

STATEMENT OF ADVICE: Matt Ward – RESTORE

Botanical and Ecological Restoration
Independent contractor local in Wellington Region
27/05/26

INTRODUCTION

1. My name is Matt Ward

INSTRUCTION

2. I have been requested to provide expert advice on behalf of the Department of Conservation (DOC) on the Belmont Quarry Land Exchange application.

QUALIFICATION AND EXPERIENCE

3. I am an independent Botanist working from my home in Pukerua Bay, Porirua. I have a Bachelor of Science in Environmental Science and Geography from Victoria University of Wellington (2007). I have worked with plants since graduating, firstly at Zealandia – Te Māra a Tāne as a Conservation officer, then at Kapiti Coast District Council as an Ecological Restoration Officer. I have worked for myself as Matt Ward – RESTORE since 2012. I have 20 years' experience working with plants and plant conservation.
4. I have a good understanding of the Wellington Regional flora and environment. Work that is especially relevant to this application includes:
 - i. Restoration of Baring Head's Rare and Endangered plants (GWRC), 2017 – ongoing.
 - ii. Technical plant identification for the LUCAS project- specifically orchids (DOC), 2021-ongoing.
 - iii. Tier 1 Dunes Health Monitoring Work (GWRC) 2017 – ongoing.
 - iv. Mana Island Floral Diversity Enhancement Report Stage 2 (FOMI) 2015-2016.

CODE OF CONDUCT

5. Whilst it is acknowledged this is not an Environment Court Proceeding, I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. I have complied with the Code of Conduct in the preparation of this advice. Unless I state otherwise, this advice is within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions I express.

SCOPE OF ADVICE AND EXPERT OPINION

6. My expert advice relates to the following:
 - i. Adequacy of the Applicant's assessment of botanical and vegetation elements of the project, including identification of any values that have not been assessed or have been insufficiently characterised.

MATERIAL CONSIDERED

7. In preparing this advice I have reviewed the following document about the vegetation content of this land exchange application:

BlueGreen – Belmont Quarry Land Exchange – Overview of Ecological Values. Prepared for Winstone Aggregate Ltd, 20 February 2026. (v12_FINAL_20260220)

- I have visited the Winstone's sites on 4th September 2025 & 19th March 2026.
- I have visited the Department of Conservation site on 9th, 12th and 16th of September 2025.

SUMMARY

This application for land exchange involves Winstone Aggregates (the applicant) offering some adjacent land to the Belmont Regional Park (BRP) administered by the Department of Conservation (DOC) for some of the BRP land adjacent to their active quarry Hebden Crescent, Lower Hutt. The applicant intends to use the 'DOC give' area as an Over Burden Deposition Area (OBDA), therefore removing all the organic material and reshaping the area permanently. I will review the material in the application report stated above to accurately cover the details of the vegetation present in both the 'DOC give' and 'DOC take' areas. The plants present may be used to assess the quality of the areas in question, to ascertain whether this application will benefit the DOC estate and the BRP.

RESPONSE TO BLUEGREEN SUMMARY OF FINDINGS

KEY ISSUES

The following headings are in the order they appear in the BlueGreen report, along with other issues needing consideration.

1. LENZ Threatened Environments pp. 12-13.

The BlueGreen report states that the OBDA is of low value retaining very little indigenous vegetation when applying the LENZ Threatened Environments rating (MWLR, 2026). This is a moot point as the evaluation used is broadscale 1:25,000, and suggested by the authors not for use to make any objective conclusions in substitution for on-the-ground assessments (Cieraad *et. al.*, 2015; Walker *et. al.*, 2007).

2. Historical Context (The OBDA through time pp. 13-14)

The area where the OBDA is located is shown in figure 1 (Retrolens, 2026), it shows that areas of the farmed land was not completely devoid of native vegetation. The flatter more favourable pasture areas are those paler areas in the black and white image. The two magnified insets of the darker areas in figure 1 show the differences in texture present, likely relating to taller (than pasture) vegetation.

The likelihood these areas are remnant wetlands and rare forest type is supported by the plant species still present 85 years later, not suggesting any of the actual specimens are original, more likely descendants. The texture of the vegetation seen in figure 1, suggests a combination of various species, not likely to include *Ulex europaeus* – Gorse, (FACU species Clarkson *et. al.*, 2013) as suggested in the BlueGreen report (Section 3.4, page 13). Figure 3-5.

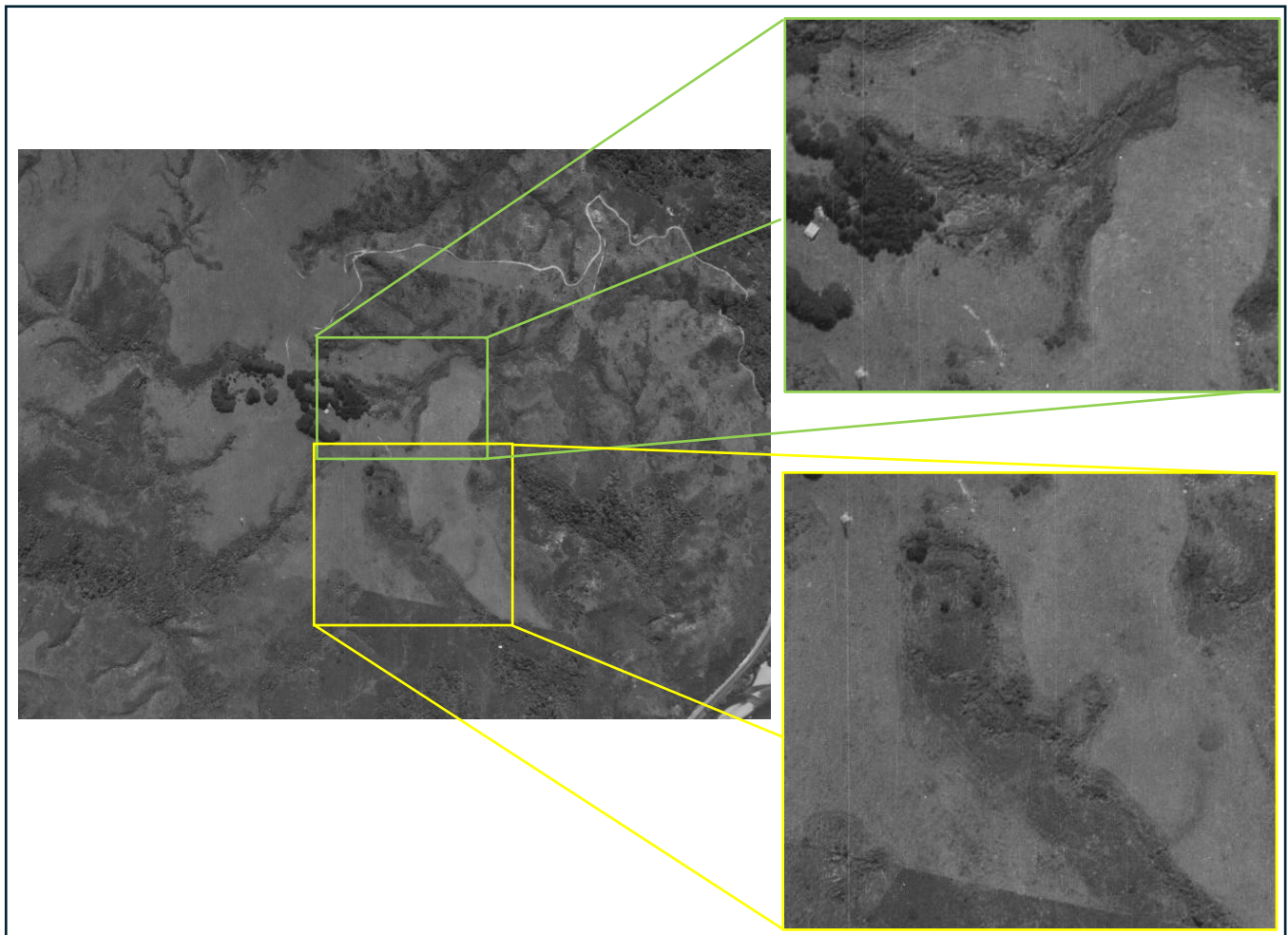


Figure 1 (above). An image from 1941 of the OBDA general area showing paler areas which would have been used for livestock.
(top-right). Inset shows a close-up of the remnant vegetation where a considerable wetland still exists today.
(bottom-right). Inset shows a close-up of the large gully which shows considerable textures of various potential plant species.

The areas featured in the insets directly correspond with the shallow gully areas where valued plant species either rare and endangered or obligate wetland species were recorded in 2025 (Figure 2.).

Figure 2 has the headwater features added as I recorded them on site in September 2025. These features when placed over the 1941 image (Figure 3.) directly correspond with the darker areas suggested to have remained vegetated by native plants during pastoral farm use.

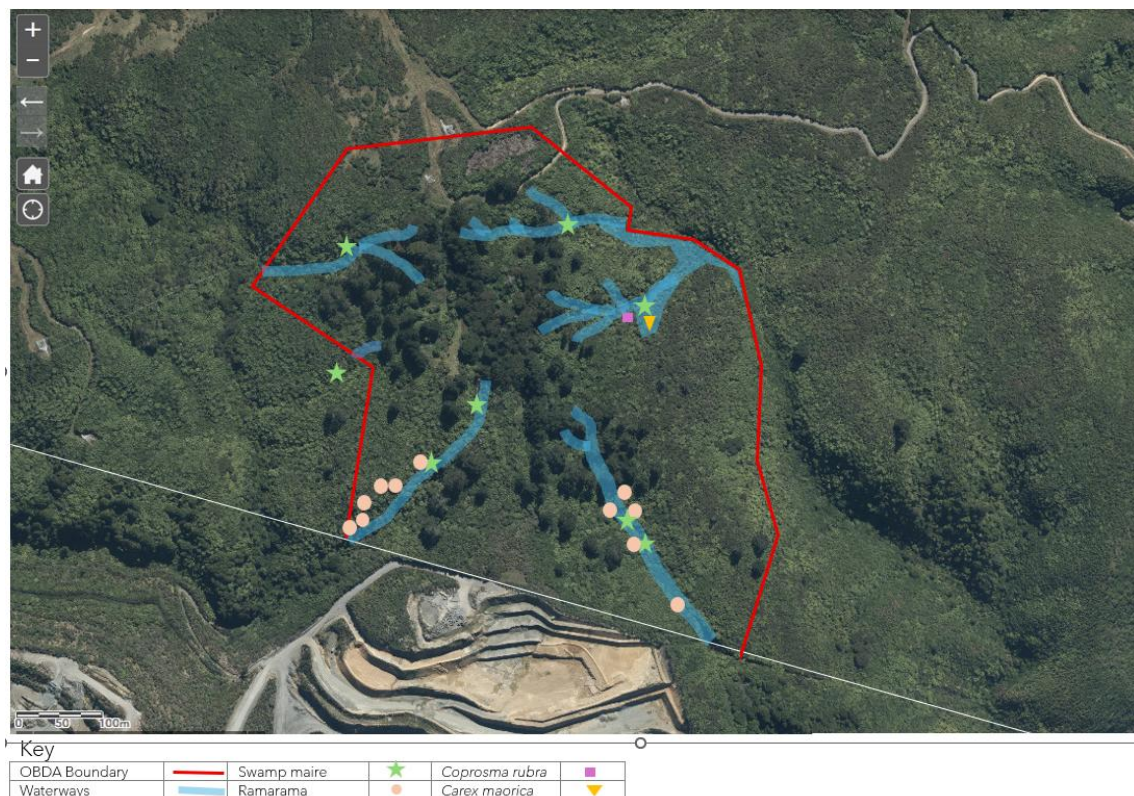


Figure 2. The OBDA present day, with the wet gully system, and Threatened Plants mapped as they were found during surveys in September 2025.

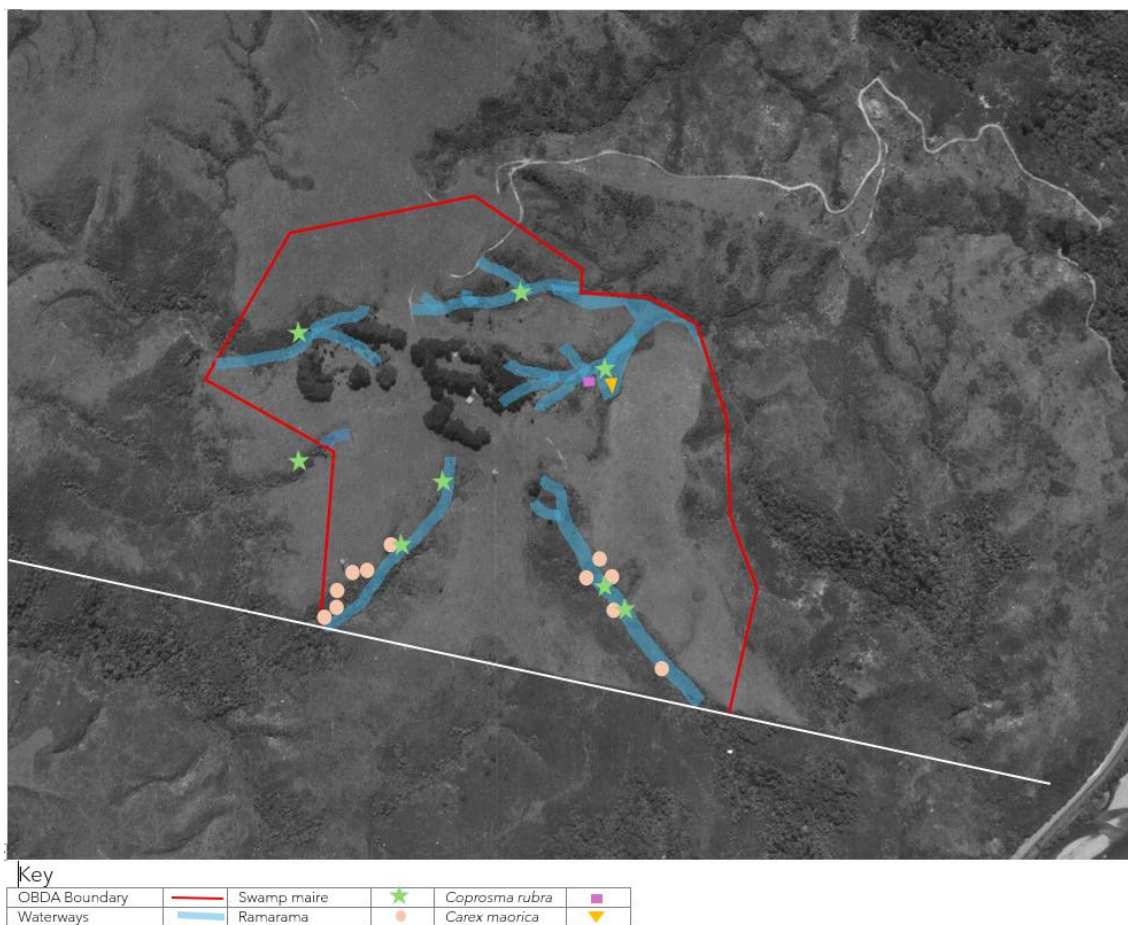


Figure 3. An image of the 1941 area of the OBDA with the Nationally Threatened Plants mapped as they were recorded during surveys in September 2025 overlaid.

3. Swamp Maire (pp. 85-88)

During my surveys in September 2025, 9 mature (reproductive age) specimens of the Threatened Nationally Vulnerable *Syzygium maire*- swamp maire were located within the OBDA area. All of the specimens were found in areas related to the shallow gullies of the headwaters as shown in figures 1 and 2 as green stars. During a brief traverse through the OBDA on March 19th, 2026, whilst exiting the Northern Gully section of Winstone's, a *Syzygium maire* – swamp maire was seen in full flower and fruit, an excellent example of a healthy thriving specimen within the OBDA (see figure 6).

In section 9.3.1 (page 88) 'Swamp Maire Conclusion' the BlueGreen report it states that:

"We recommend here that as part of the exchange, 200 swamp maire trees are raised from local sources (near enough 20:1) and planted into the wetland and managed to establishment (5 years), ensuring that the DOC-Get also has swamp maire trees."

The proposed offset rate of 20:1 is unsuitable, as it fails to reflect the maturity and ecological value of the specimens within the OBDA. To ensure the offset site achieves a comparable standard over time, I recommend adopting the precedent set by the New Zealand Transport Agency (NZTA) in 2019. In that project, an acceptable rate of 200:1 for destruction, and 100:1 for damage was applied (NZTA, , page 11).

The Notice of requirements states:

"Include the planting of swamp maire at the following rates:

- i) 100 swamp maire trees for any existing swamp maire tree affected by more than 10% of live growth pruning as determined by an independent, suitably qualified and experienced arborist;*
- ii) 200 swamp maire trees for any existing swamp maire tree that dies as a result of enabling or construction works activities, as determined by an independent, suitably qualified and experienced arborist."* (NZTA 2018; NZTA 2019)

Following the suggested off-set planting paragraph the report states:

"We also recommend that part of the substantive application attempts to transfer the existing nine swamp maire in the OBDA by way of whole tree or pruned tree and root ball transfer."



Figure 6. Healthy *Syzygium maire* – swamp maire with both flowers and fruit present in March 2026. Photos M. Ward 2026.

There is no evidence to suggest this methodology will be successful. While well-intentioned, the approach is currently unproven and lacks a conceptual or practical basis. Therefore, this suggestion is not likely to result in an enhancement of the offset site which would reflect the values present in the OBDA.

4. Wetland Species

Within the OBDA and Southern Gully (DOC Get) wetlands, several indigenous plant species were identified that are either restricted to or commonly found in such habitats. Clarkson *et. al.* (2021) classifies the affinity of New Zealand plants for wetlands using five indicator statuses:

- OBL: Obligate Wetland. Almost always is a hydrophyte, rarely in uplands (non-wetlands)
- FACW: Facultative Wetland. Usually is a hydrophyte but occasionally found in uplands
- FAC: Facultative. Commonly occurs as either a hydrophyte or non-hydrophyte
- FACU: Facultative Upland. Occasionally is a hydrophyte but usually occurs in uplands
- UPL: Obligate Upland. Rarely is a hydrophyte, almost always in uplands.

For the purpose of this report only the top 3 statuses are referred to, as they are of higher likelihood to be supporting the wetlands present in the OBDA or Southern Gully. The 20 species recorded in the OBDA are as follows:

- OBL **Trees/Shrubs** *Syzygium maire*- maire tawake, waiwaka.
Sedges *Carex dissita* - forest sedge, *Carex maorica* - Māori sedge (Regionally Uncommon), *Carex secta* - purei, pukio, *Eleocharis acuta*- sharp spike sedge, *Isolepis inundata*.
- FACW **Ferns** *Parablechnum minus*- swamp kiokio.
Sedges *Carex geminata* – rautahi, *Carex lesssoniana*- rautahi, *Carex virgata* - pukio, toito, *Schoenus maschalinus* - dwarf bog rush.
Herbs *Centella uniflora* - centella
- FAC **Trees/Shrubs** *Cordyline australis*- ti kouka, *Dacrycarpus dacrydioides* - kahikatea, *Laurelia novae-zelandiae* – pukatea, *Leptospermum scoparium* var. *scoparium* – mānuka.
Ferns *Histiopteris incisa* – mātātā, *Parablechnum novae-zelandiae* - kiokio, horokio.
Herbs *Cardamine corymbosa*, *Hydrocotyle moschata* var. *moschata* - hairy pennywort.

The ecological integrity of the OBDA wetlands is maintained by a closed canopy of *Dicksonia squarrosa* (Whēki, tree fern). The high density of these up to 8-metre-tall tree ferns creates a significant shading effect, preventing the encroachment of light-demanding invasive species, whilst allowing native species to create ground cover. This canopy cover has provided the basis upon which the rare forest type WF8 Kahikatea, pukatea forest — Regionally critically endangered — 1% remaining (Singers *et. al.*, 2018), has been able to regenerate. A key component to this forest type is the earlier mentioned swamp maire, a species not found anywhere else in the BRP.

The Southern Gully core wetland was briefly assessed, noting a predominance of planted species. However, the site is heavily infested with *Rubus fruticosus* agg. (blackberry). Routine maintenance is recommended to *enhance* the ecological health and robustness of this wetland restoration. Naturally occurring wetland species recorded were as follows:

- OBL **Sedges** *Carex secta* - purei, pukio (possibly only planted as all specimens were of similar age/size)
- FACW **Sedges** *Carex geminata* – rautahi

5. Forest Type

The existence of the swamp maire and various other wetland plants in the areas discussed above align to a type forest rare to the Wellington Region. The forest type described in Singers *et. al.* (2018) 'WF8 Kahikatea, pukatea forest — Regionally critically endangered — 1%' is known from nearby see figure 7. The botanical components of this forest type mentioned in Singers *et. al.* (2018) include *Laurelia novaezelandiae* (pukatea), *Dacrydium cupressinum* (rimu), *Dacrycarpus dacrydioides* (kahikatea), swamp maire, *Beilschmiedia tawa* (tawa), *Melicytus ramiflorus* (mahoe), *Alectryon excelsus* (titoki), *Sophora microphylla* (kowhai), *Plagianthus regius* ssp. *regius* (ribbonwood) *Elaeocarpus hookerianus* (pokaka), *Freycinetia banksii* (kiekie), *Ripogonum scandens* (supplejack, kareao, pirita), of which 75% are still present. Most of the species mentioned are at regenerating stage, but the fact they are present is important. Singers *et. al.* suggests that typically kahikatea is harvested from them, historically a timber used commercially, particularly for butter boxes (Dawson, 2009). Some of the other smaller OBL wetland species noted are shown in figures 8-10.

'Threatening Processes: *This forest type has been greatly reduced in extent with land development for agriculture and most examples are now highly fragmented or small in size. Most of the other extant examples have additionally suffered from lowered water tables as a result of land drainage, allowing invasion or replacement by species more suited to drier habitats.'* (Singers *et. al.*, 2018)



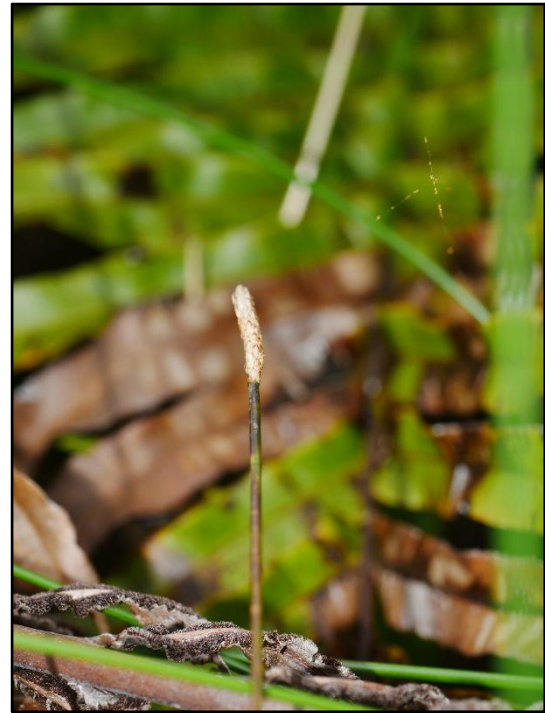
Figure 7. Known extent of the WF8 Pukatea forest type in the wellington Region (Singers *et. al.* 2018). The orange circle shows the location of the OBDA and its vicinity to other WF8 type forest. It is not far-fetched to see how an extension of the known range could be possible.



Figure 8. (above) An OBL species, *Carex maorica* (Māori sedge) seen in the wetland area on the Northeast of the OBDA, the only known location in BRP.

Figure 9. (right) Another OBL species *Eleocharis acuta* (sharp spike sedge), also a feature of the Northeast wetland in the OBDA.

Photos M. Ward 2025.



6. Edge Effect

Edge effect is referred to briefly yet not discussed in detail in the BlueGreen report. The definition of edge effect in a New Zealand forest context is “*The edges of areas of indigenous vegetation are where the impacts of surrounding land use are greatest and are where pests and weeds can invade and penetrate edges more easily. For a forest this is where light levels are higher and soil moisture and humidity are less. The edge effect can be seen most clearly where mature native forest adjoins pasture. Where a forest becomes highly fragmented (eg, by roads), the effective edge becomes proportionally larger relative to the intact core.* (MfE, 2017)”

- While a boundary fenceline beneath a continuous canopy helps limit the movement of larger pest animals, smaller pests remain a threat. These animals can hinder forest regeneration by disrupting seed dispersal and preventing seedling establishment. This manifests as a 'hollow' or open forest structure, indicating that browsing pressure or other stressors have prevented the establishment of new plant generations.
- Areas directly exposed to farmland or road edges are subject to significant edge effects. In these zones, increased pest pressure and environmental stressors—such as desiccation—can penetrate 20–100m into the interior (Norton, 2002; Janssen, 2006).

Since livestock were removed in 1996 (GWRC, 2007), the OBDA has transitioned into a robust ecosystem with mostly intact edges. In parts the vegetation now features a nearly continuous canopy (see figure 10.) and strong margins particularly along the surrounding road and track networks. At present much of the Southern boundary of the BRP near the OBDA is buffered by the Winstone’s owned North-eastern section of the Northern Gully and the two already protected QEII covenants. The only exposed edge of the OBDA is that of the active quarry area to the South, also the highest elevation of the site. This exposed edge is approximately 380 metres and allows exposure to the Southerly winds as well as access by invasive weedy plant species. If the land exchange were to take place the exposed edge would increase to 5,000 metres (Appendix 1).

Constructing the OBDA would expose swamp maire specimens on the western edge to southerly winds. This increased exposure likely necessitates ongoing monitoring for damage and potential offset planting to compensate for any harm (NZTA, 2019).



Figure 10. Looking up at 100% native canopy in the OBDA gully headwater draining Southeast. The canopy featuring a very tall *Coprosma areolata* (thin-leaved coprosma) in the centre, mahoe mid-left and top right, *Pseudopanax crassifolia* (horoeaka, lancewood top left).

Photo M. Ward 2025.

OVERALL ASSESSMENT FLORA VALUES

DOC Give Site – **Moderate-High**

*Future DOC Give Site - **Moderate-High**

DOC Get Sites Overall – **Low-Moderate**

DOC Get Sites Overall (Not including QEII covenants) - **Low**

*Future DOC Get Sites Overall – **Moderate**

	Representativeness	Diversity & pattern	Rarity & distinctiveness	Ecological context (size, shape, connectivity, buffering)	Overall Indigenous Flora Value	Indigenous Flora values after 5-7 years if all proffered measures are successfully implemented
DOC Give site						
OBDA	Moderate	Moderate-High	High	Moderate	Moderate-High	Moderate-High
DOC Get sites						
Dry Creek	Low-Moderate	Low	Low	Low	Low	Low-Moderate
Firth Block (QEII)	Moderate	Low	Low	Moderate	Low-Moderate	Low-Moderate
Northern Gully non-QEII	Low-Moderate	Low	Low	Low	Low	Low
Northern Gully (QEII only)	Moderate	Moderate	Moderate	Moderate-High	Moderate	Moderate
Northern Gully whole	Moderate	Low-Moderate	Low-Moderate	Moderate	Low-Moderate	Moderate
Southern Gully	Low-Moderate	Moderate	Moderate	Low-Moderate	Low-Moderate	Moderate

Rankings: **Low / Low-Moderate / Moderate / Moderate-High / High**

***Future** = The sites into the future by 5-7 years if all the post land transfer improvements were realised, or in the case of the OBDA the continued ongoing work by GWRC is undertaken.

The OBDA- DOC Give		
Criterion	Ranking	Comments
Representativeness	Moderate	Belmont Regional Park (BRP) is located in the Wellington Ecological District (WED), in general the vegetation is described as remnants of originally widespread forests: podocarp forests (kahikatea, totara, matai) on hills... miro-rimu/tawa forest at higher levels; all these species present in remnant forests though podocarps have been logged out of many remnants (McEwan, 1987). The WED covers an area which has many types of habitats (see Appendix 2.), and therefore many indigenous plant species. - When directly compared to the plant list of the WED (Ward, 2026) which has 602 indigenous native plant species, the OBDA area has 111 species (Ward, 2025, Appendix 3.), this includes Woody species 49 (30% of WED); Ferns 38 (37%); Grasses/sedges/rushes 14 (13%); Herbs 10 (4%). - The floral vegetation is in recovery after being an area farmed at low impact rates until 1996 (GWRC, 2007). This can be seen by the low percentage of palatable herbs and grass-like plant species recorded. Tall specimens are present particularly on the Southwestern section of the area (Figure 11). - The OBDA is regarded as 'Lowland broadleaf forest remains' within the BRP see Appendix 4 (GWRC,2007). There are several land cover types including a manuka/kanuka dominated block on the Eastern edge. The Southwestern edge also has the components of MF7 Tawa, Kamahi, podocarp forest regionally endangered 22% remaining (Singers et. al., 2018).
Future Representativeness	Moderate	This area is part of the GWRC Dry Creek KNE, continued efforts to remove the woody weed species is evident with the removal of holly (<i>Ilex aquifolium</i>) in the west of the OBDA ((GWRC, 2023, pg 12), the area will likely improve in species richness as potential disturbance areas are repopulated by the adjacent richer BRP forest as well as allowing seedlings and saplings already present a chance to thrive with the change in resource regime. These improvements would likely be minimal in the short term 5-7 years as suggested
Diversity & Pattern	Moderate-High	- The OBDA area has sections of WF8 Kahikatea, pukatea forest — Regionally critically endangered — 1% remaining (Singers et. al., 2018). The components are present and regenerating of note to this forest type is the <i>Syzygium maire</i> – swamp maire, a specialist obligate wetland species (Clarkson et. al., 2021). Apart from nearby along the western edge, this species is not found in any other part of the BRP. The evidence of these gully's being rare remnants can be seen in figures 1-3 as mentioned above. - The gullies are in good health with a canopy of tree fern; the lack of weedy species can be seen in figure 12.
Future Diversity & Pattern	Moderate-High	The ongoing work undertaken within the area as part of the Dry Creek KNE Operational Plan by GWRC will continue to improve all facets of the various habitats present. The longer efforts are undertaken the more there is to be gained, not much will change in a short term of 5-7 years. Long term the whole area may revert back to native vegetation.
Rarity & Distinctiveness	High	- There are up 20 species of the 111 natives present which prefer wetland habitat sequences. The most important being the Threatened Nationally Vulnerable tree species <i>Syzygium maire</i> – swamp maire an obligate wetland species. - Details are mentioned above – OBL 5 species; FACW 7 species; FAC 8 species. - The OBDA is the headwaters of six minor tributaries, which flow into three unnamed creeks which then flow into the Hutt River.

Future Rarity & Distinctiveness	High	With the discovery of more Threatened – Nationally Vulnerable Swamp maire specimens, being within the OBDA which has occurred in association with this land transfer proposal. More efforts would be made by both GWRC and the Friends of Belmont Regional Park to propagate and re-enforce the specimens present so that the population is more robust and resilient over time, the habitat is proven to be suitable for this work to happen.
Ecological Context	Moderate	• The OBDA is part of the Dry Creek Key Native Ecosystem site (KNE) which is a section of (613 ha) of the BRP (GWRC, 2024). • The area with indigenous plant species present is well buffered on approximately 80 % of its outer margin, having a core mostly consisting of non-native species which are slowly being succeeded by regenerating native species as can be seen in the sequence of pictures on page 14 of the BlueGreen (2026) report. • The wetlands still present within the area are home to some Nationally and Regionally rare and endangered species not found in any other part of the BRP. The wetlands are in good condition and are not infested with invasive plant species (Figure 13). • The exposed Southern edge of the OBDA has the active quarry face as a border see figure 14.
Future Ecological Context	Moderate-High	Having a decent population of swamp maire present within the OBDA will continue to provide a seed source that may be transported by the visiting avifauna, making the wider area (where swampy) potential sites for further spread of the species. The ongoing pest animal management in the area (GWRC, 2023, pg. 24) will continue to allow more seedlings to survive as is evident with this area already having a considerably higher percentage of native flora species than those areas outside the BRP.



Figure 11. A view upwards of a mature *Elaeocarpus dentata* (Hinaiu) canopy specimen.

Photo M. Ward 2025.



Figure 12. The *Dicksonia squarrosa* (wheki, tree fern) cover low energy gully weed free.

Photo M. Ward 2025.



Figure 13. A wetland amongst the native regenerating forest of the OBDA, FACW species *Carex geminata* and *Parablechnum minus* feature centrally here.

Photo M. Ward 2025.



Figure 14. The southern edge of the OBDA, the working face of the quarry.

Photo M. Ward 2025.

DRY CREEK – DOC Get		
Criterion	Ranking	Comments
Representativeness	Low-moderate	- Visited briefly, this area is the source of several weed problems faced by the management of the BRP, in particular, <i>Cortaderia selloana</i> (Pampas grass). The entire central area of this block (not offered as exchange) needs critical weed control undertaken as a considerate neighbour to the BRP, some of these weedy featured a shown in figure 15. - When directly compared to the plant list of the WED (Ward, 2026) which has 602 native plant species, the DRY CREEK area has 48 (8% of WED) native species (BlueGreen, 2026), they include Woody species 26 (16% of WED); Ferns 18 (17%); Grasses/sedges/rushes 1 (0.9%); Herbs 3 (1.3%). - I mostly agree with the assessments made in the Blue Green Report.
Future Representativeness	Moderate	With successful weed species removal/control this area may naturally reinvigorate in time, this would take longer than the suggested time frame for management of 5-7 years, more likely results would be obvious after 25 years, once canopy has formed and natural regeneration occurs.
Diversity & Pattern	Low	I agree with the assessments made in the BlueGreen Report.
Future Diversity & Pattern	Low-moderate	There are a range of habitats present in this area including riparian habitat and slope habitat. The riparian margins may improve with the removal of weed species, and the source from which they continue to reinvade, these habitats will improve in diversity in the long term.
Rarity & Distinctiveness	Low	I agree with the assessments made in the BlueGreen Report.
Future Rarity & Distinctiveness	Low	The proposed improvements will yield negligible benefits regarding this criterion.
Ecological Context	Low	- I agree with the assessments made in the BlueGreen Report. - If this area were to be exchanged it would create an expensive liability for the management of the BRP, at present it is a buffer from the central weedy zone see figure 16.
Future Ecological Context	Moderate	After the removal of the weed species from this area, it will take time for the native species to recalibrate. This would eventually allow the vegetation to 'catch up' with the encompassing BRP which has pest plant and pest animal work already ongoing by GWRC as part of the Dry Greek KNE Operational Plan.



Figure 15. From central area looking Northeast, shows concerning pest plant species, *Ulex europaeus* (gorse), *Buddleja davidii* (buddleia), in the foreground, with a whole slope of *Erica lusitanica* (Spanish heath) in flower in the background left.

Photo M. Ward 2025.



Figure 16. From central area looking Southwest, shows concerning pest plant species, *Cytisus scoparius* (broom) and *Cortaderia selloana* (pampas grass), in the foreground, the slope beyond covered with an assortment of gorse, buddleia, pampas grass, Spanish heath and *Leycesteria formosa* (Himalayan honeysuckle), all of which are problematic and require complete eradication.

Photo M. Ward 2025.

FIRTH BLOCK QEII covenant – DOC Get		
Criterion	Ranking	Comments
Representativeness	Moderate	- When directly compared to the plant list of the WED (Ward, 2026) which has 602 native plant species, the FIRTH BLOCK area has 57 (9.5% of WED) native species (BlueGreen, 2026), they include Woody species 33 (20% of WED); Ferns 18 (17%); Grasses/sedges/rushes 2 (1.8%); Herbs 4 (1.7%). - This area is a regenerating ex-quarry face. Much of the area is therefore inaccessible.
Future Representativeness	Moderate	The proposed improvements will yield negligible benefits regarding this criterion.
Diversity & Pattern	Low	I agree with the assessments made in the BlueGreen Report.
Future Diversity & Pattern	Low	The proposed improvements will yield negligible benefits regarding this criterion.
Rarity & Distinctiveness	Low	I agree with the assessments made in the BlueGreen Report.
Future Rarity & Distinctiveness	Low	The proposed improvements will yield negligible benefits regarding this criterion.
Ecological Context	Moderate	- I agree with the assessments made in the BlueGreen Report. - This area is already protected by QEII covenant and is directly adjacent to the BRP providing at least one edge with integrity.
Future Ecological Context	Moderate	The proposed improvements will yield negligible benefits regarding this criterion; they may prevent damage from the edge effect of the exposed quarry face boundary.

NORTHERN GULLY SYSTEM (Not Including QEII covenant) – DOC Get		
Criterion	Ranking	Comments
Representativeness	Low-Moderate	- When directly compared to the plant list of the WED (Ward, 2026) which has 602 native plant species, the NORTHERN GULLY SYSTEM area has a total of 31 (5.1%) native species (Appendix 5), this includes Woody species 19 (11% of WED); Ferns 11 (9%); Grasses/sedges/rushes 1 (0.9%); Herbs 0 (0%). - The North-eastern section of the area has somewhat similar mature forest to the QEII Covenant yet lacks in the species diversity. The central watercourse appears to have been channelled as it heads toward a culvert, which heads in the direction of the active quarry area. There also appears to be a dumping area below the canopy of the North-eastern tributary closest to the OBDA (Figure 17 & 18.). - The Western section of the area (South of the covenant) is majority low value reshaped, replanted overburden area. The canopy is mahoe with eroded substrate exposing large grade greywacke like a scree slope (Figure 19.).
Diversity & Pattern	Low	- I agree with most of the assessments made in the Blue Green Report. - There is a large proportion of reshaped and replanted areas which detract from the overall value and natural features present.
Rarity & Distinctiveness	Low	I agree with the assessments made in the BlueGreen Report.
Ecological Context	Low	- I agree with most of the assessments made in the Blue Green Report. - The area has too many modifications to accurately represent natural sequences of vegetation or landform. This area is overall, of low value.

* In the relative short term, the proposed improvements will yield negligible benefits regarding this site, therefore the Northern Gully has been assessed as a whole in more detail on page 26.



Figure 17 & 18. This area below the canopy in the easternmost tributary West of the operational quarry area looks to have been an old dumping site with 44-gallon drums, mesh, corrugated iron and concrete footing dispersed over an area of an area of 100 square metres. Much of the rusting metal was in the stream. This needs to be remedied. Photo M. Ward 2026.





Figure 19. The understory of the replanted overburden area of the Northern Gully system, canopy of *Melicytus ramiflorus* (mahoe), with scree-like substrate below.

Photo M. Ward 2026.

NORTHERN GULLY SYSTEM (QEII covenant) – DOC Get		
Criterion	Ranking	Comments
Representativeness	Moderate	- When directly compared to the plant list of the WED (Ward, 2026) which has 602 native plant species, the NORTHERN GULLY SYSTEM QEII COVENANT area has a total of 55 (9.1% of WED) native species (Appendix 5), this includes Woody species 34 (20% of WED); Ferns 18 (17%); Grasses/sedges/rushes 2 (1.8%); Herbs 1 (0.4%). I imagine this number of species would improve with more time spent searching. - The QEII covenanted area is 3.6ha (Appendix 6) of the total 12.62ha, representing approximately quarter of the area not half (6ha) as suggested in the BlueGreen report (page 30 6.1.1 first paragraph), this part of the Northern Gully System contains some quality forest including mature Pukatea, Miro and Tawa shown in figure 20. Unfortunately, the understorey is hollow due to recruitment failure, pest management is required. The same forest type and age is contiguous into the BRP (some of which is included in the OBDA). - Just over ¼ of the covenant is low value reshaped, replanted overburden area.
Diversity & Pattern	Moderate	- The area has a south facing slope, stream bed and north facing slope, the latter being an older reshaped overburden planted area. - The area has a section of Tawa dominated forest type (see Figure 21.) which is consistent with the neighbouring BRP, and a largely typical type of forest for the WED. Often this type of forest is seen in lowland terraces in the WED. If the area was larger there may be more biodiversity to consider.
Rarity & Distinctiveness	Moderate	Despite the presence of some podocarp species, they do not feature in high numbers or as complete in age profile from seedlings to sapling to mature.
Ecological Context	Moderate-high	- The area has three profiles of note which affect the vegetation. - The former overburden section is about 30% and of low value. - The lowest section represents about 25% of the covenant and is relatively intact stream, with good riparian vegetation and settled stream edges. - The upper section about 45% which abuts the BRP, is a continuation of the relatively mature vegetation across the fence providing canopy, epiphytes and some recovering understorey. - The area is not exposed to any open-air edges, having forested private property to the west (see figure 22), the forested DOC-owned BRP to the North, and the Winstone's quarry land to the East and South.

* In the relative short term, the proposed improvements will yield negligible benefits regarding this site as a standalone unit, therefore the Northern Gully has been assessed as a whole in more detail on page 26



Figure 20. Looking from North from the top of the former overburden (foreground) area towards the NW QEII covenanted area (middle ground). The canopy can be seen to have good structure made of mature forest species such as *Beilschmiedia tawa* (tawa), *Dacrycarpus dacrydioides* (kahikatea), *Pectinopitys ferruginea* (Miro), and *Knightia excelsa* (rewarewa). Photo M. Ward 2025.



Figure 21. Looking South across the top of the Northern Gully QEII block. The foreground vegetation is still part of the BRP, whereas the middle-ground golden green coloured vegetation is the Tawa dominated forest canopy of the covenant, with the top of the former overburden area beyond.

Photo M. Ward 2026.



Figure 22. Looking West across the boundary from the stream bed at the base of the QEII covenant within the Northern Gully system. Beyond the fence is private property with contiguous similar aged forest. Photo M. Ward 2026.

FUTURE NORTHERN GULLY SYSTEM (including QEII covenant) - DOC Get		
Criterion	Ranking	Comments
Future Representativeness	Moderate	In the relative short term, the proposed improvements will yield negligible benefits regarding this criterion.
Future Diversity & Pattern	Moderate	The area will improve with the eradication of pest plants and animals. The seeds would likely have a better chance of being dispersed by natural vectors, without predation. Additional habitat opened up with the removal of pest plants will improve the robustness of the area, and allow spread of native species. This may result in a noticeable improvement in seedling and sapling survival therefore an improvement in recruitment.
Future Rarity & Distinctiveness	Low-Moderate	In the relative short term, the proposed improvements will yield negligible benefits regarding this criterion.
Future Ecological Context	Moderate	The area will improve with the eradication of pest plants and animals. The seeds would likely have a better chance of being dispersed by natural vectors, without predation, increasing its value as a seed source.

SOUTHERN GULLY		
Criterion	Ranking	Comments
Representativeness	Low-Moderate	- The BlueGreen report does not contain a botanical list for this area. - During my 19/3/26 visit I recorded the plants in the area. The botanical list is attached as Appendix 5. Only plants deemed natural are directly compared to the datum WED list. - When directly compared to the plant list of the WED (Ward, 2026) which has 602 native plant species, the SOUTHERN GULLY area has 33 (5.5% of WED) native species, they include Woody species 17 (10% of WED); Ferns 14 (13.7%); Grasses/sedges/rushes 2 (1.8%); Herbs 0 (0%). - The area has a central wetland which has been planted and now overrun by blackberry in large parts (See figure 23). It appears that Winstone's has started to attempt to remove some of the gorse and blackberry in the wetland area and on the western bank see figures 24-26.
Future Representativeness	Moderate	If the wetland area has the weeds removed successfully the area will likely measurably improve in quality. It would allow new species establishment, and other already present the chance to thrive.
Diversity & Pattern	Moderate	There are two types of ecosystem present in the area, wetland and regenerating forest.
Future Diversity & Pattern	Moderate	The successful introduction of another native species would improve the diversity of the area slightly. A measurable change in the ecotones of may not be realised to a measurable level in the time span suggested, in the longer term e.g. 25 years this would be more noticeable.
Rarity & Distinctiveness	Moderate	- The Western edge bordering farmland is gorse regenerated bush, referred to in the BlueGreen report as 'seral' vegetation (see figure 27). - When observing the central wetland area overtime on GoogleEarth, the area appears to have been reduced to bare agricultural land until relatively recently, suggesting the <i>Carex geminata</i> may be the only likely remnant indigenous plant species found within. - Healthy remnant wetlands in the WED are diverse in biodiversity this area is not.
Future Rarity & Distinctiveness	Moderate	The suggested transfer of the 9 mature swamp maire specimens from the OBDA to this site is not likely to succeed due to the fragile ecology of the species. There is no precedent for this methodology, every expert that I have consulted with on the matter concurs. The suggestion of 200 swamp maire being planted in this site is a good start, If the suggested establishment of swamp maire in this area proves successful, the resulting improvements will be clearly noticeable. I acknowledge that the requirement of growing and planting 1800 swamp maire specimens at a size of PB3 may take time so this may also be difficult to achieve in the suggested 7 years of post-transfer care suggested.

		The addition of a rare species by planting it is not a feature that can be considered as naturally occurring, this may change in the long term if the species then spreads naturally within the site.
Ecological Context	Low-Moderate	• The Southern Gully is triangular, bordered by privately owned farmland to the West, a privately owned farmland with bush to the Southeast, and the quarry land to the Northeast. This area at 3.94ha (Table 12 pg. 80, BlueGreen 2026) is susceptible to edge effect and will require continual maintenance. • The wetland present is not particularly natural, lacking original or naturally regenerating vegetation. • The regenerating edges around the wetland are a mixture of early stage and planted vegetation.
Future Ecological Context	Low-Moderate	With the weed care suggested in this area being successful, some evidence of natural buffering may occur to naturally increase the buffering resilience of the edge effect this block is pressured by. If the area was to remain weed-free in the long-term (25 years) it would be measurably improved.



Figure 23. Looking North from the central wetland area. Dense blackberry in the foreground with planted specimens of *Cordyline australis* (ti kouka, cabbage tree), *Hoheria sextylosa* (houheria), *Plagianthus regius* ssp. *regius* (mānatu, ribbonwood), in the middle ground and mahoe directly beyond.

Photo M. Ward 2026.



Figure 24. Looking South from the central wetland area, the central water way is visible amid the blackberry. Dense blackberry looks to have been scrub-barred to attempt to control it. Very likely this will regrow as blackberry is a very difficult weed species to control without herbicide, as the root crowns resprout readily.

Photo M. Ward 2026.



Figure 25. Looking East from the western bank seen in figure 20. This looks to be a raft of gorse stems being used so that the area in figure 20 could have the material removed from site to make it look tidier, not bad practice as it prevents stem coppicing back into the substrate.
Photo M. Ward 2026.



Figure 26. Looking West from location in figure 19. This looks to have been a gorse blackberry infestation which has been cut and removed for the most part. Like the area in figure 18 it is very likely this area will regrow as blackberry is a very difficult weed species to control without herbicide, as the root crowns resprout readily.
Photo M. Ward 2026.



Figure 27. Looking East from the western bank above northern end of central wetland. Mahoe on the left gorse in the central area, and a mixture of *Dicksonia squarrosa* (wheki, tree fern) and mahoe, in the central background and to the left is reshaped replanted form of the earlier overburden area.

Photo M. Ward 2026.

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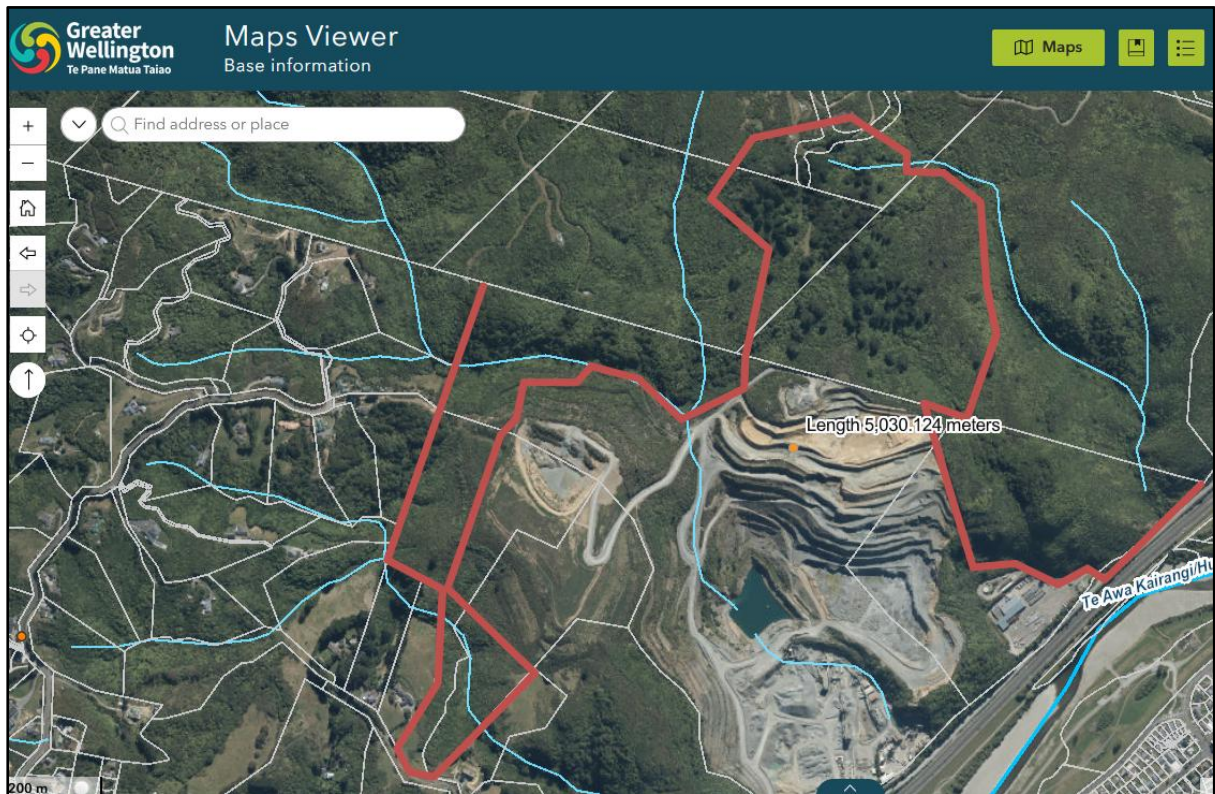
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APPENDICES

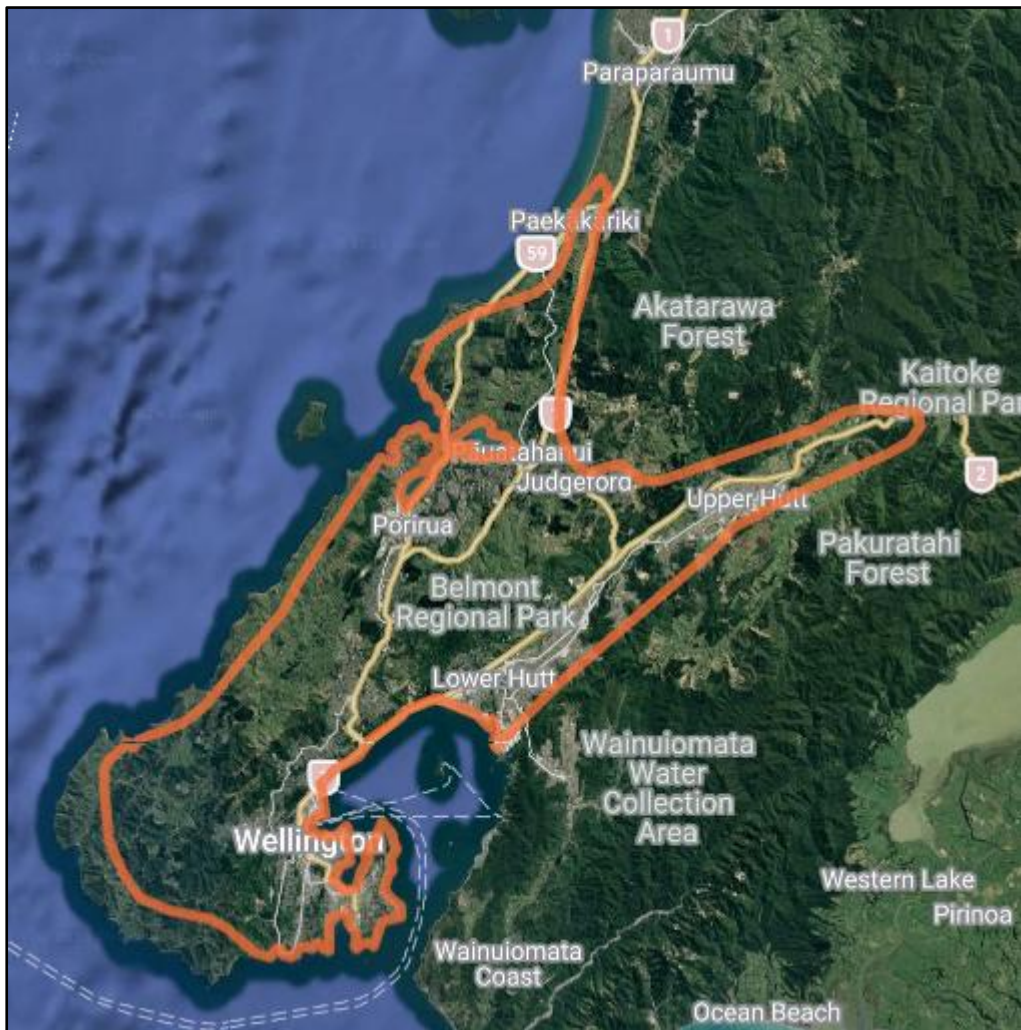
Appendix 1. Potential Edge Effect border.



Red line shows the border if the land exchange was to take place. A border of 5,000 metres. Source GWRC draw function on Maps Viewer.

<https://experience.arcgis.com/experience/8ca4cb5241604ee0a981935b9be3fd4c/page/Base-Information>

Appendix 2. The Wellington Ecological District (WED).



A representative image from Sawyer (2001). Note BRP in centre of the image.

Appendix 3. Botanical list for an area of Belmont Regional Park (The OBDA). Recorded by Matt Ward during three visits in September 2025.

NATIVE

PODOCARPS

<i>Dacrycarpus dacrydioides</i>	kahikatea
<i>Dacrydium cupressinum</i>	rimu
<i>Pectinopitys ferruginea</i>	miro

MONOCOT TREES

<i>Cordyline australis</i>	ti kouka
<i>Rhopalostylis sapida</i>	nikau

TREES

<i>Aristotelia serrata</i>	makomako
<i>Beilschmiedia tawa</i>	tawa
<i>Brachyglottis repanda</i>	rangiora
<i>Carpodetus serratus</i>	putaputawētā
<i>Coprosma areolata</i> (including a specimen 10m)	
<i>Coprosma autumnalis</i>	kanono
<i>Coprosma rhamnoides</i>	
<i>Coprosma robusta</i>	karamū
<i>Coprosma rubra</i>	
<i>Corynocarpus laevigatus</i>	karaka
<i>Elaeocarpus dentatus</i> var. <i>dentatus</i>	hinau
<i>Geniostoma ligustrifolium</i> var. <i>ligustrifolium</i>	hangehange
<i>Hedycarya arborea</i>	porokaiwhiri
<i>Knightia excelsa</i>	rewarewa
<i>Kunzea robusta</i>	rawirinui, kānuka
<i>Laurelia novae-zelandiae</i>	pukatea
<i>Leptospermum scoparium</i> var. <i>scoparium</i>	mānuka
<i>Leucopogon fasciculatus</i>	tall mingimingi
<i>Lophomyrtus bullata</i> (no Myrtle rust noted)	ramarama
<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	māhoe
<i>Myrsine australis</i>	mapau
<i>Olearia rani</i> var. <i>colorata</i>	heketara
<i>Pennantia corymbosa</i>	kaikōmako
<i>Piper excelsum</i> ssp. <i>excelsum</i>	kawakawa
<i>Pseudopanax arboreus</i>	whauwhaupaku
<i>Pseudopanax crassifolius</i>	horoeka
<i>Pterophylla racemosa</i>	kāmahi
<i>Knightia excelsa</i> (seedlings only)	rewarewa
<i>Schefflera digitata</i>	patē
<i>Solanum laciniatum</i>	poroporo
<i>Syzygium maire</i> (no Myrtle rust noted)	maire tawake, waiwaka
<i>Veronica stricta</i> var. <i>stricta</i>	koromiko

FERNS & ALLIES

<i>Alsophila dealbata</i>	ponga
<i>Alsophila smithii</i>	kātote
<i>Asplenium bulbiferum</i>	pikopiko
<i>Asplenium gracillimum</i>	hen & chicken fern
<i>Asplenium flaccidum</i>	hanging spleenwort
<i>Asplenium oblongifolium</i>	huruhuruwhenua
<i>Asplenium polyodon</i>	sickle spleenwort
<i>Austroblechnum lanceolatum</i>	nini, rereti
<i>Austroblechnum membranaceum</i>	
<i>Cranfillia fluviatilis</i>	kiwikiwi, kiwakiwa
<i>Dendroconche scandens</i>	mokimoki
<i>Dicksonia squarrosa</i>	wheki
<i>Histiopteris incisa</i>	mātātā
<i>Hymenophyllum bivalve</i>	filmy fern
<i>Hymenophyllum dilatatum</i>	matua mauku
<i>Hymenophyllum flabellatum</i>	filmy fern
<i>Icarus filiformis</i>	climbing hard fern
<i>Lastreopsis hispida</i>	hairy fern
<i>Leptopteris hymenophylloides</i>	heruheru
<i>Lomaria discolor</i>	petipeti, piupiu
<i>Notogrammitis billardiarei</i>	common strap fern
<i>Paesia scaberula</i>	lace fern
<i>Pakau pennigera</i>	piupiu
<i>Parablechnum minus</i>	swamp kiokio
<i>Parablechnum novae-zelandiae</i>	kiokio, horokio
<i>Parapolystichum glabellum</i>	smooth shield fern
<i>Pellaea rotundifolia</i>	round-leaved fern
<i>Polyphlebium venosum</i>	veined filmy fern
<i>Polystichum neozelandicum</i> ssp. <i>zerophyllum</i>	shield fern
<i>Polystichum vestitum</i>	pūniu
<i>Pseudodiphasium volubile</i>	waewaekoukou
<i>Pteridium esculentum</i>	rarauhe
<i>Pteris macilenta</i>	sweet fern
<i>Pteris tremula</i>	shaking brake
<i>Rumohra adiantiformis</i>	leathery shield fern
<i>Sphaeropteris medullaris</i>	mamaku
<i>Tmesipteris elongata</i>	fork fern
<i>Zealandia pustulata</i> ssp. <i>pustulata</i>	kōwaowao, pāraharaha
VINES	
<i>Clematis forsteri</i>	Forster's clematis
<i>Clematis paniculata</i>	puawananga
<i>Freycinetia banksii</i>	kiekie
<i>Metrosideros diffusa</i>	white rātā
<i>Metrosideros fulgens</i>	climbing rātā

<i>Metrosideros perforata</i>	akatea
<i>Muehlenbeckia australis</i>	pōhuehue
<i>Parsonsia capsularis</i> var. <i>capsularis</i>	NZ jasmine
<i>Parsonsia heterophylla</i>	NZ jasmine
<i>Passiflora tetrandra</i>	kohia
<i>Ripogonum scandens</i>	kareao, pirita
<i>Rubus cissoides</i>	tātārāmoa
GRASSES	
<i>Austroderia fulvida</i>	kakaho
SEDGES	
<i>Carex banksiana</i>	fine-leaved bastard grass
<i>Carex dissita</i>	forest sedge
<i>Carex forsteri</i>	Forster's sedge
<i>Carex geminata</i>	rautahi
<i>Carex lessoniana</i>	rautahi
<i>Carex maorica</i>	Māori sedge
<i>Carex megalepis</i>	caver's beard
<i>Carex secta</i>	purei, pukio
<i>Carex uncinata</i>	amu, matau-a-maui
<i>Carex virgata</i>	pukio, toito
<i>Eleocharis acuta</i>	sharp spike sedge
<i>Isolepis inundata</i>	
<i>Schoenus maschalinus</i>	dwarf bog rush
ORCHIDS	
<i>Caladenia</i> sp.	
<i>Microtis unifolia</i>	onion-leaved orchid
<i>Pterostylis alobula</i>	greenhood
<i>Pterostylis banksii</i>	tutukiwi
<i>Pterostylis graminea</i>	
<i>Pterostylis</i> sp.	
HERBS	
<i>Cardamine corymbosa</i>	
<i>Centella uniflora</i>	centella
<i>Hydrocotyle moschata</i> var. <i>moschata</i>	hairy pennywort
<i>Stellaria parviflora</i>	NZ chickweed
EXOTICS	
GYMNOSPERMS	
<i>Hesperocyparis macrocarpa</i>	macrocarpa
<i>Pinus radiata</i>	radiata pine
TREES	
<i>Berberis glaucocarpa</i>	barberry
<i>Cytisus scoparius</i>	wild broom
<i>Ilex aquifolium</i>	holly
<i>Leycesteria formosa</i>	Himalayan honeysuckle

Ulex europaeus

VINES

Clematis vitalba

GRASSES

Dactylis glomerata

Ehrharta erecta

RUSHES

Juncus effusus

HERBS

Cirsium arvense

Cirsium vulgare

Lotus pedunculatus

Plantago lanceolata

Rumex acetosella

Rumex obtusifolius

Ranunculus repens

Solanum chenopodioides

Trifolium repens

gorse

old man's beard

cocksfoot

veldt grass

soft rush

Californian thistle

Scotch thistle

lotus

narrow-leaved plantain

sheep's sorrel

broad-leaved dock

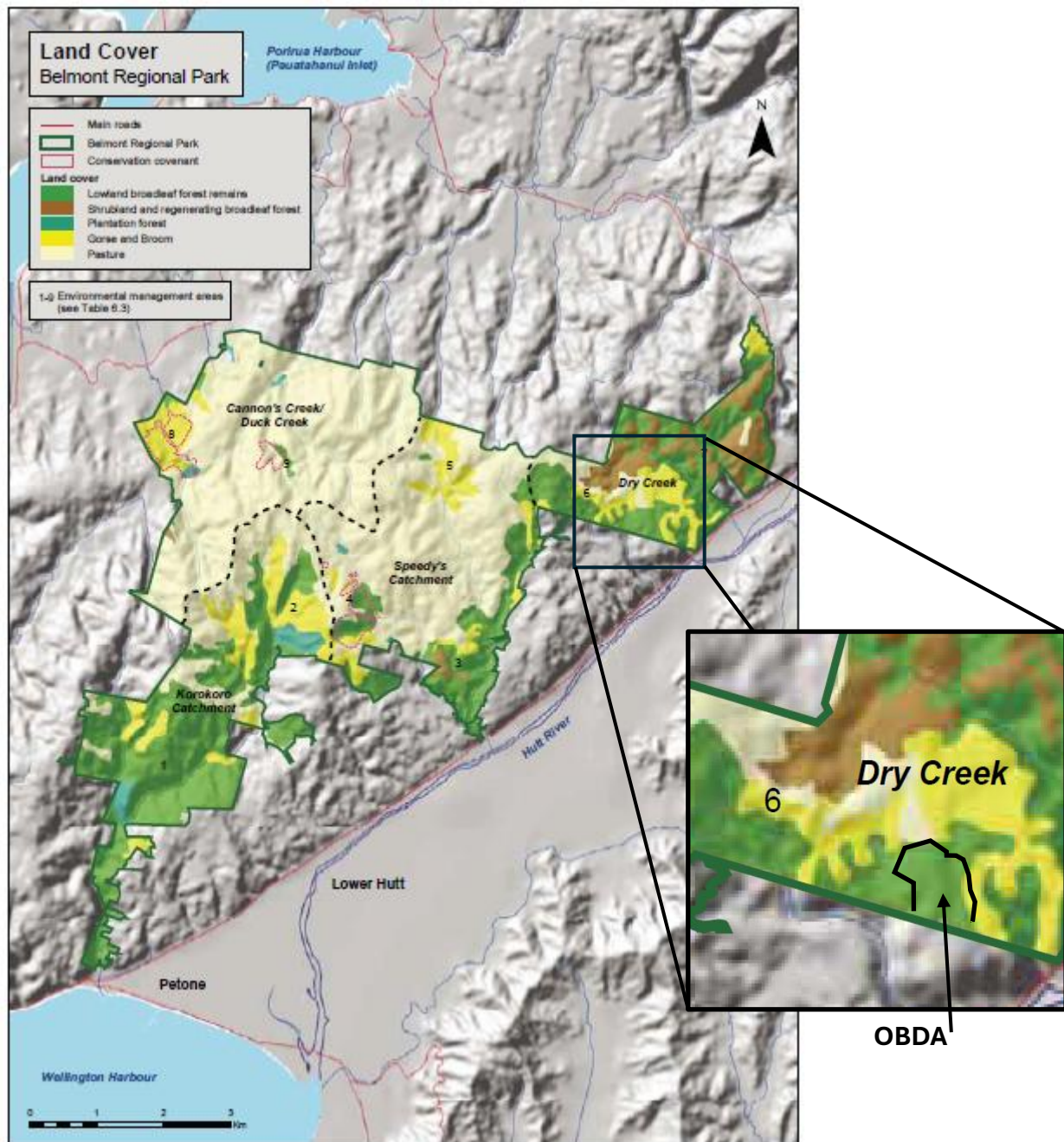
buttercup

velvety nightshade

white clover

Appendix 4. Land Covers fand SNA of the Belmont Regional Park – Resource Statement- Greater Wellington Regional Council

Map 8, Page 54, This broad scale assessment by GWRC shows that prior to this report being created the existence of the regenerating Pukatea, Kahikatea forest was largely not known. The inset shows at the time of this report the area is suggested merely as Lowland Broadleaf Forest.



Appendix 5. Botanical lists for Winstone's areas without details provided in the BlueGreen report.

Botanical lists for Winstone's areas as recorded 19/3/26

NORTHERN GULLY (QEII Covenant)

NATIVE 34woody 18ferns 2sedges 1herb

PODOCARPS

<i>Dacrycarpus dacrydioides</i>	<i>kahikatea</i>
<i>Pectinopitys ferruginea</i>	miro
<i>Podocarpus totara</i> var. <i>totara</i>	tōtara

MONOCOT TREES

<i>Rhopalostylis sapida</i>	nikau
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TREES

<i>Alectryon excelsus</i> subsp. <i>excelsus</i>	tītoki
<i>Aristotelia serrata</i>	makomako
<i>Beilschmiedia tawa</i>	tawa
<i>Brachyglottis repanda</i>	rangiora
<i>Carpodetus serratus</i>	putaputawētā
<i>Coprosma autumnalis</i>	kanono
<i>Coprosma lucida</i>	karamū
<i>Corynocarpus laevigatus</i>	karaka
<i>Didymocheton spectabilis</i>	kohekohe
<i>Geniostoma ligustrifolium</i> var. <i>ligustrifolium</i>	hangehange
<i>Hedycarya arborea</i>	porokaiwhiri
<i>Knightia excelsa</i>	rewarewa
<i>Kunzea robusta</i>	kānuka
<i>Laurelia novae-zelandiae</i>	pukatea
<i>Lophomyrtus bullata</i> (no Myrtle rust noted)	ramarama
<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	māhoe
<i>Myrsine australis</i>	mapau
<i>Olearia rani</i> var. <i>colorata</i>	heketara
<i>Piper excelsum</i> ssp. <i>excelsum</i>	kawakawa
<i>Pittosporum tenuifolium</i>	kōhūhū, kōwhiwhi
<i>Pseudopanax arboreus</i>	whauwhaupaku
<i>Pseudopanax crassifolius</i>	horoeka
<i>Pseudowintera axillaris</i>	<i>horopito</i>
<i>Pterophylla racemosa</i>	kāmahi
<i>Schefflera digitata</i>	patē
FERNS & ALLIES	
<i>Alsophila dealbata</i>	ponga
<i>Asplenium gracillimum</i>	hen & chicken fern
<i>Asplenium flaccidum</i>	hanging spleenwort
<i>Asplenium oblongifolium</i>	huruhuruwhenua
<i>Asplenium polyodon</i>	sickle spleenwort
<i>Cranfillia fluviatilis</i>	kiwikiwi, kiwakiwa
<i>Dendroconche scandens</i>	mokimoki
<i>Dicksonia squarrosa</i>	wheki
<i>Histiopteris incisa</i>	mātātā
<i>Hymenophyllum demissum</i>	piripiri

<i>Icarus filiformis</i>	climbing hard fern
<i>Lomaria discolor</i>	petipeti, piupiu
<i>Paesia scaberula</i>	lace fern
<i>Pakau pennigera</i>	piupiu
<i>Parablechnum novae-zelandiae</i>	kiokio, horokio
<i>Pyrrosia eleagnifolia</i>	ota
<i>Sphaeropteris medullaris</i>	mamaku
<i>Zealandia pustulata</i> ssp. <i>pustulata</i>	kōwaowao, pāraharaha
VINES	
<i>Freycinetia banksii</i>	kiekie
<i>Metrosideros diffusa</i>	white rātā
<i>Metrosideros fulgens</i>	climbing rātā
<i>Metrosideros perforata</i>	akatea
<i>Ripogonum scandens</i>	kareao, pirita
SEDGES	
<i>Carex forsteri</i>	Forster's sedge
<i>Carex uncinata</i>	amu, matau-a-maui
HERBS	
<i>Astelia solandri</i>	kōwharawhara

NORTHERN GULLY NATIVE

MONOCOT TREES

<i>Rhopalostylis sapida</i>	nikau
TREES	
<i>Aristotelia serrata</i>	makomako
<i>Beilschmiedia tawa</i>	tawa
<i>Brachyglottis repanda</i>	rangiora
<i>Coprosma autumnalis</i>	kanono
<i>Elaeocarpus dentatus</i> var. <i>dentatus</i>	hinau
<i>Fuchsia excorticata</i>	kōtukutuku
<i>Geniostoma ligustrifolium</i> var. <i>ligustrifolium</i>	hangehange
<i>Knightia excelsa</i>	rewarewa
<i>Laurelia novae-zelandiae</i>	pukatea
<i>Lophomyrtus bullata</i> (no Myrtle rust noted)	ramarama
<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	māhoe
<i>Olearia rani</i> var. <i>colorata</i>	heketara
<i>Piper excelsum</i> ssp. <i>excelsum</i>	kawakawa
<i>Pseudopanax arboreus</i>	whauwhaupaku
<i>Pterophylla racemosa</i>	kāmahi
<i>Schefflera digitata</i>	patē

FERNS & ALLIES

<i>Alsophila dealbata</i>	ponga
<i>Asplenium gracillimum</i>	hen & chicken fern
<i>Austroblechnum lanceolatum</i>	nini, rereti
<i>Cranfillia fluviatilis</i>	kiwikiwi, kiwakiwa
<i>Dendroconche scandens</i>	mokimoki

<i>Dicksonia squarrosa</i>	wheki
<i>Lomaria discolor</i>	petipeti, piupiu
<i>Loxogramme dictyopteris</i>	lancefern
<i>Pakau pennigera</i>	piupiu
<i>Sphaeropteris medullaris</i>	mamaku
<i>Zealandia pustulata</i> ssp. <i>pustulata</i>	kōwaowao, pāraharaha
VINES	
<i>Freycinetia banksii</i>	kieke
<i>Ripogonum scandens</i>	kareao, pirita
SEDGES	
<i>Carex virgata</i>	pukio, toito

EXOTICS

TREES

<i>Buddleja davidii</i>	buddleia
<i>Cytisus scoparius</i>	wild broom
<i>Ulex europaeus</i>	gorse

HERBS

<i>Bidens frondosa</i>	beggar's ticks
<i>Persicaria</i> sp.	willow weed
<i>Ranunculus repens</i>	buttercup
<i>Solanum pseudocapsicum</i>	Jerusalem cherry

SOUTHERN GULLY

Likely more species to be recorded with an additional visits and time.

NATIVE

(p) = planted

MONOCOT TREES

<i>Cordyline australis</i> (p)	ti kouka
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TREES

<i>Alectryon excelsus</i> subsp. <i>excelsus</i>	tītoki
<i>Aristotelia serrata</i>	makomako
<i>Brachyglottis repanda</i>	rangiora
<i>Coprosma autumnalis</i>	kanono
<i>Coprosma rhamnoides</i>	
<i>Coprosma robusta</i>	karamū
<i>Geniostoma ligustrifolium</i> var. <i>ligustrifolium</i>	hangehange
<i>Hedycarya arborea</i>	porokaiwhiri
<i>Hoheria sextylosa</i> (p)	lacebark
<i>Knightia excelsa</i>	rewarewa
<i>Leptospermum scoparium</i> var. <i>scoparium</i> (p)	mānuka
<i>Melicytus ramiflorus</i> ssp. <i>ramiflorus</i>	māhoe
<i>Myrsine australis</i>	mapau
<i>Piper excelsum</i> ssp. <i>excelsum</i>	kawakawa
<i>Plagianthus regius</i> ssp. <i>regius</i> (p)	mānatu
<i>Pseudopanax arboreus</i>	whauwhaupaku
<i>Schefflera digitata</i>	patē

CLUBMOSES & QUILLWORTS

Diphasium scariosum

FERNS & ALLIES

Alsophila dealbata

Asplenium gracillimum

Asplenium oblongifolium

Austroblechnum lanceolatum

Cranfillia fluviatilis

Dicksonia squarrosa

Icarus filiformis

Lastreopsis velutina

Paesia scaberula

Parablechnum novae-zelandiae

Polystichum neozelandicum ssp. *zerophyllum*

Sphaeropteris medullaris

Zealandia pustulata ssp. *pustulata*

VINES

Muehlenbeckia australis

Ripogonum scandens

Rubus cissoides

GRASSES

Austroderia toetoe (p)

SEDGES

Carex geminata

Carex secta (p)

Carex uncinata

EXOTICS

TREES

Cytisus scoparius

Leycesteria formosa

Rubus fruticosus agg. (abundant in wetland)

Ulex europaeus

HERBS

Erythranthe guttata

creeping clubmoss

ponga

hen & chicken fern

huruhuruwhenua

nini, rereti

kiwikiwi, kiwakiwa

wheki

climbing hard fern

Velvet fern

lace fern

kiokio, horokio

shield fern

mamaku

kōwaowao, pāraharaha

pōhuehue

kareao, pirita

tātārāmoa

toetoe

rautahi

purei, pukio

amu, matau-a-maui

wild broom

Himalayan honeysuckle

blackberry

gorse

monkey musk

Appendix 6. QEII Covenant measured accurately.

The QEII Covenant in the Northwest of the Northern Gully System was measured using the GWRC online measuring tool. Its area is 3.61ha.

