

PRIVATE PLAN CHANGE REQUEST BY THE WAINUI BAY SPAT CATCHING GROUP

Economic Analysis under s 32 Resource Management Act 1991

1. This analysis table should be read in conjunction with the evaluation outline at Schedule 5.
2. The reasonably practicable options are evaluated in the table below under the following headings:
 - a. Option 1: Retain the status quo, with Wainui Bay being an exception to the prohibition against marine farming in the coastal marine area of the District that is not zoned under an Aquaculture Management Area (“AMA”) until 2024, with both mussel spat catching and full mussel farming retaining discretionary status.
 - b. Option 2: Wainui Bay remains an exception to the prohibition against marine farming in the coastal marine area of the District that is not zoned under an AMA, with mussel spat catching becoming a controlled activity, mussel farming between 40-60mm remaining a discretionary activity and full mussel farming becoming a non complying activity (until the Tasman Resource Management Plan (“the Plan”) is reviewed, or another plan change changes the status of the activities).
 - c. Option 3 (the proposed Plan Change): Re-zone Wainui Bay under the name “AMA 4 Wainui”, making mussel spat catching and holding between 40-60mm controlled activities, and full mussel farming (or other forms of marine farming) a prohibited activity (until the Plan is reviewed, or another plan change changes the status of the activities). If the controlled activity standards are not met, mussel spat catching and holding become restricted discretionary activities.

Section 32 requirement	Option 1 (Status Quo)	Option 2 (Exception, controlled status)	Option 3 (AMA 4 Wainui, controlled status)
<p>The Plan Change Objective</p> <p>The Wainui Bay Spat Catching Group is requesting a change to the Plan to enable the continuation of existing mussel spat catching and spat holding in Wainui Bay. The purpose for making this request is as follows:</p> <ul style="list-style-type: none"> • To provide certainty of spat supply in the future, in order to ensure the ongoing viability of the mussel farming and processing industry in the top of the South Island, and in New Zealand. • To recognise that Wainui Bay is first ranking in New Zealand in terms of the reliability and quality of spat fall, and similar to Ninety Mile Beach in terms of the quantity of spat fall. The entire mussel farming and processing industry is dependent upon a reliable source of spat, and Wainui Bay is the foundation stone of this industry. • To foster investment, economic growth and employment in the aquaculture sector, and in the communities in which aquaculture activities are based. • To do no more than what is currently being done at Wainui Bay, aside from ensuring mussel spat catching can continue for the foreseeable future post-2024. <u>No new water space is being sought.</u> • To encourage use of the site for mussel spat catching and holding only, by making full mussel farming at the site a prohibited activity. 			

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<ul style="list-style-type: none"> To acknowledge the impact that mussel spat catching at Wainui Bay has on the amenity of neighbours and visitors to the area, by placing additional environmental controls in the Plan to better manage these impacts. 			
<p>Costs and Benefits</p>	<p>The main benefit of option 1 is that no change will need to be made to the Plan.</p> <p>By contrast, there are several costs associated with option 1:</p> <ul style="list-style-type: none"> - Future uncertainty around mussel spat supply. - Risk to the viability of the mussel farming and processing industry, and associated lack of incentive to invest in the sector. - Potential loss of employment, and community and social benefits from mussel farming and processing in Tasman and Golden Bays and Marlborough, along with the loss of flow-on benefits to New Zealand. - Potential for Wainui Bay to be used for full mussel farming. - The costs of assessing alternatives come 2024 and the expense of trialling new sites. - The potential for greater adverse effects if the farm is moved elsewhere in the future. - Proposed new conditions to address amenity concerns are not implemented. 	<p>The costs associated with option 2 are:</p> <ul style="list-style-type: none"> - Time and resources needed to amend the Plan. - Effects on amenity, landscape, natural character, the environment, navigation and recreation post-2024, as farming will continue at Wainui Bay. - Failure to achieve internal consistency in the Plan, which may mean that this option is less desirable from a planner's perspective. <p>The benefits associated with option 2 are:</p> <ul style="list-style-type: none"> - Increased certainty of mussel spat supply. - Improved viability of the mussel farming and processing industry, and ongoing incentive to invest in the sector. - Ongoing employment, and community and social benefits from aquaculture in Tasman and Golden Bays and Marlborough, along with flow on benefits for New Zealand. - Encourages Wainui Bay to be used 	<p>The costs and benefits associated with option 3 are largely the same as those under option 2.</p> <p>Additional costs include:</p> <ul style="list-style-type: none"> - The number of changes needed to amend the Plan in this way is larger; therefore, option 3 requires the greatest input of time and resources out of all three options. - Potential that the community will perceive that more change than is necessary is being sought, or that the change is more permanent, giving rise to potentially greater community opposition. <p>Additional benefits include:</p> <ul style="list-style-type: none"> - This option would best achieve internal consistency in the Plan from a policy perspective, which may mean that it is more likely to be approved from a planning perspective. - The likelihood of Wainui Bay being used for anything other than spat catching will be reduced even

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		<p>for mussel spat catching and holding only.</p> <ul style="list-style-type: none"> - Removes need to assess alternatives come 2024 and the expense of trialling new sites. - Removes the potential for greater adverse effects if the farm is moved elsewhere in the future. - Greater acknowledgement of the impact that mussel spat catching at Wainui Bay has on the amenity of neighbours and visitors to the area, and implementation of additional environmental controls in the Plan to better manage these impacts. 	<p>further, due to mussel farming becoming a prohibited activity.</p>
<p>Quantification (or discussion of qualitative factors)</p>	<p>The economic, social and employment effects are outlined below in relation to Objective 22.1.2.</p> <p>The potential for Wainui Bay to be used for full mussel farming under the current consents is, in reality, very low. The site is exceptionally suited for mussel spat catching. Any attempt to farm mussels would result in oversettlement issues.</p> <p>A significant investment of resources would be needed to find an alternative site, including:</p> <ul style="list-style-type: none"> - Surveying other potential sites; - New consent costs; - Overcoming limitations in the existing Plan; - Changes to logistics and employees' routines; - Community consultation, given that other sites in the region are either in a national park, or more heavily populated; 	<p>The time and resources needed to amend the Plan will be greater than under option 1, with the status quo requiring no change. Option 2 would require the existing exception for Wainui in the Plan to be amended, fewer changes than would be needed to implement option 3.</p> <p>The effects of continued spat catching at Wainui Bay post-2024 on amenity, landscape, natural character, the environment, navigation and recreation are addressed in the AEE, at Schedule 1, and below in this table.</p> <p>The economic, social and employment effects are outlined below in relation to Objective 22.1.2.</p>	<p>Refer to discussion under option 2.</p> <p>The time and resources need to amend the Plan would be greater than under options 1 and 2.</p> <p>It is difficult to predict how much increased community opposition could arise from a perception that the Plan Change is greater than is necessary or more permanent. This risk could be managed by correcting incorrect perceptions.</p> <p>Given that this option will best achieve internal consistency in the Plan from a policy perspective, it may be favoured by planners, so it is likely that time and resources spent preparing this Plan</p>

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	<ul style="list-style-type: none"> - Cost of new infrastructure and installation; and - A greater surface area may be needed to achieve anything like the equivalent quantity of Wainui Spat. <p>Alternative sources of spat supply are unlikely to be as productive or as viable as Wainui Bay spat, because:</p> <ul style="list-style-type: none"> - Wainui Bay is unique in terms of the combination of factors that lead to a spat fall of high quantity, quality and reliability at that site; - Wainui Bay is first ranking in New Zealand in terms of spat quality: Kaitaia potentially has higher spat fall, but when mussels are farmed in cooler temperatures, such as in the South Island, Wainui Bay spat attaches better; - Wainui Bay spat falls at a different time of year, enabling year round production in the mussel farming industry; - Wainui Bay spat fall is reasonably consistent, whereas Kaitaia spat fall is less reliable and has been subject to fluctuations in availability and the occasional effects of disease; - Hatchery spat has had some success, but is still being developed, so there remains a risk associated with this unknown; and - Other sites for spat collecting are being actively tested; however, nothing of significance has been identified to date. 	<p>The site is exceptionally suited for mussel spat catching. Mussel spat catching has fewer effects than full mussel farming, as discussed below in relation to Objective 21.2.2.</p> <p>The costs associated with assessing alternative sites and moving the farm elsewhere are outlined under option 1. The reverse of these costs are the benefits under option 2, as these costs would not need to be incurred.</p> <p>Option 2 would result in the existing resource consent conditions being consistent across all 6 farm blocks at Wainui Bay, which is not the case under the status quo. These conditions would be ‘enshrined’ in the Plan, giving residents more certainty that they will be complied with. In particular, the requirement to attend a community liaison meeting will apply to all 6 sites. A condition prohibiting vessels from shining vessel lights onto land where those lights may cause a nuisance will be added.</p>	<p>Change are best directed at option 3.</p>

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	<p>There is a real risk that moving the farm elsewhere in Golden or Tasman Bays in the future would result in greater adverse effects compared with the current consented activity. A move northeast towards Abel Tasman National Park would certainly result in greater adverse effects, at least from a landscape and natural character perspective. To the southwest is Tata Beach community, with over 200 houses, followed by several other towns, so that more people would be directly affected by moving the marine farms to one of these locations. This cannot be quantified even in a relative sense, unless a clear alternative site is identified.</p> <p>The benefits that would be foregone if new conditions addressing the impact on amenity are not included in the Plan are discussed under option 2.</p>		
Risk	<p>The risks associated with option 1 are outlined above in relation to costs. The major risk is loss of future viability of the mussel farming and processing industry, and associated job losses.</p>	<p>The main risk arising under option 2 is that a Plan Change proposal taking this approach would be refused on the basis that it does not achieve internal consistency in the Plan from a policy perspective, so that the risks under option 1 would also apply to option 2. In addition, the time and resources invested in preparing and lodging this proposal would be wasted.</p>	<p>As already noted, the main risk under option 3 is greater public opposition to the proposed Plan Change.</p>
Assessment of efficiency and effectiveness	<p>Option 1 neither efficiently nor effectively achieves the purpose of the Plan Change, as it does not provide certainty of mussel spat supply from Wainui Bay post-2024.</p>	<p>Option 2 would efficiently and effectively achieve the purpose of the Plan Change by recognising the significance of the Wainui Bay site, and increasing certainty by enabling mussel spat farming to</p>	<p>Arguably this approach is less efficient than option 2, as it requires a greater number of changes to the existing Plan in order to implement the Plan Change in this form.</p>

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		<p>continue at that site post-2024.</p> <p>This option requires fewer changes to be made to the wording of the Plan than would be required to implement option 3. Therefore, if we measure efficiency in terms of the number of changes to the content of the Plan, option 2 is more efficient than option 3.</p> <p>In terms of effectiveness, option 3 will achieve internal consistency in the Plan by rezoning Wainui as AMA 4, so it may be more effective than option 2, in the sense that it is likely to be preferred by planners.</p>	<p>There is also a possibility that a move to AMA status will be perceived by the community as more permanent than option 2, or that the public may consider that the applicant is asking to do more than is currently consented other than changing consent duration. Practically speaking, this is not the case. In this sense, option 3 may be less effective than option 2; however, this can be mitigated by making it clear that these perceptions are incorrect.</p> <p>Even though the Wainui site is not typical of existing AMAs 1-3, arguably Wainui's unique and important status within the mussel industry is best reflected by a move to AMA status. Practically speaking, however, both options 2 and 3 would achieve the Plan Change objective.</p> <p>From a policy perspective, a move to AMA status under option 3 will achieve greater consistency in the Plan. Therefore, it is possible that option 3 will be the most effective of all three options in terms of facilitating acceptance of the proposal at a planning level.</p>

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<p>21.1 Preservation of Natural Character</p> <p>21.1.2 Objective</p> <p>Preservation of the natural character of the coastal marine area, particularly its margins, and including the maintenance of all values that contribute to natural character, and its protection from the adverse effects of use or development.</p>			
<p>Costs and Benefits</p>	<p>The costs relevant to the matter of natural character are largely environmental in nature, particularly in terms of the visual effect of the marine farms and the impact of this on residents, holiday home owners, and visitors to the area.</p>	<p>Refer left.</p>	<p>Refer left under option 1.</p>
<p>Quantification (or discussion of qualitative factors)</p>	<p>Natural character is semi-quantifiable in this case in a comparative or relative sense.</p> <p>The farms are located in an area with eleven overlooking properties. The farms can also be viewed from a viewpoint overlooking the bay at the top of Wainui Hill, but this is difficult to pull over for, so the number of people viewing the farm from that vantage point is probably relatively small. The farms are also visible from the sea.</p> <p>Other manmade development is visible in Wainui Bay, including the road, houses, dairy farming, commercial forestry and the presence of exotic flora. These have impacted more heavily on the naturalness of the bay than the marine farms (according to the experts at the Wainui Bay Landscape Panel. A copy of the report produced is included at Appendix L).</p>	<p>Refer left. The farms are, arguably, located far enough away from substantial housing developments, but close to a road cutting that already detracts from the naturalness of the Bay.</p> <p>Option 2 promotes the use of the sites for spat catching, in preference to mussel farming. Spat catching has less of a visual impact on the natural character of the area than mussel farming, because the reduced weight on the structures means that a smaller number of surface buoys are required.</p>	<p>Refer left under options 1 and 2.</p> <p>As is the case with option 2, option 3 promotes mussel spat catching in preference to mussel farming at the site, which has a smaller impact on natural character. This reduced impact is the same under options 2 and 3.</p>
<p>Risk</p>	<p>Under the status quo, come 2024, it is uncertain</p>	<p>Option 2 would result in certainty in the</p>	<p>Refer left under option 2. This risk is</p>

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	<p>whether the marine farms will be allowed to continue operating in Wainui Bay. While their removal could marginally enhance the natural character of the Bay, this must be weighed against the risk of the unknown, namely, that the farms may be moved to another site in Golden or Tasman Bays, which could potentially have an impact on a greater number of people and detract more significantly from the natural character of the area.</p> <p>Moreover, if the sites were to be used as mussel farms in the interim, variations of which are allowed under the current consents, this would result in a slight increase in adverse visual effects when compared with spat catching, as increased weight on the longlines would require an increase in the number of buoys.</p>	<p>continued existence of the marine farms in Wainui Bay for use as a mussel spat catching site come 2024, until the Plan is reviewed or another plan change changes the status of the activity. This option reduces the risk of the site being used for full mussel farming in the interim, which would have a greater impact on natural character.</p>	<p>the same under options 2 and 3.</p>
<p>Assessment of efficiency and effectiveness</p>	<p>Maintaining the status quo will effectively preserve the natural character of Wainui Bay in the interim, as the marine farms are already part of the environment and are less obvious than other manmade interventions.</p> <p>The status quo is efficient, in the sense that the total cost to all members of society is low, given that the marine farm only directly affects the view of eleven residents, and is less obvious against the backdrop of other manmade development.</p> <p>Nevertheless, the risk of the unknown come 2024 suggests that the proposed Plan Change should possibly be considered preferable to the status quo.</p>	<p>Option 2 would result in certainty in the continued existence of the marine farms in the Bay come 2024, and promote the use of the site for mussel spat catching in preference to mussel farming in the interim, which retains the natural character of the Bay in its present state.</p> <p>For the reasons discussed under option 1, allowing the farms to continue operating as a controlled activity following 2024 will still effectively and efficiently achieve the 21.1.2 objective. This option will remove the risk associated with the unknown that would exist after 2024 under the status quo.</p>	<p>See discussion under Option 2. Option 3 would be similarly effective at maintaining the natural character of Wainui Bay.</p> <p>There is also a possibility that a move to AMA status will be perceived by the community as more permanent than option 2, or that the public may consider that the applicant is asking to do more than is currently consented other than changing consent duration. There is a risk that this could create a perception of a greater impact on natural character in the long-run. Practically speaking, this is not the case. In this sense, option 3 may be less</p>

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			effective than option 2, however, this can be mitigated by making it clear that these perceptions are incorrect.
<p>21.2 Protection of Habitats and Ecosystems</p> <p>21.2.2 Objective</p> <p>Avoidance, remediation, or mitigation of adverse effects on marine habitats and ecosystems caused by:</p> <ul style="list-style-type: none"> a) access by vessels, vehicles, people or animals; b) the introduction of species non-indigenous to the District; c) disturbance of the foreshore or seabed; d) the placement and use of structures for port, berthage, aquaculture, network utilities, roads, mineral extraction or any other purpose; e) the disposal of contaminants or waste, or accidental spillage of substances; <p>with priority for avoidance in those areas having nationally or internationally important natural ecosystem values.</p>			
<p>Costs and Benefits</p>	<p>Objective 21.2.2 is primarily concerned with the costs and benefits of environmental effects on marine habitats and ecosystems.</p> <p>Mussel spat catching at Wainui Bay results in minimal or no effects from:</p> <ul style="list-style-type: none"> - Vessel passage, as the boats are small; - Disturbance of the seabed, as anchors are already in place and only need periodic maintenance or replacement; or - Disposal of contaminants, as discharge from harvesting spat is not distinguishable from background sedimentation. 	<p>Refer left.</p>	<p>Refer left under option 1.</p>

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	<p>Because spat catching structures are in the water for a shorter period than those used for later stages of mussel production, the effects of unwanted organisms are less than might be anticipated on other marine farming structures.</p>		
<p>Quantification (or discussion of qualitative factors)</p>	<p>An ecological assessment carried out by NIWA in May 2015, included at Appendix G, did not identify any ecosystems or marine habitats of note in Wainui Bay. The environmental effects of spat catching at this location were assessed as being negligible.</p> <p>Under the existing consents, four allow for full mussel farming and two (the outer farms) allow for mussel farming of mussels up to 60mm in length. While the site is currently used for mussel spat catching, under the status quo there is theoretical potential for the site to be used to farm mussels. Practically speaking, however, this is unlikely due to over-settlement issues.</p> <p>Mussel farming has more noticeable environmental effects, namely the reverse of the effects discussed under option 2.</p>	<p>Refer left. In addition, option 2 would promote the use of the sites for mussel spat catching, by making mussel farming between 40-60mm a discretionary activity, and full mussel farming a non-complying activity. The effects of mussel spat catching on the environment are more minor than those from mussel farming. In particular:</p> <ul style="list-style-type: none"> (a) Less weight means less buoys, therefore, reduced visual impact; (b) Less surface area means less attenuation of current; (c) Smaller biomass means lower phytoplankton consumption; (d) Smaller shells results in a reduction in deposits on the seabed; and (e) Faster turnaround of equipment results in less biofouling. 	<p>Refer left under option 2. In addition, the ability to farm full mussels at Wainui Bay would be essentially removed under option 3, due to a move to prohibited activity status for full mussel farming.</p>
<p>Risk</p>	<p>Continuation of mussel spat catching under the existing provisions of the Plan does not present any risks, as any minor effects on the environment are reversible upon removal of the farms.</p>	<p>The 2015 NIWA assessment considered that no ongoing monitoring of the site was necessary. Any minor effects on the environment from mussel spat catching at Wainui Bay are reversible upon</p>	<p>Refer left under option 2.</p>

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	<p>If, however, the sites were to be used as mussel farms in the interim, variations of which are allowed under the current consents, this would result in a slight increase in adverse effects when compared with mussel spat catching. The effects of spat catching on the environment are more minor than those from mussel farming, as set out above under option 2.</p>	<p>removal of the farms. There is nothing in the assessment to suggest this would be any different in 2024 than it would be two decades later.</p> <p>The status quo does not make a clear distinction between mussel farming and spat catching. By contrast, allowing mussel spat catching to continue as a controlled activity under option 2 would further promote the use of the Wainui Bay site for that purpose, in preference to mussel farming.</p>	
<p>Assessment of efficiency and effectiveness</p>	<p>Maintaining the status quo would effectively and efficiently achieve objective 21.2.2, as structures are already in place and any other environmental effects are reversible, so that the benefits of mussel spat catching at Wainui Bay can be realised with only minimal corresponding environmental costs.</p> <p>However, the possibility of the site being used in the interim to farm full mussels, and the uncertainty (and associated costs of that uncertainty) come 2024 means that option 1 is less effective than options 2 and 3 at achieving objective 21.2.2.</p>	<p>Option 2 provides certainty that the benefits associated with spat catching at Wainui Bay can continue to be realised after 2024, with the cost of environmental effects continuing to be reversible. Option 2 may be more efficient than the status quo, in that it avoids the costs associated with assessing the suitability of alternative sites after 2024. It is also more effective, as it limits the option of farming full mussels at the site.</p>	<p>Refer left under option 2. As noted above, option 3 would be marginally more effective than option 2 at preventing mussel farming from occurring at Wainui Bay.</p>
<p>21.3 Protection of Landscapes, Seascapes and Natural Features</p> <p>21.3.2 Objective</p> <p>Maintenance of the natural character and landscape of the coastal marine area.</p>			
<p>Costs and Benefits</p>	<p>Objective 21.3.2 is primarily concerned with</p>	<p>Refer left.</p>	<p>Refer left under option 1.</p>

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	<p>maintaining the natural character and landscape of the coastal marine area and therefore, with any effect which may undermine this.</p> <p>An assessment of the three alternatives and their impact on natural character has been discussed above in relation to objective 21.1.2.</p> <p>The Wainui Bay Landscape Expert Panel Workshop determined that a landscape could be analysed in terms of biophysical elements, associative meanings and perceptual values (see report at Appendix L). Therefore, the relevant costs under the s 32 analysis could be environmental, social or cultural.</p> <p>Environmental effects are predominantly visual in nature in this instance. Areas of historic heritage identified in the wider Wainui Bay catchment (discussed at Section 17 of the AEE, at Schedule 1) are not affected by the farms.</p>		
Quantification (or discussion of qualitative factors)	The Expert Panel concluded that the location and scale of the farm are such that it has a low impact on biophysical values, low impact on associative values and only localised effects on perceptual values.	Refer left.	Refer left under option 1.
Risks	If the sites were to be used as mussel farms in the interim, variations of which are allowed under the current consents, this would result in a slight increase in adverse visual effects when compared with mussel spat catching, as increased weight on the longlines would require an increase in the number of buoys. Barring this, the natural character and landscape will be maintained in its	Option 2 does not present any risks, as the natural character and landscape will be maintained in its existing form in accordance with objective 21.3.2.	Refer left under option 2.

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	existing form in accordance with objective 21.3.2.		
Assessment of efficiency and effectiveness	The Expert Panel concluded that the continuing presence of marine farming in Wainui Bay was appropriate. The farm does not interfere with the values which lead to the categorisation of the landscape and possibly the feature as outstanding. This option effectively and efficiently achieves this objective.	Refer left. Over and above the status quo, option 2 would promote the use of the sites for mussel spat catching, by leaving mussel farming between 40-60mm in length as a discretionary activity, and full mussel farming as a non-complying activity. Mussel spat catching has less of a visual impact than mussel farming. Therefore, option 2 is more effective than option 1 at achieving objective 21.3.2.	Refer left under option 2. Option 3 would be more effective than option 2 at preventing mussel farming from occurring at Wainui Bay. There is a possibility that a move to AMA status will be perceived by the community as more permanent than option 2, and with this comes a perception that there may be a greater impact on natural character and landscape in the long-run. Practically speaking, this is not the case. In this sense, option 3 may be less effective at achieving this objective than option 2, however, this can be mitigated by making it clear that these perceptions are incorrect.
21.4 Protection of Natural Coastal Processes			
21.4.2 Objective			
Maintenance of natural coastal processes free from disturbance or impediments.			
Costs and Benefits	Objective 21.4.2 is primarily concerned with the costs and benefits of environmental effects on natural coastal processes.	Refer left.	Refer left under option 1.
Quantification (or discussion of qualitative factors)	The 2015 NIWA Report (at Appendix G) assessed depletion and deposition, and benthic habitats in relation to the Wainui Bay spat farms. The assessment found that there would be: <ul style="list-style-type: none"> - No detrimental effects to the seabed; - No indication of organic enrichment of 	Refer left. The effects of spat catching are not cumulative, so the findings in the NIWA Report apply equally to the continued operation of the farms post 2024.	Refer left under option 2. The likelihood of the Wainui Bay site being used for full mussel farming is lower under option 3 compared with option 2, although in practice the site is

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	<p>sediments;</p> <ul style="list-style-type: none"> - No effect on the abundance of animals on the seabed below the farms; and - Low benthic deposition of faecal material. <p>Overall, the NIWA Report concluded that it is not expected that the continuation of the operation of the farms will lead to any additional effects.</p> <p>An earlier 2007 NIWA report, included at Appendix HI, assessed hydrodynamics at the Wainui Bay site. The tidal currents were found to be moderate to high compared with many existing mussel farming areas in the Marlborough Sounds, and elsewhere in Golden Bay.</p> <p>This can be contrasted with the potential effects of full mussel farming, which is possible under the status quo. Mussel spat catching has fewer effects than full mussel farming, as discussed above in relation to Objective 21.2.2.</p>	<p>In addition, option 2 would promote the use of the sites for mussel spat catching in preference to mussel farming. The effects of mussel spat catching on the environment are more minor than those from mussel farming, as set out above under objective 21.2.2.</p>	<p>likely to be used for spat catching under all three options.</p>
Risks	<p>Based on the 2015 NIWA Report, there is sufficient information to conclude that there is no risk to natural coastal processes associated with the status quo, assuming the site continues to be used for mussel spat catching only.</p> <p>However, if the site were to be used for mussel farming in the interim, variations of which are allowed under the existing consents, then we cannot conclude that there would be no risk. The NIWA Report assessed effects based on the existing use of the farms. Mussel farming would likely</p>	<p>Refer left. There is nothing to indicate any risk to natural coastal processes from continued farming post 2024, as the effects of mussel spat farming are not cumulative.</p>	<p>Refer left under option 2.</p>

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	result in greater environmental effects, as discussed above in relation to Objective 21.2.2.		
Assessment of efficiency and effectiveness	The status quo effectively and efficiently maintains natural coastal processes in accordance with this objective, provided the sites are used for mussel spat catching, as opposed to mussel farming.	Option 2 effectively and efficiently maintains natural coastal processes in accordance with this objective, as does option 3.	Option 3 effectively and efficiently maintains natural coastal processes in accordance with this objective, as does option 2.
<p>AQUACULTURE</p> <p>22.1 Protection of Values</p> <p>22.1.2 Objective</p> <p>Aquaculture developed in a manner that maintains, enhances, or protects the natural and physical resources of the coastal environment, including the life-supporting capacity of marine ecosystems and the natural character, landscape, ecological, public access, recreational and amenity values, and the values important to the tangata whenua iwi, while avoiding, remedying or mitigating adverse effects.</p>			
Costs and Benefits	<p>Of all the objectives in the Plan, the aquaculture objective at 22.1.2 is perhaps the most relevant to the proposed Plan Change. This objective, in particular, lends itself to a quantitative analysis, including taking the potential for economic growth and employment into consideration. As addressed in the s 32 Analysis Outline at Schedule 5, an economic impact assessment is useful in this instance.</p> <p>The potential costs and benefits are:</p> <ul style="list-style-type: none"> - Economic; - Employment related; and - Social and community based. <p>These are discussed in more detail below.</p> <p>The potential costly effects relating to the</p>	Refer left.	Refer left under option 1.

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	environment are minimal, and have been canvassed above.		
Quantification (or discussion of qualitative factors)	<p><u>Economic Effects</u></p> <p>The aquaculture industry makes a significant contribution to the New Zealand economy. New Zealand Greenshell Mussels are the single largest seafood export, and had an export value of NZ \$218.1 million for the 2011 year.¹ This revenue is forecast to increase significantly in the next decade.²</p> <p>Combined mussel farming in Marlborough, Nelson and Golden and Tasman Bays equates to approximately 70% of New Zealand’s production on average. In August 2011 Aquaculture New Zealand forecast revenue from the domestic and export markets for mussels to be \$361 million for 2015.³ If we attribute 70% of this to the combined Golden/Tasman Bays, Nelson and Marlborough region, then the mussel farming and processing industry in the Top of the South will account for approximately \$252.7 million in revenue for New Zealand in 2015. Half of this product is on-grown from Wainui Bay mussel spat, so approximately \$126.35 million in annual revenue can be attributed to the Wainui Bay sites.</p> <p>All subsequent production and employment in the</p>	<p>Refer left. In addition, option 2 gives greater recognition to the impact of farming at Wainui Bay on residents and visitors to the area, by providing for additional conditions and including conditions of operation in the Plan.</p> <p>Continued operation of the marine farms at Wainui Bay will maintain 23 full time positions, 510 FTE positions in mussel farming and processing in the combined region, approximately 1326 positions in New Zealand and approximately \$126.35 million in annual revenue for the New Zealand economy, in the interim, but also post 2024.</p>	<p>Refer left under options 1 and 2. Arguably a move to AMA status gives greatest recognition to the importance of Wainui Bay to the industry.</p>

¹ Marine Farming Association *Aquaculture in Golden Bay and Tasman Bay Fact Sheet 2012*. A copy is available here: <http://assets.marinefarming.co.nz/Aqua%20Fact%20Sheet%20-%20GB%20&%20TB.pdf>.

² Aquaculture New Zealand has forecast revenue from the mussel sector (for domestic and export markets combined) to reach NZ \$484 million by 2025: Deloitte *Ministry of Agriculture & Forestry: Styela Economic Impact Assessment Report* (August 2011) at 21.

³ Deloitte *Ministry of Agriculture & Forestry: Styela Economic Impact Assessment Report* (August 2011) at 21.

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	<p>industry is founded on the capture of mussel spat. Wainui Bay accounts for half of the spat used in the Top of the South. The flow-on effect from loss of the Wainui Bay spat source would be to halve the economic activity of the combined region in mussel farming and processing. This would reduce the direct and indirect economic output from the industry by \$126.35 million annually.</p> <p>Aquaculture plays a key role in the Government’s growth agenda. The Wainui Bay farms are likely to play a vital part in achieving the Government’s aim of a billion dollar industry by 2025, as set out in the Government’s Aquaculture Strategy (discussed in more detail at paragraphs 5-8 of the s 32 analysis outline, at Schedule 5).</p> <p>The consistency and timing of spat fall at Wainui Bay also contributes to productivity in the mussel industry by minimising the shut down of plant that typically occurs from mid June to August. Year round processing means that processors do not need to “park” staff. These are skilled operators, rather than seasonal workers. The process has grown from more or less a “cottage” industry, into a highly specialised industry with professional crews, processing and marketing. This is reflected in the average wage of participants. Avoiding seasonality issues helps with retaining skilled staff, which in turn encourages greater investment in human capital.</p> <p>Wainui Bay spat also allows for product differentiation. The on-grown mussels have a</p>		

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	<p>different colour shell than mussels grown from other spat sources, as well as a unique taste. This results in a distinct product which is appealing to both the domestic and foreign markets.</p> <p><u>Employment Effects</u> 23 people from various companies are directly employed fulltime in farming the six sites at Wainui Bay.⁴</p> <p>The mussel farming and processing industry in the Marlborough, Nelson, Tasman and Golden Bay regions currently accounts for some 1020 full time equivalent (“FTE”) employment positions.⁵ If 50% of these positions are attributed to spat caught from Wainui Bay, then spat farming at that location accounts for 510 fulltime jobs in the combined region.</p> <p>The applicant does not have precise figures for the indirect employment created by the Wainui Bay farms. Productivity in mussel farming and processing will have at least some flow on effect in terms of suppliers in the industry and for general economic activity, because household employment and income results in spending in the wider economy.</p> <p>A multiplier shows the relationship between activity in a particular industry and activity in an economy as a whole. Fraser Colegrave, a</p>		

⁴ Clearwater Mussels Limited, Ngāi Tahu Seafood Limited, Talley’s Group Limited, and Maclab (NZ) Limited, Personal Communications.

⁵ Marine Farming Association *Aquaculture in Golden Bay and Tasman Bay Fact Sheet 2012*; Andrew Talley, Personal Communication.

Section 32 requirement	Option 1 (Status Quo)	Option 2 (Exception, controlled status)	Option 3 (AMA 4 Wainui, controlled status)
	<p>consulting economist, used a multiplier of 2.60 in the 2014 Environment Court decision in <i>Whangaroa Maritime Recreational Park Steering Group v Westpac Mussels Distributors Limited</i>, which also involved mussel farming. In the Westpac Mussels case, a total 129 FTE positions in New Zealand were expected to directly result from mussel farming at the proposed farm in Northland and in processing both within and outside the region. Applying a multiplier of 2.60, the total number of FTEs in New Zealand directly and indirectly resulting from the proposed farm was 336 ($336/129 = 2.60$).</p> <p>Using Colegrave’s multiplier of 2.60, 510 FTEs in mussel farming and processing in the combined Marlborough and Tasman/Golden Bay region could result in 1326 FTE positions in New Zealand ($510 \times 2.60 = 1326$). While this is by no means a precise number, it goes some way to quantifying the potential flow on benefits to the country arising from mussel spat catching in Wainui Bay.</p> <p><u>Social and Community Effects</u> The positive social and community effects stemming from the proposed Plan Change are more difficult to measure and quantify. The known effects are outlined in Section 19 of the AEE, at Schedule 1.</p> <p>Overall, if spat catching at Wainui Bay is not able to continue post-2024, there will be a tangible impact on businesses, schools and organisations in the local area, and in the Top of the South.</p>		

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	<p><u>Environmental</u></p> <p>The potential environmental effects associated with mussel spat catching at Wainui Bay have been canvassed at length above (and in relation to noise and discharge below). Compared to the economic, social and employment benefits stemming from the marine farms, the environmental effects are not significant. In summary:</p> <ul style="list-style-type: none"> - The farms account for a very small percentage of the entire Golden Bay marine area: 16 hectares of surface structures, with 20 hectares in aggregate; - A NIWA report has shown that the scale of effects is minor. Apart from visual effects, which affect a relatively small number of people, there are minimal environmental effects; and - Any minor effects are fully reversible, so if future generations decide to remove the farms, this can be done without the need to address any lasting cumulative effects. <p>Effects on public access, recreational and amenity values, and the values important to the tangata whenua iwi are difficult to quantify. The applicant has given specific consideration to each of these factors. Effects have been mitigated to the extent possible, as set out in the policy analysis tables.</p>		
Risks	<p>The status quo does not provide certainty post 2024. This lack of certainty creates risk in terms of:</p> <ul style="list-style-type: none"> - The viability of the mussel farming and processing industry as a whole; - A disincentive for the consent holders to 	<p>Option 2 would remove the post 2024 risks associated with maintaining the status quo, and would encourage investment in the industry by removing some of the uncertainty over the security</p>	<p>Refer left under option 2.</p>

Section 32 requirement	Option 1 (Status Quo)	Option 2 (Exception, controlled status)	Option 3 (AMA 4 Wainui, controlled status)
	<p>invest in Wainui Bay/disincentive for industry participants to invest in the wider industry; and</p> <ul style="list-style-type: none"> - Social risk in the form of potential job losses and the associated flow on effects. <p>The mussel industry, the jobs it creates, the wages it pays, and the export returns it generates all depend on secure spat supply. That is the foundation. Those involved cannot build or expand their business and volumes from insecure tenure. Certainty and security of supply of spat are needed before those marine farmers and processors can obtain capital from investors or lenders , build brands, establish markets, secure additional growing space, build factories or create new jobs. It all starts with spat, so its access and availability should never be uncertain. If tenure and therefore certainty are insecure, as is the case in Wainui, those involved are simply unable to build and expand the industry. They have nothing to build on.</p> <p>Under the status quo, it is uncertain whether the \$126.35 million per annum in revenue directly attributable to mussels on-grown from spat caught at Wainui Bay will continue to be generated post 2024.</p> <p>Security of spat supply is essential to the ongoing viability of the mussel farming and processing industry. Spat harvested from Wainui Bay is notable for its quality and quantity, but also because it falls at a different time of the year from</p>	<p>of spat supply.</p>	

Section 32 requirement	Option 1 (Status Quo)	Option 2 (Exception, controlled status)	Option 3 (AMA 4 Wainui, controlled status)
	<p>Kaitaia spat. This helps to ensure a year-long supply of mussels, and avoid seasonality issues.</p> <p>Other sources of supply are less viable, less reliable or unknown/uncertain (see discussion above under the Plan Change purpose in relation to option 1). Lack of certainty concerning spat supply going forward will pose a significant risk for the viability of the mussel farming and processing industry and to the Government’s aim of a billion dollar industry by 2025, as set out in the Government’s Aquaculture Strategy.</p> <p>The risks associated with commercial uncertainty caused by reduced natural spat supply are not merely hypothetical. This has been clearly highlighted by the recent closure of Sanford’s Christchurch mussel processing factory in April, and the resultant loss of 232 jobs.⁶</p> <p>Furthermore, from a commercial perspective, the consent holders will lack incentive to invest in the industry or to upgrade infrastructure at Wainui Bay, given that a return on that investment could not be guaranteed post-2024. Likewise, uncertainty about the viability of the industry going forward, if spat supply is not secure, could discourage other existing or new industry participants from investing.</p> <p>The significant social benefits linked to spat catching at Wainui Bay are discussed in Section 19</p>		

⁶ See <http://www.stuff.co.nz/marlborough-express/67898272/Sanford-closes-Christchurch-plant>.

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	<p>of the AEE, at Schedule 1. The status quo represents uncertainty around job security post-2024 for those currently employed in the industry. The social impact from job losses in small communities currently tied to mussel farms would be significant. Depending on alternative employment opportunities, job losses could have wider implications, in terms of dependence on social welfare, decreased spending in the wider economy, or movement of people out of the Tasman and Marlborough regions. These effects may be felt more strongly in a sector that seeks to retain specialised labourers.</p>		
<p>Assessment of efficiency and effectiveness</p>	<p>Maintaining the status quo would be ineffective at promoting the kind of certainty that is necessary in a commercial sense in an industry that is dependent on, and struggling to find, an ongoing viable source of mussel spat.</p> <p>Lack of certainty in this respect could threaten the \$126.35 million generated annually and the 533 jobs (23 at the Wainui Bay farms and 510 in mussel farming and processing) in the combined region in the interim, as there will be a disincentive for the applicant, and others, to invest in the industry if a return on that investment is not guaranteed post 2024.</p> <p>Therefore, it is clear that the status quo is not an efficient and effective means of achieving objective 22.1.2.</p>	<p>Option 2 is an efficient and effective means of achieving the aquaculture objective in the Plan.</p> <p>Option 2 would secure 23 fulltime positions in relation to the site, 510 jobs in the combined region, in the order of 1326 FTE positions directly and indirectly in New Zealand, and \$126.35 million worth of revenue in domestic and export sales annually. It will also encourage investment in a sector of the economy recognised by the Government as playing a significant part in New Zealand’s economic growth in the coming decade.</p>	<p>Refer left under option 2.</p>
<p>24. Effects of Noise</p> <p>24.1.2 Objective</p>			

Section 32 requirement	Option 1 (Status Quo)	Option 2 (Exception, controlled status)	Option 3 (AMA 4 Wainui, controlled status)
A coastal marine area in which noise levels do not adversely affect natural character, amenity values or wildlife in the coastal environment.			
Costs and Benefits	The predominant source of noise occurs from vessels servicing the Wainui Bay farms. Noise is caused by the vessels' motors, radios, employee conversations, and harvesting machinery.	Refer left. Option 2 would have the benefit of seeing the current consent conditions relating to noise adopted as part of the Plan. This gives greater recognition of the impact of noise on residents and visitors to the area, and provides a greater level of comfort that mitigation measures will be taken.	Refer left under option 1 and option 2.
Quantification (or discussion of qualitative factors)	<p>The companies operating the spat catching process operate ten service vessels, eight of which are based at Tarakohe. On average each vessel visits the site and manages the lines and floats two days a week, and less often in winter. At the height of the season, vessels operate from 6.00am to 8.00pm to lay catch rope or uplift rope for spat transfer. On average it takes around 2 hours to uplift one long line of rope. The applicant takes all steps practical to reduce the amount of noise, including being party to three codes of practice (See Sections 6 and 13 of the AEE, Schedule 1, for more detail. Copies of two of the codes of practice are available at Appendices M and N).</p> <p>Concern about noise from vessels on the site has come principally from property owners overlooking the site, of which there are 11.</p> <p>In addition, other recreational craft can, and do, use the area, so the service vessels are just one form of marine traffic that may generate noise.</p>	Refer left for a quantification of costs and above in relation to the benefit of inclusion of the noise condition in the Plan.	Refer left under option 1 and option 2.

Section 32 requirement	Option 1 (Status Quo)	Option 2 (Exception, controlled status)	Option 3 (AMA 4 Wainui, controlled status)
	<p>No specific wildlife habitats have been identified as affected by the marine farms and associated noise.</p> <p>If the sites were to be used for mussel farming under the existing consents, the vessels would visit less regularly, but they would need to visit year round.</p>		
Risks	<p>The status quo does not present any risks, as the current level of noise associated with the marine farms is periodic, and within the rights affirmed in s 27 Marine and Coastal Area (Takutai Moana) Act 2011. If the site were to be used for mussel farming, there would be vessels visiting the site year round (although less regularly).</p>	<p>Option 2 would not result in noise levels at the site above those occurring under the status quo; however, current practice would be enabled to continue post-2024.</p> <p>The current level of noise associated with the marine farms is periodic, and within the rights affirmed in s 27 Marine and Coastal Area (Takutai Moana) Act 2011.</p>	Refer left under option 2.
Assessment of efficiency and effectiveness	<p>Maintaining the status quo still effectively and efficiently achieves objective 24.1.2. The number of people who consider that they are adversely affected is minimal, and is likely to be higher in alternative locations, given the higher housing density in other parts of Golden or Tasman Bays.</p>	<p>Option 2 also effectively and efficiently achieves objective 24.1.2, as existing noise levels would not be increased, and improved mitigation measures would be put in place by including the noise condition in the Plan.</p>	Option 3 achieves objective 24.1.2 in the same manner as option 2.
<p>35.1 Discharges in the Coastal Marine Area</p> <p>35.1.2 Objective The discharge of contaminants into the coastal marine area in such a way that avoids, remedies, or mitigates adverse effects while: (a) maintaining existing water quality; and (b) enhancing water quality where existing quality is degraded for natural and human uses or values.</p>			
Costs and Benefits	<p>Minor discharge of contaminants occurs during the harvesting of spat at Wainui Bay.</p>	Refer left.	Refer left under option 1.
Quantification (or discussion of qualitative factors)	<p>The 2015 NIWA report at Appendix G has shown that the effects of mussel spat harvesting at the</p>	Refer left. Option 2 would decrease the likelihood of the site being used mussel	Refer left under option 1. Option 3 would remove the possibility of the site

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	<p>Wainui Bay site has no significant or cumulative effects on the coastal marine area.</p> <p>Disposal of contaminants, such as discharge from harvesting spat, is not distinguishable from background sedimentation.</p> <p>If full mussel farming were to occur at the sites under the existing consents, it is likely there would be a slight increase in the amount of contaminants discharged, given the greater size of mussels compared with spat.</p>	farming.	being used for mussel farming.
Risks	<p>Given that there are no cumulative effects from minimal discharge at the Wainui Bay site, there is no risk from maintaining the status quo.</p> <p>If, however, the site was to be used for mussel farming, variations of which are allowed under the existing consents, there would be a slight increase in the extent of discharge during harvest.</p>	<p>Refer left. Lack of cumulative effects means that future generations will be able to remove the Wainui Bay farms, should they wish to do so, without lasting adverse effects on the environment.</p> <p>Use of the site for mussel spat catching, rather than mussel farming, is promoted by option 2. This keeps discharge during harvest to a minimum.</p>	Refer left under options 1 and 2.
Assessment of efficiency and effectiveness	Objective 35.1.2 is effectively and efficiently achieved by the status quo, although there would be a slight increase in the extent of discharge if the site was used for mussel farming under the current consents.	Objective 35.1.2 would be effectively and efficiently achieved by option 2.	Objective 35.1.2 would be effectively and efficiently achieved by option 3.