

Kenepuru & Central Sounds



Kenepuru & Central Sounds Residents Association Inc.

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19 Feb 2014

Dear Madam

Kenepuru and Central Sounds Residents' Association Submission on Resource Consent MF U130797 – 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

Kenepuru & Central Sounds Residents Association Inc.

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called assurances from the marine farm industry that this is a benign activity with little or no impact on the 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 cumulative negative environmental impact of mussel farms is undeniable - aesthetically, recreationally, navigationally, and ecologically.

5. Cumulative Impact

- 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***

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

²At subsection 2.4.4

³At section 8

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.

• **“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

¹Cawthron Para 2.4.4

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 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.
- 5.10 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.
- 5.11 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.
- 5.12 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.

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

²Jiang and Gibbs Supra

- 5.13 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 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.
- 5.14 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, including Beatrix Bay, 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. Beatrix Bay, for example, has no forestry and only a very minor level of non-intensive agricultural grazing.
- 5.15 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 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, particularly non-complying activity 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

¹Sanfords Limited half yearly report to 31 March 2013.

²Jiang and Gibbs Supra

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

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 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 wanting of cumulative environmental impact assessments.
- 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 The Association believes and submits that the cumulative impact of marine farms on indigenous ecological systems in an area already fully marine farmed to the level considered acceptable under MSRMP discretionary activity standards will in all likelihood already be more than minor. This is supported by both scientific and anecdotal evidence as noted above. As such, the whole of any impact of any further marine farming will be more than minor.
- 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 fully stocked with marine farms to the level

considered acceptable under MSRMP discretionary activity standards, then it is very likely that a cumulative level of negative amenity impact has already been reached. As such the whole of any impact of any further marine farming will be more than minor.

- 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 Association is particularly concerned with the implications that might flow from approving non-complying consent applications, whether or not labelled as ‘in-fills’ or ‘extensions’, without regard to pre-existing cumulative amenity and ecological impacts. Such will set a ***dangerous precedent*** of an uncontrolled framework for the receipt and processing of yet more and more consent applications ***without any cumulative environmental parameters at all*** - and in areas where an already unacceptable degree of cumulative impact most probably already exists.
- 8.5 As such, the Association believes that non-complying activity applications in such areas should be treated with the requisite ***precaution*** as required by the New Zealand Coastal Policy Statement and declined if they are unable to demonstrate, with independent, objective and scientific proof, that the cumulative environmental impact, in all respects, of existing marine farming activity in the area has not already been met. The Association believes that this application **fails that test**.
- 8.6 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:

1. The proposed farm is within an area dominated by marine farms and where it is most probable that cumulative inshore ecological impact from marine farming is already above acceptable levels.

2. The proposed farm extends beyond 200M from MLWM and thus fails the standard for discretionary consideration as prescribed in section 35.4.2.9(b) of the MRSRP.

3. The proposed farm also wraps around a headland and blatantly breaches discretionary activity assessment criterion 35.4.2.9.1.3 (d) and (e).

4. The proposed farm will effectively ring fence a fishing and snorkelling reef well used by Sounds residents and visitors. The Association believes that the recreational, navigational and ecological impact of the mussel farm on this reef area alone will be of a more than minor impact. The heightened ecological risks from marine farming in close proximity to reefs, including in relatively higher current areas, is well documented¹.

5. Other negative impacts, such as biological threat, recreational, navigational, and visual impacts in general, are dismissed by the applicant as minor, being marginal only to the impact of the already existing marine farms in the area. *Accepting such a proposition sets a dangerous precedent of an uncontrolled framework for the receipt and processing of more and more non-complying consent applications without any cumulative environmental parameters at all.*

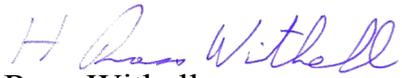
6. No cost benefit analysis of the proposal is provided and no information or data is provided from which a cost benefit analysis can be undertaken. This is a further serious deficiency in the Application.

7. 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 for the activity as prescribed in sections 104 and 104D of the Resource Management Act 1991.

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

¹Cawthron paragraph 7.1

Yours faithfully



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Chairman

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cc The Applicant

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