

6.4 The No 1 coastal policy objective in the Marlborough Regional Policy Statement ('MRPS') reads:

"water quality in the coastal marine area be maintained at a level which provides for the sustainable management of the

1 Sanfords Limited half yearly report to 31 March 2013.

2 Jiang and Gibbs Supra

3 Tim Haggitt (PhD), Shaw Mead (PhD), Clova Bay marine farming - review of potential impacts and assessment of carrying capacity

marine ecosystem.”

6.5 Policy 5.3.5 of the MRPS reads:

“Avoid, remedy or mitigate the reduction of coastal water quality by contaminants arising from activities occurring within the coastal marine area.”

6.6 Paragraph 5.3.6(c) of the MRPS goes on to provide as follows:

(c) Support research into the cumulative effects of water based activities on water quality.

Particular reference needs to be made to the cumulative or long term effects of water based activities on water quality, especially marine farming. Little is known about the cumulative or long term effects of marine farming on existing natural stocks and ecosystems.”

6.7 The Associations submits that the Application fails these legal tests and requirements.

7. Comparable Industries

7.1 It is useful to compare the evolution of the mussel farming industry within the Marlborough Sounds against more modern environmental practises. Notably how it appears to have been enabled to evolve absent of any regard to cumulative impact, absent of any objective basis for measuring cumulative impact, and absent of any thresholds for acceptable cumulative impact.

7.2 Compare this to the modern evolution of the agriculture industry. Cumulative impact on fresh water standards is paramount and indeed forms the fundamental starting point in new generation irrigation projects.

7.3 For example, a flurry of applications to the Canterbury Regional Council for irrigation water use consents in the McKenzie Country over the last decade saw a moratorium and all outstanding applications called in. Regional wide studies then followed, funded by the applicants. These assessed cumulative impacts, most particularly the assimilative capacity of all streams, rivers and lakes in the wider region for nutrients and minerals. From this nitrogen leaching standards and parameters were determined for specific areas and these now form assessment standards upon which individual farm irrigation applications can be assessed.

7.4 The Association believes it unfortunate that the mussel farming industry has been enabled to evolve absent consideration of cumulative impact.

7.5 The Association submits that this is not a basis on which the mussel farming industry within the Marlborough Sounds should continue to evolve. Nor is it a basis upon which this application can be properly considered. In other words, the Association submits that the Applicant has to demonstrate that the cumulative effects are minimal. The Applicant has not done so.

8. The Associations' Position

8.1 As noted, the Association believes and submits that where the cumulative impact on indigenous ecological systems of existing marine farms in an area is already at unacceptable levels then any further activity cannot be permitted. This is clear from the policies of the MSRMP, the MRPS and the NZCPS.

8.2 The Association also believes that the same applies for aesthetic, recreational, navigational and other negative amenity impacts from further marine farm activity in already heavily farmed areas. That is, if an area is already heavily stocked with marine farms then an unacceptable level of negative amenity impact is likely to have been reached. As such, *any* level of further impact cannot be permitted. This approach is necessary to prevent limitless sprawl. As noted, the Association believes that Beatrix Bay has passed this point.

8.3 The Association is of the view that this is likely to be the position for many of the heavily marine farmed areas existing within the Kenepuru and Pelorus Sounds.

8.4 The onus must be on the Applicant to prove otherwise. Ecologically, such assessments may necessarily need to relate to a base level inshore ecological status before the introduction of marine farms to an area, and thus may need to have regard to local knowledge as well as regressive scientific modelling and research.

9. Specifics of the Subject Application

9.1 With regard to the specifics of the subject application the Association also makes the following submissions:

- It appears from the Marlborough District Council map of marine farms that an application for this water space has been declined in the past. If this is correct the Association is concerned that yet another application should be made for the same area. The Association is of the view that the public aesthetic and recreational values of the area have, if anything, increased over time as public recreational and other patronage of the Beatrix Bay, Clova Bay and Crail Bay areas has increased.
- The Association is particularly concerned that the application will extend the line of marine farms from within Beatrix Bay to around the Whakamawahi headland. This is a well navigated headland, both by recreational vessels and by commercial mussel industry vessels. The Association notes the need to avoid navigational and headland areas (MSRMP paragraphs 35.4.2.9.1.3 (d) and (e)).

- The Association is also particularly concerned at the precedential effect of allowing a marine farm that extends out into a head land in this manner.

1. The Association does not accept the Applicants propositions that existing marine farms mean that further marine farms will have only a minor marginal impact. The logical extension of such propositions is limitless sprawl. Such cannot have been contemplated by parliament and as such is not a purposive interpretation¹ of the Resource Management Act 1991 or its underlying regulatory and policy framework. As noted, the Association's position is that a proper assessment of environmental impacts is a cumulative one. If already at or above acceptable levels then no further activity can be permitted. In other words, all of the drop into a full jug overflows.

2. No cost benefit analysis of the proposal is provided and no information or data is provided from which a cost benefit analysis can be undertaken. This is a further serious deficiency in the application.

3. The Association is of the view that the application fails the discretionary activity criteria of the Marlborough Sounds Resource Management Plan. It also offends against the objectives and policies of the New Zealand Coastal Policy Statement and The Marlborough Regional Policy Statement. It stands to have a more than minor environmental impact and fails the legislative tests as prescribed in sections 104 and 104D of the Resource Management Act 1991.

As such the Association submits the application **should be declined**.

Yours faithfully



Ross Withell

President

Kenepuru and Central Sounds Residents' Association

c/- 2725 Kenepuru Road

RD 2, Picton 7282

Email: withell@clear.net.nz

cc Marlborough Aquaculture Limited

C/o David Clark

Wishart McNab and Partners

PO Box 138, Blenheim 7240

Email david@wmp.co.nz

¹ Section 5(1) Interpretation Act 1999