

Memo.

Responses to the Ecology s92 requests from Western Bay of Plenty District Council	To: Luke Faithfull, Mitchell Daysh
	From: Drs Vaughan Keesing and Leigh Bull
Project title: Glen Isla Place coastal protection structure	Date: 17 April 2025

In their letter dated 25 March 2025, Western Bay of Plenty District Council (WBoPDC), pursuant to section 92 of the Resource Management Act 1991, requested further information relating to the Ecological Assessment¹ which formed part of the resource consent application for the Waihi Beach Coastal Protection Structure at 95 Seaforth Road, the adjoining esplanade reserve at Lot 18 and Lot 19 DPS 22035 and 12 Glen Isla Place, Waihi Beach. In this memo, we provide responses to each of the s92 requests pertaining to ecology.

WBoPDC REQUEST #1: *The Ecological Assessment prepared by BlueGreen Ecology does not assess potential effects on a temporal scale; rather there is a focus on the immediate effects of construction. Clarify the short- and longer-term effects of the activity, both immediately post-construction and in the future, particularly in relation to the likely exposure of the seawall due to erosion of the sand cover.*

BLUEGREEN RESPONSE:

We are unsure here the relevance or indeed the intent of the question as an assessment is usually undertaken to consider the values affected by an application, which in this case is the removal of a portion of sand dune and its plant and animal components, and replacement with a submerged wall under replaced sand which is then revegetated with a better native dune community.

The potential adverse effect associated with the proposal is the removal of the current surface components of the dune area as a direct result of construction, with processes in place to minimise / avoid harm to specific fauna (lizards, katipo, larger sand invertebrates – including ensuring salvage and translocation of specific habitat features and their fauna). The assessment and proposal then address, through remediation planting and management / maintenance, the impact and reinstates on to the recontoured dune a ‘better than current’ dune plant community which is currently dominated by exotics and weed species. The remedial

¹ BlueGreen Ecology (2024). Glen Isla Place Coastal Protection: Ecological Assessment. Report prepared for Glen Isla Protection Society Incorporated.

actions must reach a particular success, i.e. the establishment of the plants and a certain cover (60%) where upon the system is suitably reset (and better) and the proposal includes controls to achieve this

Moving on in time, the system is then, as it is now, exposed to ongoing natural environmental change which the applicants are not responsible for. However, the presence of the coastal protection structure will provide a degree of protection to the vegetated sand dune habitat landward of the structure.

Where erosion may occur to the southern end of the structure, the dunes immediately south of the wall will behave as a natural dune. It will have the same form, erosion rate and recovery as the balance of the natural dunes in that area.

WBoPDC REQUEST #2: *Provide an evaluation of the potential adverse effects on birds, lizards, and spiders (noting these have been dismissed in the Ecological Assessment).*

BLUEGREEN RESPONSE:

Avifauna Assessment

Method

The method used to undertake this assessment are consistent with the EIANZ guidelines for undertaking ecological impact assessments (Roper-Lindsay et al., 2018a), whereby ecological values are assigned (refer to Table 1 below) and the magnitude of effects identified (Table 2) in order to determine the overall level of effect of the proposal (Table 3). For the purpose of this assessment, we have determined the magnitude of effect at the local scale, that being the Waihi Ecological District.

According to Roper-Lindsay et al. (2018a), the overall level of effect (Table 3) can then be used to guide the extent and nature of the ecological management response required:

- Very High adverse effects require a net biodiversity gain.²
- High and Moderate adverse effects require no net loss of biodiversity values.
- Low and Very Low effects should not normally be a concern. If the assessment of effects takes into consideration impact management developed during project shaping, then it is essential that prescribed impact management is carried out to ensure Low or Very Low effects.

² Though when ecological compensation is required because biodiversity offsetting is not possible, the principles of no-net-loss or net-gain do not apply (Maseyk et al., 2018).

Table 1: Criteria for assigning ecological value to species (Roper-Lindsay et al., 2018a).

ECOLOGICAL VALUE	SPECIES CLASSIFICATION
VERY HIGH	<i>Nationally Threatened</i> (Nationally Critical, Nationally Endangered, Nationally Vulnerable, Nationally Increasing ³) species found in the ZOI ⁴ either permanently or seasonally.
HIGH	Species listed as <i>At Risk – Declining</i> found in the ZOI either permanently or seasonally.
MODERATE	Species listed as any other category of <i>At Risk</i> (Recovering, Relict, Naturally Uncommon) found in the ZOI either permanently or seasonally; or Locally (ED) uncommon or distinctive species.
LOW	Nationally and locally common indigenous species.
NEGLIGIBLE	Exotic species, including pests, species having recreational value.

Table 2: Criteria for describing magnitude of effect (Roper-Lindsay et al., 2018a)

MAGNITUDE	DESCRIPTION
VERY HIGH	Total loss of, or very major alteration, to key elements/ features of the baseline conditions such that the post development character/ composition/ attributes will be fundamentally changed and may be lost from the site altogether; AND/OR Loss of a very high proportion of the known population or range of the element / feature.
HIGH	Major loss or major alteration to key elements/ features of the existing baseline conditions such that the post-development character, composition and/or attributes will be fundamentally changed; AND/OR Loss of a high proportion of the known population or range of the element / feature.
MODERATE	Loss or alteration to one or more key elements/features of the existing baseline conditions, such that post-development character, composition and/or attributes will be partially changed; AND/OR Loss of a moderate proportion of the known population or range of the element / feature.
LOW	Minor shift away from baseline conditions. Change arising from the loss/alteration will be discernible, but underlying character, composition and/or attributes of the existing baseline condition will be similar to pre-development circumstances/patterns; AND/OR Having a minor effect on the known population or range of the element / feature.
NEGLIGIBLE	Very slight change from existing baseline condition. Change barely distinguishable, approximating to the “no change” situation; AND/OR Having a negligible effect on the known population or range of the element / feature.

³ Nationally Increasing is category that was devised by DOC (Michel, 2021) in 2021 to resolve a problem that would arise if the population of a taxon assessed as At Risk Recovering A should stabilise. Threatened – Nationally Increasing is assigned to “Small population that have experienced a previous decline (or for which it is uncertain whether it has experienced a previous decline) and that is forecast to increase >10% over the next 10 years or 3 generations, whichever is longer” (Rolfe et al. 2021). Thus, while such a threat category is not identified in Roper-Lindsay et al. (2018a), we have included it along with all other *Threatened* classifications in to the Very High ecological value category.

⁴ Roper-Lindsay et al. (2018a) define the Zone of Influence (ZOI) as “the areas/resources that may be affected by the biophysical changes caused by the proposed project and associated activities.”

Table 3: Criteria for describing the level of effect (Roper-Lindsay et al., 2018a)

LEVEL OF EFFECT		ECOLOGICAL AND / OR CONSERVATION VALUE				
		Very High	High	Moderate	Low	Negligible
MAGNITUDE	Very High	Very High	Very High	High	Moderate	Low
	High	Very High	Very High	Moderate	Low	Very Low
	Moderate	High	High	Moderate	Low	Very Low
	Low	Moderate	Low	Low	Very Low	Very Low
	Negligible	Low	Very Low	Very Low	Very Low	Very Low
	Positive	Net gain	Net gain	Net gain	Net gain	Net gain

Avifauna values

In general, vegetated sand dunes, such as the terrestrial vegetation component of the Project site, provide limited habitat for a range of common and widespread birds, including native Not Threatened (e.g. silver-eye) and Introduced species (e.g. chaffinch, blackbird). According to Roper-Lindsay et al. (2018a) (Table 1 above), these species are assigned Low and Negligible ecological value respectively.

Coastal stream mouths on sandy beaches, such as that adjacent to the Project site, provide foraging, roosting and / or breeding (above mean high water spring (MHWS)) habitat for wader and shorebirds. Table 4 below (taken from Ecological Assessment) provides a list of species for which the coastal margin adjacent to the project site may provide potential habitat throughout the year.

Table 4: Native coastal and shorebird species for which the coastal margin adjacent to the site may provide potential habitat

SPECIES		NZ THREAT CLASSIFICATION ⁵	ECOLOGICAL VALUE ⁶	HABITAT UTILISATION
Variable oystercatcher	<i>Haematopus unicolor</i>	At Risk - Declining	High	Roosting & foraging
Red-billed gull	<i>Larus novaehollandiae</i>	At Risk - Declining	High	Roosting & foraging
White-fronted tern	<i>Sterna striata</i>	At Risk - Declining	High	Roosting & foraging
Banded dotterel	<i>Charadrius bicinctus</i>	At Risk - Declining	High	Roosting & foraging
Northern NZ dotterel	<i>Charadrius obscurus</i>	Threatened – Nationally	Very High	Breeding, roosting & foraging
Black-backed gull	<i>Larus dominicanus</i>	Not Threatened	Low	Roosting & foraging
White-faced heron	<i>Egretta novaehollandiae</i>	Not Threatened	Low	Roosting & foraging
Pied stilt	<i>Himantopus h.</i>	Not Threatened	Low	Roosting & foraging
Paradise shelduck	<i>Tadorna variegata</i>	Not Threatened	Low	Roosting & foraging
Spur-winged plover	<i>Vanellus miles</i>	Not Threatened	Low	Roosting & foraging

Northern New Zealand dotterel is the only species that has been reported breeding adjacent to the project site. Previously, a single pair of Northern New Zealand dotterel have been recorded breeding at the Three Mile Creek mouth on two occasions (2021/22 and 2022/23 breeding seasons). The approximate location of the nest site is shown in Figure 1 below, and a photo provided in Figure 2. Nesting habitat for this species generally occurs on low, flat areas largely devoid of vegetation, where the nest is a simple scrape in the

⁵ Robertson et al. (2021)

⁶ Table 3

substrate, sometimes sparsely lined. When mobile, chicks generally seek cover under driftwood or vegetation if required. Thus, the spinifex foredune may provide cover to northern NZ dotterel chicks when breeding occurs there.

Chicks have not fledged in either season when breeding has occurred, with the latest attempt in 2022/23 failing due to the nest being washed away by the storms of Cyclones Hale and Gabrielle. Furthermore, we understand based on our discussion with Mrs Mel O'Sullivan⁷ while on site, that dotterel have not bred at this location in the subsequent two breeding seasons (i.e. 2023/24 and 2024/25).



Figure 1. Vegetation community map of the site. Approximate location of dotterel nest demarcated by red cross (X)

⁷ Until very recently, Mrs O'Sullivan was the owner and long-time permanent resident of 12 Glen Isla Place



Figure 2. Photo of dotterel nest habitat by Three Mile Creek mouth. Note spinifex foredune which will be avoided by works.

Assessment of Effects

The following potential effects of the proposal are assessed in the subsequent paragraphs:

- Permanent loss of habitat (foraging, roosting or breeding);
- Construction disturbance; and
- Mortalities and / or injuries due to construction activities.

For this assessment, we have assumed that species listed in Table 4 above could potentially be present

Permanent habitat loss

According to the Ecological Assessment (BlueGreen, 2024), the proposal will result in the loss of 0.007 ha of southern pohuehue vegetation, and 0.2425 ha of various exotic dune vegetation located in the central exotic terrace, hollow and riser slope. The loss of this vegetation will result in a **Negligible** magnitude of effect on common native Not Threatened and Introduced species, which are assigned **Low** and **Negligible** ecological value. As such, the overall level of effect on these species will be **Very Low**.

Areas of foraging, roosting and breeding coastal bird habitat have been identified, and the Project design has sought to avoid these areas (i.e. the area of spinifex foredune and coastal margin at the northern end of the Project site). As such, the proposed design will not result in any permanent habitat loss for avifauna, including northern New Zealand dotterel.

In fact, following the completion of construction at the northern end, replanting the area behind the existing northern spinifex foredune with native dune vegetation will provide higher quality habitat for northern New Zealand dotterel chicks than the existing exotic vegetation, and as such is considered to provide **Positive** magnitude of effect, resulting in an overall **Net gain** (refer to Table 3 above).

Construction disturbance

Disturbance activities can occur during the construction phase (e.g. noise, vibration and plant movement) and may result in avifauna displacement, decreased feeding rates, and unattended nests (leading to incubation failure and increased opportunities for predators), energy and time cost.

Potential effects of construction disturbance on nesting birds will be **avoided** through:

- Undertaking construction outside of the breeding season⁸ where feasible; and
- If construction works are to occur during the breeding season, an Avifauna Management Plan will be prepared which will include pre-work surveys and the implementation of mitigation measures if birds are found to be nesting.

Such mitigation measures may include an exclusion zone around any nesting birds, within which construction works cannot be undertaken.

Given the short-term nature of the proposed works, along with the proposed measures above, the potential effects on nesting birds will be at the most **Negligible**. Therefore, based on the **Very High** ecological value of northern NZ dotterel, the overall level of effect of disturbance will be **Low**.

With regard to roosting and foraging birds, the magnitude of effect as a result of construction disturbance will also be **Negligible** given their mobile nature and the presence of foraging and roosting habitat elsewhere along Waihi beach. Based on the **Very High** to **Low** ecological values of the species potentially roosting and foraging within and adjacent to Project site (refer to Table 4 above), the overall level of effect will be **Low** to **Very Low**.

Mortalities and / or injuries

The mobile nature of most avifauna species means that the potential for direct mortalities or injuries associated with construction activities are likely to be confined to birds that may be breeding within the Project footprint.

Furthermore, the potential for mortalities and / or injuries to nesting birds will be **avoided** through the following measures:

- Undertaking construction outside of the breeding season where possible; and
- If construction works are to occur during the breeding season, an Avifauna Management Plan will be prepared which will include the requirement for pre-work surveys and the implementation of mitigation measures if birds are found to be nesting.

Such mitigation measures may include an exclusion zone around any nesting birds, whereby construction works cannot be undertaken.

⁸ Breeding season is broadly considered to be between 01 August and 31 March, and the non-breeding season between 1 April and 31 July.

Summary of potential effects and proposed consent conditions

A summary of the overall level of potential effects of the proposal on avifauna is provided in Table 5 below. Effects are generally assessed as **Very Low**, with construction disturbance on New Zealand dotterel **Low**.

However, we note that it is essential that the impact management measures recommended in the preceding sections (including those developed during project shaping) are carried out to ensure the Low or Very Low effects transpire. As such, this will be achieved through consent conditions which require:

- Avoidance of the area of spinifex foredune and coastal margin at the northern end of the Project site through fencing off the protected vegetation area of the site;
- Undertaking construction outside of the breeding season where possible; and
- If construction works are to occur during the breeding season, an Avifauna Management Plan will be prepared which will include pre-work surveys and the implementation of mitigation measures if birds are found to be nesting.

I note that the activity will be subject to resource consent from Bay of Plenty Regional Council establishing these requirements.

Table 5: Summary of the overall level of potential effects of the proposal on avifauna.

POTENTIAL EFFECT	SPECIES	ECOLOGICAL VALUE ⁹	MAGNITUDE OF EFFECT ¹⁰	OVERALL LEVEL OF EFFECT ¹¹
Permanent habitat loss	Native Not Threatened species (e.g. silvereye, welcome swallow etc)	Low	Negligible	Very Low
	Introduced species (e.g. blackbird, chaffinch etc)	Negligible	Negligible	Very Low
	Northern NZ dotterel	Very High	Avoided	-
Construction disturbance	Native Not Threatened species (e.g. silvereye, welcome swallow etc)	Low	Negligible	Very Low
	Introduced species (e.g. blackbird, chaffinch etc)	Negligible	Negligible	Very Low
	Northern NZ dotterel	Very High	Negligible	Low
	Variable oystercatcher	High	Negligible	Very Low
	Red-billed gull	High	Negligible	Very Low
	White-fronted tern	High	Negligible	Very Low
	Banded dotterel	High	Negligible	Very Low
	Black-backed gull	Low	Negligible	Very Low
	White-faced heron	Low	Negligible	Very Low
	Pied stilt	Low	Negligible	Very Low
	Paradise shelduck	Low	Negligible	Very Low
	Spur-winged plover	Low	Negligible	Very Low
Injury and / or mortalities	Northern NZ dotterel	Very High	Avoided	-

References

⁹ Table 1

¹⁰ Table 2

¹¹ Table 3

- BlueGreen. (2024). *Glen Isla Dune—Coastal Protection Project: Ecological Assessment* (Report prepared by BlueGreen Ecology Ltd for Glen Island Protect Society).
- Maseyk, F. J. F., Ussher, G. T., Kessels, G., Christensen, M., & Brown, M. (2018). *Biodiversity offsetting under the Resource Management Act: A guidance document*. Prepared for the Biodiversity Working Group on behalf of the BioManagers Group.
- Michel, P. (2021). *Amendment to the New Zealand Threat Classification System manual 2008: Revised categories 2021*. Department of Conservation.
- Robertson, H. A., Baird, K. A., Elliott, G., Hitchmough, R., McArthur, N., Makan, T., Miskelly, C., O'Donnell, C. F., Sagar, P. M., & Scofield, R. P. (2021). *Conservation status of birds in Aotearoa New Zealand, 2021*. Department of Conservation, Te Papa Atawhai.
- Roper-Lindsay, J., Fuller, S. A., Hooson, S., Sanders, M. D., & Ussher, G. T. (2018a). *Ecological impact assessment (EclA). EIANZ guidelines for use in New Zealand: Terrestrial and freshwater ecosystems* (2nd ed.). Environment Institute of Australia and New Zealand.
- Roper-Lindsay, J., Fuller, S. A., Hooson, S., Sanders, M. D., & Ussher, G. T. (2018b). *Ecological impact assessment (EclA) EIANZ guidelines for use in New Zealand: Terrestrial and freshwater ecosystems* (2nd Edition). Environmental Institute of Australia and New Zealand.

Lizards and macroinvertebrates

The assessment determined that while a small range of lizards are potentially present in this thin and outer edge of the wider Island View Reserve, and area with few habitat items, the presence of copper and shore skink could not be ruled out, but if present are most likely present in very small numbers. Nevertheless, their possible presence is proposed to be managed, as a requirement of consent conditions, by requiring a suitably qualified ecologist to be present during pre-commencement vegetation clearance (and woody material removal) to ensure, in the event they are located, lizards are suitably managed and moved to non-impacted areas of the wider dune environment and so adverse effects directly to such species will be avoided.

If either or both shore and copper skink are present, then following Roper-Lindsay et al. (2018) these taxa can be considered of **High** value due to their At Risk – Declining conservation status. The impact may be two-fold, harm directly and /or loss of habitat. The magnitude of harm, to a local population, we considered as **Negligible** because of the management recommended to occur, i.e. salvage of lizards. In theory, no lizard is harmed, and the population is not reduced and its ability to continue life phases is unaffected. With regard to the temporary removal of vegetated habitat, this will comprise some 70m² of High value and some 2425m² of low value vegetation habitat to be removed. The potential available connected habitat for these species is around 7ha (Island View Reserve). We consider that the following combined assessment is sufficiently robust because the High value habitat area is only a small proportion of the total (0.1%). Using the measured amounts of dune habitat accessible to local skink that will be affected (2495m²), there will be a temporary reduction in local skink habitat in the order of 3.6% of that available along the local coastal edge for the duration of construction and until the remediation revegetation is established. The temporary effect will be **Low** and very low (based on High value and Low magnitude and Low value and Low magnitude respectively; refer to Table 3 above), but the salvaged lizards will persist in the adjacent unaffected areas, and it is highly unlikely that that habitat area is at or even near carrying capacity.

Remediation planting will have a positive effect on lizard habitat because pest and exotic plants will be replaced by indigenous species. Once planting is established and woody debris is returned, the habitat replacement will be a **Net gain** to the local native species (based on High value and Positive magnitude; refer to Table 3 above).

The same rationale is extended to the macroinvertebrates of the dunelands. Those found are not High value taxa, and the effects will be **Low** or less and temporary. Katipo spider were not found, and the habitat is unsuitable for this species given it is predominantly more stabilised dune area, with few woody debris and mostly exotic weed taxa. Nevertheless, the process of preclearance search and salvage removes the potential for direct harm to At Risk invertebrate taxa in the event they are found on site or are present within relocated material, as does salvage of the habitat features they prefer.

WBoPDC REQUEST #3: *To support the conclusion of the Ecological Assessment (that the project will have a "less than minor" effect and result in a "net ecological benefit at a local scale") provide an assessment of the longer-term effects of the seawall, including the potential effects on dunes in the reserve immediately to the south of the proposed seawall.*

BLUEGREEN RESPONSE:

In part the response to query 1 addresses some of this question, which is that where the remedial actions are successful, there is no ongoing effect related to the application. Our understanding is that the proposed seawall is to be dug into the dune, covered in sand and then revegetated to a suitable dune that will stabilise the sands, as much as any plant community can. Therefore, and on the assumption that the remedy is successful, there is no ongoing temporal adverse effect to consider. There may be a question of erosion and physical processes related to an exposure of the southern portion of the wall and as that relates to the southern thin connection to the Island Bay reserve dune system, but that is a geomorphological / coastal processes question rather than ecological. In that circumstance we understand that the proposed works will protect the habitat more than cause it greater threat.

WBoPDC REQUEST #4: *Provide of an assessment on indigenous fauna such as New Zealand dotterel and shore skink to support the conclusion of "net ecological benefit at a local scale".*

BLUEGREEN RESPONSE:

As outlined in the avifauna response to question 2 above, the replacement of the northern exotic dune vegetation with spinifex will extend the area in which northern NZ dotterel chick can seek shelter should birds breed in front of the project site (refer to Figure 2 above). This increases the area of dune vegetation available to breeding dotterel and is therefore a net ecological benefit at the local scale.

With respect to skink (shore and /or copper) the remedial revegetation will include native plant species that provide better food and habitat resources (e.g. pohuehue) than the current exotic species. Therefore, the larger area of native dune vegetation and (with the replacement of the woody debris etc) the habitat created will be of greater value to skink (and invertebrates). But we note that both skink species can be found in gardens very close to the coast and exotic vegetation communities too, and the remedial actions of this small area of the wider habitat while fully remediating the adverse effect will likely be of only a small additional benefit to the current skink assemblage, it is however, in terms of representing an indigenous foredune assemblage a considerable improvement on the current and so a net ecological gain more befitting its current status of the area.

WBoPDC REQUEST #5: *The Ecological Assessment states that “there is a reasonable possibility that the proposed sand cover of the southern portion of the wall will not persist for long”. This appears to contradict its optimistic conclusion of a net ecological gain; particularly given the absence of measures to be applied should the sand cover disappear. Provide further clarification of what actions (mitigation) will be implemented if the sand cover is lost. What effect would this have on remedial plantings in the medium to long term.*

BLUEGREEN RESPONSE:

The coastal processes expert (Craig Davis of Davis Coastal) has stated that based on beach monitoring data over recent decades, the wall should remain covered except in very occasional storms, and will re-cover and vegetate after storm events. As noted above, the applicants are not responsible for natural coastal erosion processes. That said, the Ecological Assessment recommended a two times multiplier of the remedial action in the southern area to assist in ensuring establishment of this higher valued southern pohuehue is successful. If the sand cover is lost after the remedial plant establishment (which is monitored and managed to success), then the effect is one of a natural erosion event and no further action of the applicant should be required.

WBoPDC REQUEST #6: *Confirm if the activity is reliant on sand push-ups and the mechanism for this. If this forms part of the scope of work being considered what effects would the frequency have on remedial plantings and indigenous fauna.*

BLUEGREEN RESPONSE:

Our assessment did not assume that there would be the need for sand push ups (nor do we understand that any such occur now) and that the recovered wall sand could be successfully planted with and establish a dune species cover. We note that the coastal processes expert (Craig Davis of Davis Coastal)) advises that the wall cover is not reliant on sand push-ups.

WBoPDC REQUEST #7: *It is noted on page 20 of the Ecological Assessment that “where the installed wall is recovered in sand, then it is also necessary to stabilise the sands and retain a sand dune, as opposed to having an exposed stone wall, and so a need to revegetate the sand”. This implies that the Applicant intends to cover and plant exposed parts of the seawall, indefinitely. Please clarify.*

BLUEGREEN RESPONSE:

The assessment considered that the wall being recovered in sand would need to be revegetated to firstly maximise the chance of stabilising the sands and secondly to provide quality dune habitat and representative vegetation.

To ensure the success of the replanting, planted vegetation will be managed and maintained for the period described above in the answer to question 1, during which time lost plants will be replaced. If sand is lost, the applicant will not be able to replace that sand as it will not have an available source of additional

sand. Some sand could be lost from time to time from the front face of the wall but it is unlikely that sand will be lost above the top of the wall due to the protection of the wall itself. Any sand lost from the front face of the wall is likely to be replaced through natural accretion over time. Where that is successful, we considered that the remedial actions required to balance the effects will have been achieved. If, after that remediation is deemed to have been successful, coastal processes cause erosion sufficient to remove the vegetation sand areas from the dune, inclusive of the buried wall, it will likely also have removed the front spinifex dune and, in total, that erosion should be considered a part of the natural process of this coast and an effect which the applicant is not responsible to manage.

WBoPDC REQUEST #8: *How does the proposed level of adverse effects align with the requirements of the New Zealand Coastal Policy Statement, Policy 11 and demonstrate that significant adverse effects will be avoided, remedied, or mitigated in accordance with this policy. Why have 'At Risk' indigenous fauna species not been considered in the Ecological Assessment with regard to Policy 11a(i).*

BLUEGREEN RESPONSE:

As stated in the Ecological Assessment (at Sections 4 and 6), there will be no significant adverse effects as effects are avoided or the overall level of effects are considered Very Low. Furthermore, anticipated effects will be temporary and the resultant features post-effects management (remedial actions of sand cover and revegetation, salvage and replacement) cause the values most intrinsic to the NZCPS to be remedied.

With regard to Policy 11(a)(i), as described in Section 3 of the Ecological Assessment), terrestrial vegetation at the Project site does not provide habitat for any 'Threatened' or 'At Risk' avifauna species. Similarly, no 'Threatened' or 'At Risk' lizards or macroinvertebrates were found at the site.

As further described in response to query 2 above, the High value taxa (i.e. 'Threatened' or 'At Risk' species) potentially present are managed by avoiding the highest value habitat, minimising the effect to the high value vegetation, , preparing an Avifauna Management Plan should works extend into the breeding season, having a suitably qualified ecologist present during pre-construction vegetation clearance, and managing any lizards or macroinvertebrates found, such that adverse effects are avoided.

Therefore NZCPS Policy 11 is adhered to, and the resultant values post-construction are as good as, but likely better, in terms of habitat and taxa presence in this coastal area.

WBoPDC REQUEST #9: *Demonstrate how the proposed works are consistent with the effects management requirements under the NPS-IB, including an assessment of Policy 4 regarding resilience to the effects of climate change.*

BLUEGREEN RESPONSE:

Section 7 of the Ecological Assessment applies the effects management hierarchy under the NPS-IB. The effects management firstly walks through the hierarchy: avoidance, minimisation, remedy and does not require to step further with the remedial actions leaving no residual effect requiring an offset.

In terms of resilience of indigenous biodiversity to climate change, the front dune which is the most representative indigenous biodiversity is not affected by the proposal and will be as susceptible to the effects of climate change as it would be without the proposed activity. The proposed vegetation removal and remediation will increase the proportion of indigenous biodiversity by removing pest and exotic plants, replacing these with indigenous species, and resulting in the presence of more native plants than currently present. If climate change either drowns the front dune or causes more storms, the activity has no adverse impact on the resilience of this coastal dune, it will be as it is now, at risk of loss. In fact, the project would protect any vegetated dune behind the coastal erosion structure thereby improving resilience of the dune environment.

WBoPDC REQUEST #10: *How is the loss of the ecologically significant southern pohuehue going to be addressed and what steps are being taken to remedy or mitigate the effect of this loss? Provide further information to support the conclusion that the loss of this Significant Natural Area is "very low at the local scale".*

BLUEGREEN RESPONSE:

As stated on page 20 of the Ecological Assessment *"We consider that the impacts on the southern pohuehue/knobbly club rush area requires remediation while the wider site requires mitigation to preserve the natural character and ecological functioning."*

As the report identifies, approximately 70m² of the southern pohuehue-knobbly club rush area will be lost during construction. This is proposed to be remedied through the revegetation of 140m² (double the affected area to accommodate the lag between loss and regenerated assemblage) with pohuehue and knobbly club rush. All planting is to be subject to a detailed Remediation Planting Plan, as a requirement of any consent conditions for the proposal, which includes maintenance and replanting requirements.

As stated in the report and addressed to a degree above, the loss of 70m² of this community is set against around 4ha of the same front dune along Island View Reserve and so represents 0.18% of the available local vegetation type. This arguably High value vegetation assemblage is thus affected by a Negligible magnitude of effect, and a temporary one at that, and therefore resulting in a Very Low level of effect.

WBoPDC REQUEST #11: *Please clarify future management of vegetation following the initial remedial plantings. Does the proposed Remediation Planting Plan condition adequately mitigate the effects of vegetation removal, both in the short and longer terms.*

BLUEGREEN RESPONSE:

Once remedial planting has been established (it is managed for 2 years or until 60% coverage is achieved to ensure establishment) and is confirmed by monitoring to have been successful as remedial revegetation, its management from there on, because the effects have been successfully remedied at that point, as we understand it, falls to the same authority that manages it now (i.e. WBoPDC).

WBoPDC REQUEST #12: *How will the Remediation Planting Plan mitigate the potential destabilisation of the dune and impacts following storm events.*

BLUEGREEN RESPONSE:

Storms of such magnitude would remove the existing values, and the council is unlikely to then recover those values through restoration. But in respect to this application for works, we understand that the Applicant does not need to mitigate storm effects once the sand covering has been successfully established in the dune plant assemblages required by the consent conditions. We understand that the Applicant accepts a condition of consent requiring the replacement of plants within the Reinstatement Area (the area of disturbed vegetation area within the construction footprint in the dune and is the targeted replanting area to preserve and enhance the ecological functioning of the IBDA-B) that are lost due to a maximum of two storm events during the establishment period (being 2 years or until 60% coverage is achieved).

WBoPDC REQUEST #13: *What effect will the proposal have on the ability of indigenous biodiversity to rehabilitate in the short term due to the settling of sand around the constructed structure (e.g. potential for sinkholes). What measures are proposed to ensure that there is dune renourishment and maintain the 0.5m buffer above the rocks.*

BLUEGREEN RESPONSE:

Craig Davis of Davis Coastal advises that the settling of sand around rocks involves very small movements compared to natural sand transfer and movement within the dune system. There should not be sizable sink holes and a 0.5m buffer is a nominal initial cover of the wall which we expect to increase naturally with vegetation establishment. The Applicant proposes that, prior to replanting of the Reinstatement Area, where a depression greater than 0.5m in depth is found, sand will be moved from the surrounding area, using raking (or a similar method), to contour the depression with the surrounding dune height prior to any planting occurring.

Ecologically, so long as the revegetation is successful, other colonists and fauna transferred will adapt and are suited to sand substrates that constantly change, and so we do not foresee an issue.

WBoPDC REQUEST #14: *Outline any regular monitoring proposed to track and manage the effects of sand movement and erosion resulting from the wall, including mitigation/management responses.*

BLUEGREEN RESPONSE:

This is not primarily an ecological issue, noting that the remedial ecological actions have a required monitoring regime to ensure that that ecological component of the project is successful.

WBoPDC REQUEST #15: *Does the proposal include for the installation of fencing/roped off areas to support dune stability and ecological recovery, along with ongoing protection of the dune from private property owners continuing to walk through the dune to access the beach.*

BLUEGREEN RESPONSE:

Craig Davis of Davis Coastal advises that fencing is as per the drawings. The area currently does not have any fencing and from an ecological perspective fencing may only be required in the short term to protect the planting while the remedial actions are managed to success. If fencing is not proposed, the effect will be no different than that of the existing situation.

WBoPDC REQUEST #16: *Please offer any proposed conditions of consent to address the above.*

BLUEGREEN RESPONSE:

We have reviewed the proposed conditions for the Bay of Plenty Regional Council earthworks consent and do not consider that any additions are required. The essence is that the construction effects are managed to minimise the area affected, avoid harm to specific valued species and that the areas proposed are remediated in the ways described in the draft plans and the success of those actions monitored and managed.