

Report to Wellington City Corporation.

Town Planning Division.

Proposed Reserve, Owhiro Bay Quarry to Sinclair Head

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Vegetation

The South Wellington coast particularly on the raised beach, screes and cliffs has been well known among botanists as possessing a unique series of types of vegetation, produced by the instability of substrate and the fairly extreme climate of the Cook Strait area. This vegetation includes plants with near relatives or, the same species found either in the drier tussock grasslands of the South Island, and the central North Island, and some plant species whose normal habitat is that of the high mountains. The proposed reserve area was, in 1946 a relatively good example of the locally unique vegetation types outlined above. There were several types of habitat with corresponding plant communities distinctive of these habitats.

1. The sand dunes, notably at Fly Point, carried pingao, the sand Coprosma, the mountain tutu and the sand Pimelea. This vegetation has now completely disappeared.
2. The coarse sand to fine gravel of the raised beach of the 1855 earthquake was occupied by extensive areas of scabweed and the prostrate Pimelea, together with mountain tutu. This habitat has also been completely destroyed within the reserve area.
3. The bouldery or rocky raised beach, of which a little remains, occupied mainly by pohuepohue, C. propinqua, and at the inland margin by Solander's Olearia and tauhinu. There are fragments remaining of this type of vegetation.
4. Screes. The screes, apart from those destroyed by quarrying operation, are still in a reasonably good condition, although considerably limited in area compared to their pre-quarrying condition. These screes colonised by pohuepohue and Coprosma propinqua form part of a succession towards a shrubland of Solander's Olearia, and of Olearia paniculata as well as providing sites for speargrass; silver tussock and mountain flax.

On bibliography ✓
Mugger

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The future of the vegetation on the screes will vary. The rock screes produced artificially by bulldozer operation above the coast will eventually colonise with native plants. The rotten rock or soil and rock mixed screes may present a habitat for introduced plants. These introduced plants, notably the Californian poppy and Senecio elegans appear to fluctuate seasonally from year to year in their occupation of sites along the coast and I think can only be tolerated and accepted as part of the landscape.

5. Rock bluffs and cliffs. Quarrying operations at Red Rocks Point particularly have reduced to a very small area the cliff face which had a very rich flora of a combination of mountain plants and characteristic coastal lowland plants. A full listing by habitats is appended and as the list from this habitat is very long, refer to this appendix.

6. Salt Meadow. Small splash pool areas of salt meadow already on Marine Department's land are good examples of their type, with saltwort, Selliera and small sedges. Care should be taken not to allow spoil to enter these areas, most of which are to the east of Red Rocks.

7. The grassed and stabilised slopes./ ^{These were} probably the site of low coastal forest; a parallel could be drawn to the forest in the western corner of Palliser Bay. There are few remnants, notably a degenerating stand of karaka beyond Red Rocks. Repeated burning and grazing in the past has reduced the more stable faces to a grassland, of introduced plants, with patches of tauhinu and on the more exposed areas to mountain flax. There is one patch of gorse which must be sprayed as soon as possible to avoid its spread. The increase in area of gorse would result in disappearance of native vegetation for a considerable time. The gorse would eventually allow return of forest but would present a very high fire hazard in this recreationally popular area. Species are not fully listed for this site in the attached table.

Recommendations

1. That if the road be closed beyond the quarrying area, that an attempt be made to reconstitute the raised beach of the 1855 earthquake using sand and gravel as free from fine soil as possible. The reconstitution of the raised

possibly twenty years approximation to the original vegetation.

2. Fires should be completely prohibited from the area.
3. In any publication dealing with the area no mention should be made of, particularly, the cliff plants. They are present only in a very limited quantity.

By contrast with the proposed reserve area from Owhiro Bay Quarry to Sinclair Head, the Sinclair Head reserve presents a picture of vegetation unchanged for many years. It is fortunate that this area is far by foot from the end of the quarrying operations. The distance involved should be a strong factor in permitting its continued existence. For the present then, I should recommend the detailed ideas above for the proposed reserve.

Summary

The vegetation of the proposed reserve was among the more unique vegetation, of the South Wellington coast. ^{It} has been so greatly modified by quarrying operations that little can be done except to reconstitute an approximation to original conditions and then wait and see. The existence of intact vegetation in the Sinclair Head reserve is a reclaiming factor. Hence I would stress that road access must be barred and the road as far as possible destroyed beyond the barrier so that access to the Sinclair Head area be only feasible on foot.

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Main habitats are listed by numbers in text order

SPECIES LIST FOR OWHIRO BAY QUARRY TO RED ROCKS

*Now very rare, †On grassed stable slopes

1. Dunes
2. Raised beach sand-gravel
3. " " boulders
4. Scree
5. Cliffs
6. Salt marsh

<u>Botanical Name</u>	<u>Common Name</u> as used in text	<u>Habitat</u>					
		1.	2.	3.	4.	5.	6.
† <i>Acaena anserinifolia</i>							
<i>Aciphylla squarrosa</i> var. <i>squarrosa</i>	speargrass			X	X	X	
<i>Adiantum cunninghamii</i> var. <i>cunninghamii</i>						X	
<i>Apium australe</i>					X		X
<i>Asplenium terrestre</i> subsp. <i>maritimum</i>						X	
<i>Calystegia soldanella</i>		X					
<i>C. turguriorum</i>		X					
* <i>Carex pumila</i>		X					
<i>Cassinia leptophylla</i> var. <i>leptophylla</i>				X	X	X	
<i>Clematis forsteri</i> var. (<i>C. hookeriana</i>)					X		
* <i>Coprosma acerosa</i>	sand Coprosma	X					
<i>C. propinqua</i>			X		X		
<i>C. repens</i>						X	
* <i>Coriaria sarmentosa</i>			X		X		
† <i>Corynocarpus laevigatus</i>							
<i>Cotula squalida</i>				X	X	X	
<i>Craspedia uniflora</i> var. <i>maritima</i>						X	
<i>Cyperus ustulatus</i>			X				
* <i>Desmoschoenus spiralis</i>		X					
<i>Epilobium nummularifolium</i>					X	X	
<i>Gnaphalium luteoalbum</i>					X	X	
<i>Haloragis erecta</i>					X		
<i>Hebe stricta</i> var. <i>macroura</i>						X	
<i>Leptocarpus similis</i>			X				X
<i>Leptospermum scoparium</i>						X	
<i>Linum monogynum</i>						X	
<i>Luzula banksiana</i> var. <i>banksiana</i>						X	
† <i>Macropiper excelsum</i>							
† <i>Meliccytus ramiflorus</i>							
<i>Metrosideros perforata</i>						X	
<i>Muehlenbeckia complexa</i>	pohuehue			X	X		
<i>Olearia solandri</i>	Solander's Olearia			X	X		
<i>O. paniculata</i>						X	
<i>Phormium cookianum</i>	mountain flax				X	X	
<i>Phymatodes diversifolium</i>						X	
<i>Pimelea prostrata</i> var. <i>prostrata</i>	prostrate Pimelea			X	X		
<i>Plantago raoulii</i>		X					

2.

Botanical Name	Common name as used in text	Habitat					
		1.	2.	3.	4.	5.	6.
Poa laevis var. (P. caespitosa Cheeseman 1925)	silver tussock		X	X	X	X	
Polystichum richardii							X
†Pteridium aquilinum var. esculentum					X		
Pyrrosia serpens							X
*Raoulia hookeri var.		*	*		*		
Rhagodia triandra					X		X
Ranunculus acaulis		X	X				
(now gone) Pimelea arenaria	sand Pimelea	(X)					
Salicornia australis	saltwort						X
Samolus repens							X
Scirpus cernuus	small sedge						X
S. nodosus		X					
Scleranthus biflorus							X
Selliera radicans							X
Senecio lautus var. lautus							X
Sophora microphylla							X
Spinifex hirsutus		X					
Tetragonia trigyna					X		
Tillaea moschata							X
Urtica ferox							
Wahlenbergia gracilis							X

Adventives (only listed by site when species is characteristic of site.)

Anagallis arvensis							
Brassica sp.					X		
Bromus unioloides					X		
Cirsium vulgare				X	X		
Fumaria officinalis						X	
Glaucium flavum	Californian poppy			X	X		
Lagurus ovatus		X	X				
Leontodon taraxicoides							
Plantago lanceolata							
Rumex sp.							
Senecio elegans			X	X	X	X	
Spergularia media							

†Ulex europaeus
Hurochaeis radiata

gorse
Carsear

6/15/99
R. M. L. C.