

Natural Character, Landscape/Seascape, & Visual Effects Assessment

Mussel Spat Nursery

Raglan, Waikato

Prepared For:
**North Western
Mussels Ltd**
December 2023

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Document Control

Report Title:	Landscape, Seascape, Natural Character and Visual Effects Assessment				
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Revision:	1	2	3		
Date:	22.11.23	20.12.23	22.12.23		
Status:	DRAFT	DRAFT	FINAL		

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Introduction

North Western Mussels Ltd has applied for Resource Consent to undertake Greenshell mussel (*Perna canaliculus*) spat harvesting and nursery activities within four areas off the west coast of Waikato, near Raglan. The proposal involves the installation of submerged ropes that are fixed to floating buoys, anchored to the seabed.

This report has been prepared to provide an assessment of the potential landscape (including seascape) and visual effects of the proposal. It also considers the impact on natural character and benthic seascape values.

It is noted that the resource consent application was originally supported by a landscape, natural character and visual effects assessment that was undertaken by WSP, dated July 2018. For various reasons, the design of the proposal has taken longer than anticipated, and changes have been made since the WSP report was prepared. Therefore, it was identified by Waikato Regional Council that an updated assessment was required. Wayfinder were engaged to undertake this assessment, and as such this report provides a replacement to the WSP report.

This assessment concludes that the natural character and landscape/seascape effects of the proposal will be **low**, the visual effects during daylight hours will be **very-low**, and the visual effects at night time will be **low**. For the purposes of undertaking a planning assessment, this can be translated to a **less than minor** level of effects.

Methodology

A site and locality visit was undertaken on 2nd November 2023. This included visiting the following locations:

- ▶ Each of the four spat nursery and harvesting areas, by boat;
- ▶ Measure distances away from the centre of each of the four spat nursery and harvesting areas (500m, 1,000m and 2,000m), by boat;
- ▶ The length of the coastline from approximately 500 north of Site A to approximately 500m south of Site D, at a distance of approximately 500m from the coast, by boat;
- ▶ The full length of Whaanga Road from Manu Bay to Ruapuke Road, by car, stopping at various viewpoints;



- ▶ The full length of Swann Access Road, by car, and along approximately 500m of Ruapuke Beach by foot; and
- ▶ Pukerewa Road from Matira Road to Waikaretu Valley Road, by car, stopping at the highest points where there were vantage points to the sea.

A graphics package is attached to this report. Sheet 2 provides a map showing the proposed Site Areas, together with the viewpoint locations. A series of photographic images then follow, providing representative views from each of the viewpoints.

Sheets 8 to 11 provide two visualisations of the proposal taken from 500m and 1,000m away from Site D. To prepare these visualisations, firstly a floating buoy was placed on the water in the centre of the proposal area. The area was then photographed from each viewpoint, the location captured using a late-model iPhone that records geographical co-ordinates. A flat CAD model of the proposal was then prepared with a vertical line extending each of the distances from the centre of the farm, and then using the CAD software the model was aligned to the viewpoint location, allowing for the height of the viewer (in the boat above the water). The CAD model was then overlaid across the photograph, aligning the central point with the floating buoy captured in the photograph. Using Adobe Photoshop, this buoy was then cloned across the photograph to match the layout of the farm in the CAD model. The CAD model was then switched off, leaving just the image with the cloned buoys. Finally, the photograph was worked slightly to provide variation in the visibility of each of the buoys, based on the surrounding wave patterns.

The visualisations are intended as a guideline only to understand the scale and potential visibility of the proposal from the viewpoint locations. Due to the highly dynamic nature of the ocean versus the static nature of a single photograph, the visualisations should not be relied upon as the sole assessment tool.

In this regard, the assessment to inform this report was largely undertaken using knowledge gained during the site visit, in addition to online tools such as Google Maps, Google Street View and the Council online GIS portal. In addition, the author of this report has been involved in the assessment of similar proposals in Northland, Coromandel, Nelson and Marlborough.

Further relevant and useful information is contained in the original WSP assessment, and this has been considered through the development of this report. In particular the landscape context is essentially factual and provides additional context to this report. In addition, the WSP report contains several photographs from similar viewpoints as used in this assessment, alongside some imagery from the Mt Karioi Summit Track which was not visited in the preparation of this report. The WSP Report and its Graphical Supplement is included within the AEE, and parts of this report outline where and how the WSP imagery informed the assessment. It is important to note that the proposal has changed since the preparation of the WSP Graphical Supplement, and it is used only as a reference.



Scale of Effects

The New Zealand Institute of Landscape Architects has published technical guidelines for landscape assessment¹ which has informed the preparation of this document. This includes the use of a 7-point assessment rating scale which has been adopted for this report, as follows:

This Assessment	Very-Low	Low	Low-Mod	Moderate	Mod-High	High	Very-High
RMA	Less than Minor		Minor		More than Minor		
						Significant	

The scale deliberately avoids the use of more traditional RMA terminology, such as minor or less than minor, and (as the NZILA guidelines set out) caution is needed in directly translating the 7-point scale of each identified effects into an RMA terminology. Rather, the degree of individual effects are to be assessed first, and then – following that – an overall professional judgement can be made on the overall significance of effects in the context of relevant RMA or policy tests. Nevertheless, a broad scale translation of effects is provided for reference.

The scale is applied to all aspects of this report. Firstly, effects are considered in regard to the combined landscape and seascape – these being the biophysical, perceptual and associational values (and effects on those values) related to the coastal landforms, the overall seascape (including the seabed), and the interaction between the two. In this context, a very-high level of effect would apply where the proposed development represents an overwhelming or significant change to how the landscape and seascape are perceived or experienced, such as impacts on its degree of modification, remoteness and/or memorability. Very-high effects would also result in notable and potentially permanent modifications to the seabed. By contrast, a very-low level of effect would apply to a proposal that is potentially more transient or temporary, that is potentially difficult (or impossible) to detect within the wider seascape, and is fully reversible.

Applying the scale to natural character firstly requires an assessment of the existing natural character – particularly that experienced at the coast – before considering how the proposal might impact the biotic, abiotic or experiential natural character values. In this context, a very-high level of effect on natural character would apply where the proposal results in significant changes to the biotic systems along the coast (such as wave patterns, bird patterns or sea spray), abiotic values (such as the movement of rocks or driftwood), or has a fundamental impact on the way people experience and interact with the coast. By contrast, a very-low level of effect would result from a proposal that aligns with the general characteristics of the coast, such as its wild or remote nature, with minimal impacts on coastal systems.

¹ Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022.



Visual effects are landscape effects that are experienced visually. As a result, these are considered last in this report, and focus on how any landscape, seascape or natural character effects are seen either from the water or from the landscape. In this context, a very-high rating represents a situation where a proposal would become the key, dominating element in the primary view from a particular viewpoint, likely in the foreground, making the appreciation of other aspects of the view difficult to achieve. A very-low rating represents a situation where a proposal might be partially visible from a particular viewpoint, but it would be subservient to other aspects of the view and likely partially (or largely) obscured by foreground elements.

It's important to recognise that visual effects need to be considered in terms of the whole view – during an assessment process it is easy to focus solely on the proposed site only, and not consider views in other directions which may be more interesting or captivating. It is also important to recognise that “seeing” a proposal does not necessarily equate to an effect. The role of a visual effects assessment is to identify the degree to which a proposal may change a person's appreciation of or connection to a certain view.

Factors to Consider

The key factors or values that are considered relevant to this proposal, based on the nature of the proposal and the character and context of its locality, are outlined as follows:

- ▶ The extent of openness of the landscape/seascape, including the vastness of the viewer experience;
- ▶ The transient nature of the landscape/seascape, particularly in regard to the turbidity of the water, the size and shape of the surface wave patterns, the colour of the sea, and the changing atmospheric conditions;
- ▶ The level of modification to the surrounding landforms and the predominant land use activities being undertaken on them;
- ▶ The remoteness of the location, including the experience of this remoteness on both the water and the land;
- ▶ The uniqueness of the landform in the context of the coastal environment;
- ▶ The memorability of the area, including at the micro-scale (around each of the sites) and at a more macro level;
- ▶ The sense of identity of the area, what is known for and how it shapes the culture or personality of the place;
- ▶ The coherence of the landforms and coast as a whole unit across all four proposal areas;
- ▶ The ecological value and characteristics of the landscape/seascape, including the presence of any flora and fauna, and how this might be impacted by the proposal;
- ▶ The nature of the predominant viewpoint locations, these being land based and often from elevated locations;
- ▶ The nature and frequency of any water activities in the vicinity of the proposal areas, including boating (and the type of boating – fishing, recreational, commercial, etc), surfing, swimming, kai moana gathering; and



- ▶ The nature of the proposal, including its scale, layout and combined character in comparison to the surrounding landscape/seascape.

Other factors such as geomorphic values, vegetation patterns, roading/circulation/wayfinding, cadastral/settlement patterning, archaeological values, and historical associations are considered to be less relevant to this specific proposal. Although they are assessed in a general character sense, they are given less weighting in the application of the scale.

Proposal

Full details of the proposal are contained within the AEE and associated plans, with a broad overview of the original proposal contained on Sheet 2 of the attached WSP Graphic Supplement 9 and the revised proposal plans (on which this assessment is based) contained at the rear of the Section 32 Evaluation Report prepared by Mitchell Daysh, being pages 171 to 180 of the collated AEE.

In short, the proposal includes the installation of four mussel spat nursery and harvesting activity areas, as follows:

- ▶ Area A: 2,000m x 1,500m approximately 4km from the coast, containing 3 sets of lines
- ▶ Area B: 2,000m x 1,500m approximately 3km from the coast, containing 3 sets of lines
- ▶ Area C: 2,000m x 1,500m approximately 3km from the coast, containing 3 sets of lines
- ▶ Area D: 2,500m x 1,200m approximately 3.5km from the coast, containing 2 sets of lines (one set only 1,500m in length)

The sets of lines consist of a lineal series of buoys that are anchored at each end to the sea bed. The length of each line is approximately 300m for sites A-C, and 200m for Site D, however only approximately 200m is visible above the surface for Sites A-C and 150m for Site D (the remaining line angles down to each anchor). Each of the lines are located approximately 5m apart. The “catching rope” is suspended from the buoys on each line, approximately 2m below the surface.

Although under the water surface the lines are arranged somewhat differently to a typical mussel farm, above the surface of the water they have a very similar appearance.

The buoys are proposed to be coloured black, with the exception of the two end buoys on each line which are required to be orange to comply with Maritime New Zealand guidelines for aquaculture and marine farms. Perimeter lights will also be placed at intervals of 650 to 950m around the perimeter of each proposal area. These lights are required by Maritime New Zealand and will be yellow, flashing 5 times every 20 seconds. These lights are required to be visible from at least 2 nautical miles (approximately 3.7km).

The farms will be largely left untended and there will be no storage facilities associated with the farms. Farms will be visited 3-4 times per month, depending on weather conditions, for ongoing maintenance requirements and harvesting. This is likely to involve barges operating from Raglan Harbour.



Landscape Context

As identified, the four proposal sites are located off the west coast of Waikato. Sites A, B & C are located to the north of the Raglan Harbour, between Ngātutura Point and Te Hara Point. The centre of Site A is located approximately 5km offshore, and the centres of Sites B & C are located 3.5km approximately offshore. Site D is located to the south of Raglan Harbour, the centre approximately 5km west of Papanui Point.

The landscape to the north of Raglan can be described as predominantly highly modified, rolling rural landscape consisting of large tracts of pastoral farmland. It is very sparsely populated, particularly along the coastal route of Te Akau Coast Road which is highly exposed to western coastal wind (observed by the stunted growth of trees along seaward faces). Within the hinterland, larger areas of remnant and regenerating native bush are evident, but the broad land use is sheep and cattle grazing. Although only an hour from Raglan or Port Waikato, access is along winding, gravel roads and there is an overwhelming sense of remoteness.

In this area there is no public access to the coast, and only limited private access due to the steep bluffs. It is apparent there is a very small cluster of buildings on Gibson Beach, these appearing to include remote bach or cabin style accommodation with limited (if any) services. Pukerewa Marae is located on the most elevated portion of Pukerewa Road, on the inland side of the road just below the coastal ridgeline, and two farmhouses are located slightly further to the north.

Although modified, the landforms form a bold, somewhat foreboding backdrop to the seascape in the areas between Sites A, B & C. This was further emphasised in the morning of the site visit, where the sun was low in the sky and the weather pattern resulted in dense cloud formations building over the land, and it is understood from the mussel farm operators that this is a common experience. Together the landforms provide a strong, coherent coastline that extends from Port Waikato in the north to Raglan Harbour.

The pastoral land use activity is visually prominent on these landforms, including from the sites some 3.5km offshore. However, at this distance a lot of the finer detail of the landscape is lost, only visible from a closer proximity (approximately 1.5km on the day of the site visit) where the geomorphic processes (particularly related to erosion damage or the ingress of sand dunes) is more evident.

To the south, Mt Karioi is the most prominent landform, a largely conical ancient volcano form that rises to 756m. Most of this landform is covered with remnant or regenerated coastal native bush which is managed by the Department of Conservation. A steep walking track suitable for experienced trampers provides a 6-7 hour return trip to the summit.

Whaanga Road is a winding gravel track around the perimeter of Mt Karioi, connecting Manu Bay with Ruapuke Beach. A notable outlook from this road is immediately south of Te Toto Gorge, where there is a small outlook platform extending over a dramatic escarpment feature, providing extensive seaward views. Further outlooks are also achievable further to the south near a solitary farmhouse located at 1109 Whaanga Road (near Papanui Point). In this area, the native vegetation thins out, and the flatter areas of the landscape have been modified to support pastoral land uses.

Further to the south the landform drops to the sea, forming Ruapuke Beach. Being relatively more accessible from Raglan, residential activity in this area is more notable, with clusters of both permanent and temporary accommodation dwellings located in elevated locations above the beach. Public access is also provided to the beach in several locations.



The whole coast presents a familiar west coast experience characterised by big surf and billowing sea spray (both evident in the attached photographs). Raglan itself is a globally recognised surfing location, with three known left-hand surf breaks. Manu Bay, the most publicly accessible of the three, also contains a public boat ramp (with other boat launching facilities contained within Raglan Harbour). The weather is a defining element of the experience of being in the Raglan area, providing a variety of expansive, big-sky experiences to wild, wind-blown dark skies.

Boating activity tends to be focussed on fishing rather than general recreational, with a high proportion of motor boats and few (if any) sailing boats. It is understood that most recreational fishing boats leave Manu Bay (or Raglan Harbour) and head directly west to deeper water, and there is very limited boat activity close to shore. Commercial fishing in the wider vicinity is operated from both Raglan Harbour and Port Waikato to the north, but tend to involve boats heading to deep water, due west. There is no other marine farming in the immediate area, although numerous temporary research sites have been consented and operate along the length of the coast between the four site areas, and there is a spat catching farm further south in Aotea Harbour.

Further inland, south of the main road between Hamilton and Raglan, is the Te Uku wind farm which sits high on hinterland landforms. This wind farm is widely visible from the Waikato area, including ocean locations (although it is not visible from any of the site areas).

At night, most of the coastal area is dark, with only limited lighting coming from the very small number of isolated dwellings. This differs around the settlement of Raglan, and across the coastline south of the harbour to Manu bay, where settlement is much more established.

Existing Natural Character Assessment

Natural Character is not defined in New Zealand legislation, but a broad outline of what it entails is provided in Section 09 of *Te Tangi a te Manu*. It is generally considered to be interpreted as the naturalness or degree of modification of a site or area, combined with the area's distinct combination of natural characteristics and qualities. An assessment of natural character tends to focus on the biotic, abiotic and experiential values of a particular area, this being of the coastline rather than just the sea or just the land.

A detailed definitive description of the existing natural character of the coast adjacent to the four site areas is provided in a document prepared by *Boffa Miskell Ltd* titled "*Natural character study of the Waikato coastal environment*" (dated 2016). This document has been adopted by the Waikato Regional Council to inform regional policy.

Site Areas A, B & C are located to the west of "Opura", this being coastal terrestrial area 16 (Page 218 of the *Boffa Miskell Report*), stretching from the Waikato River Mouth to Raglan Harbour. It notes the grazed nature of the landscape, steep coastal escarpments, and the virtually impossible public access. The key coastal characteristics are noted as "*relatively straight, narrow stretch of coastline, black sand on beaches, steep coastal cliffs along the majority of the coastline, back dunes, flatter land associated with the mouths of watercourses where sand accumulation has occurred, grazing*".



The abiotic features relate to the high iron content in the sand and landforms and the significance of the geology (particularly the coastal cliffs). They also include sand sheets and dune incursions, and other parts of the report note the “*narrow and high energy*” beaches and the evidence of rock strata. Biotic values relate mostly to the various water courses and pockets of indigenous vegetation, including some wetland areas. Experiential values are limited to those who are able to access the coast, which is noted as very limited, so therefore there is a sense of remoteness. However, this is balanced with the extensive modification of the landscape and the extensive presence of farming activity.

Overall, the terrestrial natural character of this area is given a **moderate** rating. Some locations within the mapped area, where there are dune incursions, regenerating coastal vegetation, exposed stratification layers, and/or exposed iron sand sheets are given a **high** rating.

The Coastal Marine Area (“CMA”) adjacent to Opura is identified as “Waikato North”, Area D (Page 188 of the report). The CMA extends 12 nautical miles (22.2km) from the coast, and so includes the site areas. The key characteristics of the CMA are the high energy environment, the littoral cells (areas of sediment movement), and the shoreline fluctuations which result from the combination of these two values. In addition, the report notes the coastal cliff environment as being a key value in defining the natural character of the CMA.

The report notes that there is limited information on the biotic value of the coastal environment. While some studies have been undertaken around the Waikato River delta, the report assumes that because modification of the marine environment is minimal, marine fish and benthic organism diversity is anticipated to be unmodified. Maui dolphins are known to use the coastal waters, as will seals, dolphins and sharks, and the sea will provide a transit route for migrating birds.

Experiential values are limited to the few that are able to visit this area of the coast, and so remoteness values are considered to be high. The report also notes that lack of structures and buildings on the land contributes to the isolation values.

The overall natural character of the CMA area of North Waikato is identified as **high**, with the coastal waters (being the immediate shoreline) rated **very-high** due to the dynamic nature of the shore break and the remoteness.

Site Area D is located to the west of “Karioi”, this being coastal terrestrial area 18 (page 234 of the report). In this area, the abiotic values include the volcanic form of Mt Karioi, and the ancient sands and siltstones around this feature. The Te Toto Gorge is also noted as a geopreservation site, and the lava flows around Papanui Point and Whale Bay also contribute to the overall abiotic value. The biotic values are noted to be heavily influenced by widespread indigenous forest cover (42% of the mapped area), particularly near to Mt Karioi. Experiential values include the highly expressive natural processes and patterns of the landforms, and the inclusion of recreational walking tracks, but are also influenced by the presence of residential activity and public access around Ruapuke Beach.

Overall, the Karioi coastal terrestrial area is assigned a **moderate** rating, with Mt Karioi itself rated **very-high** due to the expressive volcanic formations. Ruapuke Beach is given a **high** rating due to the natural sequencing from the beach and extended dunes to inland wetlands.



The CMA area to the west of Karioi is Whaingaroa, Aotea and Kawhia Harbours, Area E (page 194 of the report). It has similar values to the North Waikato CMA, but with an increased presence of large physical control features, including Mt Karioi which protrudes from the generally linear coastline south of Raglan. The mobile sand spit and dunes are also noted as an important abiotic value. Aquaculture activity is noted in the report, and the nationally significant surf breaks around Raglan are noted as contributing to experiential value.

Overall, the Karioi CMA is given a **moderate-high** rating, with the open coastline given a **very-high** rating. This coastline is mapped as extending approximately 3km offshore, with the exception of an area around Karioi which extends approximately 6km offshore.

Summary of Landscape Characteristics and Values

The key aspects that contribute to the landscape, seascape and natural character around each of the Site Areas include:

- ▶ The generally remote nature, with limited built form on the landscape and limited public access, but noting that all of the areas contain highly modified landscapes used for grazing;
- ▶ The wild, high-energy coastline with large surf breaks and sea spray;
- ▶ The expressive, bold cliff faces that form a sequence along the coast, and the volcanic form of Mt Karioi;
- ▶ The black sand beaches with dune structures that extend inland;
- ▶ The littoral cells, and particularly how these are moved around within the high-energy environment; and
- ▶ The darkness at night due to the lack of onshore buildings and limited boat movements.

In terms of biophysical and biotic values, these are generally related to watercourse on the landscape and within the CMA (including the sea floor or benthic environment). There are some indigenous vegetation clusters, and there is likely the movement of sea birds.

In terms of perceptual and experiential values, these predominantly relate to the general remoteness of the locations, combined with the high-energy coast (this including the surf breaks, sea spray and movement of sediment). The bold, lineal coastal landforms, expressive of their geology, also enrich the isolation of the coastal area, however this is somewhat diminished by the notable modification of the landscape (especially north of Raglan) for pastoral farming. Mt Karioi is a standout feature because of its volcanic cone form.

There is little documented associational value. The surf breaks, which are largely centred around Raglan, are nationally significant and internationally recognised. The naming of the various landscape features also indicates historical mana whenua connections, reinforced by the location of the marae in the elevated landforms east of Site Area A.

Policy Context

The AEE provides a full breakdown of relevant policy, and it is not intended to repeat this here. Below provides an overview of the key policy relating to this assessment of natural character, landscape/seascape and visual effects.



The New Zealand Coastal Policy Statement (2010), in particular Policies 1, 6, 13 and 15.

The Waikato Regional Plan, including the *Boffa Miskell Report* identified in the last section. The Regional Plan sets out how the Regional Council meets the requirements of the NZCPS. In particular are the maps that have been adopted into the Regional Plan that identify areas of High, Very High and Outstanding Natural Character. Although the proposal is located in the CMA, it is not located in any of the mapped areas.

The proposed Waikato Regional Coastal Plan (“WRCP”) was notified (18th August 2023) and includes seascape maps which identify Site D as being within the “Waikato Karioi” Outstanding Natural Landscape² (“ONL”). Schedule 3 (Pages 201-202) of the proposed WRCP outlines the values associated with the ONL, based on a study undertaken by Boffa Miskell. These values are further discussed later in this report.

Visibility Assessment

Before considering potential effects, it is considered important to provide an overview of the likely visibility of the Site Areas from various locations. This is particularly relevant given the identified remoteness values, but also because of the nature of the proposal that is to be located within the ocean.

To assist with the visibility assessment, viewpoints on land were visited at the same time as the operations boat journeyed to Site Area D. A typical buoy was then launched from the boat in the centre of Site Area D, and views of this buoy were captured from distances of 500m, 1,000m and 2,000m away.

The visibility conditions on the day of the assessment were fair. The boat (a Senator RH680 of approximately 7m in length) set off at 6am just after dawn when the atmospheric conditions were generally clear. High cloud was present, and during the assessment the odd rain shower passed by. Because of the morning start, the photographs taken from sea faced into the sun, and are therefore darker in appearance than what was visible with the naked eye during the assessment.

From the viewpoints on Whaanga Road it was possible to see Karewa (Gannet Island) which is located approximately 20km to the southwest of Papanui Point and visible in the photographs on Sheet 6. However, it was not possible to see the boat or the buoy with the naked eye, both of which are located in the centre of Site Area D in these images.

From the water, it was possible to see the buoy from 500m away, and intermittently from 1,000m away, however it was not visible with the naked eye from 2,000m away (the buoy was deployed when the image on Sheet 11 was taken).

From the water to the north of Raglan, it was not possible to make out any buildings on land when the boat travelled 3km offshore, however on the return journey it was possible to see some of the built form and make out some of the landform expressions when travelling approximately 500m from the shore.

² <https://waikatomaps.waikatoregion.govt.nz/Viewer/?map=92b6ab92f36a439ab61698ded3200bf5>



Understandably, in perfect conditions, visibility would be clearer and detailed items would be more visible from greater distances. However, the extent of sea spray directly next to the coast was very evident and can be seen in nearly all the images.

The motion of the waves also directly impacts the visibility of floating buoys – these are approximately 500mm high, and so a swell of anything greater than this means that they will often fall out of view in the troughs of the waves. This is more pronounced with just a single buoy – a row of buoys or a full farm would have variable visibility across the swell, some of it in troughs at the same time some of it is on crests.

On the day of the assessment, colour was muted across all aspects of the seascape and landscape, with no discernible difference between bright objects or dark features. An exception was a bright structure seen on the landscape from a distance of approximately 1km, caused by the specific angle of the sun reflecting off the roof.

Climate data for Raglan suggests that it has clear or mostly clear skies approximately 40% of the year, with brighter periods in March³. The daily chance of precipitation sits between 20% and 40% year round. The majority of the wind direction is from the west or south, and it is these winds that increase sea spray.

Based on these observations, it is considered that visibility of detailed features tends to be very good within 1-1.5km but drops away sharply after that. Beyond 2km, it is generally difficult to see individual features within the landscape or seascape. This changes with larger objects, including rows of buoys, that are likely to be seen as holistic entities from distances greater than 2km, rather than as individual buoys. From elevated positions, views will be less affected by sea-swell, but will be equally affected by atmospheric conditions, meaning that beyond approximately 2km individual details are unlikely to be visible.

Noticeably, the black buoys that make up the majority of the farms, are more likely to be visually recessive. These will more readily fade into the darkness of the swell than the orange buoy that are designed to be visible. As such, the extents of the farm are more likely to have a visible form than the farm as a whole.

Night-time visibility and effects are considered later in this report.

Natural Character Effects

Abiotic

As identified, the abiotic values that contribute to natural character of the surrounding landscape/seascape relate to the landforms, beaches and sediment movement within the water. There are also abiotic values associated with the seabed.

The only interaction between the proposal and the abiotic values will be the anchoring mechanisms at the end of the buoys, at a depth of approximately 20m below sea level. The anchors are removable, and will have a negligible impact on the structure of the seabed. The nature of the proposal means that there is also very minimal chance of any non-organic material falling to the benthic layer.

³ <https://weatherspark.com/y/144881/Average-Weather-in-Raglan-New-Zealand-Year-Round>



The floating buoys may create some very localised changes to wave patterns, but are magnitudes smaller than the scale of the surrounding ocean. As such it is considered that they will have no discernible impact on the high energy surf breaks.

It is therefore considered that the potential effects of the proposal on abiotic natural character values will be **very-low**.

Biotic

By their very nature, the proposed spat lines are designed to capture wild mussel spats – which will ultimately be harvested from this location and transported to mussel growing farms. As a result, the removal of this spat, and any consequential changes in the food chain, are a biotic effect. However, the scale is insignificant within the extent of coastline, and there have been no recorded or known effects from other similar ventures elsewhere⁴. There are also no recorded or known instances of other sea creatures, such as Maui dolphins, engaging with the lines. It is also understood that mussel farms can potentially have positive effects on biotic systems⁵.

With other marine farms (including mussel farms) there is occasionally an interaction of seabirds with the buoys and lines. However, the nature of the spat operation is that the farm does not produce any desirable or accessible food, and so does not attract birds in the same way. At most, birds may use the buoys as perching points within the ocean.

It is therefore considered that the potential effects of the proposal on biotic natural character values will be **very-low**.

Experiential

The main experiential values in regard to natural character relate to the wild, high-energy coastline that is framed by the bold, legible landforms and narrow beaches. None of these values will be affected by the proposed farms, as they are all located several kilometres from shore.

The farms will introduce a degree of built form into the seascape, potentially diminishing the feeling of remoteness. However, as identified in the previous section, for the most part (and particularly from sea level) the farms are unlikely to be visible from distant locations, and so it is only when a viewer is on the water, within 2-3km, that they will easily experience the presence of the farms.

From land-based viewing locations, the feeling of remoteness is within the context of a highly modified landscape – one used for pastoral farming. Therefore, the value of isolation is not necessarily derived from the lack of modification, but rather the absence of lots of people or visible activity.

⁴ Based on information provided by Aquaculture Direct.

⁵ https://www.marinefarming.co.nz/site_files/24792/upload_files/EcosystemsServices_NIWA_Summary.pdf?dl=1



The same is the case for the proposal. Although they will be tendered, as has been outlined, this will be relatively infrequent. It involves a marine farming vessel visiting the farms a few times a month – therefore the majority of the time the farms will simply be an element of built form on the water, with little associated human activity. In essence, the proposed farms are not dissimilar in activity as the pastoral farming on the landscape.

In addition, the remoteness value is derived from not many people being there to experience it. This remains the case – there are very few boats that traverse the water in this location. From land, the view out to sea is vast, so even if a boat is visible near to a farm, the wider expanse of ocean is also likely to be vacant.

Therefore, it is concluded that the experiential natural character values will be *low*. They will introduce an element of modification that will be experienced by people in close proximity, but for the majority of the time the farms will be untended with little human activity associated with them. It is considered that they will also have no effect on the high energy shoreline.

Overall Natural Character Effects Assessment

Considering the abiotic, biotic and experiential values combined, it is considered that the overall effect of the proposal will be *low*. It will introduce a degree of modification to the seascape, but the extent of human activity associated with the proposal is minimal. It will have very-low effects on the benthic environment, and no effects on the high energy coastline.

Site Area D is located near (but not within) the identified area of high natural character (Karioi), and it's fair to say there is no magic defining line in the sea that indicates one identified area from the next. However, as the *Boffa Miskell Report* identifies, the natural character values associated with the Karioi CMA area is identified as high because of the coastal edge, including the interaction with Mt Karioi. The proposed Site Area is several kilometres from these locations, and as identified will have limited effects on the values that contribute to the high rating. As such, it is considered that Site Area D is sufficiently removed from the Karioi CMA area so as to not affect its overall natural character value rating.

Landscape/Seascape Effects

Similarly to biotic and abiotic natural character effects, it is considered that the proposal will have limited effects on the biophysical attributes of the wider landscape/seascape. As outlined, the anchors will interact with the seabed, but in the context of the wider area these anchors will have a minimal overall impact on the benthic makeup and processes. The proposal will have no physical impacts on any of the landforms or landscape, and no impacts on the high energy coastline. It is anticipated there will be some very minor interaction between seabirds and the buoys.

As identified, there are limited associational values within the wider landscape/seascape around the proposed Site Areas. Although there is certainly a general mana whenua overlay, there are no specifically identified waahi tapu or rāhui areas within the vicinity of the Site Areas. Any associational values are more likely to be land-based or connected to the coastal edge.



Therefore, the main area of landscape that has potential to be affected is its perceptual values. These are essentially similar to the experiential values explored in regard to natural character effects. The proposal will have no effect on the wild nature of the coastline as it is expressed through the high energy surf breaks, presence of seaspray, legibility of geology, and the interplay of beaches, wetlands and vegetation. It is simply of much too small a scale, and is located too far from the coastline, to have any impact on the scale and intensity of the water meeting the coastline.

In this regard, it is considered that the only potential landscape effect is the presence of the proposal within an area that is largely devoid of this type of activity, and the impact this has on the perception of remoteness and isolation.

It will introduce modified, “built” form into the seascape environment. This manifests through the presence of the straight rows of buoys, set out in grid formats, spread across four Site Areas. Such a layout is not random or natural, it is a clear taming and management of a system to achieve a productive, useful outcome for people. However, it is not rigid and it will move around to some degree with the wave patterns. As identified earlier, from visible locations at sea level, it’s unlikely that from distances greater than approximately 1-1.5km that the whole farm within a Site Area will ever be visible – it will bend and twist with the swell.

But, as identified above, the presence of buoy in the water does not necessarily diminish remoteness values – rather it is the presence of other people that have the greater impact. This is particularly apparent when driving through the remote farmland north of Raglan, a highly modified productive landscape, with very few people in it. The journey through this landscape felt long, somewhat challenging and isolating – reinforced by the wave from the drivers of the very few cars passed. It reinforced that even a modified landscape can retain remoteness characteristics, it is the direct presence of human activity (or lack of) that is the key contributing factor.

In this regard, the proposed farms retain a sense of remoteness. They do not contain platforms or buildings, and they are tendered infrequently. For the most part they are set and left to their own devices – much as the stock are within the landscape.

Equally, by its very nature, there are few people around to experience this remoteness. As identified, most recreational and commercial boats head due west from Manu Bay or Raglan Harbour, avoiding the Site Areas. And, as will be further identified in the following section, there are very few land-based viewing locations where the proposals will be openly visible.

As such, it is considered that the effects of the proposal on landscape/seascape values will be **low**. There are very limited biophysical and associational effects (if any), and perceptual effects pertain only to the remoteness values. Certainly the spat farms introduce new activity to this location, and have non-natural characteristics, but such forms can only be experienced from people in relatively close proximity to the Site Areas, of which there are very few.

Waikato Kairoi ONL

As identified, Site D will be located within the proposed WRCP Waikato Kairoi ONL. Schedule 3 of the proposed WRCP outlines the ONL values as follows:



Physical Values	Perceptual Values	Associative Values	Te Ao Māori Values
The open coastline comprises the volcanic shoreline of Mt Karioi with long black sandy beaches and exposed volcanic sections. The rocky shoreline creates exposed rock shelves and blowholes with dynamic and high energy wave action along the shoreline. Rocky reefs, islets and outcrops are generally located adjacent to volcanic geology, particularly around Mt Karioi and south of Kāwhia Harbour. Limited biotic information relating to the open coastline. Except for fishing, modification of the marine environment is minimal, marine fish and benthic organism diversity and distribution can be expected to be unmodified. The open coast provides a transit route for shorebirds. HIGH rating.	There is little evidence of human modification with few vehicular access points and limited development or structures at the coastal margin. Where residential development has occurred this is modest and subservient to the landscape. Very strong sense of isolation, remoteness and wilderness due to the inaccessibility of the area and the relatively limited boating activity on the Tasman Sea. Particularly significant vistas include mid and long-range views of dramatic western coastline and seascape. Transient values derive from the highly exposed environment of the west coast and are amplified by the dynamic dunes (at Rangitoto Point); and the dynamic patterning of light on intertidal areas. HIGH rating.	Manu Bay and Whale Bay provide a nationally significant surf break. High recreation values attributed to this coastline and its' waters. Mt Karioi, maunga forms a strong cultural, physical and visual connection with the seascape area and is an integral feature within the context of the seascape. VERY HIGH rating.	There are many taonga species within the coastal and marine environment, including wading birds, such as the threatened reef heron, banded rail, NZ dotterel, and wetland bird species like the threatened and rare variable oystercatcher and Hector's dolphins. The cultural heritage landscape along the coast is highly significant to Maniapoto - cultural heritage (in the CMA) may include mammalian habitats, migration routes (including the ahoaho [Hector's dolphin] and kōura), reefs, islands and trenches, burial caves, wāhi tapu. The Mōtakotako rohe/area of interest includes Aotea Harbour and the coast north to the vicinity of Papanui Point and include important traditional mahinga mataitai, mahinga waimāori mahinga kai, and waahi tapu. Values of hapu that address the construct of landscape / whenua values are held by hapu. Not all values are expressed in this table and require engagement with hapu and iwi to express. The baseline is that the Te Ao Māori values addressing all dimensions of landscape are high. HIGH rating.

The majority of these values or attributes are focussed on the immediate coastal edge, and specifically the interplay between the sea and the land. This includes references in the physical and associational values to the rocky shoreline; the high energy wave action and surf break; the highly exposed, dynamic dunes; and the connection between Karioi and the sea. Due to the distance of Site D from the coast, it is considered the proposal will have **very-low** (if any) effects on these particular values. Additionally, it has already been identified that the proposal will have **very-low** (if any) effects on biotic values (such as wildlife) that are identified as having Te Ao Māori value.



However, as described earlier, there will potentially be effects on the perceptual values of remoteness, and potentially the presence of buoys could be considered a degree of human activity or modification. At a broad landscape values level (not factoring in visibility), the consideration of these values is relevant. But in reality, for a person actually being within and experiencing this landscape/seascape, there is (as previously described) very limited visibility of the proposal beyond approximately 2km. As such, it is unlikely that the proposal will affect mid and long-range views out to sea, nor will it increase the feeling of remoteness or isolation experienced from the land any more than the existing presence of the road and various farm buildings. At most, the effects on remoteness will likely only be experienced by boat, which as outlined above, there are few of.

As such, it is considered that the effects of the proposal on the values that contribute to the Waikato Kairoi landscape being considered outstanding will be **low**. There are very limited biophysical and associational effects (if any), and perceptual effects pertain only to the remoteness values. Certainly, the Site D spat farm introduces new activity to this location, and will have non-natural characteristics, but it can only be experienced from people in relatively close proximity to it, and not likely from the land.

Visual Effects

The potential visibility of the proposal has explored how the sites are likely only able to be visible from sea level within 2km. With the middle point of two of the farms located 3.5km from the shore, and the other two (including Site D) being 5km from the shore, it is very unlikely that they will be visible from any shoreline locations or beaches (include Ruapuke Beach). As such, the visual effects of the proposal from the surrounding sea and immediate coastline are considered to be **very-low**, if any.

Therefore, any visual effects are only likely to be experienced from elevated locations on the landscape.

On this basis, there are principally only four public locations where visual effects may be experienced from, as follows:

- ▶ The central part and most elevated portion of Pukerewa Road, a very isolated rural road where there is no specific viewing areas;
- ▶ Two locations on Whaanga Road, neither of which have specific viewing areas; and
- ▶ The tramping track on Mt Karioi.

From all of these locations, no details of the proposal will be visible, it will appear as a cluster of indiscernible buoys. It is unlikely that the geometrical arrangement of the proposal will be immediately evident, nor would the alternative colouring of the orange buoys. As such, the most likely appearance of the farms from these locations would be of a darker hue or spot on the ocean, some way in the distance.

Based on the observations of the boat used for access during the assessment, it is also unlikely that any maintenance or harvesting activity would be visible from the land-based locations. Even when following the boat during the assessment and having the ability to pinpoint it using a live GPS tracker, beyond 3km it was invisible to the naked eye.

On this basis, as mentioned earlier, no physical assessment was undertaken from the Mt Karioi track. As identified in the WSP report, and illustrated in Viewpoint 5 of their report, the boat is not visible and the farm would be, at most, a small dark scratch on a very expansive outward view.



Therefore, it is considered that the visual effects from public locations on land will be **very-low**, if any.

During the assessment, a few residential properties were noted on both Pukerewa Road and Whaanga Road, and the Pukerewa marae was also noted at the elevated point of Pukerewa Road. However, all of these properties were located slightly below the immediate coastal ridgeline, no doubt to shelter from the prevailing westerly and southerly winds. Although some outlooks may be possible, visual effects would be similar to those described from public locations. Equally, from the surrounding farmland, farm operators may have the opportunity to see the farms on very clear days, but would not be able to make out any specific details.

The cluster of residential properties above Ruapuke Beach are a further 1-2km distant from Site Area D, this being over 6km away. From this distance the farms are unlikely to be visible.

Therefore, it is considered that the visual effects of the proposal from private locations, including Pukerewa Marae, will be **very-low**, if any.

Visual effects at night are considered in the next section.

Overall, it is therefore considered that the visual effects of the proposal during daylight hours will be **very-low**, if any. The farms are only likely to be seen on bright, clear days, and will be most noticed by local farmers who are familiar with the wider seascape. Even then, the detailed features of the farms will be difficult to discern, and they will most likely take the appearance of a darker hue within the wider seascape.

Night Effects

As identified, it is a requirement by Maritime NZ to install night lighting on the perimeter of the marine farms for safety reasons. The lights will flash 5 times every 20 seconds, and they must be visible from at least 2km away.

With one of the values of the surrounding seascape/landscape being remoteness, although it is undocumented in the reference material (including the *Boffa Miskell Report*), the outcome of this is a dark sky. There is simply very few buildings and very limited “human light” to influence the surrounding atmosphere.

Various studies on human visibility at night indicate that a candle flame can be seen by the naked eye, in a very dark location, from up to 45km away. This is unsurprising, given that many stars in the sky are many millions of light years away, but appear very visible.

As a result, the lighting on the proposed farms will undoubtedly be visible at night, including from the land based viewing locations identified above. Depending on the swell, the quantity of lights seen at any one time will vary, being a combination of the light flash with the height of the light in the waves.

The matter to consider, however, is not visibility of the lights per se, but rather how this might affect a viewer’s experience of the landscape/seascape at night.

Principally, the lights associated with the farms are unlikely to have any notable impact on the quality of the night sky (this being dependent on weather conditions). The lights will not be bright enough to cause light pollution such that is experienced by street lighting or light spill from residences.



Therefore, the key effect is the presence of the farms and the dynamic nature of the lighting within what would be perceived as a dark, empty ocean (notwithstanding any boats that might be travelling within it). Such an effect would likely decrease the sense of remoteness – the lights more strongly indicating human activity despite the farms not being attended.

However, a key question is who might experience such effects. It is unlikely that any traveller would take the time to stop, at night, at any of the public locations where the farms are visible, and given the nature of the roads would most likely be focussed on the task at hand (with headlights on). However, some of the residential locations may become aware of the farms at night, including those located above Ruapuke Beach, but they would appear very distant. It is unlikely that they would be a distraction to the wider dark seascape.

As such, it is considered that the visual effects of the proposal at night will be *low*. The farms will be more visible than they are during daylight hours, and detract slightly from the remoteness values. However, they are unlikely to be eye-catching, and will not compete with the wider night sky.

Review of Proposal Against Policy

New Zealand Coastal Policy Statement (2010)

This assessment has been cognisant of Policy 1 and considered the extent and characteristics of the coastal environment. It has factored in potential effects on these characteristics and values.

Equally, it has considered the existing and proposed activities within the coastal environment, as outlined by Policy 6. This has included the consideration of visual effects.

In regard to Policy 13, the assessment has considered the potential effects on the natural character of the coast. This has included a detailed assessment of the existing natural character, informed by reports that have been adopted by the Waikato Regional Council, before considering the potential effects on abiotic, biotic and experiential values. It finds that the most notable effect is on experiential values, but that this is limited only to the sense of remoteness and isolation. Overall, it is considered that the effects on natural character will be *low*.

In regard to Policy 15, the assessment notes that there will be no effects on the biophysical or associational values of the adjacent landscape, including no physical effects on any notable landforms. The only potential effect relating to natural features and natural landscapes relates to the perceptual values of remoteness, as outlined for natural character effects. Overall, it is considered that the effects on landscape will be *low*.

Regional Plan and Proposed Regional Coastal Plan

The proposal does not trigger any policy considerations under the Regional Plan or any Regional policy in regard to landscape/seascape effects. Policies in regard to natural character have been assessed under the NZCPS.

Site D sits within the Waikato Kairoi ONL, but will have limited (if any) effects on the identified physical and associative values, and also limited effects on the aspects of the landscape identified as having Te Ao Māori value. Therefore, it is considered that the only effects will be on the perceptual values, specifically the feeling of remoteness and the open vistas. Given the limited visibility of the proposal (Site D) beyond approximately 2km, it is considered that such effects will be relatively low. Overall it is considered that the effects of the proposal on the ONL will be *low*.



Conclusions

This report has provided an assessment of the potential natural character, landscape/seascape and visual effects of four mussel spat farms that are proposed off the west coast of Waikato, near Raglan.

The report has provided a detailed overview of the methodology utilised, identifying that this has followed best practice guidelines. It included a locality visit in November, including both on the water and various land based locations.

From this site visit, and utilising various online tools, a detailed outline of the existing context is provided. This includes a detailed overview of the key natural character values, based on the assessment prepared by *Boffa Miskell* that has been adopted by the Waikato Regional Council.

Following this, the proposal considers the potential effects. Largely it finds that the effects are related to the widely known values of remoteness, an experiential or perceptual quality given that it is difficult to access or see. As a result, the proposed farms will introduce an element of modification to the seascape. However, this is not dissimilar to the modification of the majority of surrounding landforms – for pastoral use. Critically, the feeling of remoteness and isolation is actually derived from the lack of human activity, which will remain evident within the proposed farms. They are not proposed to be tendered daily – rather they require relatively minimal input only a few times per month.

Equally, the remoteness qualities mean, by default, there are few people around to experience them.

Therefore, in weighing up all of the potential values, it is considered that the natural character and landscape/seascape effects will be **low**, and the visual effects of the proposal will be **very-low**. However, it is noted that visual effects will increase at night-time, due to the presence of lighting.

Overall, however, it is concluded that the natural character, landscape/seascape and visual effects will be **less than minor**.

Shannon Bray
Registered Landscape Architect



Landscape & Visual Effects Assessment Maps & Photographs

Mussel Spat Nursery & Harvesting Farms

Prepared for:

North Western Mussels Ltd

22 December 2023



LEGEND:

-  APPLICATION SITES
-  ROADS
-  VIEWPORT

Imagery & Property Parcels
sourced from LINZ
August 2023

Context Map

Raglan Spat Nursery
& Harvesting Farms

Prepared For:
**North Western
Mussels Ltd**

FOR ISSUE

23-12-22 Drawn: B O'Donnell
Revision 03 Checked: S Bray

Scale: 1:200,000
Print at A3 **Sheet 2**

2333_RaglanMussels_VS_23-12-01

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SITE A: Image taken from proposed site looking East towards Pukerewa Road (REF: 59)
Latitude: 37° 35' 15.882" S
Longitude: 174° 42' 36.678" E



SITE B: Image taken approximately 2000m East from the centre of proposed site looking East towards Te Akau Coast Road (REF: 83)
Latitude: 37° 39' 4.722" S
Longitude: 174° 46' 26.79" E



Photograph Details:
Date: 2 November 2023
Site A - 8:27am
Site B - 8:50am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent

Site A, B - Existing Photo

Raglan Spat Nursery
& Harvesting Farms

Prepared For:
**North Western
Mussels Ltd**

FOR ISSUE

23-12-22 Drawn: B O'Donnell
Revision 03 Checked: S Bray

Scale: N/A
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Sheet 3

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SITE C: Image taken from approximately 1500m East from the centre of proposed site looking East towards Pukerewa Road (REF: 96)
Latitude: 37° 41' 42.12" S
Longitude: 174° 47' 7.002" E



SITE D: Image taken from proposed site looking East towards Papanui Point and Ruapuke Beach (REF: 1)
Latitude: 37° 53' 13.728" S
Longitude: 174° 41' 33.402" E



Photograph Details:
Date: 2 November 2023
Site C - 9:02am
Site D - 6:41am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent

Site C, D - Existing Photo

Raglan Spat Nursery
& Harvesting Farms

Prepared For:

North Western
Mussels Ltd

FOR ISSUE

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Revision 03 Checked: S Bray

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Sheet 4

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SITE A: Image taken from Pukerewa Road looking West towards proposed SITE A, B, C (REF: 135)
Latitude: 37°35'10.76"S
Longitude: 174°47'1.89"E



Photograph Details:
Date: 2 November 2023
Site A - 12:49pm
Site B, C - 12:50pm
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent



SITE B, C: Image taken from Pukerewa Road looking South West towards proposed SITE A, B, C (REF: 125)
Latitude: 37°35'10.76"S
Longitude: 174°47'1.89"E

Site A, B, C - Existing Photo

Raglan Spat Nursery
& Harvesting Farms

Prepared For:
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Mussels Ltd**

FOR ISSUE

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SITE D: Image taken from 1109 Whaanga Road looking West towards proposed SITE D (REF: 16)
Latitude: 37° 52' 12.462" S
Longitude: 174° 46' 1.518" E



Photograph Details:
Date: 2 November 2023
Site D - 6:23am
Site D - 6:44am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent



SITE D: Image taken from Ruapuke Beach looking West towards proposed SITE D (REF: 38)
Latitude: 37° 53' 30.252" S
Longitude: 174° 45' 56.742" E

Site D - Existing Photo

Raglan Spat Nursery
& Harvesting Farms

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Mussels Ltd

FOR ISSUE

23-12-22 Drawn: B O'Donnell
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Sheet 6

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SITE D: Image taken from 1638 Whaanga Road looking West towards proposed SITE D (REF: 55)
 Latitude: 37° 53' 37.062" S
 Longitude: 174° 46' 46.128" E



Photograph Details:
 Date: 2 November 2023
 Site D - 6:56am
 Site D - 6:57am
 Camera: Apple iPhone 14 Pro Focal
 Length: 26mm Equivalent



SITE D: Image taken from 1644B Whaanga Road looking West towards proposed SITE D (REF: 56)
 Latitude: 37° 53' 39.498" S
 Longitude: 174° 46' 46.68" E

Site D - Existing Photo

Raglan Spat Nursery
 & Harvesting Farms

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FOR ISSUE

23-12-22 Drawn: B O'Donnell
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SITE D: 500m from proposed site looking East towards Papanui Point and Ruapuke Beach (REF: 1)
Latitude: 37° 53' 13.728" S
Longitude: 174° 41' 33.402" E



Photograph Details:
Date: 2 November 2023 - 6:41am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent
Reading distance: 909mm

Site D - Existing Photo

Raglan Spat Nursery
& Harvesting Farms

Prepared For:

North Western
Mussels Ltd

FOR ISSUE

23-12-22 Drawn: B O'Donnell
Revision 03 Checked: S Bray

Scale: N/A
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SITE D: 500m from proposed site looking East towards Papanui Point and Ruapuke Beach (REF: 1)
Latitude: 37° 53' 13.728" S
Longitude: 174° 41' 33.402" E



Photo extract: Enlarged x4



Photograph Details:
Date: 2 November 2023 - 6:41am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent
Reading distance: 909mm

Note: This Visualisation is a technical representation that demonstrates the proposed mussel farm in its proposed location at the correct scale, based on information provided by Aquaculture Direct Ltd. It does not represent an assessment of effects.

Site D - Visual Simulation

Raglan Spat Nursery
& Harvesting Farms

Prepared For:
North Western
Mussels Ltd

FOR ISSUE

23-12-22 Drawn: B O'Donnell
Revision 03 Checked: S Bray

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Sheet 9

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SITE D: 1000m from proposed site looking East towards Papanui Point and Ruapuke Beach (REF: 6)
Latitude: 37° 53' 12.822" S
Longitude: 174° 41' 12.642" E



Photo extract: Enlarged x4



Photograph Details:
Date: 2 November 2023 - 6:46am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent
Reading distance: 909mm

Note: This Visualisation is a technical representation that demonstrates the proposed mussel farm in its proposed location at the correct scale, based on information provided by Aquaculture Direct Ltd. It does not represent an assessment of effects.

Site D - Visual Simulation

Raglan Spat Nursery
& Harvesting Farms

Prepared For:
North Western
Mussels Ltd

FOR ISSUE

23-12-22 Drawn: B O'Donnell
Revision 03 Checked: S Bray

Scale: N/A
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SITE D: 2000m from proposed site looking East towards Papanui Point and Ruapuke Beach farm not visible to naked eye at this distance (REF: 11)
Latitude: 37° 53' 15.462" S
Longitude: 174° 40' 21.282" E



Photograph Details:
Date: 2 November 2023 - 6:51am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent
Reading distance: 909mm

Note: This Visualisation is a technical representation that demonstrates the proposed mussel farm in its proposed location at the correct scale, based on information provided by Aquaculture Direct Ltd. It does not represent an assessment of effects.

Site D - Visual Simulation

Raglan Spat Nursery
& Harvesting Farms

Prepared For:
North Western
Mussels Ltd

FOR ISSUE

23-12-22 Drawn: B O'Donnell
Revision 03 Checked: S Bray

Scale: N/A
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Sheet 11

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Landscape & Visual Effects Assessment Maps & Photographs

Raglan Spat Nursery

Prepared for:

North Western Mussels Ltd

19 December 2023



LEGEND:

-  APPLICATION SITE
-  ROADS
-  VIEWPORT

Imagery & Property Parcels
sourced from LINZ
August 2023

Context Map

Raglan Spat Nursery

Prepared For:
NWML

FOR REVIEW

23-12-19 Drawn: B O'Donnell
Revision 02 Checked: S Bray

Scale: 1:200,000
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2333_RaglanMussels_VS_23-12-01

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SITE B: Image taken approximately 2000m East from the centre of proposed site looking East towards Te Akau Coast Road (REF: 83)
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Photograph Details:
Date: 2 November 2023
Site A - 8:27am
Site B - 8:50am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent

Site A, B - Existing Photo

Raglan Spat Nursery

Prepared For:
NWML

FOR REVIEW

23-12-19 Drawn: B O'Donnell
Revision 02 Checked: S Bray

Scale: N/A
Print at A3

Sheet 3

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SITE C: Image taken from approximately 1500m East from the centre of proposed site looking East towards Pukerewa Road (REF: 96)
Latitude: 37° 41' 42.12" S
Longitude: 174° 47' 7.002" E



Photograph Details:
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Site D - 6:41am
Camera: Apple iPhone 14 Pro Focal
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SITE D: Image taken from proposed site looking East towards Papanui Point and Ruapuke Beach (REF: 1)
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Longitude: 174° 41' 33.402" E

Site C, D - Existing Photo

Raglan Spat Nursery

Prepared For:

NWML

FOR REVIEW

23-12-19 Drawn: B O'Donnell
Revision 02 Checked: S Bray

Scale: N/A
Print at A3

Sheet 4

2333_RaglanMussels_VS_23-12-01

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SITE A: Image taken from Pukerewa Road looking West towards proposed SITE A, B, C (REF: 135)
Latitude: 37°35'10.76"S
Longitude: 174°47'1.89"E



Photograph Details:
Date: 2 November 2023
Site A - 12:49pm
Site B, C - 12:50pm
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent



SITE B, C: Image taken from Pukerewa Road looking South West towards proposed SITE A, B, C (REF: 125)
Latitude: 37°35'10.76"S
Longitude: 174°47'1.89"E

Site A, B, C - Existing Photo

Raglan Spat Nursery

Prepared For:
NWML

FOR REVIEW

23-12-19 Drawn: B O'Donnell
Revision 02 Checked: S Bray

Scale: N/A
Print at A3 **Sheet 5**

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SITE D: Image taken from 1109 Whaanga Road looking West towards proposed SITE D (REF: 16)
Latitude: 37° 52' 12.462" S
Longitude: 174° 46' 1.518" E



Photograph Details:
Date: 2 November 2023
Site D - 6:23am
Site D - 6:44am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent



SITE D: Image taken from Ruapuke Beach looking West towards proposed SITE D (REF: 38)
Latitude: 37° 53' 30.252" S
Longitude: 174° 45' 56.742" E

Site D - Existing Photo

Raglan Spat Nursery

Prepared For:

NWML

FOR REVIEW

23-12-19 Drawn: B O'Donnell
Revision 02 Checked: S Bray

Scale: N/A
Print at A3

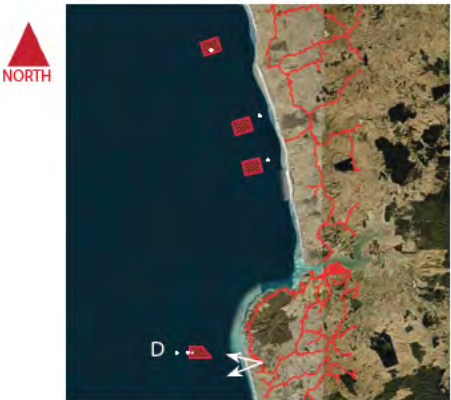
Sheet 6

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SITE D: Image taken from 1638 Whaanga Road looking West towards proposed SITE D (REF: 55)
Latitude: 37° 53' 37.062" S
Longitude: 174° 46' 46.128" E



Photograph Details:
Date: 2 November 2023
Site D - 6:56am
Site D - 6:57am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent



SITE D: Image taken from 1644B Whaanga Road looking West towards proposed SITE D (REF: 56)
Latitude: 37° 53' 39.498" S
Longitude: 174° 46' 46.68" E

Site D - Existing Photo

Raglan Spat Nursery

Prepared For:

NWML

FOR REVIEW

23-12-19 Drawn: B O'Donnell
Revision 02 Checked: S Bray

Scale: N/A
Print at A3

Sheet 7

2333_RaglanMussels_VS_23-12-01

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SITE D: 500m from proposed site looking East towards Papanui Point and Ruapuke Beach (REF: 1)
Latitude: 37° 53' 13.728" S
Longitude: 174° 41' 33.402" E



Photograph Details:
Date: 2 November 2023 - 6:41am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent
Reading distance: 909mm

Site D - Existing Photo

Raglan Spat Nursery

Prepared For:
NWML

FOR REVIEW

23-12-19 Drawn: B O'Donnell
Revision 02 Checked: S Bray

Scale: N/A
Print at A3 **Sheet 8**

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SITE D: 500m from proposed site looking East towards Papanui Point and Ruapuke Beach (REF: 1)
Latitude: 37° 53' 13.728" S
Longitude: 174° 41' 33.402" E



Photo extract: Enlarged x4



Photograph Details:
Date: 2 November 2023 - 6:41am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent
Reading distance: 909mm

Note: This Visualisation is a technical representation that demonstrates the proposed mussel farm in its proposed location at the correct scale, based on information provided by Aquaculture Direct Ltd. It does not represent an assessment of effects.

Site D - Visual Simulation

Raglan Spat Nursery

Prepared For:
NWML

FOR REVIEW

23-12-19 Drawn: B O'Donnell
Revision 02 Checked: S Bray

Scale: N/A
Print at A3

Sheet 9

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SITE D: 1000m from proposed site looking East towards Papanui Point and Ruapuke Beach (REF: 6)
Latitude: 37° 53' 12.822" S
Longitude: 174° 41' 12.642" E



Photo extract: Enlarged x4



Photograph Details:
Date: 2 November 2023 - 6:46am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent
Reading distance: 909mm

Note: This Visualisation is a technical representation that demonstrates the proposed mussel farm in its proposed location at the correct scale, based on information provided by Aquaculture Direct Ltd. It does not represent an assessment of effects.

Site D - Visual Simulation

Raglan Spat Nursery

Prepared For:
NWML

FOR REVIEW

23-12-19 Drawn: B O'Donnell
Revision 02 Checked: S Bray

Scale: N/A
Print at A3 **Sheet 10**

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SITE D: 2000m from proposed site looking East towards Papanui Point and Ruapuke Beach farm not visible to naked eye at this distance (REF: 11)
Latitude: 37° 53' 15.462" S
Longitude: 174° 40' 21.282" E



Photograph Details:
Date: 2 November 2023 - 6:51am
Camera: Apple iPhone 14 Pro Focal
Length: 26mm Equivalent
Reading distance: 909mm

Note: This Visualisation is a technical representation that demonstrates the proposed mussel farm in its proposed location at the correct scale, based on information provided by Aquaculture Direct Ltd. It does not represent an assessment of effects.

Site D - Visual Simulation

Raglan Spat Nursery

Prepared For:
NWML

FOR REVIEW

23-12-19 Drawn: B O'Donnell
Revision 02 Checked: S Bray

Scale: N/A
Print at A3 **Sheet 11**

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