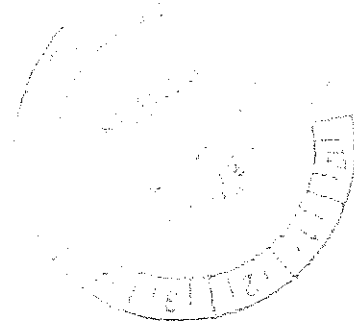


**Appendix 4. Submissions received following the preliminary decision**

20 July 2009

The Ministry of Fisheries  
Private Bag 14  
Nelson

Attention: Christine Bowden  
Rachel Alexander



Dear Christine and Rachel

*RE: Final Submission Regarding WBIAMA-Preliminary Evaluation*

Please find enclosed a hard copy of the Leigh Commercial Fishermen's Association Inc. Final Submission regarding the WBIAMA Preliminary Evaluation Report.

As per my conversation on the phone with Rachel, 20 July 2009 please accept this as LCFA's final submission to replace the previous copy sent last week. LCFA was very conscience of the time- frame and sending MFish our points/concerns to be considered before a final decision was made by MFish that it was forwarded incomplete in the draft version.

The submission is now complete and final.

Yours sincerely

A handwritten signature in cursive script that reads "Cindy Bailey".

Cindy Bailey (Secretary)

cc Russell Burnard

Leigh Commercial Fishermen's Association Incorporated

PO Box 158  
Leigh

Ph: 09 422 7918

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Submission to the Ministry of Fisheries in response to the preliminary decision to approve the Wilson Bay, Firth of Thames, Interim Aquaculture Management Area.

Leigh Commercial Fishermen's Association Incorporated would like to comment on the Ministry of Fisheries (MFish) "Wilson Bay Interim Aquaculture Management Area (WBIAMA) – Preliminary Evaluation" (Preliminary Evaluation).

Leigh Commercial Fishermen's Association (LCFA) continues its objection to the WBIAMA for the reasons set out below.

## 1 Background to LCFA

- 1.1 LCFA was incorporated in 1994 to promote and support the interests of commercial fishermen, whether by supporting any legislation, event, undertaking or any other matter which relates directly to the betterment or wellbeing of commercial fishermen financially or in any other respects; or to oppose any legislation, event or undertaking which is detrimental to the interests of commercial fishermen.
- 1.2 It presently represents Leigh Fisheries Limited and some 65 fishing vessel owner/operators and their crew as members.
- 1.3 As previously stated in its submission of 10 October 2008, LCFA members use various fishing methods to target several species of fish. The majority of fish caught by LCFA members is in FMAI. Last year, LCFA members caught 25% of SNAI. That fish was landed through Leigh Fisheries Ltd. The members of LCFA represent the largest fleet of owner/operators, remaining in New Zealand's inshore fishing fleet. They also constitute the largest fleet of owner/operator longline fishermen in the country. Although several of LCFA fishermen own their own quota, the majority obtains their ACE through Leigh Fisheries Ltd. Leigh Fisheries Limited is itself a long standing and substantial processor, distributor and exporter of fish.
- 1.4 LCFA is also a member of the NZ Federation of Commercial Fishermen.
- 1.5 LCFA has consulted its members in the course of preparing these submissions. The views expressed in these submissions accordingly reflect the views of the membership.

## 2 Summary of LCFA Position

- 2.1 LCFA has read and carefully considered the Preliminary Evaluation. It has considerable difficulty comprehending the reasons given by MFish for recommending preliminary approval of the WBIAMA.

- 2.2 MFish states at para 5 of the Preliminary Evaluation: " *This recommendation is made on the grounds that, given the information available at this time, MFish is satisfied the activities contemplated for the Wilson Bay Interim AMA in this request for an aquaculture decision would not have an undue adverse effect on fishing or the sustainability of fisheries resources.*"
- 2.3 In the LCFA's view "*the information available at this time*" provides a totally inadequate basis on which to make such an important decision. The effects of marine farming, particularly large scale marine farm developments, on the overall sustainability of fish stocks are generally unknown. MFish has relied almost completely on theoretical information to assess the potential effects which such a large aquaculture management area (AMA) could have on the sustainability of the wild fisheries resource.
- 2.4 If fully developed, the WBIAMA would be one of the largest aquaculture management areas in the country, covering some 2,473 hectares within the confines of the Firth of Thames. Implementation would accordingly see very large scale marine farming located in the middle of the most important snapper spawning grounds for the northeast coast of the North Island.
- 2.5 As presently proposed, the WBIAMA would cover an area that is half way across the Firth of Thames. This is a massive filter to put in this area.
- 2.6 Due to the size of the site to which the application relates there will be impacts on the sustainability of the wild fisheries resource. LCFA believes that these impacts will be significant.
- 2.7 The science that has been done to date has been based on much smaller marine farms (There are no fully developed marine farms of the size proposed for Wilson Bay). The limited available information has been theorized and modelled as to the possible effects, but very little actual research has been completed. There are too many unknowns.
- 2.8 LCFA struggles to understand why Area B is being pushed forward as an AMA, while Area A is only about 20% developed. It would clearly make more sense to develop Area A to its full potential and then to assess the impact of Area A on the environment, fishing and the general sustainability of fisheries resources before any further development is considered.
- 2.9 LCFA is not against the development of aquaculture per se. It is concerned that there is insufficient scientific evidence to support approving such a large area as is contained in the WBIAMA application, particularly within the confined area that is the Firth of Thames.
- 2.10 LCFA has considered the available science that has been completed to date regarding the potential effects that an AMA of this size could have on the future

of our wild fish stocks, particularly snapper in the Firth of Thames, Hauraki Gulf and the northeast coast of the North Island. The science reports have definitely not alleviated its concerns. They have in fact caused greater concern. LCFA has found the science to be neither robust nor conclusive. Theories, hypothesis and suppositions are not a good enough basis on which to make such an important decision, particularly in circumstances where actual research to verify (or otherwise) such theories and hypothesis could in the LCFA's view be completed in a relatively economic and timely manner. That MFish has actually given preliminary approval, based on these same reports, and found that there would be no undue adverse effect on fishing or the sustainability of fishing resources is the most concerning of all.

- 2.11 The LCFA has serious concerns as to the manner in which the proposal is being rapidly advanced by MFish with little input from any other parties that are not connected with the aquaculture industry.
- 2.12 By making a "determination" in favour of the WBIAMA, MFish has demonstrated very limited regard to the potentially very serious consequences for the future of our wild fish stocks, in particular snapper in the Hauraki Gulf and on the northeast coast of the North Island.
- 2.13 MFish has the responsibility for overseeing the continuing sustainability of New Zealand's wild fisheries. LCFA does not understand why MFish is not taking a precautionary approach in relation to aquaculture and aquaculture's potential to damage and deplete our wild fisheries in the context of the WBIAMA proposal. (It is certainly, in our members' experience, generally quick to cut TAC and TACC on a precautionary basis when it suspects a decline in any particular wild fish stock.) The science available to date is "incomplete" and provides an insufficient basis for MFish to make an informed and fair decision in regard to WBIAMA. Where information is uncertain, unreliable or inadequate, decision makers should be cautious as outlined in s 10 of the Fisheries Act 1996 (Act).
- 2.14 If information is inadequate and uncertain then the rights of the existing users should take precedence and be protected.
- 2.15 There is no doubt that any adverse impact to wild fisheries resources in the Firth of Thames would directly impact commercial, recreational and customary fishers.

### 3 The Process

- 3.1 LCFA has previously corresponded with MFish regarding the preliminary approval, through letters written by Jodie Campbell (13 May 2009 and 29 May 2009) on its behalf. It has asked some important questions on issues which needed clarification in order to enable LCFA to prepare a further submission. LCFA also wanted to have the opportunity to discuss the Cawthron Report (April 2009) "*Sustainable Aquaculture in New Zealand: Review of the Ecological Effects*

- of Farming Shellfish and Other Non-fish Species.” (Cawthron Report)* This report is yet to be discussed at an AEWG meeting.
- 3.2 LCFA was led to believe that MFish were awaiting the opportunity to discuss the Cawthron Report at an AEWG meeting before making a final decision on the WBIAMA proposal.
  - 3.3 An extension to the submission time- frame was requested in order to enable LCFA to consider answers to the questions asked of MFish and to enable discussion at an AEWG meeting regarding the Cawthron Report. LCFA considered that both of these matters were vital to the writing of its submission. Further LCFA was of the understanding that it was unable to quote any of the conclusions contained in Cawthron Report while that report was considered a “work in progress” and that the report had to be finalised before it could be referred to. LCFA was in fact cautioned regarding this matter and sent a “*Terms of Reference for the Ministry of Fisheries Aquatic Environment Working Group in 2007-08*”.
  - 3.4 LCFA has since received correspondence, dated 19 June 2009, from Russell Burnard, Manager Regulatory and Information, MFish stating that the draft report “*would almost inevitably fall within the pool of available information*” and was in fact “*summarizing and reviewing existing information, we would simply note that the information contained in the draft report was already available to the Ministry*”.
  - 3.5 LCFA has therefore concluded from these statements that it may now refer to information contained in the Cawthron Report as well as any conclusions and recommendations cited in that Report in its submission to MFish.
  - 3.6 The fact that MFish has declined to engage with LCFA and to answer the questions that were put forward has limited LCFA’s understanding of MFish’s interpretations in relation to commercial fishing and the effects on commercial fishing resources (or indeed other fisheries resources) in the report. It is difficult to provide robust comment without answers to the questions asked of MFish.
  - 3.7 LCFA does not understand why in this particular case MFish has used the 6 month statutory time frame for IAMA decisions as justification for not granting an extension of time for submissions. Russell Burnard has stated “*The Ministry has already provided a period for stakeholders to provide submissions and comments on the preliminary decision.*” LCFA notes that the aquaculture industry has had years to prepare its case but other stakeholders have only had months or in the case of comment on the Preliminary Evaluation, only weeks to prepare their responses. The LCFA also notes that the deadline for submissions was 15<sup>th</sup> May 2009. This deadline was only five weeks from the release of the Preliminary Evaluation not the six weeks that is stated in the information pack.

LCFA relies on a rural delivery service and did not receive the report until 16<sup>th</sup> April 2009.

- 3.8 In this context LCFA further notes that s.186E (2) of the Act allows the Chief Executive to request any fisher whose interests may be affected by a decision to provide further information about the effects which a proposed AMA may have on access to or displacement of fishing. Under s.186E (3) the period allowed for a response to such a request is excluded from the 6 month period within which a determination is to be made. LCFA and its members consider themselves to be fishers whose interests would be so affected and accordingly this mechanism could (and should) have been used to extend the relevant time frame.
- 3.9 The sustainability of New Zealand's wild fisheries is of utmost importance. It is worth putting the time and effort in now to get things right. LCFA members, and indeed the fishing population at large, could pay a high price in the future if the necessary homework is not done now; all as a consequence of a desire to meet a tight time-frame (and particularly where there does appear to be a mechanism which might have been properly used to extend the time-frame). Fishing and fisheries resources should take precedence over bureaucratic processes and worrying about time-frames, when so much is at stake. Consultation must be thorough and fair.
- 3.10 Russell Burnard has also stated "*As the person with the delegated authority to make the decision for the Wilson Bay interim AMA, my decision will be based on the best available information currently before the Ministry. While the available information may not be as good as we would like, I will exercise judgment where information is uncertain.*"
- 3.11 With respect, is this the same judgment that was used in making "a determination" for the WBIAMA in the Preliminary Evaluation, in which it was decided that the WBIAMA "*would not have an undue adverse effect on fishing or the sustainability of fisheries resources?*" The information available remains unchanged.
- 3.12 LCFA notes that MFish was requested by Environment Waikato (EW) on 20th March 2008, to make an aquaculture decision in relation to an area of Wilson Bay declared as the WBIAMA. It was over five months before there was a public information meeting.
- 3.13 MFish did not consult directly with LCFA regarding WBIAMA and we challenge that we should have been consulted. In the letter dated 9<sup>th</sup> July 2009, from MFish's Chief Legal Adviser (in response from a letter dated 3 July 2009, from Lowndes Jordan on behalf of the LCFA), the reason given that LCFA was not specifically consulted was that only rig and flatfish were considered by MFish as commercial fisheries that could be potentially affected. Considering the importance of the snapper fishery in FMA1 and that it is a rebuilding stock and



that the Firth of Thames is the most important snapper breeding ground for the northeast coast of the North Island; it is most alarming, that MFish, who have the responsibility to protect our wild fish stocks did not think the snapper fishery to be important enough for consideration for consultation by stakeholders.

- 3.14 The LCFA became aware of the WBIAMA only by chance, which fortunately, did enable it to send a representative to attend the public meeting held on 26<sup>th</sup> August 2008 in Thames.
- 3.15 With respect, LCFA considers that MFish's consultation process is flawed. MFish needs to consult more widely than just in relation to the bare area of the interim AMA and its immediate vicinity (although given the location of the snapper spawning grounds in the Firth of Thames snapper fishers, such as those represented by LCFA, clearly have a direct interest in that limited area also). Fishing and issues related to the sustainability of fisheries resources can not be "compartmentalized" in this way with lines drawn, on the basis that these fishers and these fisheries resources will be affected on this side of the line but not affected on the other side. The picture must be looked at as a whole, as consequences will definitely have a knock- on effect. An AMA of this size of the WBIAMA, inclusive of Area A (fully developed) has the potential to impact on fisheries in the whole of the northeast coast of the North Island.
- 3.16 LCFA further comments that in the initial consultation, its submissions were due by 10 October 2009, (giving it just over six weeks to complete that submission). However, the NIWA "site specific" research was not completed and discussed at an AEWG meeting until well after this date. LCFA has been disadvantaged both in that instance and in the present case in regard to the time-frames imposed for the provision of submissions, because it has not had access to all of the information necessary to complete its submissions.
- 3.17 The Aquaculture Industry has had years to prepare for this Interim AMA application. LCFA only ask that MFish afford it the same courtesy and consideration by granting it a fair allocation of time within which to properly investigate the potential adverse effects on fishing and sustainability of fisheries resources. LCFA is very conscious of the fact that MFish does not want to wait "years" for it to complete its research. LCFA has no desire to unnecessarily delay the process either. It believes that any research required could be carried out in a timely and efficient manner and for its part would endeavour to ensure that such was the case. LCFA would have preferred that MFish itself would have required (and obtained) more robust and conclusive science before making such an important decision. LCFA stresses again that it simply does not understand how MFish could have come to a decision granting a preliminary approval at this time, given the very limited science available to date.

#### 4 Snapper Spawning Grounds

- 4.1 LCFA represents some sixty –five members. **Thirty of these members' livelihoods are directly dependant on the sustainability of the snapper fish stocks in FMA1.**
- 4.2 LCFA has several serious concerns regarding the WBIAMA application but its main concern is the potential adverse impact on the recruitment of snapper stocks specifically in FMA1. Considering that the Firth of Thames is the most important snapper breeding ground for the northeast coast of the North Island and thus FMA1, MFish should be equally concerned.
- 4.3 In the Executive Summary to its Preliminary Evaluation MFish states that *"It is unlikely development of the interim AMA would substantially alter the biological diversity of the aquatic environment or the productivity and biological abundance of fisheries resources on a site-specific or regional scale."*
- 4.4 LCFA does not understand how the MFish has reached its conclusion based on the information available at this time. Considering the area is in the most important breeding grounds for snapper in FMA1, the consequences of allowing an AMA of the size proposed could be far reaching. The large size of this application, situated in the Firth of Thames, makes it very difficult to accurately predict the effects on the sustainability of the fisheries resources without further research. From reading and considering the science that is available at this time, LCFA has been forced to conclude that the effects of marine farming (particularly large scale developments) on the food chain, schooling of target or prey stocks, and the overall sustainability of fish stocks are "generally unknown".
- 4.5 In this context the LCFA is also unclear as to what area (in the sense of what expanse of sea) MFish considers when discussing the effects on a "regional scale"? Does this include all of FMA1?
- 4.6 LCFA does not want a situation to develop that, in the years to come, would see the snapper fisheries resource depleted, resulting in inevitable quota cuts, while the marine farms are left to carry on, uninhibited, continuing to cause decline in the snapper stocks.
- 4.7 SNA 1 fish stock is a rebuilding stock. LCFA's members have already suffered quota cuts, resulting in a corresponding loss of income and investment, for the purpose of rebuilding of this fishery. It would be grossly negligent for MFish, based on the very little information that is available, to now take such a risk with this fishery by approving a very large AMA in the very area that is the largest and most important snapper breeding ground for the northeast coast of the North Island.

- 4.8 With respect to the scientists, (pg. 15, NIWA 2008) they have stated: *“The Hauraki Gulf supports the largest and most valuable national stock of snapper (Pagrus auratus) (Sparadae) (Aimala et al 2002). Snapper are serial spawners, with females releasing batches of eggs daily into the coastal plankton (< 35 m depth) from early October (spring) to February (summer), with the most intense spawning in November and December (Scott et al. 1993; Zeldis & Francis 1998). This extended period of egg production within an area that includes mussel aquaculture has posed the question of whether removal of snapper eggs by mussels could impact fish recruitment. Broekhuizen et al (2002, 2003) showed this to be unlikely through dynamic simulations for Area A fully stocked. However, research into quantifying the effects of mussel farms on zooplankton, as well as fish larvae and fish eggs, is at an early stage. We certainly cannot say at this stage that there are significant adverse effects associated with mussel farms consuming zooplankton. Given the direct link of zooplankton abundance to fisheries production, and the potentially important balance between generation time and capture efficiency of different size groups by mussels, it is important to continue the research efforts to better quantify zooplankton consumption”*. Terms such as “likely” or “unlikely” have been used to describe possible adverse effects. MFish should not be making a decision to “approve” based on the reports available to date. Further studies need to be completed.
- 4.9 The Cawthron Report in regard to water column effects, states that: *“Filtration pressure by mussels is sufficient to potentially alter the composition of the phytoplankton and zooplankton communities through selective feeding, but the extent to which this occurs and its ecological consequences are poorly understood.”*
- 4.10 On page 8, para. 17, of the Preliminary Evaluation, MFish states that: *“The Hauraki Gulf especially the Firth, is the main spawning ground for New Zealand’s largest snapper fishery.”*
- 4.11 On page 25, para 71 of the Preliminary Evaluation, MFish further states that: *‘The northern Firth of Thames is the major spawning ground for New Zealand’s largest snapper fishery (encompassing the Hauraki Gulf and the Firth of Thames) (Broekhuizen et al 2002 and 2004). The Firth was consistently found to be the most important site for snapper spawning and larval survival of any area of the Gulf, and was where larval survival was highest (Zeldis et al, in review, cited in Broekhuizen et al 2002). Surveys of snapper eggs and larvae within the greater Hauraki Gulf suggest the majority of snapper spawning takes place in waters less than 30 m deep (Broekhuizen et al 2002)”*
- 4.12 In the NIWA report at Appendix 4: Modeling Assumptions and Sensitivity, page 88, para 1, it is stated that: *“In the Wilson Bay Area B region, water depths range from circa 15 m to circa 25 m.”*

- 4.13 On page 23, para 59 of the Preliminary Evaluation, MFish states "*NIWA (2008) recorded water depths of 16 to 27 m within the interim AMA, with the northern end of the site being deeper than the southern end.*"
- 4.14 Yet on page 45, para 183 of the Preliminary Evaluation, MFish concludes that: "*There are no habitats of known significance for fisheries management that would be affected by the interim AMA.*" How can this be?
- 4.15 Considering the above statements, is it to be concluded that snapper spawning grounds are not considered "important" fisheries resources?
- 4.16 On page 44, para 175 of the Preliminary Evaluation, MFish states: "*The Firth and the Hauraki Gulf are important for the snapper fishery with snapper spawning grounds to the north of the interim AMA.*" and "*MFish considers it unlikely the spawning grounds would be adversely affected because they are located well outside the vicinity of the interim AMA.*" Yet MFish has not stated where this information has been sourced. In the letter dated 13 May sent on LCFA's behalf, it asked that you clarify MFish's view as to location of the spawning grounds, so that LCFA could better understand this statement. A reply has not been received.
- 4.17 LCFA challenge that even if the snapper spawning grounds are north of the AMA (although it does not believe that they are limited to the area north of the AMA), the prevailing currents will still carry the eggs and larvae through the marine farms. In this regard the executive summary to MFish's Preliminary Evaluation states that: "*the site is well flushed with good mixing of the water column and continuous replenishment of nutrients to the site.*"
- 4.18 A recent scientific study by NIWA, has shown that nearly all snapper on the west coast of the North Island comes from nurseries in just one harbour. This would suggest that all snapper on the northeast coast of the North Island may well come from one area in the Firth of Thames and that the northeast coast North Island snapper nursery is not distributed evenly throughout the Firth of Thames or the Hauraki Gulf. This is important because all the present scientific research/modeling (such as it is) makes the critical assumption that snapper larvae are evenly distributed in the Firth of Thames and are not concentrated in specific areas. This could be very significant for the future stocks of snapper on the northeast coast of the North Island if the WBIAMA is approved.
- 4.19 There is scientific evidence that mussels eat fish eggs and larvae. You state that the consumption of fish eggs is "small". How can we compare this to "medium" or "large"? These are subjective terms of reference, not exact (or even reasonably approximate) science. What are the environmental consequences of "small" levels of consumption? How is this measured?

- 4.20 On page 25, para. 69 of the Preliminary Evaluation MFish states "*At the Firth - wide scale, NIWA's modelling shows fish larvae depletion increases from <2% under the existing situation (Area A fully developed), to between 2-5% with the interim AMA added. When considering the WBMFZ scale only, fish larvae depletion increases from the existing situation of 2-7% to between 5-15% when the interim AMA is added.*"
- 4.21 These are theoretical assumptions and in reality the outcome is unknown as to just what affect a farm of the size proposed would actually have on larvae depletion in the area. The addition of a 5-15% of fish larvae depletion plus the cumulative affect of all the already existing mussel farms in the Firth of Thames, Hauraki Gulf, and Bay of Plenty could be enough to tip the balance to adversely impact the recruitment of snapper stocks in FMA1. Are these the figures on which the assumption that the consumption of fish eggs is "small", is based?
- 4.22 LCFA understands that there have been no studies done regarding the effects of marine farms on upper trophic level species, particularly those species harvested by recreational, customary and commercial interests? If this is correct, then LCFA would ask why these studies have not been completed and considered before decisions are made with regard to marine farming in the Firth of Thames.
- 4.23 Studies have shown that snapper larvae are vulnerable to consumption by mussels for up to 8 days post spawn (Broekhuizen). LCFA raises the possibility that if nutrients are lacking in the water column i.e. as a consequence of uptake of plankton by the mussels, then snapper larvae could be vulnerable for longer periods if they fail to grow as quickly as would normally be expected as a result of lack of nutrition.
- 4.24 Have there been any studies done regarding consumption of snapper larvae by predators that will be introduced into the environment as a consequence of the introduction of mussel farms? The mussel long lines will attract other predators such as anemones. Snapper larvae could thus also be vulnerable over a longer period to consumption by such predators.
- 4.25 Both NIWA and MFish refer to "*uniform muddy sediments and largely featureless seabed*". The executive summary to MFish's Preliminary Evaluation states "*The benthic community in this area consists of relatively common species, including enrichment tolerant species, typically found in mud habitat*". Fishers (including LCFA members) have accumulated vast historical knowledge of the snapper fishery in the Firth of Thames and the Hauraki Gulf and their experience is that it is over this muddy, featureless seabed of the Firth of Thames that snapper will spawn. During the schooling season the snapper will feed on some of the "*relatively common species, typically found in mud habitat.*" This is in fact the ideal breeding ground for snapper.

- 4.26 NTWA states *"There are no areas of rocky reef habitats"*. However, by introducing mussel farms, the seabed will change directly beneath those farms and in their immediate vicinity.
- 4.27 Indeed on page 30, para. 96 of the Preliminary Evaluation it is acknowledged by MFish that: *"Accumulation of live shellfish and empty mussel shells may create a more reef-like hard habitat for a suite of other species to live either on or in the hard substrate."*
- 4.28 On pages 38 and 39, paras. 137, 138 and 139 the Preliminary Evaluation discuss other species that may occur in the new reef like environment that would be produced by the live mussels and empty shells that accumulate beneath the longlines. These include predatory species. Para. 139 states: *"Species attraction or deterrence, predator aggregation and changes to predator-prey interactions could be possible flow on effects from the new habitat types and food sources. Although it is likely the introduction of new structures would change the benthic community, MFish considers these effects would be localized effects on species that are relatively widespread and common. MFish has no information to suggest changes at the regional scale would be significant because there are no ecologically important species affected by the new structures."*
- 4.29 Again are snapper spawning grounds not significant for the sustainability of fisheries resources? By changing the habitat and by the introduction of other predatory species, the snapper spawning grounds will undoubtedly be directly affected.
- 4.30 In Appendix 4: Notes on NIWA FRIA from AEWG meeting and MFish Science Group review, 22 October 2008, it is stated that: *"It was noted in discussion that the model doesn't take into account the fact that fish that pass through a farm but not captured by a mussel will exit the farm in a micro-environment with less zooplankton and generally lower productivity (lower phytoplankton). Mussels on farm ropes would also be better placed to filter out fish larvae than wild mussels on the seabed. It was also suggested that wild mussels have also increased, suggesting that the combined phytoplankton depletion over a fairly recent baseline could be higher than the model results suggest."*
- 4.31 LCFA is seriously concerned that changes to the environment, which result in habitat changes; reduction/depletion in plankton, causing food source reduction; and direct consumption of eggs and larvae; will adversely affect the productivity and the biological abundance of the snapper fishery in FMA1.

## 5 Rock Lobster

- 5.1 The LCFA continues to have concerns regarding the potential effect on the future recruitment of rock lobster, particularly in the CRA 2 rock lobster fishery.

- 5.2 As has been previously stated, LCFA is also concerned that phyllosoma larvae may be consumed by the mussels and also with the potential for the puerulus larvae to settle on the mussel longlines, and thus not have the opportunity to develop to a size needed to leave this settlement habitat before the mussels are harvested. (The likelihood being that such larvae will be destroyed in the harvesting process.)
- 5.3 Neither of these situations were originally modelled in the NIWA site specific study (Oct 2008). The potential effects of the AMA were considered at the AEWG meeting 22 Oct 2008. It was discussed that in theory, phyllosoma larval transport and filtration could be modelled as in the study but it was not clear how to tackle the potential for mussel farms to act as "sinks". The meeting minutes record that: *"There was consensus that both aspects of impacts on rock lobsters should be borne in mind as cautions in the final report."*
- 5.4 On page 36, para. 125 of the Preliminary Evaluation it is stated that: *"NIWA data from the Hauraki Gulf and the Firth of Thames shows pueruli in collectors were very rare and compared with the data from the East Cape to Wellington region, settlement in the Hauraki Gulf is very low (NIWA 2008)"*
- 5.5 On page 36, para. 126 of the Preliminary Evaluation it is stated that: *"NIWA (2008) states pueruli larvae are unlikely to be present in any significant numbers in the vicinity of the WBMFZ and the negative impact on recruitment to sub-tidal areas cannot be substantiated at this stage. MFish concurs with NIWA and also considers the relatively low predictions of fish larvae depletion from modelling suggests any effects of uptake of pueruli by the mussels would likely be small."*
- 5.6 LCFA has concerns regarding the modelling used to predict the possible uptake of phyllosoma larvae by mussels because phyllosoma larvae are vulnerable to be consumed by mussels for a longer period than snapper larvae.
- 5.7 Also if the pueruli are present in small numbers then any loss to mussel consumption could be of greater significance.
- 5.8 On page 39, para. 140 of the Preliminary Evaluation it is stated that: *"available information suggests that providing artificial structures in the water are unlikely to "filter out" a significant number of recruits or affect the inshore population".* It is further recorded that: *"Anecdotal evidence at existing marine farming sites around New Zealand suggests it is rare to find large quantities of pueruli or juvenile rock lobsters on mussel farms: MFish is not aware of pueruli settling on the existing farms in the WBMFZ."*
- 5.9 However in contrast Booth (2003) states: *"That pueruli settle on mussel longlines is well known, but whether there is any attraction or if it is simply random encounter is unknown."* and that *"However, in low settlement areas, lobster settlement in mussel farms may be even more critical to the inshore fishery."*

5.10 LCFA questions whether longlines on mussel farms are actually checked for pueruli before harvesting of the mussels and if there have been studies done on the mussel farms in the WBMFZ specifically for pueruli or juvenile rock lobster settling on the longlines. This research should be undertaken if it has not yet been done.

## 6 Rig and Flat Fish

6.1 On page 53, para. 212 of the Preliminary Evaluation it is stated that: *"MFish considers the interim AMA would have adverse effects on the FLA1 fishery."*

6.2 On page 58, para. 220 of the Preliminary Evaluation it is stated that: *"MFish also considers the interim AMA would have adverse effects on the SPO1 fishery."*

6.3 On page 66, para. 242 of the Preliminary Evaluation it is stated that: *"Although MFish is concerned about the adverse effects of the interim AMA on commercial flatfish and rig fishing, in both cases MFish considers the cumulative annual catch loss from the interim AMA and existing farms in FLA1 and SPO 1 is less than 5% and not yet unduly adverse."*

6.4 On pages 57 and 61, paras. 216 and 224 of the Preliminary Evaluation it is stated that: *"MFish is concerned that not all of the flatfish/rig catch affected by the interim AMA may be able to be caught at alternative sites and there may be some catch loss if the interim AMA is approved. This is because:*

- ◆ *Flatfish/Rig are patchily distributed and it is generally only economic to fish for them where they congregate. Congregation areas are likely limited.*
- ◆ *Commercial fishers have a long history of fishing in SA007 and it is likely the most economic fishing sites are already used. On average, 67 vessels (flatfish), 27 vessels (rig) target flatfish/rig in SA007 each year.*
- ◆ *Three of the five submitters who submitted (flatfish) and submitters (rig) say there are alternative sites but going to these will increase travel costs, fishing pressure, and reduce their flatfish/rig catches.*
- ◆ *Because flatfish/rig is a relatively low value species and profit margins are likely low, the ability to economically fish alternative sites would be limited.*
- ◆ *Using alternative sites is likely to increase fishers' operating costs due to the need to travel further. Increased fishing pressure in these alternative sites is also likely to result in a reduced catch per unit effort (CPUE) because of competition with other commercial fishers already operating in*



*these alternative areas. Reduced CPUE increases fishing costs because fishers have to spend more time fishing to catch the same quantity of fish (i.e., more fuel, wages, boat, and gear use).*

- ◆ *Submitters are also concerned that recent decisions to ban set netting in the Kaipara and Manukau harbours to protect dolphins may already be increasing fishing pressure in the Firth as affected fishers move into SA007.*

- 6.5 The Preliminary Evaluation also states that most of the vessels targeting these species in the Firth of Thames are less than 6 m in length.
- 6.6 However MFish concludes that flatfish and rig could reasonably be caught elsewhere in SA007. MFish acknowledges that these fishers would be adversely affected by the interim AMA yet considers that the cumulative average annual catch loss from the interim AMA and existing farms in FLA1 and SPO1 is less than 5% and not unduly adverse.
- 6.7 LCFA would like to know how and why MFish can reach the conclusion that these individual fishermen are “not unduly adversely affected?” From their point of view, their livelihoods will definitely be directly affected. MFish should be protecting the rights of these fishermen and protecting their fisheries resources (quota for which has already been bought and paid for). There is a long history of this fishery in the Firth. In circumstances where the potential effects of an AMA of this size are largely unknown MFish should favour retaining the status quo when making any decision – at least until proper evidence one way or the other is available.

## **7 Rubbish and Debris**

- 7.1 LCFA notes that in MFish’s Preliminary Evaluation it is stated: *“that there is strong anecdotal evidence from submissions and also the public meeting that debris falling from the existing Area A farms is accumulating on the seafloor across a wide area. Commercial fishers have provided maps of the areas where debris occurs and is fouling their set nets.”*
- 7.2 MFish further states: *“Some of the debris is reported to be plastic and other farm gear (such as ropes). If this is the case, Environment Waikato needs to enforce resource consent conditions for the existing farms which prevent the discard at sea of non-biodegradable farm rubbish.”* and *“if the interim AMA is approved, that resource consent conditions for the new farms would include prohibiting the disposal of plastic and farm gear at sea.”* and *“MFish will assume that the farmers of the interim AMA would abide by the consent conditions ...”*

- 7.3 Given the amount of rubbish that has been reported, and which was presented at the public meeting, as a daily occurrence south of the existing mussel farms, it is clear that EW is not presently enforcing resource consent conditions with regard to non-biodegradable farm rubbish. Area A is only 20% developed therefore the problem will only increase with the approval and subsequent activation of Area B.
- 7.4 Fishermen have stated in their submissions that debris, rubbish and mussel farm discharge/byproduct (including sea squirt, kelp and mussel whisker) is causing loss of fishing grounds by changing the seabed and destroying their gear. One reported a "putrid sludge" that is contaminating the seabed south of the existing mussel farms.
- 7.5 MFish states: *"that they have little information to assess effects of the interim AMA due to the accumulation of debris and how this might impact fisheries resources. In most cases in New Zealand, debris from marine farming operations is rapidly dispersed by currents. This is the first time MFish has received submissions about the accumulation of biodegradable debris such as algae and sea squirt from mussel farming. MFish's judgment, however is that debris from the existing farms would not have undue adverse effects on the sustainability of fisheries resources."* and then stated reasons for this conclusion.
- 7.6 MFish should be seriously questioning why there is an accumulation of debris in the Firth of Thames with regard to mussel farming and why this is the first time that submitters have submitted as such, in regard to an AMA application. The underlying reasons should be studied further as it could be indicative of changes caused by existing AMAs to the intricate and delicate balance of the relatively enclosed waters and environment of the Firth of Thames and the wider Hauraki Gulf. Issues that should be considered as to why this is happening would include:
- ◆ The currents may not be as they have been modelled and the flushing of the Firth may be more limited than studies are demonstrating
  - ◆ The shallow depth of the water within the Firth and the Hauraki Gulf are affecting the flow thus affecting the ability of the Firth to be "flushed" completely.
  - ◆ The relatively enclosed waters and the direction of the currents are affecting the flow, inhibiting the dispersion of by-product from the existing marine farms.
- 7.7 In the Cawthron Report, in the executive summary in relation to seabed effects, it is stated that: *"The most important factors influencing the magnitude of effects are water depth and current speeds; hence severity of effects is very much site-specific and effects are minimized by locating farms in well flushed areas, where species and habitats of special value are not present."*

- 7.8 In relation the discussion of fishing activity at para. 208, the Preliminary Evaluation further states: *“Set netting should also be possible from around 100 m of the interim AMA. However, MFish is aware that in the case of the existing farms in Area A material falling to the seafloor during harvesting and farm maintenance is causing set nets to become fouled over a much wider area of the Firth. Fishers report that flatfish no longer live in this fouled area and fouled set nets need to be replaced and repaired more often. LCFA states set netting cannot now occur within 10 km of the existing farms (Area A). Other fishers have variously reported the fouling zone from the existing farms extends from a few hundred metres to 13 km south of Area A. Biofouling is one of the major concerns of submitters. NIWA did not observe any material fouling the seafloor during the FRIA surveys beneath the interim AMA, but MFish notes the survey area did not include the areas where fishers state the biofouling is occurring. MFish considers, from the consistency of submissions and from public meetings, that fouling is probably occurring and is impacting set net operations.”*
- 7.9 In the letter dated 13 May 2009 sent on behalf of LCFA, at question 13, it was suggested that the effect of debris being cast by the present farm (Area A) in the Firth of Thames is a relevant consideration under the Act because the effects of the farm are preventing the setting and hauling of gear, as well as imposing additional costs on fishers. This is a real effect of marine farming and it should not be left for councils to deal with. MFish must consider such effects as they do clearly adversely affect fishing activity.
- 7.10 In para. 102 of the Preliminary Evaluation MFish have stated: *“that they would be interested to hear people’s views about the debris concern and welcome relevant additional information.”*
- 7.11 LCFA was involved in the “Sustainable Coastlines Great Barrier Island Clean-up Event” held in April 2009. It notes that a disproportionately significant amount of non-biodegradable rubbish originating from mussel farms was collected.
- 7.12 Rubbish and debris from mussel farms is a huge issue that is not being addressed by the local councils, in particular EW, and the latter should be taken to task over this issue.

## 8 Finfish Farming and Environment Waikato

- 8.1 EW is presently consulting on a coastal plan change to provide opportunities for the aquaculture industry to trial new forms of aquaculture, including finfish farming within existing AMA’s. MFish is no doubt aware of this planned change by EW.
- 8.2 LCFA is concerned that both EW and MFish appear to be pushing to have this interim AMA approved prior to EW changing its coastal plan. It appears that when applying for the interim AMA, the intent of EW was to introduce finfish

- farming into their region and specifically Wilson Bay. We query why they have applied for the interim AMA before they have changed their coastal plan. Perhaps this may be because it would avoid MFish having to make a decision based on the fact that the AMA would no longer be limited to shellfish farming.
- 8.3 LCFA understands that once MFish has given approval for an AMA, the regional councils, in this case EW, can make changes to the type of farming, density and layout within the AMA. MFish does not have to be consulted again. If the AMA were converted to finfish farming, then EW would be solely responsible when it came to consider the effects of the farming activity on fishing and fisheries resources. The LCFA is also of the understanding that MFish is obligated (under s9 of the Act) to consider the potential effects of finfish aquaculture on fishing and fisheries resources. Therefore LCFA would expect that MFish would do so in the course of its current deliberations. In fact it is noted in the Preliminary Evaluation that this is not the case and that accordingly the significant risks posed by finfish farming are not being evaluated at all.
- 8.4 In fact it has come to LCFA's attention that MFish, through its involvement with the Aquaculture Implementation Team, is officially supporting and, with the Ministry for the Environment, funding the growth of aquaculture in the Waikato, and in particular the growth of finfish aquaculture.
- 8.5 LCFA has read the EW Technical Report 2008/38: "Potential Environmental Effects Associated with the Proposed Shift from Mussel to Finfish Farming in the Firth of Thames". That report states that: *"The largest AMA is in Wilson Bay, within the Firth of Thames, and this is the most likely area for large-scale diversification. The most likely form of "new" aquaculture to be implemented is finfish farming, because of its potential to generate greater returns than shellfish farming. However, international experience has shown the environmental effects of fish farming can be significant."*
- 8.6 MFish has the ability to reduce TAC and TACC and close areas in relation to the various wild fisheries where it considers that such fisheries are under stress. However it is our understanding that there is no legislation in place which would enable MFish to shut down a marine farm if were it found to be detrimental to the environment, including in relation to detrimental effects on fishing and the sustainability of wild fisheries resources. This lack of legislation does not appear to accord with what MFish maintains is its responsibility in regard to fishing and the sustainability of fisheries resources generally. LCFA asks why MFish does not have the ability to shut down or otherwise regulate these farms if they prove detrimental?
- 8.7 LCFA would be less concerned with the potential effects of large scale marine farms on the future sustainability of our wild fisheries resources if it knew that

there was: conclusive science available as to the likely effects of such farms in waters such as those of the Firth of Thames, stringent monitoring and an ability on the part of MFish to regulate and possibly shut down any marine farms that were causing adverse effects on fishing and the sustainability of fisheries resources. At this time LCFA has none of these assurances.

9 **Cawthron Report # 1476- Sustainable Aquaculture in New Zealand: review of the Ecological Effects of Farming Shellfish and other Non-finfish Species.**

9.1 The LCFA has read the Cawthron Report. As previously stated it would have preferred to have had the opportunity to discuss this report at an AEWG meeting prior to making its submissions. It now understands that such a meeting is scheduled to be held 27<sup>th</sup> July 2009.

9.2 However, for the purposes of this submission LCFA notes the (significant) "Remaining Information Gaps" set out in the Cawthron Report that specifically highlight its concerns. (Chapter 8, page 107)

- ◆ *There is limited information on the actual rates of sedimentation occurring beneath and adjacent to marine farms. Such information is necessary to validate models used in predicting depositional footprints and for determining the rates of deposition that can be effectively assimilated by the environment (e.g. deposition may be occurring at distances well beyond the farm but are not detectable based on monitoring indicators such as organic enrichment of sediments). Along these lines there is little available information on the links between seabed effects and the water column (e.g. the influence of organic enrichment of the seabed on the water-column nutrient chemistry).*
- ◆ *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. In particular there is a paucity of information surrounding how taxa such as sponges, hydroids, ascidians etc., as well as mobile reef epibiota (e.g. crabs, brittle stars), respond to organic deposits. Some tolerant reef communities are considered useful from an impact amelioration standpoint (Angel & Spanier 2002; Gao et al. 2008), while others are likely to be highly enrichment sensitive and it would be useful to know more about how various taxa groups respond. Likewise, effects on adjacent intertidal habitats remain poorly documented.*
- ◆ *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. Although this has not been a big issue to date, it is apparent that the scope for interactions between commercial fish species (as well as other species including marine mammals) and marine farms will increase with the development of the several new large offshore farms. Scale-related effects from larger farms on habitats and associated ecosystem function are difficult*

*to predict and is likely to be an area of some interest during their development.*

- ◆ *Through water column surveys and application of numerical models, we have a reasonably good understanding of the effects of filter feeding bivalves on seston depletion. 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.*
- ◆ *Considerable 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). Modelling approaches have been undertaken to evaluate trophic effects from culturing oysters (Leguerrier et al. 2004) and mussels (Jiang & Gibbs 2005) and further development of these types of models may assist in forecasting cumulative ecosystem-scale effects.*
- ◆ *The relationship between the environment and the growth of the main New Zealand culture species, which underpins any related ecosystem models, is presently poorly defined. A better understanding of the feeding physiology and the energetics of New Zealand's main aquaculture species would greatly improve confidence and reduce variance in model outputs, particularly when it comes to making predictions for new environments (e.g. offshore).*
- ◆ *In section 7.4 we highlighted a need for better understanding of biosecurity threats. For example, disease outbreaks and transmission from cultured shellfish, while not currently identified as a major issue, does carry with it a high level of risk. Hence we need to understand more about how increasing aquaculture, or perhaps diversifying cultured species, may in turn increase this risk on the New Zealand environment.*

## 10 Summary

- 10.1 The LCFA are not against development of aquaculture per se. It is however very concerned that there is insufficient scientific evidence available at this time to support approving such a large area as is contained in the WBIAMA application, particularly within the confined area of the Firth of Thames.

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- 10.2 Apart from being a very important commercial species, snapper is also one of the favourite recreational catches. The WBIAMA is situated in the most important snapper spawning ground for the northeast coast of the North Island.
- 10.3 Snapper is a rebuilding fish stock. MFish has already implemented quota cuts in FMA1 since the introduction of the QMS, in order to rebuild and preserve this fish stock.
- 10.4 LCFA is concerned that it is "generally unknown" what effect a marine farm (we state marine rather than simply "mussel" in view of EW intention to change their coastal plan to allow finfish farming) of this size will have on the environment and thus how it will affect the future of our wild fish stocks, in particular snapper.
- 10.5 MFish has a responsibility to maintain the sustainability of our wild fish stocks. It generally takes a precautionary approach in relation to preservation of wild fish stocks: if the science is unclear it will (and often does) introduce quota cuts and err on the side of caution. It is difficult to understand why a similar degree of caution does not appear to be being applied in relation to aquaculture, and in particular the current WBIAMA application. If the science as to the effects of the WBIAMA on the fishery as a whole is not there then MFish should also take a precautionary approach in this case. MFish must look further and undertake more robust scientific investigation before it can be satisfied that any effects would not be "undue".
- 10.6 At the recent New Zealand Federation of Commercial Fishermen conference in Dunedin, the Minister of Fisheries, Phil Heatley, stated that *"he was not the friend of commercial, recreational, customary or aquaculture interests but his responsibility was looking after our fisheries resources"*.
- 10.7 MFish should indeed be mindful of its overall responsibility for the whole of the fisheries resources of New Zealand when making its decision regarding the WBIAMA.
- 10.8 At the recent SEAFIC conference in Wellington the Aquaculture Industry presented its goal of becoming a billion-dollar industry by 2025. These are no doubt very exciting times for aquaculture in New Zealand. The government is providing funding for research and development. The Maori Commercial Aquaculture Claims Settlement Act was also signed at this time.
- 10.9 LCFA is however concerned that if MFish loses sight of its overall responsibilities and does not exhibit an appropriate degree of caution in regard to the development of aquaculture, this potential billion-dollar industry may not be so much an addition to the New Zealand economy but a means of destroying a fishing regime carefully (and in some respects, for those involved in the industry, painfully and expensively) developed over the last 25 years; a regime which in many respects the envy of other parts of the world.

10.10 The aquaculture industry markets its products as coming from the clean pristine waters of New Zealand. It asserts that its products are sustainably produced with negligible environmental impact. This might be the reality today (in the absence of the massive farms currently proposed), but if future development progresses with little regard for the environmental consequences on the future sustainability of our wild fisheries then the aquaculture industry risks damaging its own marketing of its products. LCFA would suggest that the aquaculture industry itself would not want this situation to develop. It would therefore also be in the Aquaculture Industry's best interests to ensure that there is robust conclusive science available regarding the environmental impact of large scale aquacultural projects such as that proposed for the WBIAMA before final decisions are made.

10.11 The Prime Minister, the Honourable John Key spoke at the recent SEAFIC conference. He relevantly said:

*"Our fish stocks are carefully managed for the long-term benefits they provide. And our seafood industry is a model for the rest of the world to follow. Since 1996, the wild catch value has increased by well over a billion dollars."*

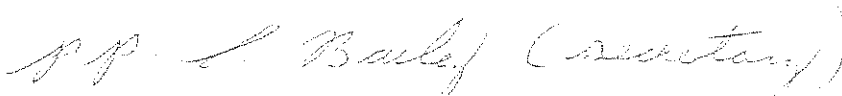
*"We must continue to manage our wild fish stocks for the long term."*

Speaking of Aquaculture *"No matter how the industry is reformed, we must always be conscious of two things. Firstly, aquaculture developments must have regard for existing commercial fishing rights. And secondly, growth in the aquaculture industry must not come at the cost of our environmental responsibilities."*

10.12 LCFA is in agreement with the Prime Minister. There is very little science surrounding the implementation of AMAs in waters such as the Firth of Thames. Accordingly MFish should not make any decision approving the WBIAMA until it has undertaken, and considered the results of, relevant and thorough scientific investigations. Until that time, LCFA on behalf of its members strongly objects to approval of the present WBIAMA proposal.

Dated: 20 July 2009

Yours sincerely



Leigh Commercial Fishermen's Association Incorporated



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GS Bailey  
53 Pt Wells Rd  
RD 6 Warkworth  
0986  
PH: 021944113  
EMAIL: seaharvester@xtra.co.nz

Christine Bowden  
Aquaculture Manager  
Ministry of Fisheries

Dear Christine

*RE: My Objection to the Wilson Bay Interim Aquaculture Management Area (AMA), Firth of Thames.*

My name is Graeme Bailey. I have been a snapper long line fisherman for most of my 31 years fishing. In that time I have seen a lot of changes in fishing gear, types of fishing vessels and the introduction of the quota management system. The greatest change was the rebuilding of the snapper stocks. I have had three snapper quota cuts. Each was hard on the family and fishing business but this proposed AMA Area B at Wilson Bay makes me wonder if there is a future left in the snapper fisheries. Most commercial fishermen have not fished in the Firth of Thames for many years over the summer months because of it being a known snapper spawning ground. I am not against AMA's in general. But I do object to an AMA being placed over a proven main snapper spawning ground, changing the bottom texture, having mussels take away the phytoplankton so the snapper eggs and larvae will not survive, and mussels eating snapper egg and larvae. It all adds up, to look bad for the snapper fisheries in years to come.

**My Comments on the Wilson Bay Interim Aquaculture Management Area Preliminary Evaluation Report; Released 09 March 2009.**

(Page 8, Point 15) "The Firth of Thames is a large shallow estuary fed by several rivers. The water depths vary from 0 meters to 40 meters in depth. Mud dominates the floor of most of the estuary giving way to sand as it open into the Hauraki Gulf."

(Page 8, Point 17) "The Hauraki Gulf especially the Firth of Thames is the main spawning ground for New Zealand snapper fishery John Dory, Rig and School Shark."

(Page 28, Figure 6)

Figure 6 shows area A and area B marine farms will reach half way a cross the water of Firth of Thames from NNE to SSW. This means snapper eggs and larvae would go through area A and area B marine farms on many tides (page 23 point 60) The Firth of Thames is mostly around 78% tidally driven current, the rest is generated mainly by wind driven currents. Refer (R N Z N

Hydrographer Chart No N Z 532) which shows currents run from 140degs to 320degs on out going tide at 1Kn 320degs to 140degs on the in going tide at 1Kn. Area A and area B marine farm at the deeper end will run from Coromandel Peninsula at Wilson Bay 36°53'25"S to 175°25'50"E at 054degs from a NNE to SSW directions. Then it runs 2.2 nautical miles in a south east direction. Between area A and B, the AMA will cover 2473 hectares. A filtration system set half way across the Firth of Thames with the ability of filtering everything out of the water from (5-200 µm / Safi & Gibbs 2003)( however particles as large as 600 µm can be retained /Zeldis et al 2004 ) In the "snapper model", 7 to 8 day old larvae are assumed to be in the same location which is hard to understand when reports say you have to have current run to make a mussel farm work , it is stated that snapper egg and larvae first start swimming at day 8. So any spawning finfish larvae or their food source phytoplankton, would have a good chance of being filtered out of the water while going through marine farm area A and area B as the tide runs in and out over the 8 days and stated mussels will eat zooplankton up to eight days old (NIWA modeling) . Long line culture of mussels can process up to 8.6 liter per hour; a substantial proportion of the seawater flowing through a fully stocked farm can be processed by mussels before moving beyond the farm boundaries (James et al 2001).

When the current flows through a mussel farm that is 2.2 nautical miles long and is half the width of the Firth of Thames, and also is right on top of New Zealand's "most important site for snapper spawning and larval survival of any area" (Broekhuizen et al 2002); I fail to understand how the Ministry of Fisheries could even consider approving Area B, in fact I fail to understand how Area A was approved in the first place.

(Broekhuizen et al 2002 page 25 point 71) "The Firth of Thames was consistently found to be the most important site for snapper spawning and larval survival of any area of the Hauraki Gulf."

(Zooplankton NIWA 2008 page Point 122) "The most important site for snapper larval survival rate was found to be consistently the Firth of Thames."

(NIWA 2002 page 22 point 55) "State the Hauraki Gulf and especially the Firth of Thames are the main spawning grounds for New Zealand largest snapper fishery."

(Zooplankton NIWA 2008 page 36 point 122) "The major food source for farmed mussels is considered to be phytoplankton but zooplankton may also comprise a large part of farm mussel diet at time."

(Broekhuizen et al 2002 2005 page) "Only covers area A mussels farm is predicted 5% to 15% finfish larvae depletion add area B mussels farm could the prediction be as high as 10% to 30% larvae depletion from mussels farming (which includes snapper eggs and larvae)"

(Waikato Interim AMA in Wilson Bay Firth of Thames) "The over all area of area A and area B will be 2473 hectares"

(NIWA 2008 page 23 point 59) "Water depths measured within area A at different time ranges 10 meters to 27 meters (Figure 4 NIWA 20080) recorded water depths of 16 meters to 27 meters within the interim AMA with the northern end of the AMA being deeper than the southern end."

(Broekhuizen et al 2002 page 25 point 71) "Survey of snapper egg and larvae within the greater Hauraki Gulf suggest take place in waters less than 30 meters"


(NIWA 2002 page 22 point 55) "Research survey suggest the majority of snapper spawning take place in waters less than 30 meters"

(<http://www.niwa.cri.nz/news/mr/2009/2009-03-03>) Critical Assumptions of the modeling "Snapper larvae evenly distributed in Firth of Thames". This may be contraindicated by recent discoveries that nearly all snapper on west coast of the North Island of New Zealand come from just one nursery in one harbor. Could the Firth of Thames snapper spawning aggregation be providing a similar ecosystems service?

THE ONLY REASON YOU WOULD CONSIDER APPROVING WILSON BAY AREA B AMA IS SO YOU CAN BE RESPONSIBLE FOR CONSIDERABLE REDUCTION IN SNAPPER STOCK ON THE NORTH-ISLAND EAST COST WHICH WOULD RESULT IN A QUOTA CUT, IN SNAPPER.

If you have any questions, please contact me.

Yours sincerely



05/06/2009

Graeme Bailey

With Compliments:

- Just an FYI -



Challenges Facing  
Environmentalists

million. But in recent years some stocks have failed to recover from historical overfishing, with some commercial catch quotas for snapper being cut recently to protect the species.

In 2003, Niwa scientists collected juvenile snapper from seven estuaries along the west coast of the North Island.

The Ministry of Fisheries is also planning studies of the East Northland snapper population and grey mullet populations on both coasts. Studies of Hawke Bay fisheries in conjunction with the Hawke's Bay Regional Council are also a possibility because the area is so little studied and has such large sediment load inputs.

In the west coast snapper study, scientists tested snapper ear bones (otoliths) for eight different chemical elements. They were able to create a "chemical signature" to identify which estuary the fish came from. Four years on, a

ogist Dr Mark Morrison said the discovery is a significant breakthrough for scientists. "These findings highlight the importance of protecting natural habitats, like Kaipara Harbour.

"Any negative impacts on the production of juvenile fish in the harbour will cascade through into a much larger coastal ecosystem, ultimately having a huge effect on the abundance of fish over a 700-kilometre coastline," Mark says.

Kaipara Harbour is under threat from human activities - particularly land uses which cause sedimentation, eutrophication, and changes in water quality.

These effects can all damage the biogenic (living) nursery habitat of snapper (usually seagrasses and horse mussel beds).

It is likely other west coast harbours were also once important nurseries. Niwa is now work-

ing to establish a strong positive correlation between increasing seagrass blade densities and juvenile snapper (and other fish species) abundance.

Reductions in seagrass blade densities are a sign of environmental degradation of seagrass meadows, which may reduce their value to small fish.

"Now that we know more about where the important nurseries are, we need to know why snapper larvae settle there, and how we can stop degradation of their habitat. Our aim is to be able to advise coastal resource managers on the likely consequences of different habitat management to fish stocks so that we can ensure that recreational, customary, and commercial fishing can continue in the future."

Funding for this research comes from the Foundation of Research, Science and Technology, the New Zealand Biodiversity Fund and the Ministry of Fisheries.

We need to ensure we protect our nursery grounds throughout NZ!  
It would be very interesting to know the scale of the populations nursery grounds in Waiarua Bay, Fat and Douglas Bay support. Do we know its not the same as Kaipara?  
Julie

**Te Kouma Farm**

I G & M James  
Te Kouma RD  
Coromandel

19 May, 2009

Mr Russell Bernard, Ms Rachel Alexander  
Ministry of Fisheries  
Private Bag 14  
Nelson 7011

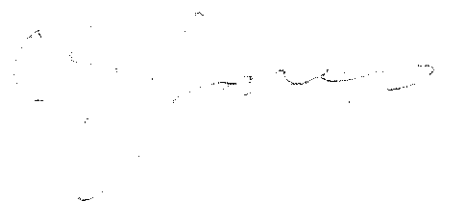
Dear Russell:

**Submission to Wilson Bay Interim AMA.**

I made my submission to the above matter and posted it of before the closing date. However as you will note I posted it to a closed PO box.

Please find the submission enclosed and I am trusting that it may be accepted as a late submission under the circumstances.

Sincerely,



Ian James

## Te Kouma Farm

IG & M James  
Te Kouma RD  
Coromandel

8 May, 2009

Mr Russell Bernard  
Ministry of Fisheries  
PO Box 5012  
Wellington

Dear Russell:

### Submission to Wilson Bay Interim AMA.

I am submitting on the following three points, 1 adverse effects, 2 seafloor debris, 3 Transport. I realise that these are not all of the concern of MoF, however I feel strongly that the direct effects that flow from any increased area of marine farming need to be addressed in the planning stages and that MoF should at the very least make recommendations to the relevant authorities regarding these effects.

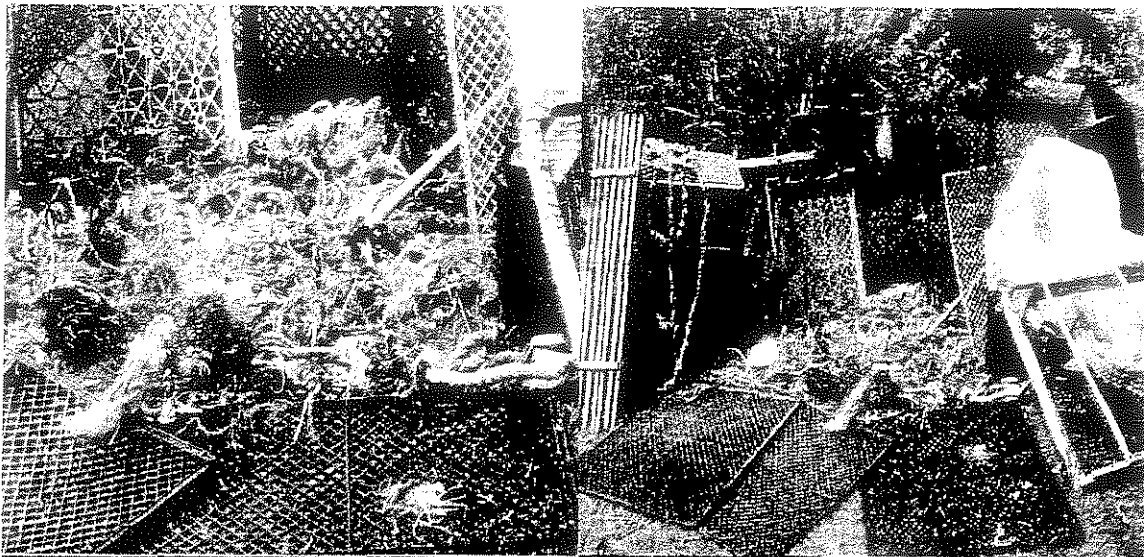
1. Adverse effects: On reading the "Preliminary Evaluation", the thrust seems to be to enable the increased area, and it appears that there is pressure to do this from Government, District and Local Councils and Marine Farmers and their representatives. This is all very well if the area is established on the best advice and science of the day. However there is really no way that all the effects of such a large area of aquaculture can be predicted. The potential problems seem to be well documented already, the problem is that once the area goes into "private ownership" there seems to be no robust mechanism to reverse the process and have the marine farms removed. Trigger points, shifting trigger points, discussing trigger points, arguing about trigger points and then going to court for years about trigger points, while something as important as the Ramsar site is suffering, is a nonsense. I am submitting that there needs to be a much clearer and easier way to dismantle what has been done if it is found to cause undesirable side effects.
2. Seafloor debris: I live at Te Kouma on a farm with several kilometres of coastline. In the area are marine farms that were set up under the "Wilson Bay to Otoutu" planning process. These farms are much smaller than the Wilson bay area but the rubbish from them is considerable. Under the farms it is "out of sight out of mind" and when it washes up there is really no way of knowing exactly whose marine farm it came from. Rules simply do not seem to stop this disgusting problem and nothing seems to be done by Regional Council to stop it. When we visit beaches on the east coast we are amazed at how clean they are without marine farming rubbish. I submit that there needs to be a lot more done to reduce seafloor and seashore debris. (Please see attached pictures of rubbish collected from our farm beaches)

3. **Transport:** I am a long-time resident of Te Kouma road, Coromandel. Over recent years there has been a large increase in the volume of mussels landed at Sugarloaf Ramp on the Te Kouma Road, to be taken by large truck and trailer units down the Thames Coast Road (State Highway 25) to Tauranga. Most of this increase of mussels has come from the Marine Farming Zone in the Firth of Thames. The planned extension of the farmed area will again increase the already large volumes of mussels sent down SH 25. Between the Sugarloaf and Thames there are a number of corners where the trucks have to cross the centre line to negotiate the narrow winding road. At the intersection of SH 25 and Te Kouma Road the truck and trailer units also use the entire width of the roadway and this is an area with limited visibility for other road users to sight them. At present the largest mussel barge can carry one hundred tons of mussels from the Firth of Thames to be put on trucks at Sugarloaf. Traffic on SH 25 continues to increase with the popularity of the Coromandel as a fishing and tourist destination. As a frequent user of the SH 25 myself I cannot see the logic in bringing huge barge loads of mussels all that distance north from the farms in the Firth only to load them on trucks and send them south again on a winding and dangerous road. For instance why not drive the barges to Kopu where there are already landing facilities for barges and truck the mussels straight to Tauranga from there? I am submitting that all agencies involved in the establishment of the Wilson Bay AMA should work together to ensure that mussels are not trucked from Sugarloaf down SH 25 to Thames.

Sincerely,

Ian James





Mussel rubbish at Te Kouma Coromandel



13 May 2009

Christine Bowden  
Ministry of Fisheries  
Private Bag 14  
Port Nelson

Dear Christine

I'm helping the Leigh Commercial Fisherman's Association with the Wilson's Bay Interim AMA. We will be providing a submission in response to the preliminary decision, but need answers to the questions contained within this letter in order to do so.

This letter does not substitute for a submission. We have not included specific comment on the preliminary recommendation report. This has been reserved until we have your responses below and can consider them together with the report.

I, along with members of the Leigh Commercial Fisherman's Association, have read the preliminary recommendation report thoroughly and don't believe the report answers the questions below. However, if you feel you have addressed these questions within it, can you simply expand on, and clarify, your comments for us?

#### **Questions arising from preliminary recommendation report**

A main concern (among many) we are working to understand is the location of the AMA in the middle of spawning grounds, particularly snapper. The following few questions relate to this issue.

- (1) In the executive summary, you state, "there are no habitats of known significance for fisheries management that would be affected by the interim AMA". Yet, you say it is the "main spawning ground for New Zealand's largest snapper fishery". My conclusion, then, is that spawning grounds are not considered important for fisheries resources. Is this correct?
- (2) NIWA's research surveys in the Firth of Thames state, "the majority of spawning takes place in water less than 30 m deep." The interim AMA is located in waters less than 30 m deep. However, you state the spawning grounds "are located well outside the vicinity of the interim AMA". Can you please clarify the location of the spawning grounds? In order for us to best understand the areas you are referring to, can you please include a map of the spawning area and distribution of finfish populations that the spawning area supports?
- (3) You also say the consumption of fish eggs is "small". Can you please define what level of consumption would be "medium" and "large" by these same standards? Also, please tell us what the environmental consequences are of "small" levels of consumption of

snapper and rock lobster pueruli. Can you include copies of the scientific articles (or other resources) you have used to make this judgement?

- (4) Can we please get copies of all the information (scientific or otherwise) the Ministry used to determine whether a marine farm over fish spawning grounds would cause a UAE on fishing or fisheries resources, in particular any field research to this effect?

The following questions relate more generally to fisheries resources.

- (5) The report draws a direct link between the proposed interim AMA and the feeding/behavioural patterns of seabirds 25 km away. However, within the report there isn't a direct link between the proposed interim AMA on the feeding/behavioural patterns of the fishstocks that live within the area of the farm. In fact, within the "description of the area potentially affected by the interim AMA" you specify the birds and mammals that are present in the region but do not mention the species of fish that live, eat and breed there. Can you please explain why these species were handled differently?
- (6) I could find no consideration of effects of the interim AMA on commercial fishstocks harvested in QMA1 as is required under s 40 (a) of the Aquaculture Reform Act 2004. In fact, you state you do not know whether the interim AMA would impact the abundance of finfish (requirement ii). Instead, you list some categories for consideration in paragraph 46. With respect to these, can you please provide us information on how you chose the specific considerations you did, why you chose them, and how they connect to the "sustainability of fisheries resources"?
- (7) It appears in your report you consider the effects of each category separately. For example, you state "MFish considers the risk of adverse effects on the sustainability of fisheries resources from *biodeposition* is low" and "MFish is satisfied *biofouling* would not have an undue adverse effect on the sustainability of fisheries resources". Can you please explain why you make a determination on whether you are "satisfied the effects are not undue" on each issue separately? Also, can you please explain how this fits within the legislation?

The following questions relate to commercial fishing.

- (8) You state "MFish does not know whether or not these [six] fishers would be adversely affected by the interim AMA. MFish has no information to suggest any other commercial fishers would be adversely affected by the interim AMA". Yet you state there are nearly 70 fishers that target flatfish alone in star area 007 and that the site is in area currently fished. Our conclusions, then, is that a commercial fisherman is only adversely affected if he *submits* he is so. Can you provide comment and justification for your position? Can you also, then, state why you only wrote to 30 fishers?
- (9) Our understanding is that the legislation requires a decision on "fishing", followed then by a nomination of the fishstocks affected. Can you please explain why you make a determination on whether you are "satisfied the effects are not undue" on each fishstock separately?
- (10) You state the effects on commercial fisheries "are not yet undue". However, the Opotiki marine farm alone removed more than your suggested 5% threshold but was still approved. And, this interim AMA would cause additional loss on top of that. It appears that you are making a UAE decision (cumulative or otherwise) for each fishstock before considering effects on fishing as a whole. Therefore, can you please state at what level effects on "commercial fishing" would be undue?

- (11) Your analysis of fishing in the area of the farm states fishers can go elsewhere to catch fish. Can you please specify, on a map preferably, where these areas are for each species? Also, can you please indicate your knowledge of how much fish comes from these alternative areas and how much you expect it will cost the fishermen to fish each of those areas? There is considerable variability within our commercial operations, but at the least can you please provide one example of how you determined this.
- (12) Can you also provide us copies of the information used to determine how a change of fishing pressure within the Firth of Thames (and QMA1) is going to impact on fishing and the sustainability of fishstocks that support it?
- (13) The effects of debris being cast by the current farm in the Firth of Thames (and potential AMA) is a relevant consideration under the Reform Act because the affect of the farm is preventing the setting and hauling of gear, as well as posing additional costs on fishers. It is a real effect of marine farming, regardless of whether you think council will handle it. However, we want to know what part of the legislation prevents you from considering the potential affect of marine farm debris on commercial fishing if it adversely affects fishing activity? If it doesn't, please state how you will consider it in the final decision.

The following questions relate to the **Ministry's decision making processes**.

- (14) Your analysis only includes farming of 520 ha. However, my understanding is that if the area be approved as an AMA, Environment Waikato would have an AMA of over 2,400 ha (not just the 1,200 ha you are considering). MFish would not be able to make another aquaculture decision if Environment Waikato changed the layout or density of mussel farming within the AMA. Is this correct?
- (15) Is there any central governing to ensure that aquaculture carry out their farming responsibly etc, i.e. who within the Ministry of Fisheries ensures that there is constant monitoring of effects on the environment from the farms? The fishing industry is always being held accountable and monitored for sustainability of stocks, practices, effect on other marine life and seabirds. Our fisheries can be closed out or shut down (and quotas cut) if we don't meet the Fisheries Act standards. We could be wrong but there doesn't seem to be any legislation to shut down these farms if it is found they are detrimental to fishing or our fishstocks. We've noted that they have a 35 year lease that can be renewed generally in perpetuity.
- (16) You also state that should the farm be approved and converted to finfish farming, Environment Waikato would consider the effects of that activity on fishing and fisheries resources. However, change of farming activities in Tasman have proven Council's do not consider the effects of changes in activity of "fishing" (under s 20 of the RMA). How does the Ministry of Fisheries plan to fulfil their obligation under s 9 of the Fisheries Act 1996 if you do not consider the potential effects of finfish aquaculture on fishing or fishstocks? This is also very concerning given the Ministry of Fisheries official support for – and funding of – the growth of aquaculture in the Waikato, particularly the growth of finfish aquaculture (refer letter from Daniel Lees to Hon Jim Anderton 22 August 2008).
- (17) I continue with respect to the above Government support for finfish aquaculture in Waikato. In 2006, the Minister also wrote "the overall goal for Government is to ensure this project [in Waikato] results in opportunities for finfish farming that are able to be commercially viable". In fact, the previous Aquaculture Manager was the Government point of contact on this statement. As the current Aquaculture Manager, I'm assuming you are now the point of contact. Can you please provide us evidence that this official

Government position did not, and has not, compromised the impartiality of the Ministry of Fisheries, its staff, and its decision makers with respect to this Interim AMA?

#### Additional research

I will be attending the Aquatic Environment Working Group meeting on the 20<sup>th</sup> of May to discuss the recent report by Cawthron regarding the effects of marine farms on fisheries resources. I'm certain you will be using this information in the final decision for the Wilson's Bay Interim AMA and as such, must allow stakeholders the opportunity to comment on it. Leigh Fisherman's Association wants to include any information from this report in our submission.

As such, we ask for an extension for submissions until after that meeting, and allowing time for fishermen to receive and respond to this information. In addition, should the report not study the link between marine farms and the abundance, distribution, quality and recruitment of commercial fishstocks, the commercial fishing industry will be endeavouring to do this research themselves.

We do not believe it is our responsibility to do so. It is yours to find out this information. Yet, in that failing, we are put into this position. Marine farming interests were given years to complete their FRIAs. We will undertake our research as soon as is practicable, but require the Ministry to give us the same courtesy they gave the aquaculture industry and hold off making any decisions until that scientific information becomes available.


**It is not our responsibility to prove there is an UAE on fishing and fisheries resources; rather, you must have the evidence to be satisfied there is not.**

#### Conclusion

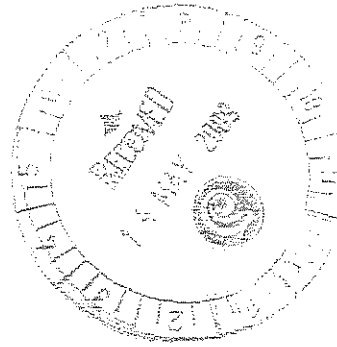
We are in no way trying to prevent the growth of aquaculture. However, we are greatly concerned about the future of our fishstocks and fisheries should this interim AMA proceed. If a precautionary approach is taken, as is always the case with the Ministry of Fisheries, you cannot approve this interim AMA without knowing the effects on recruitment and retention of wildstocks and commercial harvests. Only then would you be able to be satisfied the effects would not be "undue".

Please contact me if you do not understand our questions. Otherwise, I look forward to your timely response. Please know we are happy to receive a letter or meet in person to resolve our questions.

Sincerely



Jodie Campbell



86 Te Kawa Road  
Greenlane  
Auckland

The Regulatory Manager  
Attn Mr Russell Burnard  
The Ministry of Fisheries  
Private Bag  
Wellington

Re: Submission regarding approval for extended marine farm area: Firth of Thames.  
(Wilson's Bay interim aquaculture management area )

I am a regular visitor to Coromandel – I have been holidaying there for 31 years and my parents spend much of their time living there. My submission relates to the shore-based facilities that will be required to support the extended marine farm area. Although this matter may be outside of the jurisdiction of the Ministry of Fisheries, as part of the planning process for extended commercial activity in the area the Ministry should make all efforts to work with those agencies that will have to manage the down-stream effects of the Ministry's decision. For example, consideration of the extra truck travel that will be generated on State Highway 25 (and the associated safety, environmental and economic implications) should be considered by consulting with the New Zealand Transport Agency, *before* approving increased aquaculture activity in the area.

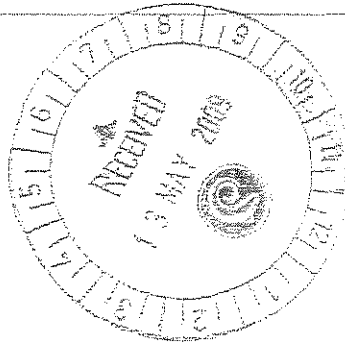
Further expansion of the unloading facilities at the 'Sugarloaf' in Te Kouma (near Coromandel town) is completely unsuitable for this area. Unloading facilities at Thames or Kopu (near Thames) would be a far better option as it would save approximately 50 km of travel and significantly reduce truck travel on unsuitable SH25 along with associated truck crashes and road maintenance. Furthermore, unloading facilities at Thames or Kopu would be rightfully situated within industrial areas rather than the residential/recreational sugarloaf location which is also a place of great beauty.

My submission is that much greater consideration needs to be given to the location and development of shore-based facilities for the aquaculture industry in the Coromandel region and that as part of the planning and approval process, the Ministry of Fisheries should work with Environment Waikato, Thames Coromandel District Council and the New Zealand Transport Agency to plan for these facilities.

Yours Sincerely,

Hamish Mackie

The Regulatory Manager  
Attn Mr Russell Burnard  
The Ministry of Fisheries  
Private Bag  
Wellington



Re: Submission re approval for extended marine farm area, Firth of Thames. (Wilson's Bay interim aquaculture management area )

Our submission relates to the infrastructure that approval of this enlarged area requires.

We understand that your jurisdiction does not cover land based activities but we think that there is also a responsibility on the part of the Ministry of Fisheries to acknowledge and plan for the consequences of their actions.

We are residents close by to the present operation where barges are unloaded and are constantly being told that the only way for expansion is to enlarge the berthing areas in Waipapa Bay. . The previous history of totally ignoring resource consents (on the part of Environment Waikato, Thames Coromandel District Council and the Mussel Farmer executive ) give us no confidence that any expansion will be monitored. These bodies have consistently ignored complaints and it is only now that expansion is planned that the original resource consent (1993) is being monitored. The history we have of dealing with these bodies is that they are all firmly looking after each other and are myopic in dealing with any "big picture".

Over and above these concerns is the fact that Te Kouma Rd and State Highway 25 are very unsuited to large trucks conveying products down to Thames and already for some years this has been a problem with the output of the farms as it is at present.

We do not deny that expansion of the aquaculture industry would be positive economically but planning for another off loading area such as Kopu (which is already industrially zoned) would benefit the area tremendously as heavy traffic would be decreased on SH 25 and there would be much less environmental impact to the Waipapa Bay environment.

Our submission therefore is that:

Any consent for expansion of the Wilsons Bay aquaculture management area is reliant on sustainable landing and safe transport options. These options should be part of the conditions for expansion either from the Ministry or the relevant local and transport bodies.

Barry & Megan Mackie  
6D Edgecumbe St,  
Hamilton 3200

*B. Mackie*

*M. Mackie*

90 Baddeley Avenue  
Kohimarama  
Auckland 1071  
Telephone 09 528 4852

Rachel Alexander  
The Ministry of Fisheries  
Private Bag 14  
Nelson

15 May 2009

Dear Rachel

**RE: Ministry of Fisheries consultation on Wilson Bay Aquaculture Management Area**

This is an individual submission relating to the proposed Wilson Bay AMA. I do not fish in the proposed Wilson Bay AMA. I do have an ongoing interest in the MoF and Environment Waikato aquaculture policy relating to the Hauraki Gulf as a member of a family that owns property on the Coromandel Peninsula, and as a private individual with an interest in the landscape and public amenity of the Hauraki Gulf.

I have no specific view on the proposed Wilson Bay AMA except that any planned future policy change to allow aquaculture **other than** the designated shellfish farming (such as finfish farming) should be publicly notified for comment. I request that should such a policy change be proposed for this area or any other Hauraki Gulf site that I be directly notified at the email address below. Please inform me of the outcome of this consultation.

Thank you for the opportunity to make this submission.

Regards



Stephen Martin  
Email: sjmartin.email@gmail.com

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**Robin Britton**

PO Box 7016  
Hamilton  
Mobile 027 281 2969  
Email [rbritton@wave.co.nz](mailto:rbritton@wave.co.nz)



15<sup>th</sup> May 2009

Ministry of Fisheries  
Private Bag 14  
NELSON

Attn: Christine Bowden/ Rachel Alexander

Dear Rachel and Christine

**Submission in Support of the  
Preliminary Evaluation Report – Wilson Bay Interim Aquaculture  
Management Area**

This submission is made on behalf of Fisheries Consultancy Services Ltd.

Thank you for the opportunity to review the Preliminary Evaluation Report. Fisheries Consultancy Services Ltd strongly supports the decision to make a determination for the Wilson Bay Interim AMA. We consider that the conclusions drawn from the significant amount of information provided for in this report are appropriate and that all relevant matters have been considered.

The following **general comments** are made:

We are supportive of the wide consultation that has been undertaken.

We consider that the information on which the report is based is extensive and more than adequate to base the decision upon. We also consider that it reinforces the information gathered and consulted upon at the time of the Regional Coastal Plan variation which originally created the Wilson Bay aquaculture areas, which in turn supplemented the report's information base.

Robin Britton  
Resource Management/Planning Consultant



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In addition we would like to make the following **specific comments**:

**Paragraphs 8 & 9:** Reference is made to the adverse effects of aquaculture development on fisheries as being "not yet" undue.

We would like to see that the use of the wording "not yet" is clarified such that these paragraphs are not read as suggesting the adverse effects are likely to become "undue" in the future as a result of the proposed AMA.

**Paragraphs 24 & 179:** References to the Rules.

We note that there is a varying degree of reliance on the rules for staging aquaculture development within the AMA and managing associated environmental effects. We consider that where MFish is relying on a rule in the Regional Coastal Plan, that this should be clearly stated and the rule specified. Likewise it should be noted (in accordance with the legislative requirements) that the rules in the Regional Coastal Plan relied on, cannot be revoked without the involvement of MFish in such a decision.

**Paragraph 29:** Summary of Comments Table.

As a matter of clarification, the submission made by Robin Britton on behalf of Fisheries Consultancy Services Ltd was made in "support" of the AMA.

**Paragraph 102:** Debris

Overall, we consider that this is a management issue. However we reiterate that there is a Mussel Industry Code of Practice which sets out best practice for managing farms, particularly from an operational perspective. Compliance with this Code of Practice is fundamental to the industry and auditing of farm operations is undertaken. As this is a management issue, the Code of Practice would also be a key supporting document in the resource consent application phase for the Area B of the Wilson Bay AMA. Fisheries Consultancy Services Ltd strongly supports the Code of Practice and is prepared to raise the issue of debris control with other mussel industry players to determine what further actions might be appropriate to address it further.

**Paragraph 111:** Orientation of lines

We confirm that, as applicant for consent for Area B, Fisheries Consultancy Services Ltd will propose and accept a requirement that the orientation of lines in Area B of Wilson Bay AMA would be parallel to the coastline. This reflects common and best practice for farm alignment with the ocean currents.

**Paragraph 141:** Pest Control

We strongly support the statements in this paragraph. We would also add that the mussel industry is undertaking work nationally to be proactive about new pest incursions and the management of existing pests, which impact or potentially would impact on the growth of the species grown.

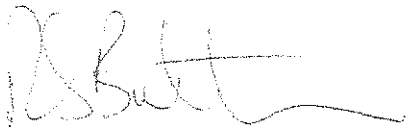
Robin Britton  
Resource Management/Planning Consultant

**To Conclude:**

Fisheries Consultancy Services Ltd reiterates its strong support for the determination made and submits that the minor matters raised above would assist in refining and finalising the report.

If you have any further queries on any of the matters raised, please contact me on 027 281 2969.

Yours sincerely

A handwritten signature in black ink, appearing to read 'R Britton', with a long horizontal flourish extending to the right.

**Robin Britton**  
*On behalf of Fisheries Consultancy Ltd.*

Robin Britton  
Resource Management/Planning Consultant

**Leigh Commercial Fishermen's Association Inc.**

PO Box 158, Leigh

PH 09 422 7918

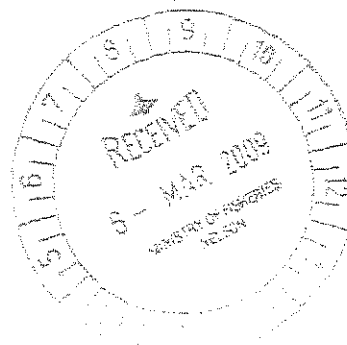
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27<sup>th</sup> February 2009

Rachel Alexander and Christine Bowden  
The Ministry of Fisheries  
Private Bag 14  
Nelson



Dear Rachel and Christine

*RE: Waikato Interim AMA in Wilson's Bay, Firth of Thames. Comment on the Fisheries Resource Impact Assessment prepared by NIWA.*

Please find enclosed the LCFA comment regarding NIWA's report on the Fisheries Resource Impact Assessment regarding Wilson's Bay Interim AMA application.

Yours sincerely

A handwritten signature in cursive script, appearing to read 'Cindy Bailey'.

Cindy Bailey (Secretary)

---

**The Leigh Commercial Fishermen's Association Incorporated**  
**PO Box 158**  
**Leigh**

PH: 09 422 7918

Fax: 09 422 7913

Email: [lcfa@wave.co.nz](mailto:lcfa@wave.co.nz)

Website: [www.lcfa.co.nz](http://www.lcfa.co.nz)

**Follow-Up Comment on the Fisheries Resource Impact  
Assessment (Wilson Bay Area B, Interim AMA)**

Prepared by NIWA for the Ministry of Fisheries.

**The Leigh Commercial Fishermen's Association Inc (LCFA) would like to comment on the report prepared by NIWA for the Ministry of Fisheries regarding the Wilson's Bay, Firth of Thames interim AMA application.**

Geordie Murman, a member of our association, and representing LCFA attended the AEWG meeting in Wellington, 22 October 2008 regarding the NIWA Report.

The report did not address the issues that we feel should be closely studied to ensure the survival of our wild fish stocks, particularly snapper and rock lobster. The LCFA feel that a mussel farm the size of Area B added to a fully developed Area A plus the possibility of further development in the western Firth of Thames; will create a massive filter that will allow little possibility for any escape for either zooplankton (including eggs and larvae) or phytoplankton (nutrients). The effect may not be seen for several years, but if there is a decline in the biomass of wild fish species in 5-15 years, what will happen? Over fishing will be blamed, commercial, recreational, customary etc. and quota cuts will be made to make these species sustainable. The mussel farms will remain, continuing to deplete the wild fish stocks. Is there any legislation in place that will require removal of mussel farms if there is a reduction in the biomass of wild fish species?

The LCFA feel that the Ministry of Fisheries should proceed with caution before approving any further interim AMA applications. More practical studies need to be carried out to assess the survival of eggs/larvae and nutrients and the habitats of our wild fish stocks. Hypothesis, theories and predictions are not "good enough" science, when we have so much to lose. It will be too late in 10 -20 years after the stocks are depleted, we must do our homework now and do it well, before approval is given. NIWA has been successful in spawning snapper and rock lobster. More practical studies using mussels and egg/larvae should be underway to see if eggs/larvae are vulnerable.

The LCFA would like to point out that there are no other existing mussel farms of this size to really compare the effects on the environment. It is unknown what effect this size of mussel farm will have on the plankton up take, whether it is phytoplankton or zooplankton. Or truly what effect this size of mussel farm will have on the habitat of the species in the immediate area or the flow- on effect. Small changes could have a huge impact.

The Hauraki Gulf and the Firth of Thames are the largest and the most important spawning ground for snapper on the north-east coast of the North Island. It also provides a protected environment for juvenile rock lobster growth. There will be other species that rely on the environment of the Hauraki Gulf and the Firth of Thames for their survival.

Section 2.2.2, page 16 of the report states *"The Hauraki Gulf supports the largest and most valuable national stock of snapper."* We are certainly in agreement regarding this statement. The report goes on to explain *"Snapper are serial spawners, with females releasing batches of eggs daily into the coastal plankton (~ 35 m depth) from early October (spring) to February (summer), with most intense spawning in November and December (Scott et al. 1993; Zeldis & Francis 1998). The extended period of egg production within an area that includes mussel aquaculture has posed the question of whether removal of snapper eggs by mussels could impact fish recruitment. Broekhuizen et al (2002, 2005) showed this to be unlikely through dynamic simulations for Area A fully stocked. However, research into quantifying the effects of mussel farms on zooplankton, as well as fish larvae and fish eggs, is at an early stage. We certainly cannot say at this stage that there are significant adverse effects associated with mussel farms consuming zooplankton. Given the direct link of zooplankton abundance to fisheries production, and the potentially important balance between generation time and capture efficiency of different size groups by mussels, it is important to continue the research efforts to better quantify zooplankton consumption."*

In the key findings on page 17, - plankton resources and food web; the final bullet states *"Depletion of Snapper eggs in the Firth was shown to be unimportant in terms of snapper recruitment in simulation modelling of Wilson Bay Area A."* We take issue with this statement. As stated in the previous paragraph *"showed this to be unlikely"* and then went on to say that *"research into quantifying the effects of mussel farms on zooplankton, as well as fish larvae and fish eggs, is at an early stage"* We found that the statements in the final bullets of the key findings were very misleading. If someone was only to skim through the "key findings" the information would be quite different than if reading the whole document. Why was the part about the fish larvae and fish eggs not included in the third bullet point? The word "unlikely" has a very different meaning from the word "unimportant". The Ministry of Fisheries is supposed to be making very important decisions

that could affect the future of our wild fish stocks based on this report. If findings are not reported accurately and unbiased, then where is the science?

The LCFA also note that again “simulation modeling” was used to conclude if the removal of snapper eggs by mussels could impact on future biomass. The conclusion showed this to be unlikely, but where was the information obtained to set up the modeling program, as the report states that research is at an early stage.

In the statement “*We certainly cannot say at this stage that there are significant adverse effects of mussel farms consuming zooplankton*”, but nor can you say that there are not significant adverse effects of mussel farms consuming zooplankton based on your statements that research is at an early stage.

This in fact highlights one of the main reasons that we are so concerned about the effect that mussel farms could have on the depletion of eggs and larvae leading to a depletion of fish stocks. Statements such as “*research into quantifying the effects associated with mussel farms on zooplankton, as well as fish larvae and eggs, is at an early stage*”, says it all for us. This is reason enough to delay any applications for further AMA zoned areas until further practical applied research has been completed. The logic of proceeding with an AMA zone when so little is known about the effects on the eggs/larvae for future stocks makes little sense to us, as so much is at stake.

Much of the water entering the Hauraki Gulf from the prevailing northern currents are enriched with nutrients and carry local and offshore fish spat and rock lobster spat. Much of this flow passes down into the Firth of Thames, and then out to the east, so it will be filtered by the mussels. All the tonnage of mussels that these farms will produce, will require a massive amount of food that will have to be removed from the waters of the Firth of Thames and the Hauraki Gulf. Three tonne of mussels will require three tonne of nutrients to produce the mussels.

In the case of Snapper as stated in the report, they spawn over several months. This makes the spat vulnerable over a longer period of time and there is more chance of the spat being consumed by the mussels.

Rock lobster larvae are current borne for up to 18 months. During this time the larvae are in danger of being eaten by the mussels. In the settlement stage, there is the danger that larvae will settle on mussel ropes instead of inshore reefs. Mussels are harvested usually every 12 to 18 months. The harvester will kill the juvenile rock lobster that has settled on the ropes.

The currents, even at a good flow through the mussel farms could travel at approximately 1.5 km/hour so planktonic stage fish larvae could take at least 3.5 hours to be carried through the marine farms. The danger for the larvae or spat is being eaten by mussels or starved of food and nutrients through competing with the mussels. Then when the tide changes it starts again. Some will not ever get out from within the area of the mussel farm.

The report discusses depletion of plankton and fish larvae in terms of percentages, ie *"On the Firth --wide scale fish larvae depletion is ~ 2% with the "existing farms + Area A" increasing to 2-5% when Area B is added;"* and *"On the spatial scale of the WBMFZ percentage depletion of fish larvae ranges between 2-7 % with the existing farms + Area A" increasing to 5-15% when Area B is added;"* The report discusses various scenarios with wind or without wind for percentages of depletion of larvae and plankton etc. Who has decided what percentages are acceptable? A 5-15% depletion of larvae could have a very detrimental impact on the future stocks. How do we know what is an acceptable level of depletion of plankton as a food source for other species?

When discussing phytoplankton utilization, the report states that by *"adding Area B to the WBMFZ, it is unlikely to exceed the "Limits of Acceptable Change" (LAC) set by Environment Waikato for Area A that is no more than 20% chlorophyll-a depletion exceeded 10% the Firth of Thames area"*. We have two queries here. The word "unlikely" is hardly reassuring as solid scientific evidence and what solid science was used by Environment Waikato to set the "Limits of Acceptable Change"?

The report did state that *"Large reductions in phytoplankton and microzooplankton may cause declines in zooplankton abundance, with knock-on consequences for the other fisheries resources."* It then went on to say that *"Modelling of the proportion of water processed by the farms does not, however, suggest that the large reductions in phytoplankton or small zooplankton are likely."* Again this is theoretical and has not been proven.



In the report it states that "*Area B contains a uniformly muddy and largely featureless seabed*", and "*There are no areas of rocky reef habitat or macro-algal beds.*" We challenge that the "mud" habitat could be perfect spawning habitat and ideal nursery area for spat and juvenile fish. This may be why it is the nursery grounds, as it is a safe environment away from predators.

The mussel farm is in the middle of the snapper spawning areas and could create an unsuitable habitat, predation by mussels, competition for food and nutrients and massive predation by other organisms associated with mussel farms such as anemones, sea squirts, and crustaceans and fish that wouldn't normally live in this habitat. Fishermen have noted a definite increase in the amount of sea squirt in the Hauraki Gulf and in the Firth especially around mussel farms. These numbers will only increase with the advent of more farms and will be to the detriment of the original inhabitants.

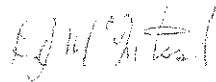
Once the marine farm is approved, is there legislation requiring ongoing monitoring of plankton, fish larvae, fish stocks, rock lobster settlement, depletion of nutrients? If so, what are the consequences or what measures are in place to remedy any adverse effects?

Who are the applicants? Some will have investments in other areas of the fishing industry. Are they aware of the possible adverse effects on wild fish stocks in the future; and are they willing to jeopardize the future of the commercial, customary and recreational "wild fishery" by not doing their homework now, ensuring that any decisions made now regarding this AMA application is based on good thorough scientific evidence rather than theories and speculation. There is a real possibility that by putting such a massive filter in this area, it could have catastrophic effects on our wild fish stocks.

The LCFA oppose the AMA application for Area B in the WBMFZ, based on the fact that there has been very little practical scientific research done that would prove that these mussel farms would not be detrimental to the future of our wild fish stocks. We feel that it should be the responsibility of the applicants and the Ministry of Fisheries to ensure that proof exists before approval is given for the application to go ahead. We are not convinced that the science done to date is robust or conclusive enough.

The LCFA urge the Ministry of Fisheries to exercise caution and not approve the AMA application at this time.

Yours sincerely

Dave McIntosh (President) 

  
Cindy Bailey (Secretary)

Cc Hon Phil Heatley, Minister of Fisheries

Doug Loder, New Zealand Federation of Commercial Fishermen (Inc)