



**Memorandum to: Robin Britton**

**17 July 2018**

**Re: Ecological Reports Prepared in Relation to Aotea Harbour Mussel Spat Catching Application**

The technical ecology reports prepared in association with a Resource Consent Application to undertake mussel spat catching within Aotea Harbour and submitted to Waikato Regional Council have been reviewed by Coasts and Catchment Ltd due to the lack of suitably qualified staff at Council to appraise the technical information contained within those reports.

Comments returned via Waikato Regional Council have been somewhat unclear, however, the concerns raised will be addressed, as far as possible below.

An ambiguous question was raised as to the validity of benthic sampling station locations, which characterise the benthic biological communities and the sediments of the area of Aotea Harbour in the vicinity of the proposed mussel spat catching facility. Upon investigation, it is apparent that a small typographical error has been made in reporting the GPS positions for the sampling locations. The GPS locations were originally reported as:

Sampling Site	Latitude	Longitude
AH1	38° 00.280' S	175° 50.578' E
AH2	36° 00.424' S	175° 50.369' E
AH3	36° 00.502' S	175° 50.141' E

The correct GPS locations are in fact:

Sampling Site	Latitude	Longitude
AH1	38° 00.280' S	174° 50.578' E
AH2	38° 00.424' S	174° 50.369' E
AH3	38° 00.502' S	174° 50.141' E

This small typographical error was enough to place sampling locations many miles outside Aotea Harbour itself.

A supplementary ecological report was prepared in order to answer some concerns regarding the potential ecological effects of the proposed mussel spat catching facility and to provide further information on the likely effects on marine mammals among other issues. The principal statements made in the supplementary ecology report have been made by published authors in peer-reviewed journals and papers, recognised as experts in their fields of study. Those statements have simply been collated and presented, along with proper citation, and interpreted in the light of the proposed mussel spat catching application in order to provide a scientifically defensible argument as to the most likely effects resulting from the proposal.

The scientific information provided within that supplementary report was discovered as a result of a literature search of published and peer reviewed scientific publications and government

documents and brings together the best available information from suitably qualified from New Zealand and overseas. The citation of authors alongside the statements made allows the reader the opportunity to independently consult the documents authored by the recognised experts to verify that the statements being made have been correctly interpreted and presented.

The supplementary report suggests that the only marine mammals that may encounter a mussel spat catching facility as proposed are Orca, bottlenose dolphin, common dolphin or NZ fur seal. The most likley of these mammals to encounter a proposed spat catching facility would be NZ fur seal, which are known to breed on Gannet Island, 11 nautical miles to the west of Aotea Harbour. According to Clement (2013)<sup>1</sup> none of these marine mammals have been recorded as having been entangled in aquaculture structures in New Zealand and seals are regarded by Clement (2013) as being the marine mammal group least likely to be excluded from habitats by mussel farming.

It should also be noted that the location of this proposed mussel spat catching facility is isolated from the mouth of Aotea Harbour by two existing mussel spat catching operations that have been consented by Waikato Regional Council and have been operating for several years. There have been no recorded incidents of adverse marine mammal interactions with either of the two existing mussel spat catching operations to date (R Dockery, pers comm). If mussel spat catching operations did actually impede access of marine mammals to the harbour channel, then the presence and operation of the two existing consented operations would provide an impediment and potentially prevent marine mammals from ever encountering the proposed spat catching facility.

Coasts and Catchment Ltd have requested a summary of the training, expertise and experience of the author of the supplementary ecology report, particularly with regard to marine mammals and their susceptibility to aquaculture structures. As indicated, the principal statements made with regard to marine mammals have been taken from, and attributed to, published authors who are recognised as being sufficiently experienced in their field. As such, the specialist areas of expertise of the author of the report that collates published research are largely irrelevant, however, a brief curriculum vitae is appended, as requested.

#### PACIFIC COASTAL ECOLOGY



S E White, M.Sc Hons  
**SENIOR ECOLOGIST**

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<sup>1</sup> Clement D (2013) Literature review of ecological effects of Aquaculture: Effects on marine mammals. *Report for Ministry for Primary Industries, August 2013, 19pp.*



#### **CURRENT POSITION**

Consulting Coastal Ecologist

#### **PROFESSIONAL ASSOCIATIONS**

Member of the  
New Zealand Coastal Society

#### **EXPERTISE**

Benthic biological assessment  
Marine invertebrate monitoring  
Water quality assessment  
Sediment quality assessment  
Ecological assessment  
Data analysis and statistics  
Environmental Impact Assessment  
Project management  
Report writing and presentation  
Expert witness statements

#### **Qualifications**

Master of Science (Zoology) with Honours, University of Auckland, 1989.  
Bachelor of Science (Biology), University of Auckland, 1986.  
Qualified as an Independent Commissioner on Resource Management matters, 2015.

#### **Summary of Competencies**

I have over 26 years experience in coastal and estuarine ecology, benthic community monitoring and assessment, water quality, sediment quality and environmental assessment with experience in designing and implementing monitoring programmes, analysing data including statistics, writing technical reports and providing expert witness testimony to Environment Court level. I have recently completed the "Making Good Decisions", which qualifies me to be appointed as an independent commissioner, able to make delegated decisions for consent authorities on Resource Management matters such as resource consents and plan changes.

#### **Employment History**

##### **2013 – Present, Pacific Coastal Ecology**

Self employed sole trader undertaking a wide range of projects for clients including specialist ecological advice and impact assessments on benthic biological communities, shipwrecks, aquaculture, oil spills, marinas, coastal developments, dredging, water quality and expert witness testimony to Environment Court level.

##### **1997 – 2013, Bioresearches**

Senior Coastal Ecologist undertaking a wide range of projects for clients including strategic advice, monitoring and assessment of marinas, roading, coastal development wastewater discharges, dredging, sediment quality assessment, effects on benthic invertebrate communities, reclamation, declamation, shipwrecks, mangrove management, aquaculture and expert witness testimony.

##### **1993 – 1997, Waikato Regional Council**

Coastal Ecologist providing specialist technical input to Council policy, resource consent processing, environmental monitoring, benthic biological assessments, state of the environment reporting and expert witness testimony.

##### **1989 – 1993, Taranaki Regional Council**

Coastal Ecologist providing specialist technical input to Council policy, resource consent processing, environmental monitoring, assessing biological responses to discharges and developments, resource consent monitoring, oil spill response and state of the environment reporting.

##### **1989, Lower Hutt City Council**

Contract Ecologist undertaking assessment of the effects of the discharge of treated sewage on benthic biota in subtidal habitats in the vicinity of the Pencarrow Wastewater Outfall, Wellington.

## Project List

### **Wreck of MV Rena**

Documenting the effects of the grounding of MV Rena on Astrolabe Reef, Tauranga, advising on the actual and potential effects of salvage operations and of contaminants, wreckage and debris on the fisheries values and benthic invertebrate communities of Astrolabe Reef.

### **Marsden Cove Marina and Waterways**

Conducting baseline ecological investigations including sediment quality and biological assessments of the site prior to construction of the Marsden Cove development, Northland. Monitoring the effects of construction of the Marsden Cove development on water and sediment quality and on the intertidal and subtidal biological communities of Marsden Bay. On-going monitoring of the benthic biological communities of Marsden Bay and the effects of the operation of the Marsden Cove development on them. Documenting the development of biological communities within the Marsden Cove development. Advising Marsden Cove Marina on biosecurity issues and monitoring, particularly with regard to Mediterranean Fan Worm issues.

### **Stephenson Island Mussel Farm**

Investigative assessments of the biological communities in the vicinity of Stephenson Island, Northland and the effects of establishing a mussel farm development on the benthic biota and fisheries values of the area including presentation of technical evidence to the Environment Court.

### **Westpark Marina**

Conducting sediment quality and biological assessments within Westpark Marina, Auckland in order to assess the suitability of the marine sediments within the marina for disposal at sea following dredging and the biosecurity and environmental risks associated with that activity, particularly with regard to international marine pollution regulations.

### **Westhaven Marina**

Monitoring sediment and water quality conditions within Westhaven Marina, Auckland and assessing the effects of the marina on, and the risks to, the wider Waitemata Harbour.

### **Ravensdown Fertiliser**

Monitoring the effects of the discharges from Ravensdown Fertiliser works in Dunedin on the water quality, sediment quality and subtidal benthic biological communities of the Otago Harbour.

### **Chelsea Sugar Works**

Assessing the effects on water quality, sediment quality and intertidal and subtidal benthic biological communities of the Waitemata Harbour in the vicinity of the discharges from the Chelsea Sugar Works, Auckland.

### **Manukau Wastewater Treatment Plant**

Monitoring the effects of wastewater discharges from the Manukau Wastewater Treatment Plant on the biological communities of the Manukau Harbour, Auckland. Documenting and monitoring the development of benthic biological communities as a result of the conversion of wastewater treatment pond areas back into intertidal seabed.