

Ruakaka Hearing

Ecology Presentation

Sarah Flynn, Tanya Cook, Lee Shapiro &
Stephen Fuller

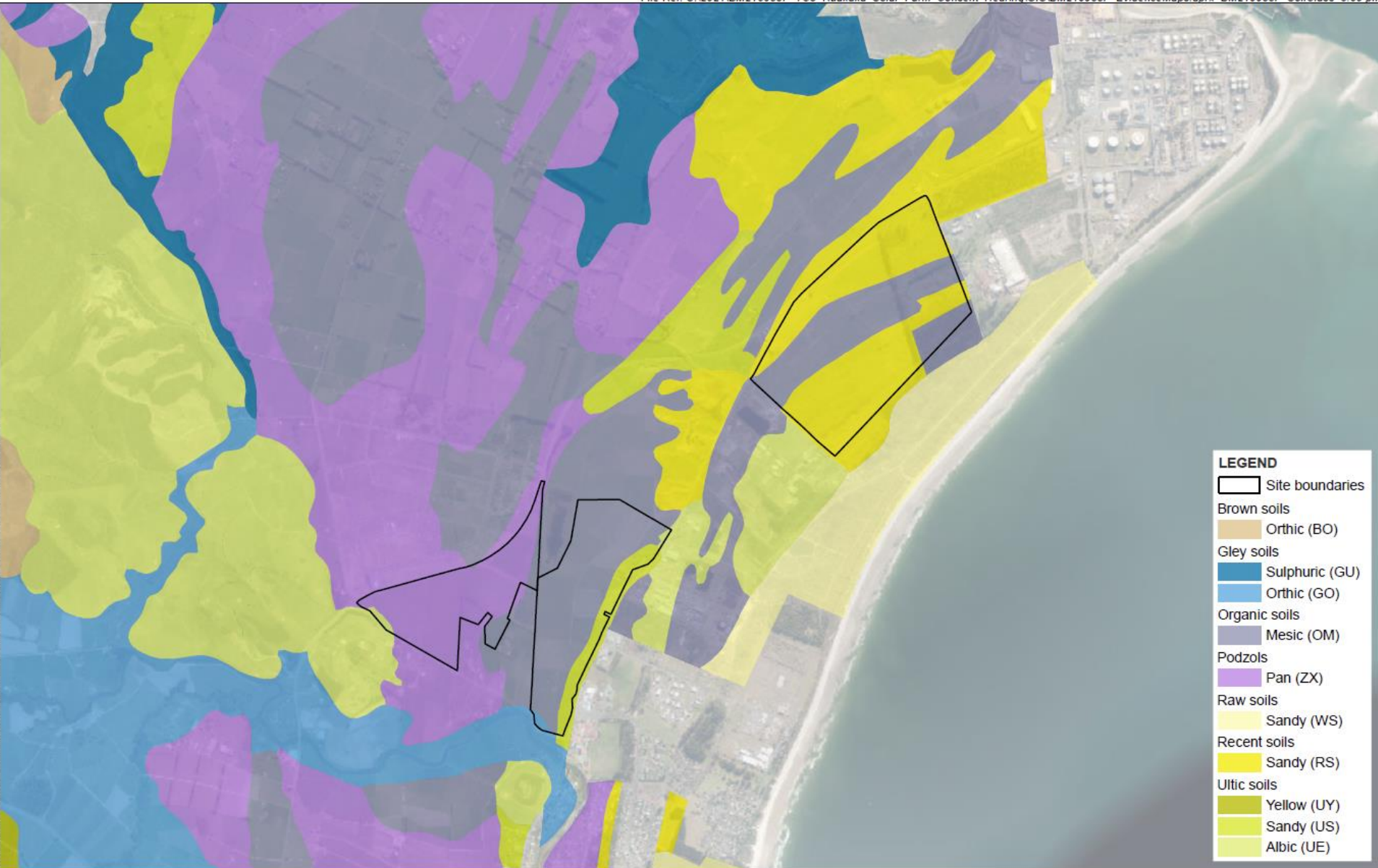


S. Flynn

Ecology overview



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LEGEND

- Site boundaries
- Brown soils**
- Orthic (BO)
- Gley soils**
- Sulphuric (GU)
- Orthic (GO)
- Organic soils**
- Mesic (OM)
- Podzols**
- Pan (ZX)
- Raw soils**
- Sandy (WS)
- Recent soils**
- Sandy (RS)
- Ultic soils**
- Yellow (UY)
- Sandy (US)
- Albic (UE)

Figure 6



- LEGEND**
- Consented BESS area
 - Site boundary
 - Drainage channels
 - Significant vegetation and habitats
- Wetlands**
- Exotic dominated
 - Indigenous dominated
 - Open water pond
- Individual trees**
- Exotic
- Vegetation**
- Kānuka dominated shrubland
 - Exotic scrub
 - Exotic shelterbelts and hedgerows
 - Exotic grassland
 - Riparian vegetation
 - Residential gardens



Figure 7

- LEGEND**
- Site boundary
 - Drainage channels
- Wetlands**
- Exotic dominated
 - Indigenous dominated
 - Open water pond
- Individual trees**
- Exotic
 - Native
- Vegetation**
- Dead exotic hedgerow
 - Exotic shelterbelt and hedgerows
 - Exotic scrub
 - Native scrub
 - Residential gardens
 - Exotic grassland

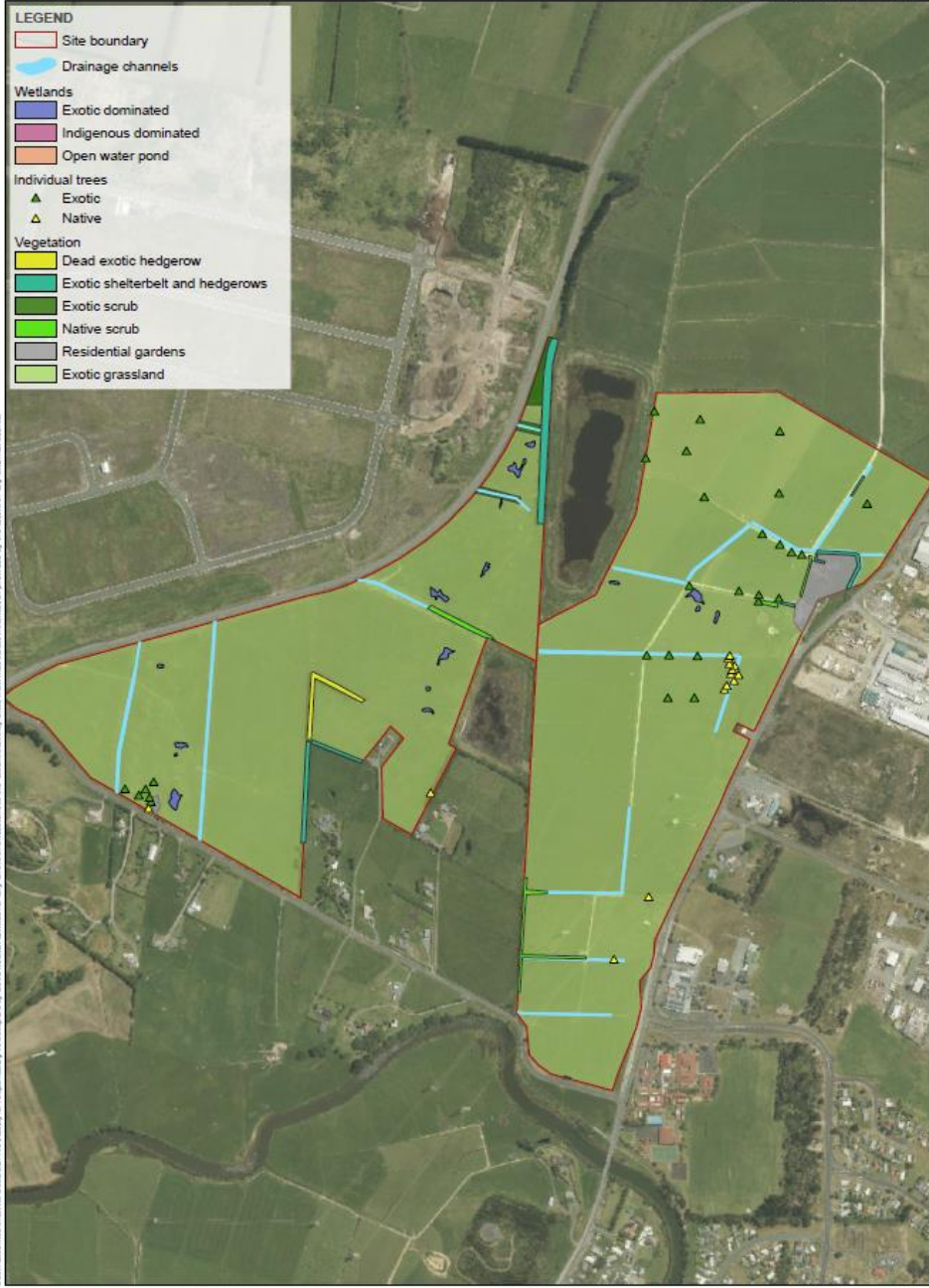


Figure 8

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Kānuka shrubland and forest



Indigenous wetland



Indigenous wetlands



Exotic dominated wetland



Wetland condition



Open water wetland





Wetland
restoration

Ruakaka
Dunelands
SNA

Kanuka
Shrubland

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File Ref: BA2100004_Site1_Restoration



9.1 ha wetland on Site 1B/1C

Figure 9

INDICATIVE WETLAND CONCEPT



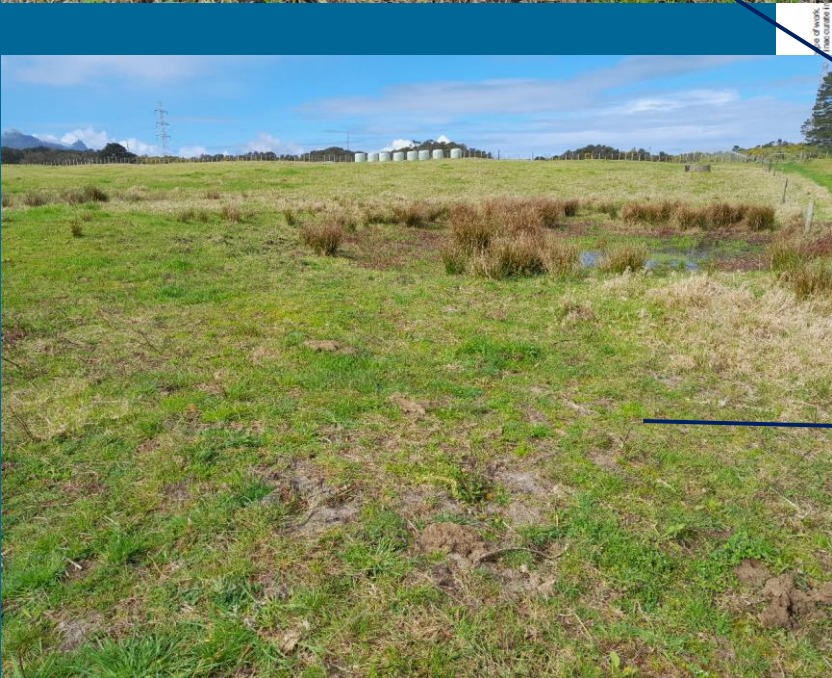
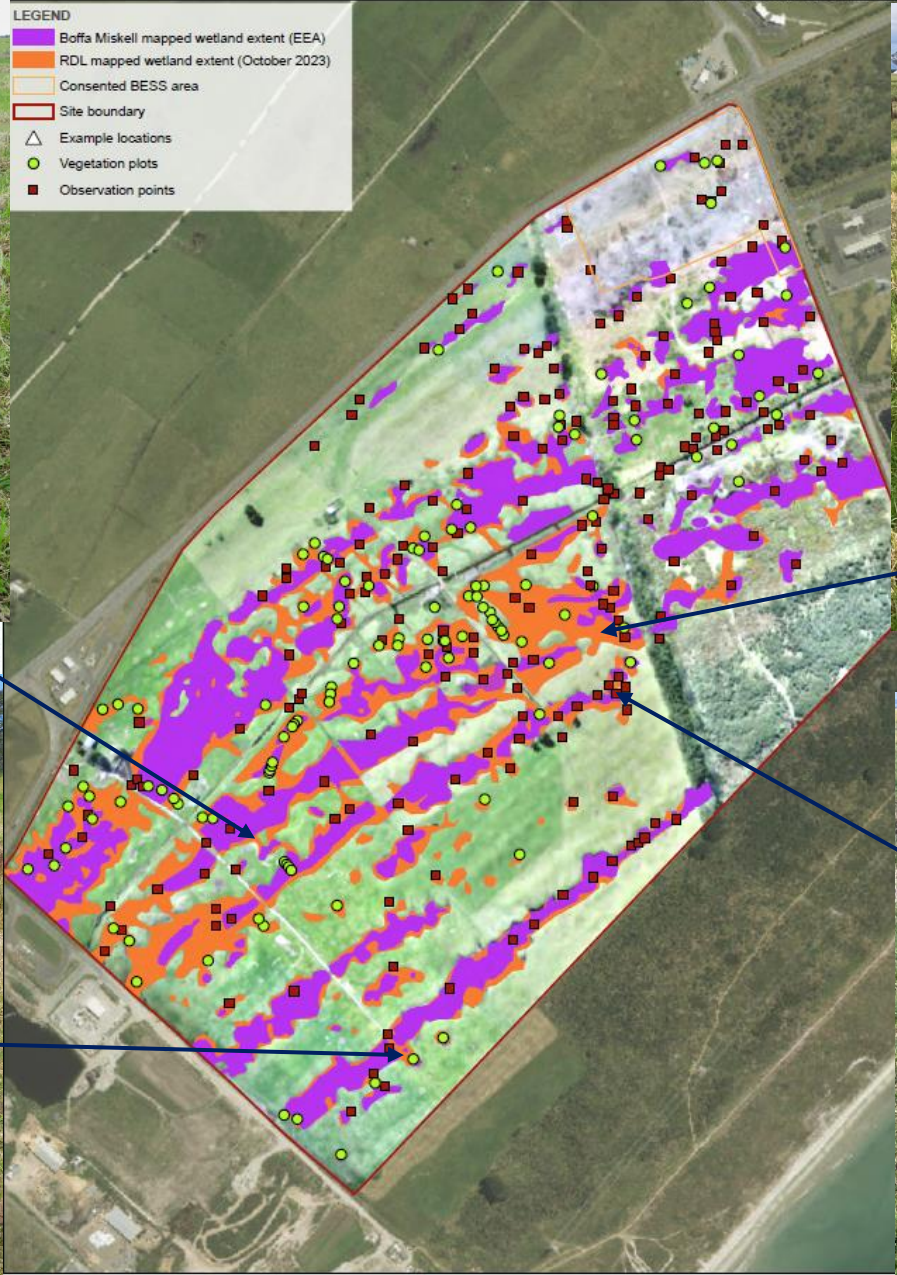
11.73 ha wetland on Site 3

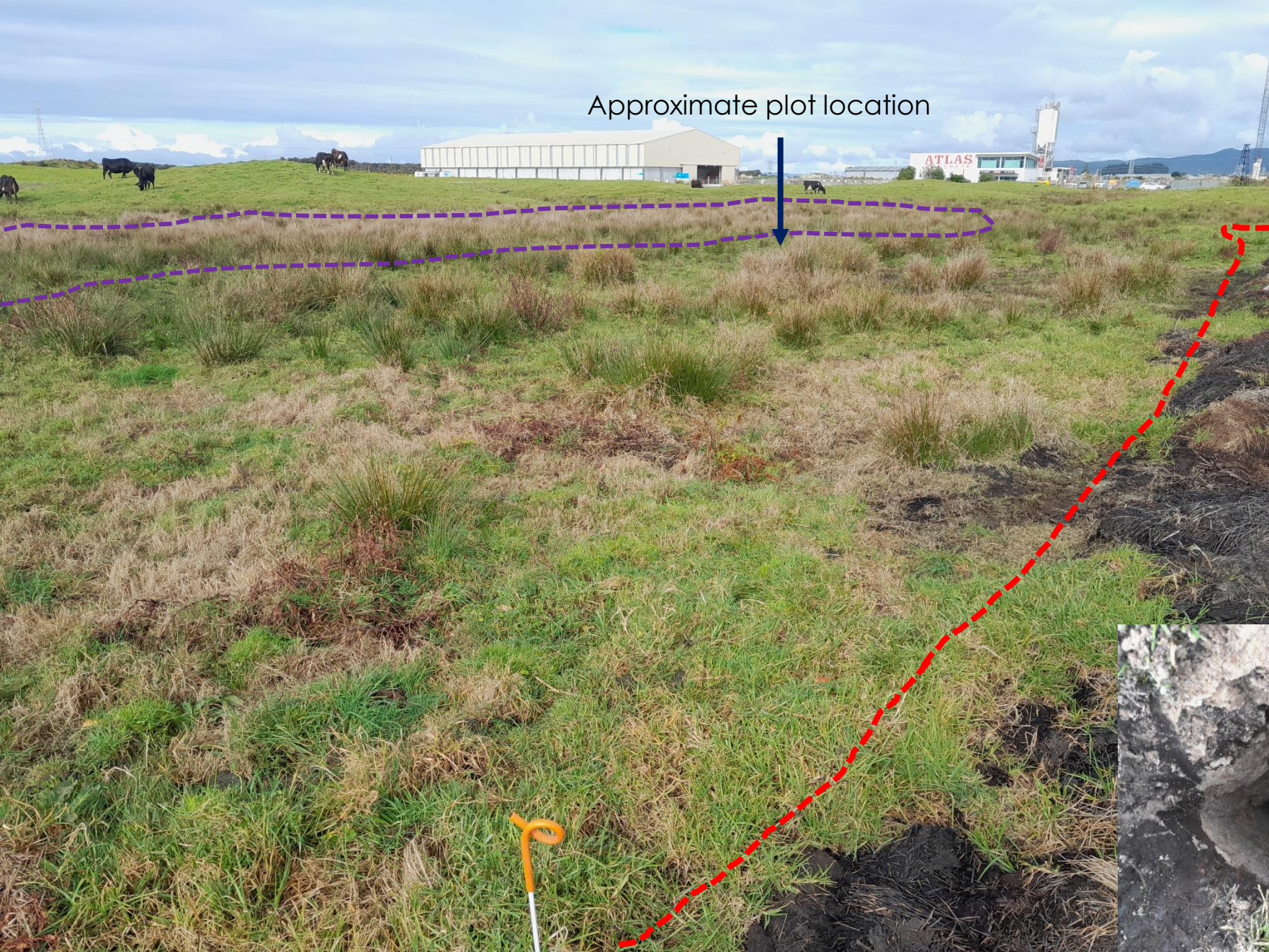


T. Cook

Wetland delineation







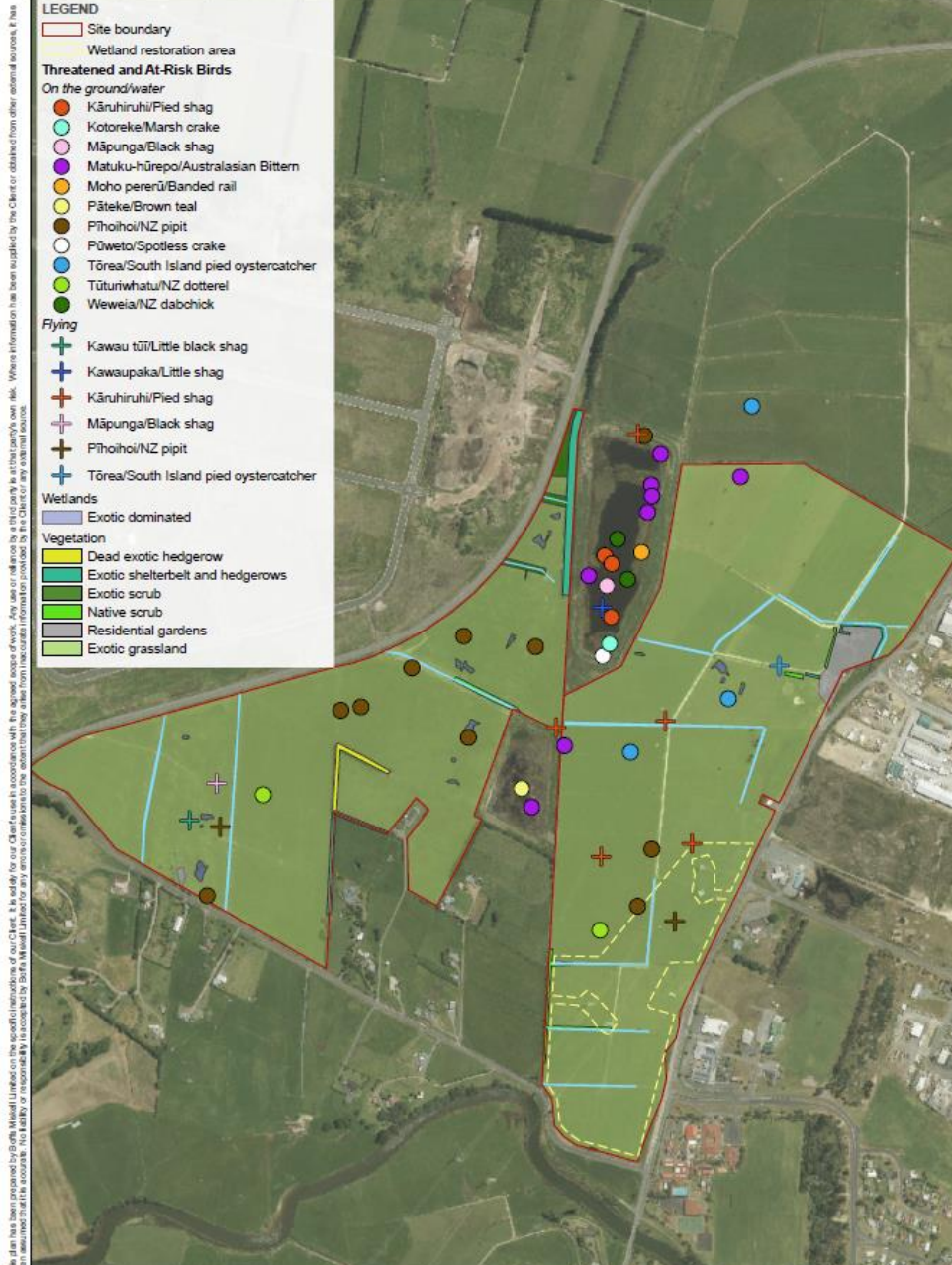
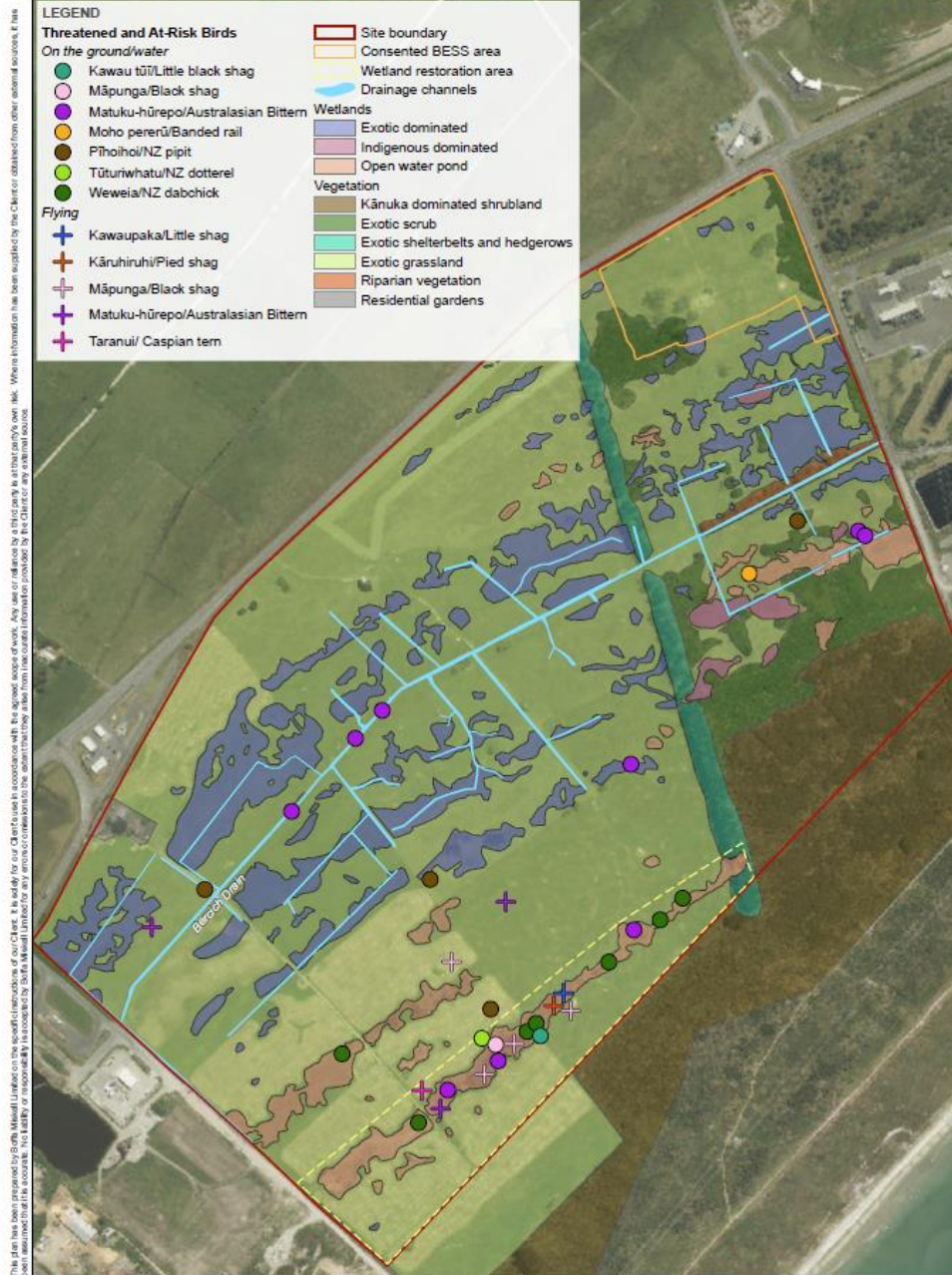
Photographs taken in Site 1C, 1 Aug 2024



L. Shapiro

Avifauna values





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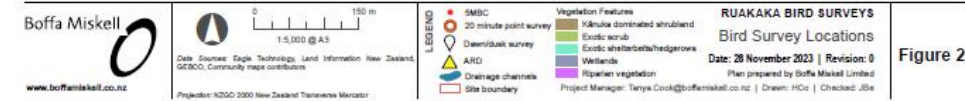


Figure 2



Figure 3

S. Fuller

Constructed Wetlands - Examples

Mackays to Peka Peka Peka

From "Fuller 2018: Wetland Construction on the SH1 Realignment, Kapiti Expressway. Prepared for the National Wetland Restoration Symposium, 2018".



Site 1. Raumati Wetland & OSA
(Offset Storage Area)
4.8 ha





Photo - September 2015





Photo - April 2016



Photo - November 2016





Photo 10 Apr 2017

Site 2. Drain 7 and OSA 2A & 3 11ha





Photo - September 2015





Photo - July 2016





Photo - November 2016





Photo - April-2017



Site 3. Otaihanga Trident

6.7 ha





Photo - September 2015





Photo - April 2016





Photo - May-2017

Planting, salvage & natural recovery



Mass planting



Photo – November 2016



Photo – September 2018



Getting ponds right



Photo – October 2020



Ephemeral wetlands





Stuckenia pectinata



Ferns and herbs



Raupo



Isolepis & turf plants

Natural Arrivals



Other Biodiversity Values



Weeds

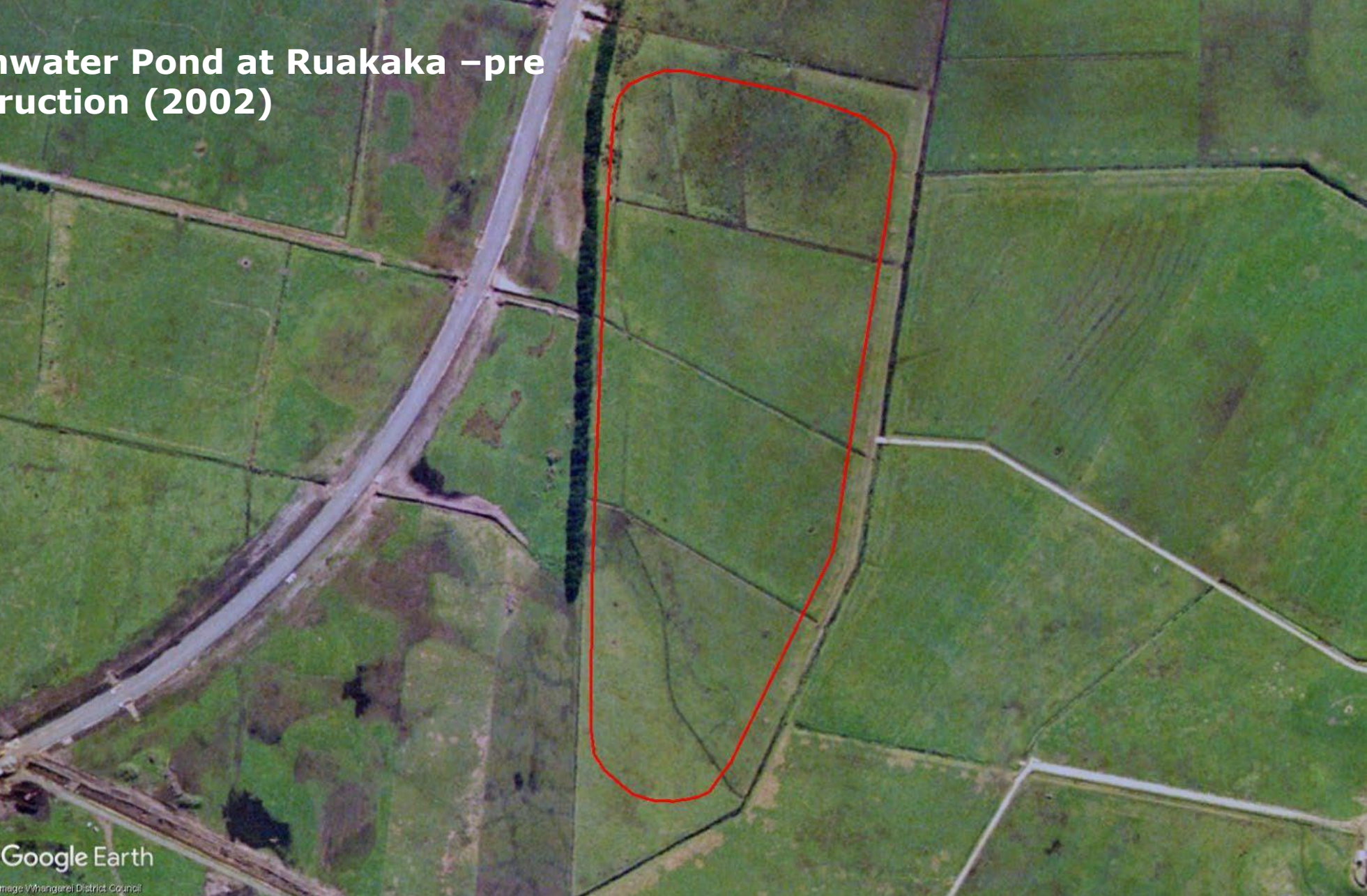


Constructed Wetlands

Stormwater Pond at Ruakaka –pre- construction (2002) and post construction (2012)



Stormwater Pond at Ruakaka –pre construction (2002)



Google Earth

Image Whangarei District Council



Stormwater Pond at Ruakaka –post construction (2012)



Google Earth

Image © 2024 Maxar Technologies



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**NORTH HOLDINGS LTD
PORT MARSDEN HIGHWAY, SECTION 42 BLK VII, RUAKAKA SD
MODIFIED WETLAND CONCEPT PLAN**

SURVEYED	DESIGNED	DATE	SHEET
SB	SB		1
DRAWN	SB		SERIES WLD
CHECKED		DATE	SCALE
APPROVED		11/08/11	1:2000
CADD FILE: 10372-sb-wetland-concept-100811		PLANT DATE	REF 10372
			ORIG. SIZE A3

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LEGEND

- INLET ZONE
- SHALLOW MARSH VEGETATION
- MARSH VEGETATION
- DEEP MARSH VEGETATION
- OPEN WATER

FIGURE 1: LONG SECTION SCHEMATIC REPRESENTATION OF WASTEWATER TREATMENT COMPONENT OF CONSTRUCTED WETLAND

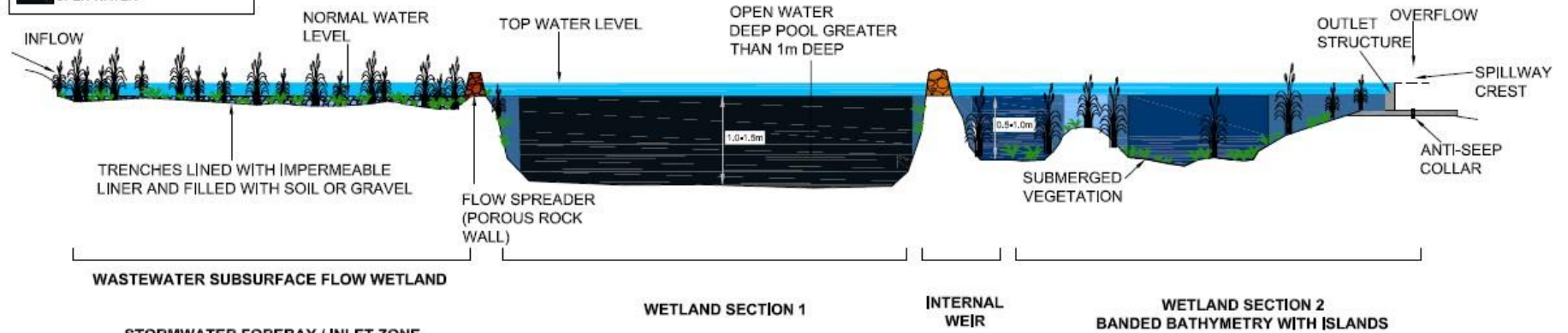
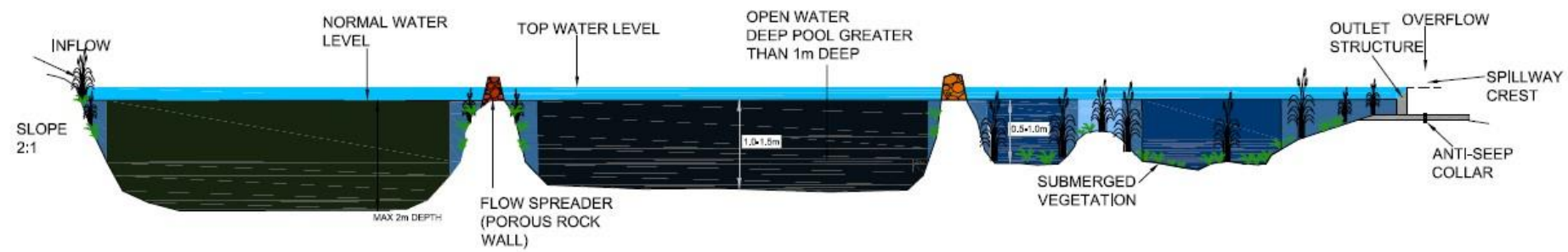


FIGURE 2: LONG SECTION SCHEMATIC REPRESENTATION OF STORMWATER TREATMENT COMPONENT OF CONSTRUCTED WETLAND



SOURCE: CONSTRUCTED WETLAND SYSTEMS • DESIGN GUIDELINES FOR DEVELOPERS (MELBOURNE WATER) 2005

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CLIENT

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 LONG SECTION SCHEMATIC OF WETLAND

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DESIGNED AT			5
DRAWN SB			
CHECKED AT			SERIES WLD
APPROVED	DATE	SCALE	REF 10372
	11/08/11	NTS	
CAD FILE	10372-et-ls schematic-100811	PLOT DATE	ORIG, SIZE A3



A wide-angle photograph of a stormwater pond at Ruakaka. The pond is a large, irregularly shaped body of water surrounded by dense, tall reeds and grasses. In the foreground, there is a grassy bank with some fallen branches. The background shows a flat landscape with a few trees and utility poles under a cloudy sky.

Stormwater Pond at Ruakaka (Taken 19 June 2024)





Stormwater Pond at Ruakaka (Taken 19 June 2024)