

Marine Farm Compliance Inspections

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Report from Coastal Monitoring Team Leader, Bruce Howse and Environmental Monitoring Officer Coastal, Ricky Eyre, dated 29 June 2007.

INTRODUCTION

Northland Regional Council (NRC) officers undertook inspections of 129 Northland marine farms during April to June 2007. From these inspections compliance assessments were made for each farm.

This report summarises the results of the inspections, identifies issues affecting compliance and makes recommendations in regard to identified issues and compliance.

BACKGROUND

Prior to the implementation of the Aquaculture Law Reform (Repeals and Transitional Provisions) Act 2004, which came into effect on 1 January 2005, the NRC was responsible for the administration and monitoring of approximately 30 marine farms. Approximately 100 marine farms were transferred from the Ministry of Fisheries (MFish) to the NRC after 1 January 2005. MFish are still responsible for an additional nine marine farms in the Northland region that are under notices of forfeiture due to compliance issues affecting the marine farms.

COMPLIANCE REGIME

Coastal permits for marine farms have conditions that generally require the consent holder to:

- Maintain in good order and repair all structures and marker posts;
- Keep the foreshore and seabed free of marine farming debris and stock and remove any build up of the foreshore or seabed;
- Mark the area with white posts and maintain to a standard (navigational markers).

A compliance schedule was developed by NRC staff for assessing the state of compliance of marine farms (refer Attachment 1). The following criteria were assessed in the schedule, where feasible, to determine compliance for each farm:

- Condition of farm structures (i.e. growing racks and rails);
- Condition of seabed (i.e. amount of accumulated shell litter and sediment beneath growing racks);
- Presence of debris (i.e. pieces of dislodged growing racks, netting bags);
- Presence and suitability of navigational markers.

For each of the criteria a three level compliance rating has been given, either compliant, minor non-compliance or significant non-compliance rating. Results of inspections were sent to all consent holders, and those with compliance issues were advised of remedial actions and that abatement notices may follow.

STATE OF COMPLIANCE

Geographically the highest compliance rates were achieved in the Far North (Parengarenga, Houhora and Whangaroa), moderate compliance rates were achieved in Orongo Bay and low compliance rates for remaining areas.

Summary compliance statistics indicate that for all marine farms assessed (refer Table 1 & 2):

- 25% had significant non-compliance issues with condition of farm structures;
- 17% had significant non-compliance issues with condition of seabed;
- 14% had significant non-compliance issues with the presence of debris;
- 10% had significant non-compliance issues with navigational markers.

Some of these compliance results are not surprising; particularly given the long time some of the marine farms have been operating and the accumulation of shell material on the seabed and the dereliction of structures over time. A conservative view was taken towards compliance, rather than a lenient approach that may result in compliance issues becoming more significant in the future.

Table 1. Summary of levels of compliance based on each area.

Area	% Of Farms Compliant
Parengarenga	71
Houhora	70
Rangaunu	0
Whangaroa	66
Orongo Bay	53
Waikare Inlet	0
Greater Bay of Islands	31
Kaipara	14
Hokianga	0
Whangarei	0

Table 2. Summary of non-compliance on an area basis for the criteria assessed.

Area		Structures		Seabed Condition		Debris		Navigational Markers	
		Significant Non-Compliance	Minor Non-Compliance	Significant Non-Compliance	Minor Non-Compliance	Significant Non-Compliance	Minor Non-Compliance	Significant Non-Compliance	Minor Non-Compliance
Parengarenga	# of farms 21	0	4	0	0	0	4	1	1
Houhora	10	0	2	0	0	0	0	0	1
Rangaunu	5	3	2	0	0	0	3	0	0
Whangaroa	12	0	3	0	2	0	2	0	2
Oronga Bay	19	2	6	1	2	2	2	0	0
Waikare Inlet	15	13	1	12	3	10	4	4	0
Greater Bay of Islands	13	4	1	2	4	2	6	0	2
Kaipara	22	7	6	5	4	3	3	6	8
Hokianga	2	1	1	0	0	0	0	1	1
Whangarei	1	0	0	0	0	0	0	0	1
Sum	120	30	26	20	15	17	24	12	16
% total of farms		25	22	17	13	14	20	10	13

ISSUES

Several issues require consideration of some significant complicating issues prior to deciding on a course of action for non-compliant marine farms, these are:

- The transfer of farms in a moderate to poor condition from MFish to NRC.
- Waikare Inlet water quality issues and the restricted harvesting status of GA206 (lower and mid-Waikare).
- Removal of accumulated material (located beneath growing racks) from seabed.
- Need to better assess and understand the environmental effects of marine farming on the seabed and coastal waters in order to better manage the effects of marine farming.

Other issues are more straightforward and a more routine regime of compliance request followed by enforcement in cases of ongoing non-compliance is recommended. These more straightforward issues are:

- Provision of suitable navigational markers at all marine farms.
- Removal of debris and derelict structures from all growing areas, with the exception of the Waikare Inlet marine farms.

The above issues are discussed in the following.

Transfer of Farms in Moderate to Poor Condition from MFish to NRC

The majority of non-compliance was associated with those farms that were transferred from MFish to NRC following the 1 January 2005 implementation of the Aquaculture Law Reform (Repeals and Transitional Provisions) Act 2004. Indeed, abatement notices are proposed to be served on 25 ex-MFish controlled marine farms, as opposed to four abatement notices for marine farms originally permitted by NRC.

It seems unreasonable that the NRC should bear the responsibility for the non-compliance of the ex-MFish controlled marine farms that are in moderate to poor condition. MFish should have ensured, and were asked to ensure, that farms were in a compliant state prior to transfer to the NRC (although this was not a legislative requirement of the Aquaculture Law Reform (Repeals and Transitional Provisions) Act 2004)).

There is likely to be a significant amount of work required in bringing the non-compliant ex-MFish controlled marine farms up to a compliant standard. Whilst it is possible for NRC staff to recover costs from consent holders with regard to follow up for non-compliance, this work requires NRC resources that could be applied to other coastal management issues. It is considered that MFish should contribute to the resourcing required to bringing farms to a complaint standard, rather than relying on NRC to do this.

Waikare Inlet – Restricted Harvesting Status

Since 2001 most of Waikare Inlet has been under a restricted harvesting status, meaning product grown in the area must be relayed to another growing area for a period of time before it can be sold. Consent holders have claimed that the effect of the restricted harvesting status is that the farms are not economically viable. This has affected the ability of consent holders in this area to maintain marine farms to a compliant standard.

It is unreasonable to expect consent holders in this area to undertake remediation of marine farms without assistance, particularly given resourcing issues facing the consent holders. It is recommended that no enforcement action be taken against consent holders for non-compliant marine farms in the Waikare Inlet. Rather it is recommended that the NRC works with the affected farmers to seek assistance from central government for resources to undertake the remediation of affected marine farms. At the same time the continuation of a water quality monitoring and enhancement programme around Waikare Inlet is recommended, to assist in the chance of improving the harvesting status of the area.

Removal of Accumulated Material from Seabed

Accumulation of shell litter and sediment on the seabed beneath growing racks are amongst the most visible effects of oyster farms. 17% of farms were considered significantly non-compliant due to accumulation of shell litter and sediment beneath farm structures. Accumulation tends to be greatest in sheltered areas, particularly those with weak currents.

Whilst it is desirable to maintain the seabed free of accumulated materials, the practicality of removing accumulated materials from beneath racks is questionable. The relative environmental consequence is also considered minor to moderate (Forrest *et al*, 2007), and effects are largely reversible once materials are removed. Whether removal of accumulated material should be done as a routine part of farming operations or upon the conclusion of farming operations needs further

consideration and discussion with the marine farming industry before pursuing a course of action on this particular issue.

Need to Better Assess and Understand the Environmental Effects

There is a need to better assess and understand the environmental effects of marine farming activities, particularly with regard to level of acceptable change of effects on the seabed, water column and other effects (i.e. spread of fouling organisms).

The basis for this work has already been commenced through a review of the ecological effects of intertidal oyster aquaculture having been completed recently (Forrest *et al*, 2007 (funded via a FRST Envirolink grant)). The review provided a synthesis of effects, completed an ecological risk evaluation and provided recommendations for monitoring. Further investigations to gather site-specific knowledge about the effects of oyster farming were recommended, with a focus on biosecurity risks and effects on the seabed. Knowledge gained from this would be relevant to future development and to the mitigation of any significant adverse effects that occur in present oyster farming operations. It is recommended that further investigations are undertaken to better understand the effects of marine farming.

Provision of Suitable Navigational Markers

The provision of suitable navigational markers on marine farms is considered critical for the safety of other marine users. These are also relatively inexpensive and quick to install and are considered a basic compliance requirement for all marine farms.

All consent holders with non-complaint navigational markers have been requested to bring these into compliance. It is recommended that abatement notices are served on those that were significantly non-compliant (Table 3), requiring these to be maintained for a period of two years. This will enable these farms to be reassessed during the next compliance inspections (scheduled for 2009) and enable enforcement action to be escalated, if required, for cases of continued non-compliance.

Removal of Debris and Derelict Structures from Growing Areas Not Under a Restricted Harvesting Status

The removal of debris (i.e. pieces of growing structures) and derelict structures is considered a basic compliance requirement for marine farming. Enforcement, where deemed appropriate, should be implemented to ensure compliance with conditions of permits with regard to debris and derelict structures for all growing areas, with the exception of the Waikare Inlet (as discussed previously).

All consent holders with non-compliance for debris and derelict structures have been requested to bring these into compliance. It is recommended that abatement notices are served on those that were significantly non-compliant (refer Table 3), requiring these to be maintained and brought into a compliant standard within a period of two years (with the exception of the Waikare Inlet farms). This will enable these farms to be reassessed during the next compliance inspections (scheduled for 2009) and enable enforcement action to be escalated for cases of continued non-compliance.

Table 3. Number of abatement notices proposed per area and reason for.

Area	# of farms	Number of Abatement Notices Proposed	Reason For Abatement Notice		
			Structures	Debris	Navigational Markers
Parengarenga	21	3	2		1
Houhora	10	Nil			
Rangaunu	5	3	3		
Whangaroa	12	1			1
Oronga Bay	19	2	2		
Waikare Inlet	15	4			4
Greater Bay of Islands	13	4	4		
Kaipara	22	10*	8	3	5
Hokianga	2	2	1		1
Whangarei	1	Nil			
Sum	120	29	20	3	12
% total of farms		24	17	3	10

* = some notices are for multiple non-compliance.

Recommendations

1. NRC approaches central government over the issue of the transfer of marine farms in moderate to poor condition from MFish to NRC, seeking assistance with the resourcing required to bring non-compliant farms to a compliant standard.
2. NRC works with the affected marine farming consent holders in the Waikare Inlet to seek assistance from central government to undertake the remediation of marine farms, whilst also continuing to promote a water quality monitoring and enhancement programme in and around the Waikare Inlet.
3. Further assess, in conjunction with the marine farming industry, whether removal of accumulated material from beneath farming structures should be done as a routine part of farming operations or upon the conclusion of farming operations.
4. Undertake effects-based monitoring investigations to better assess and understand the environmental effects of marine farming on seabed and coastal waters in order to better manage the effects of marine farming.
5. Require all marine farm consent holders to place and maintain suitable navigational markers and require this through enforcement action for cases of significant non-compliance for all marine farms.
6. Require removal of debris and derelict structures for all areas and require this through enforcement action for cases of significant non-compliance for all marine farms, with exception of those farms in the Waikare Inlet.

COMPLIANCE WITH DECISION MAKING PROCESS

The activities detailed in this report are provided for in the Council's 2006-2016 LTCCP, and as such are in accordance with the Council's decision-making process and sections 76-82 of the Local Government Act 2002.

References:

Forrest BM, Elmetri I, Clark K. 2007. *Ecological Effects of Intertidal Oyster Aquaculture*. Prepared for the Northland Regional Council. Cawthron Report No. 1275, 24p.

APPENDIX 1 – COMPLIANCE SCHEDULE

Appendix for Oyster Farm Monitoring



CONDITION OF STRUCTURES

Significant Non-Compliance (= CL6)



More than 5% of the farm structures appear in disrepair and are becoming or likely to become detached and result in either debris generation and/or give rise to objects that

may become potential navigation hazards.

Minor Non-Compliance (= CL3)



Localised small areas (less than 5% of the farm structures) of farm structures appear in disrepair and are becoming or likely to become detached and result in either debris generation

and/or give rise to objects that may become potential navigation hazards and/or excessive cropping likely to cause failure of farm structures.

Full Compliance (= CL1)



All structures associated with the marine farm appear in good condition.

CONDITION OF SEABED

Significant Non-Compliance (CL6)



Sediment and shell accumulation visually apparent under farm structures causing 'windrow' formation of sediment mounds.

Minor Non-Compliance (= CL3)



Accumulation of shell material beneath farm structures readily apparent, although no 'windrow' formation of sediment mounds apparent.

Full Compliance (= CL1)



Minor accumulation of shell material beneath farm structures and no 'windrow' formation of sediment mounds apparent.

PRESENCE OF DEBRIS

Significant Non-Compliance (CL6)



A number of debris present and/or potential for debris generation from failed or failure of farm structures or materials associated with farming activities.

Minor Non-Compliance (= CL3)



Single or multiple debris present from failed farm structures or materials associated with farming activities.

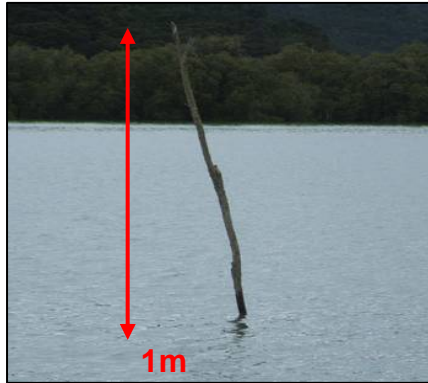
Full Compliance (= CL1)



No debris apparent.

NAVIGATIONAL MARKERS

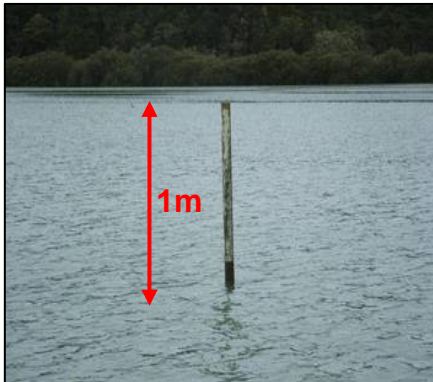
Significant Non-Compliance (CL6)



Markers absent from one or more location and/or showing less than 1m above MHWS, not showing white, or are not placed at correct spacings.

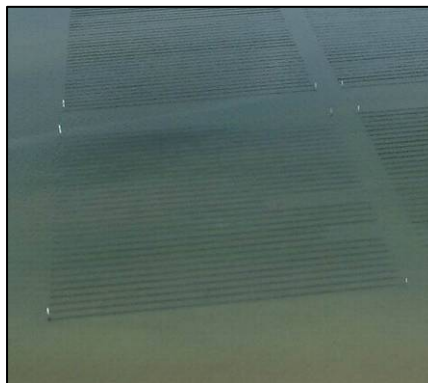
Minor Non Compliance (= CL3)

Marker is suitable however not



adequately maintained (i.e. white painting faded).

Full Compliance (= CL1)



Markers present at required locations, showing at least 1m above MHWS and well maintained.

Notes on States of Compliance

A combination of two or more of the CL3 (minor non-compliance) categories will place the marine farm into a state of significant non-compliance (coded CL5).

Other factors (i.e. restrictions on farming method, requirements to leave access routes etc) may also influence states of compliance, and these may influence compliance.