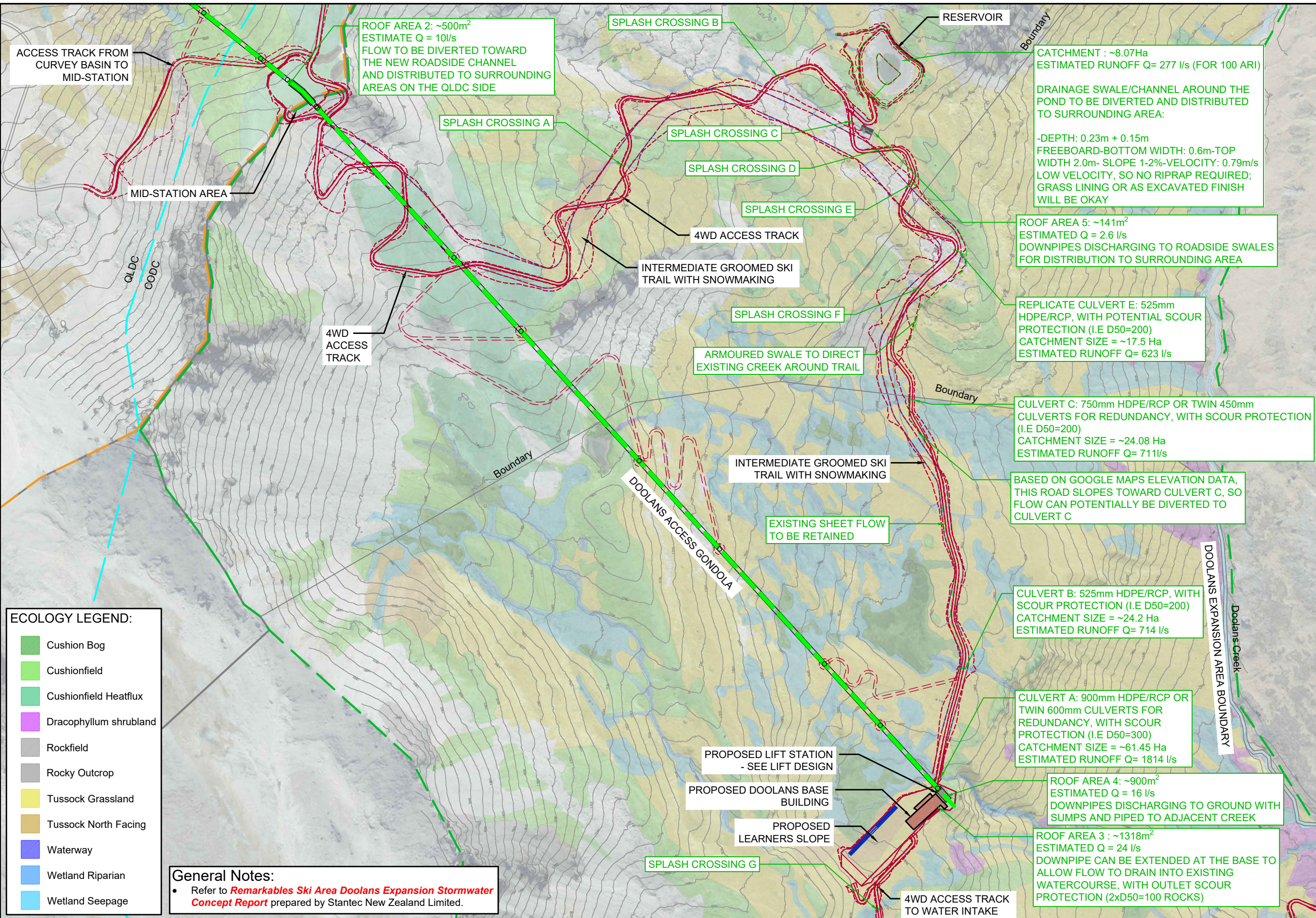




ECOLOGY LEGEND:

- Cushion Bog
- Cushionfield
- Cushionfield Heatflux
- Dracophyllum shrubland
- Rockfield
- Rocky Outcrop
- Tussock Grassland
- Tussock North Facing
- Waterway
- Wetland Riparian
- Wetland Seepage

General Notes:

- Refer to **Remarkables Ski Area Doolans Expansion Stormwater Concept Report** prepared by Stantec New Zealand Limited.



REVISION	DESCRIPTION	DATE
H	For Consent	30/01/26
I	For Consent	06/03/26
J	For Consent	16/04/26
K	For Consent	06/05/26

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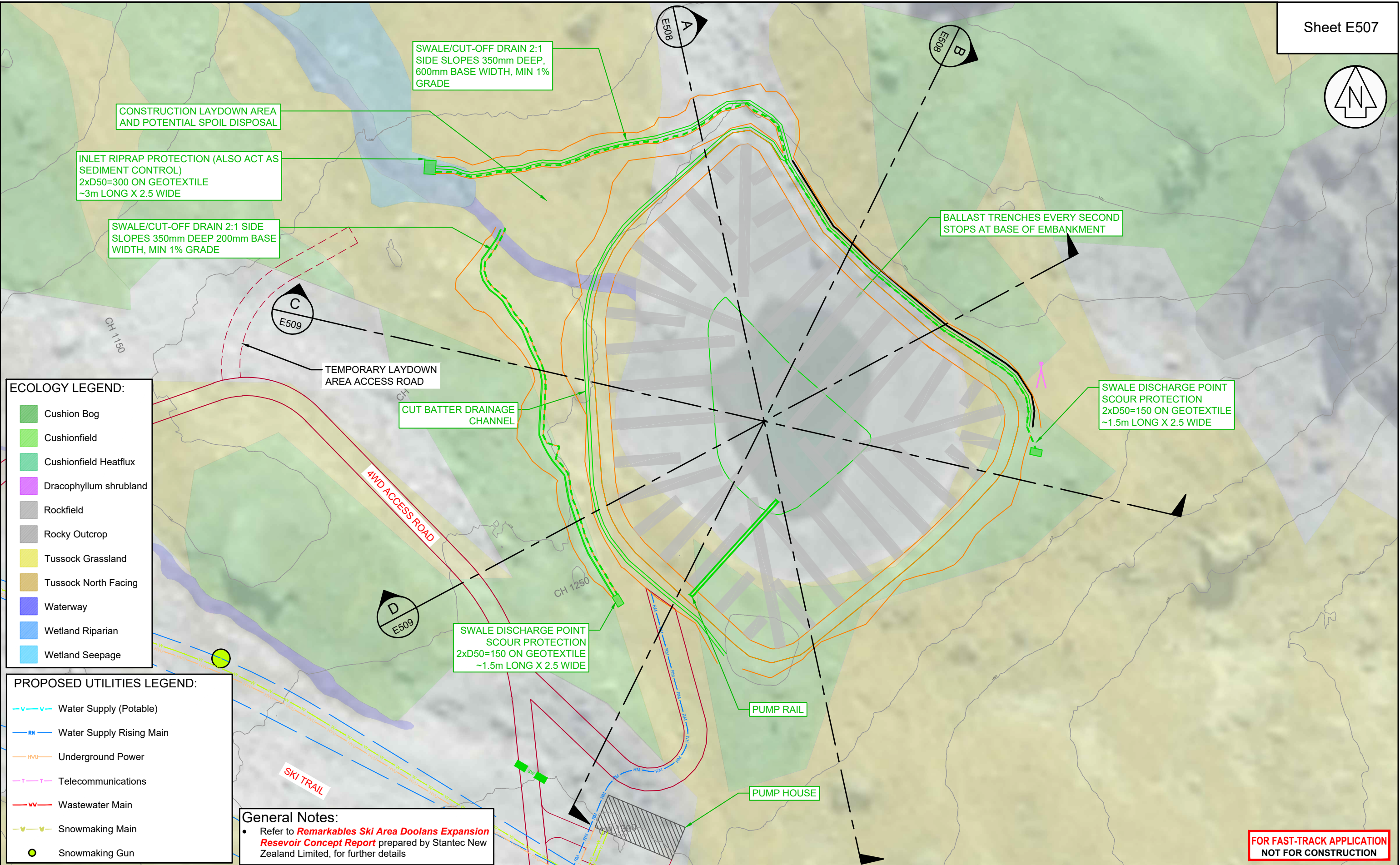
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Doolans Access, Roads, Trails & Utilities
Stormwater

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SURVEYED	DATE	CHECKED	DATE	SCALE
TN/MS	06/05/26	AJHB	06/05/26	1:5,500 @ A3
DRAWN	DATE	APPROVED	DATE	DATUM & LEVEL
	06/05/26	AJHB	06/05/26	NZTM
				LEVEL IN TERMS OF DV088
				ORIGIN OIT XI DP XXXXX RL = XXXXX
				DRAWING REFERENCE
				A30043_E7
				REVISION
				K

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ECOLOGY LEGEND:

- Cushion Bog
- Cushionfield
- Cushionfield Heatflux
- Dracophyllum shrubland
- Rockfield
- Rocky Outcrop
- Tussock Grassland
- Tussock North Facing
- Waterway
- Wetland Riparian
- Wetland Seepage

PROPOSED UTILITIES LEGEND:

- Water Supply (Potable)
- Water Supply Rising Main
- Underground Power
- Telecommunications
- Wastewater Main
- Snowmaking Main
- Snowmaking Gun

General Notes:

- Refer to **Remarkables Ski Area Doolans Expansion Reservoir Concept Report** prepared by Stantec New Zealand Limited, for further details

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Remarkables Ski Area Upgrades & Doolans Basin Expansion
Doolans Access, Roads, Trails & Utilities
Reservoir Layout

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SCALE
1:750 @ A3

DATUM & LEVEL

NZTM

LEVEL IN TERMS OF DV088

ORIGIN OIT XI DP XXXXX RL = XXXXX

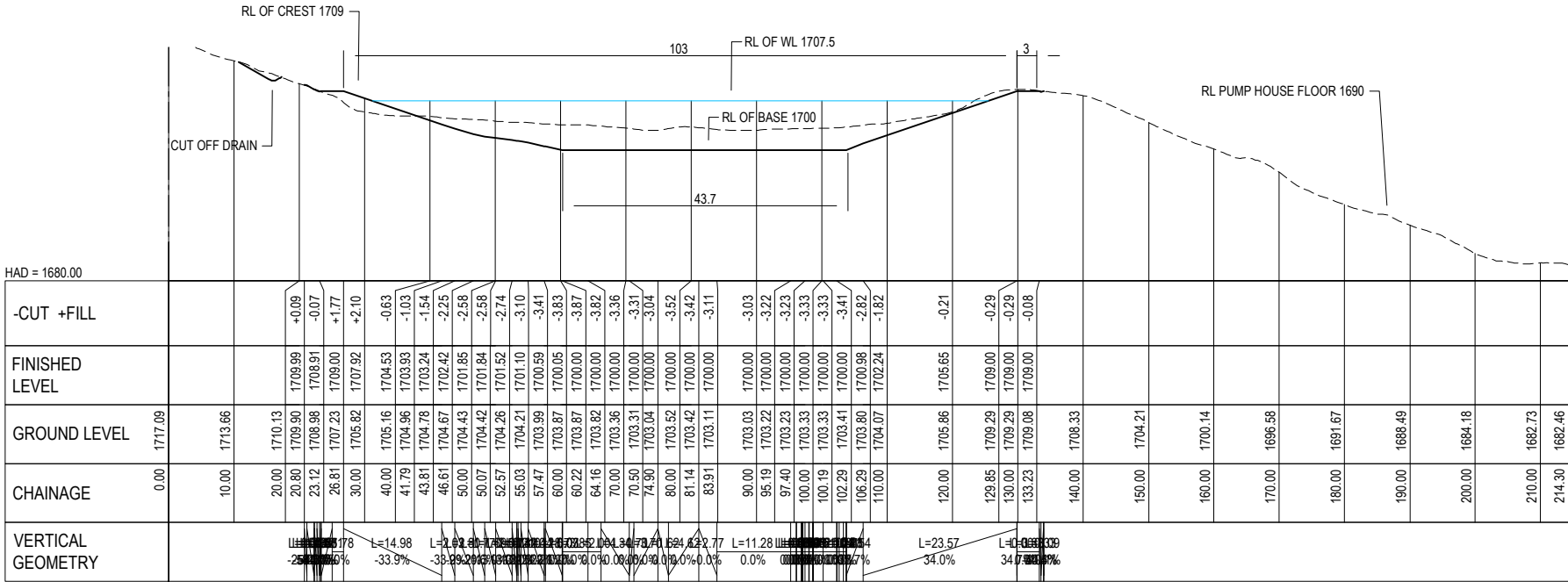
DRAWING REFERENCE

A30043_E7

REVISION

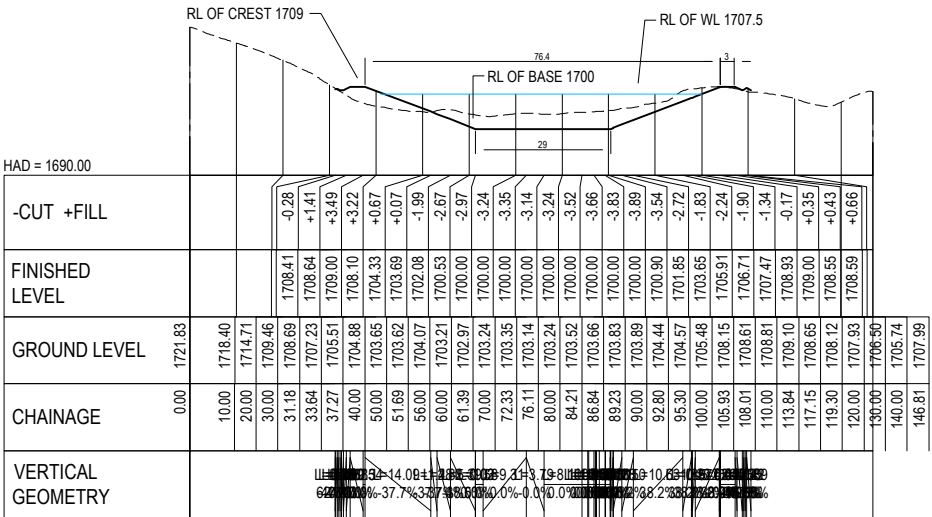
J

SURVEYED	DATE	CHECKED	DATE
-	-	AJHB	16/04/26
DRAWN	DATE	APPROVED	DATE
TN/MS	16/04/26	AJHB	16/04/26



LONGITUDINAL SECTION - Section AA

SECTION A-A
SCALE 1 :500



LONGITUDINAL SECTION - section b

SECTION B-B
SCALE 1 :500

General Notes:

- Refer to **Remarkables Ski Area Doolans Expansion Reservoir Concept Report** prepared by Stantec New Zealand Limited, for further details

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H	For Consent	30/01/26
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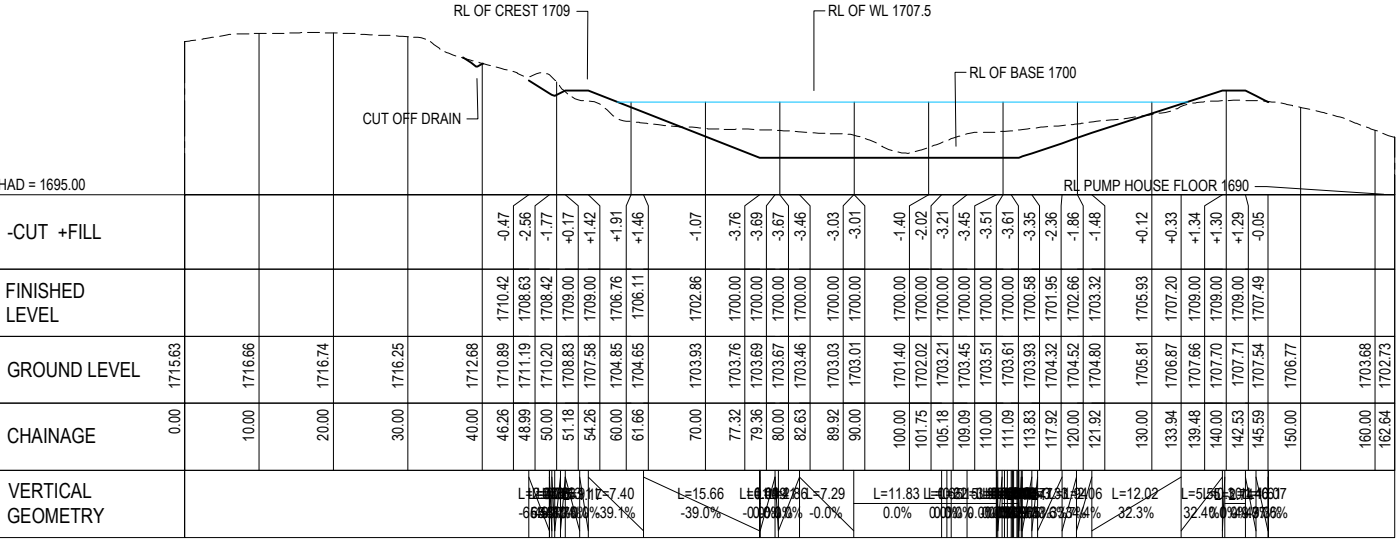
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Reservoir Sections Sheet 1

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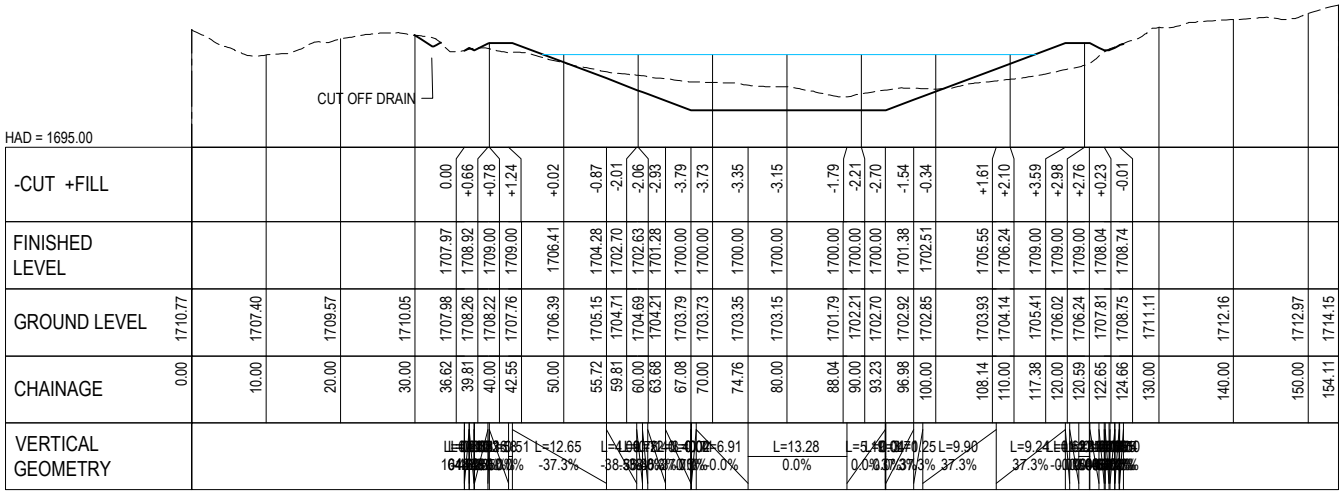
SURVEYED	DATE	CHECKED	DATE	DRAWING REFERENCE	REVISION
-	-	AJHB	16/04/26	A30043_E7	J
DRAWN	DATE	APPROVED	DATE		
TN/MS	16/04/26	AJHB	16/04/26		



LONGITUDINAL SECTION - section c

SCALES: HOR 1:200 VERT 1:200

SECTION C-C
SCALE 1 :500



LONGITUDINAL SECTION - section d

SCALES: HOR 1:200 VERT 1:200

SECTION D-D
SCALE 1 :500

General Notes:

- Refer to **Remarkables Ski Area Doolans Expansion Reservoir Concept Report** prepared by Stantec New Zealand Limited, for further details

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 SOUTHERN LAND DEVELOPMENT CONSULTANTS	REVISION	DESCRIPTION	DATE
	H	For Consent	30/01/26
	I	For Consent	06/03/26
	J	For Consent	16/04/26

Remarkables Ski Area Upgrades & Doolans Basin Expansion

Doolans Access, Roads, Trails & Utilities

Reservoir Sections Sheet 2

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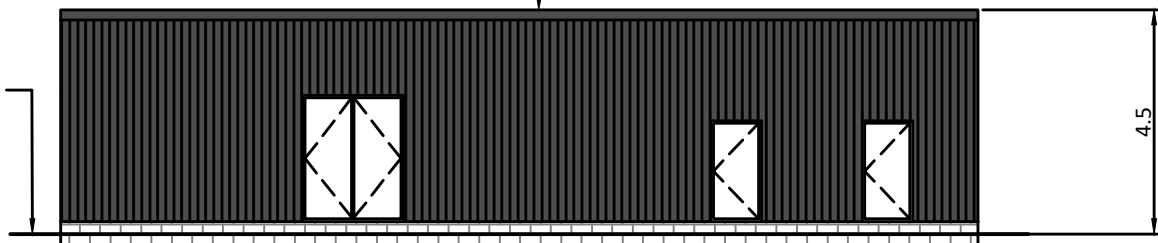
SURVEYED -	DATE -	CHECKED AJHB	DATE 16/04/26	DRAWING REFERENCE A30043_E7	REVISION J
DRAWN TN/MS	DATE 16/04/26	APPROVED AJHB	DATE 16/04/26		



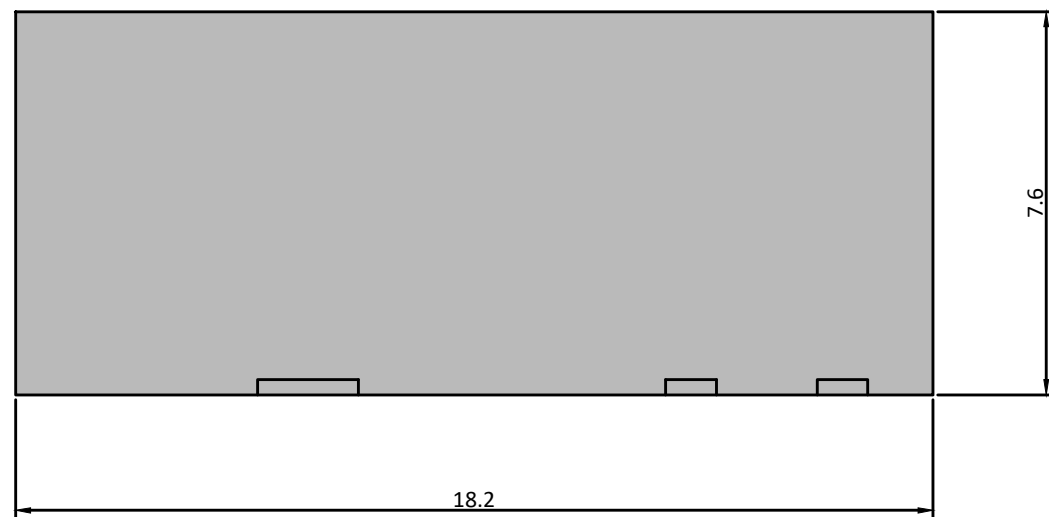
SNOWMAKING SYSTEM PUMP STATION BUILDING

PROPRIETARY SHED TO MATCH TECHNOALPIN DESIGN. COLOURSTEEL TO BE PAINTED IN RESENE IRONSAND N36-003-056

INDICATIVE EXISTING GROUND LEVEL



SOUTHERN ELEVATION
1:150 @ A3

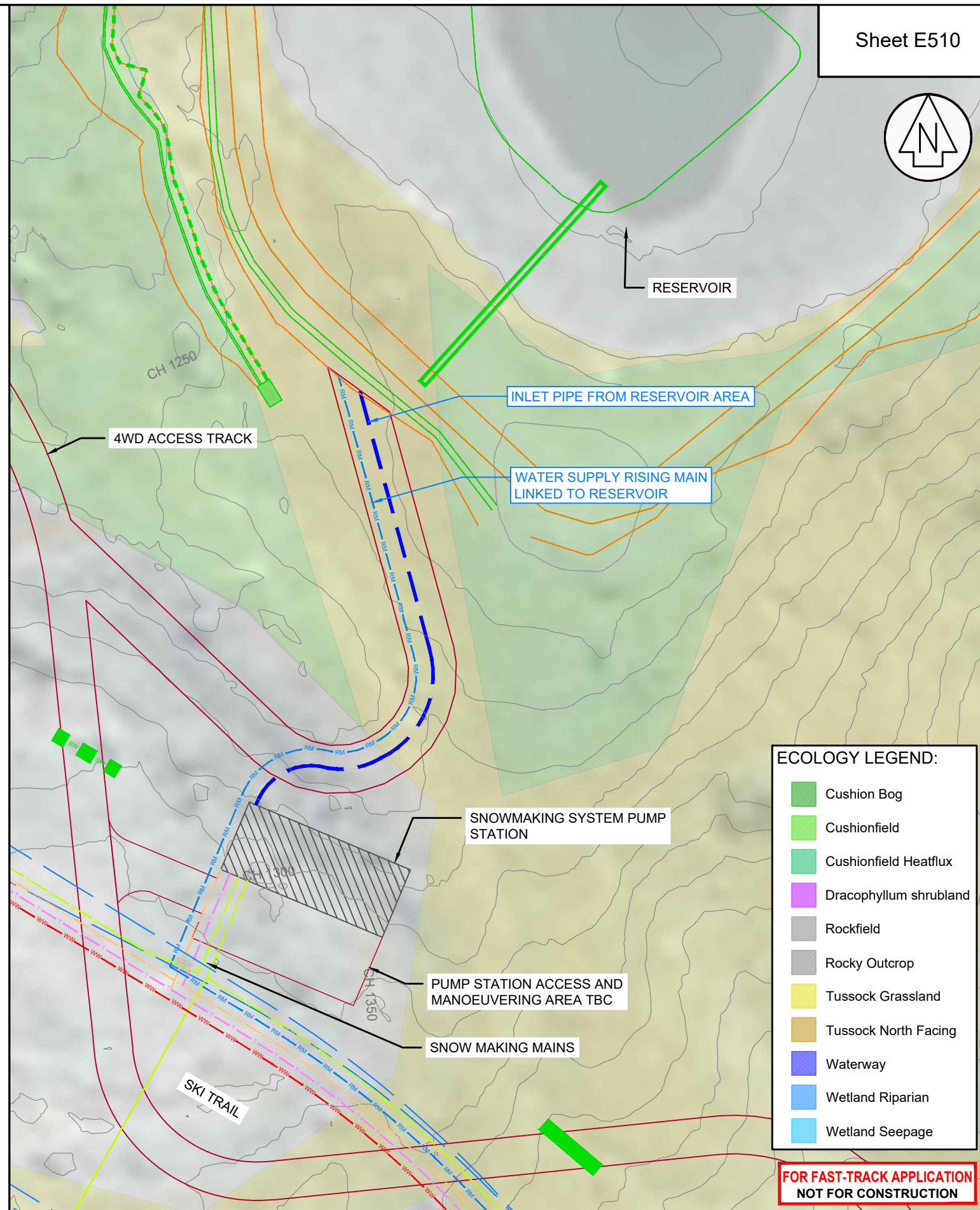


FOUNDATION PLAN
1:150 @ A3

General Notes:

- Refer to **Remarkables Ski Area Doolans Expansion Reservoir Concept Report**, **Remarkables Ski Area and Doolans Expansion Waer Supply Package** and **Remarkables Ski Area Expansion Water Intake Concept Report**, all prepared by Stantec New Zealand Limited.

SERVICES REQUIRED TO BUILDING:
1. POWER SUPPLY = UNDERGROUND MAINS
2. TELECOMMUNICATIONS = UNDERGROUND MAINS



ECOLOGY LEGEND:

	Cushion Bog
	Cushionfield
	Cushionfield Heatflux
	Dracophyllum shrubland
	Rockfield
	Rocky Outcrop
	Tussock Grassland
	Tussock North Facing
	Waterway
	Wetland Riparian
	Wetland Seepage

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REVISION	DESCRIPTION	DATE
G	For Review	11/11/25
H	For Information	30/01/26
I	For Consent	06/03/26
J	For Consent	16/04/26



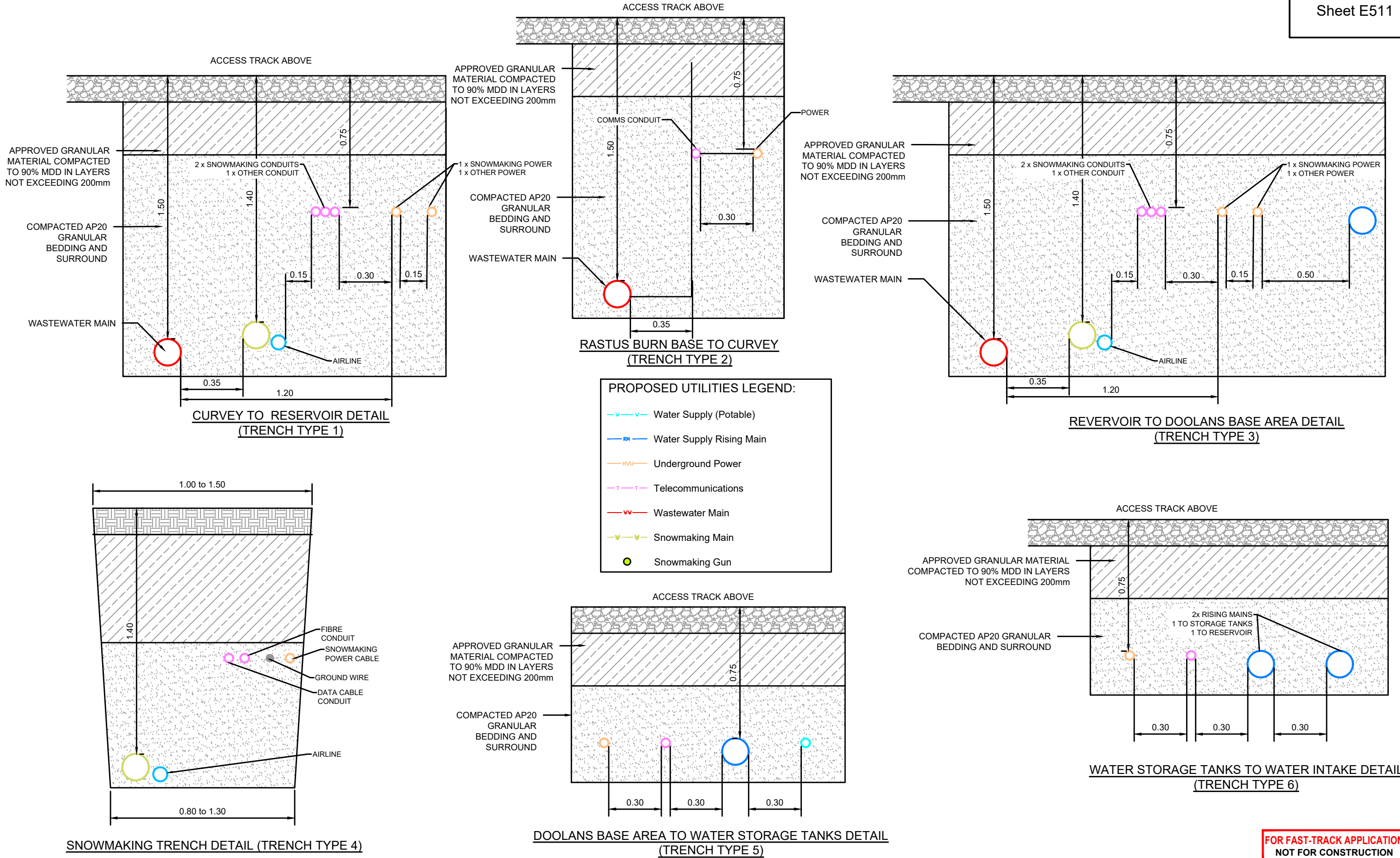
Remarkables Ski Area Upgrades & Doolans Basin Expansion Doolans Access, Roads, Trails & Utilities Pumphouse Building Details

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-	-	MB	16/04/26
DRAWN	DATE	APPROVED	DATE
AJHB/TN	16/04/26	AJHB	16/04/26

SCALE	1:500 @ A3
DATUM & LEVEL	NZTM
LEVEL IN TERMS OF DV088	ORIGIN OIT XI DP XXXXX RL = XXXXX
DRAWING REFERENCE	A30043_E7
REVISION	J



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NOT FOR CONSTRUCTION

REVISION	DESCRIPTION	DATE
G	For Information	28/11/25
H	For Consent	30/01/26
I	For Consent	09/03/26
J	For Consent	16/04/26

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Typical Trench Details

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				SCALE 1:20 @ A3	
DATUM & LEVEL NZTM				LEVEL IN TERMS OF DV068 ORIGIN DIT XI DP XXXXX RL = XXXXX	
SURVEYED	DATE	CHECKED	DATE	DRAWING REFERENCE	REVISION
-	-	MB	16/04/26	A30043_E7	J
DRAWN	DATE	APPROVED	DATE		
AJHB/TN	16/04/26	AJHB	16/04/26		

Appendix B: Co-ordinates of all recorded Threatened, At Risk and Data Deficient plant species.

Species	Easting	Northing
<i>Acaena caesiiglauca</i>	1273073	5000568
<i>Acaena caesiiglauca</i>	1273057	5000532
<i>Acaena caesiiglauca</i>	1272887	5000604
<i>Acaena caesiiglauca</i>	1272856	5000649
<i>Acaena caesiiglauca</i>	1272482	5001697
<i>Acaena caesiiglauca</i>	1270561	5002519
<i>Aciphylla lecomtei</i>	1272748	5002349
<i>Aciphylla lecomtei</i>	1272745	5002360
<i>Aciphylla lecomtei</i>	1272744	5002332
<i>Aciphylla lecomtei</i>	1272742	5002345
<i>Aciphylla lecomtei</i>	1272738	5002336
<i>Aciphylla lecomtei</i>	1272734	5002336
<i>Aciphylla lecomtei</i>	1272730	5002329
<i>Aciphylla lecomtei</i>	1272470	5001954
<i>Aciphylla lecomtei</i>	1272460	5001953
<i>Aciphylla lecomtei</i>	1272455	5001440
<i>Aciphylla lecomtei</i>	1272452	5001478
<i>Aciphylla lecomtei</i>	1272452	5001437
<i>Aciphylla lecomtei</i>	1272452	5001451
<i>Aciphylla lecomtei</i>	1272450	5001709
<i>Aciphylla lecomtei</i>	1272449	5001461
<i>Aciphylla lecomtei</i>	1272447	5001710
<i>Aciphylla lecomtei</i>	1272439	5001720
<i>Aciphylla lecomtei</i>	1272439	5001719
<i>Aciphylla lecomtei</i>	1272439	5001466
<i>Aciphylla lecomtei</i>	1272438	5001721
<i>Aciphylla lecomtei</i>	1272437	5001722
<i>Aciphylla lecomtei</i>	1272437	5001720
<i>Aciphylla lecomtei</i>	1272437	5001720
<i>Aciphylla lecomtei</i>	1272437	5001720
<i>Aciphylla lecomtei</i>	1272422	5001625
<i>Aciphylla lecomtei</i>	1272416	5001481
<i>Aciphylla lecomtei</i>	1272398	5001668
<i>Aciphylla lecomtei</i>	1272396	5001669
<i>Aciphylla lecomtei</i>	1272395	5001668

<i>Aciphylla lecomtei</i>	1272394	5001669
<i>Aciphylla lecomtei</i>	1272392	5001670
<i>Aciphylla lecomtei</i>	1272391	5001673
<i>Aciphylla lecomtei</i>	1272366	5001751
<i>Aciphylla lecomtei</i>	1272366	5001742
<i>Aciphylla lecomtei</i>	1272365	5001750
<i>Aciphylla lecomtei</i>	1272364	5001741
<i>Aciphylla lecomtei</i>	1272354	5001523
<i>Aciphylla lecomtei</i>	1272352	5001519
<i>Aciphylla lecomtei</i>	1272351	5001517
<i>Aciphylla lecomtei</i>	1272323	5001779
<i>Aciphylla lecomtei</i>	1272321	5001778
<i>Aciphylla lecomtei</i>	1272311	5001794
<i>Aciphylla lecomtei</i>	1272310	5001794
<i>Aciphylla lecomtei</i>	1272309	5001795
<i>Aciphylla lecomtei</i>	1272309	5001797
<i>Aciphylla lecomtei</i>	1272309	5001800
<i>Aciphylla lecomtei</i>	1272308	5001797
<i>Aciphylla lecomtei</i>	1272270	5000650
<i>Aciphylla lecomtei</i>	1272259	5001828
<i>Aciphylla lecomtei</i>	1272258	5001826
<i>Aciphylla lecomtei</i>	1272257	5001828
<i>Aciphylla lecomtei</i>	1272256	5001825
<i>Aciphylla lecomtei</i>	1272256	5001824
<i>Aciphylla lecomtei</i>	1272255	5001828
<i>Aciphylla lecomtei</i>	1272255	5001826
<i>Aciphylla lecomtei</i>	1272254	5001826
<i>Aciphylla lecomtei</i>	1272109	5000734
<i>Aciphylla lecomtei</i>	1272097	5000718
<i>Aciphylla lecomtei</i>	1271910	5001262
<i>Aciphylla lecomtei</i>	1271876	5001558
<i>Aciphylla lecomtei</i>	1271703	5001778
<i>Aciphylla simplex</i>	1272409	5002450
<i>Aciphylla simplex</i>	1272406	5002494
<i>Aciphylla simplex</i>	1272330	5002489
<i>Aciphylla simplex</i>	1272308	5001968
<i>Aciphylla simplex</i>	1272306	5001966
<i>Aciphylla simplex</i>	1272304	5001967

<i>Aciphylla simplex</i>	1272302	5002445
<i>Aciphylla simplex</i>	1272298	5001970
<i>Aciphylla simplex</i>	1272298	5001972
<i>Aciphylla simplex</i>	1272296	5002463
<i>Aciphylla simplex</i>	1272292	5001967
<i>Aciphylla simplex</i>	1272291	5001970
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<i>Aciphylla simplex</i>	1271967	5002022
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<i>Aciphylla simplex</i>	1271928	5001564
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<i>Aciphylla simplex</i>	1271823	5001495
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<i>Aciphylla simplex</i>	1271796	5001479
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<i>Aciphylla simplex</i>	1271474	5001850
<i>Aciphylla simplex</i>	1271440	5001822
<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1272355	5000978

<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1272342	5001059
<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1272282	5000852
<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1272262	5000576
<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1272249	5000772
<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1272147	5001020
<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1272130	5001250
<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1271976	5001827
<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1271879	5000964
<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1271876	5001307
<i>Anisotome</i> (b) (CHR 511716); ("Otago bog")	1271682	5001239
<i>Anisotome lanuginosa</i>	1272702	5002364
<i>Anisotome lanuginosa</i>	1272697	5002368
<i>Anisotome lanuginosa</i>	1272691	5002366
<i>Anisotome lanuginosa</i>	1272668	5002353
<i>Anisotome lanuginosa</i>	1272594	5002103
<i>Anisotome lanuginosa</i>	1272594	5002103
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<i>Anisotome lanuginosa</i>	1272593	5002102
<i>Anisotome lanuginosa</i>	1272575	5002109
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<i>Anisotome lanuginosa</i>	1272571	5002109
<i>Anisotome lanuginosa</i>	1272569	5002291
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<i>Anisotome lanuginosa</i>	1272448	5001532
<i>Anisotome lanuginosa</i>	1272447	5001512
<i>Anisotome lanuginosa</i>	1272445	5001562
<i>Anisotome lanuginosa</i>	1272445	5001573
<i>Anisotome lanuginosa</i>	1272441	5001589
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<i>Anisotome lanuginosa</i>	1272428	5001612
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<i>Anisotome lanuginosa</i>	1272267	5001562
<i>Anisotome lanuginosa</i>	1272266	5001563
<i>Anisotome lanuginosa</i>	1272266	5001561
<i>Anisotome lanuginosa</i>	1272266	5001560
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<i>Anisotome lanuginosa</i>	1272225	5001466
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<i>Anisotome lanuginosa</i>	1272223	5001466
<i>Anisotome lanuginosa</i>	1272220	5001464
<i>Anisotome lanuginosa</i>	1272220	5001465
<i>Anisotome lanuginosa</i>	1272220	5001464

<i>Anisotome lanuginosa</i>	1272219	5001464
<i>Anisotome lanuginosa</i>	1272195	5001824
<i>Anisotome lanuginosa</i>	1272186	5001836
<i>Anisotome lanuginosa</i>	1272183	5001478
<i>Anisotome lanuginosa</i>	1272182	5001834
<i>Anisotome lanuginosa</i>	1272182	5001481
<i>Anisotome lanuginosa</i>	1272181	5001476
<i>Anisotome lanuginosa</i>	1272180	5001478
<i>Anisotome lanuginosa</i>	1272171	5001831
<i>Anisotome lanuginosa</i>	1272169	5001832
<i>Anisotome lanuginosa</i>	1272166	5001511
<i>Anisotome lanuginosa</i>	1272165	5001512
<i>Anisotome lanuginosa</i>	1272160	5001513
<i>Anisotome lanuginosa</i>	1272155	5001521
<i>Anisotome lanuginosa</i>	1272154	5001578
<i>Anisotome lanuginosa</i>	1272154	5001574
<i>Anisotome lanuginosa</i>	1272153	5001576
<i>Anisotome lanuginosa</i>	1272131	5001937
<i>Anisotome lanuginosa</i>	1272129	5001940
<i>Anisotome lanuginosa</i>	1272126	5001938
<i>Anisotome lanuginosa</i>	1272108	5000734
<i>Anisotome lanuginosa</i>	1272099	5000580
<i>Anisotome lanuginosa</i>	1272092	5000770
<i>Anisotome lanuginosa</i>	1272068	5000767
<i>Anisotome lanuginosa</i>	1272065	5000843
<i>Anisotome lanuginosa</i>	1272063	5000805
<i>Anisotome lanuginosa</i>	1272056	5000816
<i>Anisotome lanuginosa</i>	1272052	5000832
<i>Anisotome lanuginosa</i>	1272050	5000825
<i>Anisotome lanuginosa</i>	1272045	5001703
<i>Anisotome lanuginosa</i>	1272039	5000872
<i>Anisotome lanuginosa</i>	1272025	5000899
<i>Anisotome lanuginosa</i>	1272022	5000893
<i>Anisotome lanuginosa</i>	1272018	5000925
<i>Anisotome lanuginosa</i>	1272018	5000907
<i>Anisotome lanuginosa</i>	1272017	5000915
<i>Anisotome lanuginosa</i>	1272017	5000915
<i>Anisotome lanuginosa</i>	1271998	5001733

<i>Anisotome lanuginosa</i>	1271993	5001735
<i>Anisotome lanuginosa</i>	1271980	5001728
<i>Anisotome lanuginosa</i>	1271966	5001725
<i>Anisotome lanuginosa</i>	1271959	5001727
<i>Anisotome lanuginosa</i>	1271954	5001729
<i>Anisotome lanuginosa</i>	1271948	5001732
<i>Anisotome lanuginosa</i>	1271940	5001054
<i>Anisotome lanuginosa</i>	1271931	5001077
<i>Anisotome lanuginosa</i>	1271918	5001354
<i>Anisotome lanuginosa</i>	1271917	5001095
<i>Anisotome lanuginosa</i>	1271906	5001113
<i>Anisotome lanuginosa</i>	1271906	5001365
<i>Anisotome lanuginosa</i>	1271906	5001361
<i>Anisotome lanuginosa</i>	1271903	5001876
<i>Anisotome lanuginosa</i>	1271881	5001322
<i>Anisotome lanuginosa</i>	1271879	5001324
<i>Anisotome lanuginosa</i>	1271876	5001884
<i>Anisotome lanuginosa</i>	1271786	5001607
<i>Anisotome lanuginosa</i>	1271775	5001333
<i>Anisotome lanuginosa</i>	1271775	5001858
<i>Anisotome lanuginosa</i>	1271715	5001208
<i>Anisotome lanuginosa</i>	1271466	5001833
<i>Anisotome lanuginosa</i>	1271230	5001953
<i>Anisotome lanuginosa</i>	1271227	5001956
<i>Anisotome lanuginosa</i>	1270554	5002518
<i>Azorella exigua</i>	1272762	5002360
<i>Azorella exigua</i>	1272306	5000450
<i>Azorella haastii</i> subsp. <i>haastii</i>	1272158	5000811
<i>Brachyscome longiscarpa</i>	1272215	5001920
<i>Brachyscome montana</i>	1272757	5002360
<i>Brachyscome montana</i>	1272757	5000312
<i>Brachyscome montana</i>	1272730	5002323
<i>Brachyscome montana</i>	1272461	5001969
<i>Brachyscome montana</i>	1272457	5001966
<i>Brachyscome montana</i>	1272455	5001960
<i>Brachyscome montana</i>	1272438	5001950
<i>Brachyscome montana</i>	1272413	5001632
<i>Brachyscome montana</i>	1272410	5000511

<i>Brachyscome montana</i>	1272336	5001854
<i>Brachyscome montana</i>	1272286	5002413
<i>Brachyscome montana</i>	1272258	5002422
<i>Brachyscome montana</i>	1272214	5002405
<i>Brachyscome montana</i>	1272207	5002421
<i>Brachyscome montana</i>	1272206	5002419
<i>Brachyscome montana</i>	1272205	5002419
<i>Brachyscome montana</i>	1272204	5002420
<i>Brachyscome montana</i>	1272188	5001841
<i>Brachyscome montana</i>	1272183	5000633
<i>Brachyscome montana</i>	1272177	5001824
<i>Brachyscome montana</i>	1272171	5002433
<i>Brachyscome montana</i>	1272145	5002010
<i>Brachyscome montana</i>	1272119	5002020
<i>Brachyscome montana</i>	1272118	5002028
<i>Brachyscome montana</i>	1272112	5002031
<i>Brachyscome montana</i>	1272053	5000845
<i>Brachyscome montana</i>	1271888	5001332
<i>Brachyscome montana</i>	1271885	5001331
<i>Brachyscome montana</i>	1271884	5001329
<i>Brachyscome montana</i>	1271858	5001709
<i>Brachyscome montana</i>	1271728	5001602
<i>Brachyscome montana</i>	1271678	5001353
<i>Brachyscome montana</i>	1271599	5002497
<i>Brachyscome montana</i>	1271349	5001925
<i>Brachyscome montana</i>	1271312	5001934
<i>Brachyscome montana</i>	1271270	5001937
<i>Brachyscome montana</i>	1271232	5001949
<i>Carex edgariae</i>	1272541	5002277
<i>Carex edgariae</i>	1272533	5002277
<i>Carex edgariae</i>	1272512	5002276
<i>Carex edgariae</i>	1272512	5002281
<i>Carex edgariae</i>	1272260	5002418
<i>Carex edgariae</i>	1272239	5001354
<i>Carex edgariae</i>	1272152	5002008
<i>Carex edgariae</i>	1272105	5001117
<i>Carex edgariae</i>	1272094	5001098
<i>Carex edgariae</i>	1272041	5001847

<i>Carex edgariae</i>	1271828	5001682
<i>Carex hectorii</i>	1272530	5002281
<i>Carex hectorii</i>	1272365	5000682
<i>Carex hectorii</i>	1272277	5000796
<i>Carex hectorii</i>	1272276	5002403
<i>Carex hectorii</i>	1272227	5000543
<i>Carex hectorii</i>	1270566	5002514
<i>Carex kirkii</i> var. <i>kirkii</i>	1272412	5002052
<i>Carex kirkii</i> var. <i>kirkii</i>	1272392	5002039
<i>Carex kirkii</i> var. <i>kirkii</i>	1271804	5001648
<i>Carex kirkii</i> var. <i>kirkii</i>	1270798	5002189
<i>Carex lachenalii</i> subsp. <i>parkeri</i>	1271465	5001883
<i>Carex petriei</i>	1270551	5002525
<i>Carex talbotii</i>	1271974	5001829
<i>Centrolepis pallida</i>	1272283	5000852
<i>Centrolepis pallida</i>	1272149	5001020
<i>Centrolepis pallida</i>	1271876	5000967
<i>Colobanthus apetalus</i>	1272247	5000775
<i>Colobanthus apetalus</i>	1271979	5001831
<i>Colobanthus apetalus</i>	1271872	5001307
<i>Colobanthus apetalus</i>	1271683	5001239
<i>Colobanthus apetalus</i>	1270798	5002190
<i>Colobanthus apetalus</i>	1270480	5002452
<i>Colobanthus apetalus</i>	1270420	5002661
<i>Colobanthus strictus</i>	1272158	5001808
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1273053	5000293
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1272862	5000547
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1272837	5000687
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1272805	5000517
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1272677	5000599
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1272353	5000977

<i>Craspedia uniflora</i> var. <i>uniflora</i>	1272288	5000894
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1272280	5000851
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1272253	5001304
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1272221	5000929
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1272215	5001919
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1271978	5001828
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1271878	5000966
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1270554	5002522
<i>Dracophyllum prostratum</i>	1272357	5000976
<i>Epilobium komarovianum</i>	1272261	5000576
<i>Epilobium komarovianum</i>	1272130	5001252
<i>Epilobium komarovianum</i>	1271874	5001308
<i>Epilobium komarovianum</i>	1271684	5001239
<i>Epilobium komarovianum</i>	1271683	5001239
<i>Epilobium komarovianum</i>	1270548	5002524
<i>Epilobium porphyrium</i>	1272762	5002359
<i>Epilobium porphyrium</i>	1272577	5002472
<i>Epilobium porphyrium</i>	1272488	5002287
<i>Epilobium porphyrium</i>	1272482	5002541
<i>Epilobium porphyrium</i>	1272413	5002463
<i>Epilobium porphyrium</i>	1272279	5001948
<i>Epilobium porphyrium</i>	1272160	5001807
<i>Epilobium porphyrium</i>	1271877	5001310
<i>Epilobium porphyrium</i>	1271803	5001490
<i>Epilobium porphyrium</i>	1271554	5002271
<i>Epilobium porphyrium</i>	1271516	5001705
<i>Epilobium porphyrium</i>	1271497	5001818
<i>Epilobium porphyrium</i>	1271228	5001999
<i>Epilobium porphyrium</i>	1271068	5002219
<i>Epilobium porphyrium</i>	1270797	5002189

<i>Epilobium porphyrium</i>	1270670	5002433
<i>Epilobium porphyrium</i>	1270419	5002660
<i>Euchiton traversii</i>	1271874	5001310
<i>Euphrasia petriei</i>	1272220	5000520
<i>Forstera purpurata</i>	1272735	5000530
<i>Gaultheria nubicola</i>	1272307	5000449
<i>Gaultheria nubicola</i>	1272300	5000439
<i>Gaultheria nubicola</i>	1272264	5000577
<i>Gaultheria nubicola</i>	1271578	5002466
<i>Gaultheria nubicola</i>	1271230	5001999
<i>Gaultheria nubicola</i>	1270981	5002160
<i>Geranium microphyllum</i>	1273211	5000371
<i>Geranium microphyllum</i>	1272862	5000548
<i>Geranium microphyllum</i>	1272735	5000529
<i>Geranium microphyllum</i>	1272676	5000600
<i>Geranium microphyllum</i>	1272395	5000290
<i>Geranium microphyllum</i>	1272360	5000651
<i>Geranium microphyllum</i>	1272247	5000773
<i>Geranium microphyllum</i>	1272228	5000799
<i>Geranium microphyllum</i>	1272220	5000932
<i>Geranium microphyllum</i>	1272220	5000931
<i>Juncus novae-zelandiae</i>	1272148	5001020
<i>Juncus pusillus</i>	1272356	5000976
<i>Juncus pusillus</i>	1272283	5000850
<i>Juncus pusillus</i>	1272262	5000575
<i>Juncus pusillus</i>	1272257	5001306
<i>Juncus pusillus</i>	1272149	5001019
<i>Juncus pusillus</i>	1272131	5001251
<i>Juncus pusillus</i>	1270549	5002521
<i>Kelleria childii</i>	1272578	5002472
<i>Kelleria childii</i>	1272488	5002287
<i>Kelleria childii</i>	1272415	5002463
<i>Kelleria childii</i>	1272284	5002401
<i>Kelleria childii</i>	1272278	5001948
<i>Kelleria childii</i>	1272239	5002183
<i>Kelleria childii</i>	1272227	5001942
<i>Kelleria childii</i>	1272097	5001124
<i>Kelleria childii</i>	1271928	5001708

<i>Kelleria childii</i>	1271877	5000965
<i>Kelleria childii</i>	1271875	5001885
<i>Kelleria childii</i>	1271811	5001679
<i>Kelleria childii</i>	1271803	5001490
<i>Kelleria childii</i>	1271700	5001495
<i>Kelleria childii</i>	1271577	5002468
<i>Kelleria childii</i>	1271559	5001653
<i>Kelleria childii</i>	1271554	5002271
<i>Kelleria childii</i>	1271530	5001559
<i>Kelleria childii</i>	1271516	5001705
<i>Kelleria childii</i>	1271468	5002236
<i>Kelleria childii</i>	1271464	5001882
<i>Kelleria childii</i>	1271382	5001935
<i>Kelleria childii</i>	1271174	5002039
<i>Kelleria childii</i>	1271112	5002193
<i>Kelleria childii</i>	1270981	5002159
<i>Kelleria paludosa</i>	1273054	5000293
<i>Kelleria paludosa</i>	1272356	5000977
<i>Kelleria paludosa</i>	1272341	5001059
<i>Kelleria paludosa</i>	1272262	5000575
<i>Kelleria paludosa</i>	1272258	5001304
<i>Kelleria paludosa</i>	1272246	5000772
<i>Kelleria paludosa</i>	1272149	5001019
<i>Kelleria paludosa</i>	1272131	5001251
<i>Kelleria paludosa</i>	1271877	5000966
<i>Kelleria paludosa</i>	1271874	5001309
<i>Kelleria paludosa</i>	1271684	5001239
<i>Kelleria paludosa</i>	1270550	5002518
<i>Leptinella goyenii</i>	1272578	5002473
<i>Leptinella goyenii</i>	1272480	5002541
<i>Leptinella goyenii</i>	1272467	5001979
<i>Leptinella goyenii</i>	1272425	5001624
<i>Leptinella goyenii</i>	1272414	5002466
<i>Leptinella goyenii</i>	1272411	5000865
<i>Leptinella goyenii</i>	1272410	5000511
<i>Leptinella goyenii</i>	1272315	5000559
<i>Leptinella goyenii</i>	1272307	5000449
<i>Leptinella goyenii</i>	1272238	5002185

<i>Leptinella goyenii</i>	1272226	5001459
<i>Leptinella goyenii</i>	1272156	5001576
<i>Leptinella goyenii</i>	1272146	5000652
<i>Leptinella goyenii</i>	1272063	5000804
<i>Leptinella goyenii</i>	1271903	5001114
<i>Leptinella goyenii</i>	1271873	5001883
<i>Leptinella goyenii</i>	1271836	5001769
<i>Leptinella goyenii</i>	1271805	5001494
<i>Leptinella goyenii</i>	1271559	5001655
<i>Leptinella goyenii</i>	1271499	5001817
<i>Leptinella goyenii</i>	1271466	5002238
<i>Leptinella goyenii</i>	1271464	5001883
<i>Leptinella goyenii</i>	1271383	5001938
<i>Leptinella goyenii</i>	1271226	5002000
<i>Luzula leptophylla</i>	1272862	5000548
<i>Luzula leptophylla</i>	1272357	5000977
<i>Luzula leptophylla</i>	1271684	5001239
<i>Myosotis antarctica</i> subsp. <i>antarctica</i>	1270419	5002661
<i>Myosotis antarctica</i> subsp. <i>antarctica</i>	1270213	5002935
<i>Myosotis lyallii</i> subsp. <i>elderi</i>	1272250	5001809
<i>Myosotis lyallii</i> subsp. <i>elderi</i>	1271929	5001708
<i>Myosotis pulvinaris</i>	1272482	5002541
<i>Myosotis pulvinaris</i>	1272468	5001981
<i>Myosotis pulvinaris</i>	1272311	5001969
<i>Myosotis pulvinaris</i>	1272301	5001969
<i>Myosotis pulvinaris</i>	1272295	5001971
<i>Myosotis pulvinaris</i>	1272238	5002182
<i>Myosotis pulvinaris</i>	1272153	5001575
<i>Myosotis pulvinaris</i>	1272144	5000653
<i>Myosotis pulvinaris</i>	1271904	5001111
<i>Myosotis pulvinaris</i>	1271836	5001766
<i>Myosotis pulvinaris</i>	1271806	5001491
<i>Myosotis pulvinaris</i>	1271495	5001818
<i>Myosotis pulvinaris</i>	1271469	5002235
<i>Myosotis pulvinaris</i>	1270981	5002158
<i>Nertera balfouriana</i>	1272282	5000851

<i>Nertera balfouriana</i>	1272149	5001020
<i>Pachycladon novae-zelandiae</i>	1272299	5001965
<i>Phyllachne rubra</i>	1271874	5001885
<i>Phyllachne rubra</i>	1271700	5001494
<i>Phyllachne rubra</i>	1271559	5001653
<i>Phyllachne rubra</i>	1271465	5001883
<i>Phyllachne rubra</i>	1271384	5001934
<i>Pimelia notia</i>	1272395	5000290
<i>Pimelia notia</i>	1272366	5000532
<i>Pimelia notia</i>	1272345	5000779
<i>Pimelia notia</i>	1272325	5000731
<i>Pimelia notia</i>	1272209	5000632
<i>Pimelia notia</i>	1272157	5000809
<i>Pimelia notia</i>	1272121	5001348
<i>Pimelia notia</i>	1271835	5001767
<i>Pimelia notia</i>	1271775	5001816
<i>Pimelia notia</i>	1271174	5002039
<i>Poa lindsayi</i>	1271068	5002219
<i>Poa lindsayi</i>	1270798	5002189
<i>Poa lindsayi</i>	1270670	5002432
<i>Poa schistacea</i>	1271803	5001492
<i>Poa schistacea</i>	1271497	5001817
<i>Ranunculus buchananii</i>	1271806	5001474
<i>Ranunculus maculatus</i>	1272277	5002412
<i>Ranunculus maculatus</i>	1271975	5001830
<i>Ranunculus maculatus</i>	1271874	5001309
<i>Ranunculus pachyrrhizus</i>	1272337	5000418
<i>Ranunculus pachyrrhizus</i>	1271976	5001829
<i>Ranunculus royi</i>	1272465	5000079
<i>Raoulia apicinigra</i>	1272158	5001807
<i>Raoulia apicinigra</i>	1270799	5002189
<i>Raoulia apicinigra</i>	1270669	5002433
<i>Raoulia apicinigra</i>	1270483	5002451
<i>Raoulia apicinigra</i>	1270420	5002660
<i>Raoulia youngii</i>	1272483	5002542
<i>Raoulia youngii</i>	1272465	5001980
<i>Raoulia youngii</i>	1272154	5001576
<i>Raoulia youngii</i>	1271804	5001490

<i>Raoulia youngii</i>	1271530	5001559
<i>Rytidosperma pumilum</i>	1273251	5000186
<i>Rytidosperma pumilum</i>	1273211	5000372
<i>Rytidosperma pumilum</i>	1273053	5000294
<i>Rytidosperma pumilum</i>	1273018	5000328
<i>Rytidosperma pumilum</i>	1272906	5000121
<i>Rytidosperma pumilum</i>	1272863	5000548
<i>Rytidosperma pumilum</i>	1272804	5000092
<i>Rytidosperma pumilum</i>	1272764	5002361
<i>Rytidosperma pumilum</i>	1272755	5000312
<i>Rytidosperma pumilum</i>	1272666	5000700
<i>Rytidosperma pumilum</i>	1272547	5000578
<i>Rytidosperma pumilum</i>	1272497	5002141
<i>Rytidosperma pumilum</i>	1272466	5001978
<i>Rytidosperma pumilum</i>	1272455	5001437
<i>Rytidosperma pumilum</i>	1272421	5001622
<i>Rytidosperma pumilum</i>	1272411	5000863
<i>Rytidosperma pumilum</i>	1272410	5000511
<i>Rytidosperma pumilum</i>	1272384	5002033
<i>Rytidosperma pumilum</i>	1272365	5000532
<i>Rytidosperma pumilum</i>	1272345	5000779
<i>Rytidosperma pumilum</i>	1272345	5001249
<i>Rytidosperma pumilum</i>	1272325	5000733
<i>Rytidosperma pumilum</i>	1272315	5000557
<i>Rytidosperma pumilum</i>	1272307	5000449
<i>Rytidosperma pumilum</i>	1272300	5000440
<i>Rytidosperma pumilum</i>	1272281	5000541
<i>Rytidosperma pumilum</i>	1272279	5001950
<i>Rytidosperma pumilum</i>	1272227	5001941
<i>Rytidosperma pumilum</i>	1272212	5000634
<i>Rytidosperma pumilum</i>	1272209	5000438
<i>Rytidosperma pumilum</i>	1272158	5001806
<i>Rytidosperma pumilum</i>	1272157	5001737
<i>Rytidosperma pumilum</i>	1272156	5000811
<i>Rytidosperma pumilum</i>	1272144	5000650
<i>Rytidosperma pumilum</i>	1272139	5002390
<i>Rytidosperma pumilum</i>	1271859	5001656
<i>Rytidosperma pumilum</i>	1271836	5001764

<i>Rytidosperma pumilum</i>	1271775	5001817
<i>Rytidosperma pumilum</i>	1271496	5001820
<i>Rytidosperma pumilum</i>	1271469	5002237
<i>Rytidosperma pumilum</i>	1271228	5002001
<i>Rytidosperma pumilum</i>	1271175	5002038
<i>Rytidosperma pumilum</i>	1271068	5002218
<i>Rytidosperma pumilum</i>	1270833	5002263
<i>Rytidosperma pumilum</i>	1270797	5002189
<i>Rytidosperma pumilum</i>	1270669	5002434
<i>Rytidosperma pumilum</i>	1270624	5002460
<i>Rytidosperma pumilum</i>	1270484	5002452
<i>Rytidosperma pumilum</i>	1270419	5002661

Appendix C: Vegetation Quadrat Data Forms

Snow tussock grassland

Species	Quadrat												
	6	11	18	32	29	66	63	61	35	45	48	33	51
	Aspect												
	NW	W	E	E	NE	NE	E	NW	NNE	Flat/WSW	ENE	E	SW
<i>Abrotanella inconspicua</i>	0	2	0	0	0	0	0	0	0	0	0	0	1
<i>Acaena saccaticupula</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Acaena caesiglaucua</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Aciphylla aurea</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Aciphylla kirkii</i>	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Aciphylla lecomtei</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Aciphylla "Lomond"</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Agrostis capillaris</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Agrostis muelleriana</i>	0	1	0	0	0	0	1	0	0	0	0	0	0
<i>Anisotome flexuosa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Anisotome imbricata</i> var. <i>imbricata</i>	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Angyrotegium mackayi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Asperula perpusilla</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Astelia nervosa</i>	0	0	0	0	1	0	0	0	0	0	0	0	0
<i>Austroblechnum penna-marina</i> subsp. <i>alpina</i>	2	0	0	4	0	0	0	0	0	0	0	0	0
<i>Austrolycopodium fastigiatum</i>	0	0	0	0	0	0	0	0	0	0	1	0	2
<i>Brachyglottis bellidioides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Brachyscome montana</i>	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Caltha obtusa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Carex edura</i>	0	0	0	0	0	1	0	0	0	0	0	0	0
<i>Carex penalpina</i>	0	0	0	2	0	0	0	0	0	0	0	0	0
<i>Carex pyrenaica</i> var. <i>cephalotes</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Carex subviridis</i>	2	0	0	0	0	0	0	0	0	0	0	0	0
<i>Carex wakatipu</i>	0	1	0	0	0	0	0	3	0	0	0	0	0
<i>Celmisia haastii</i>	2	2	0	0	0	1	0	0	0	1	2	2	1
<i>Celmisia loricifolia</i>	0	0	0	0	0	0	0	0	0	0	0	0	2
<i>Celmisia lyallii</i>	0	0	6	0	0	0	0	0	0	0	0	0	0
<i>Chiloglottis cornuta</i>	not observed in a quadrat but noted in community during walk through												
<i>Celmisia sessiliflora</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Chionochloa macra</i>	5	6	6	5	6	5	6	4	4	6	6	5	5
<i>Chionochloa rigida</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Colobanthus buchani</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Coprosma atropurpurea</i>	0	0	0	0	0	0	0	0	1	0	0	0	0
<i>Coprosma niphophylla</i>	0	0	0	2	0	0	0	0	0	0	0	0	0
<i>Coprosma perpusilla</i> subsp. <i>perpusilla</i>	3	0	0	0	0	0	0	0	0	0	0	0	0
<i>Craspedia lanata</i> var. <i>lanata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Dracophyllum muscoides</i>	0	3	2	0	0	2	0	2	2	1	0	0	2
<i>Dracophyllum prunum</i>	not noted in community during walk through												
<i>Dracophyllum rosmarinifolium</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Epilobium alsinoides</i>	0	1	1	1	0	1	0	1	1	1	0	1	0
<i>Epilobium atripicifolium</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Epilobium porphyrium</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Euchiton lateralis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Gaultheria depressa</i> var. <i>novae-zelandiae</i>	0	0	0	1	1	0	0	0	0	1	2	1	2
<i>Gaultheria nubicola</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Gaultheria parvula</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Gentianella bellidifolia</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Gentianella corymbifera</i> subsp. <i>corymbifera</i>	0	0	0	0	0	0	0	0	0	0	0	0	1
<i>Geranium microphyllum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Geum leiospermum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Geum cockaynei</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hectorella caespitosa</i>	0	0	0	0	0	0	1	1	0	0	0	0	0
<i>Heiiracium lepidulum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Huperzia australiana</i>	0	1	0	0	0	0	0	0	0	0	0	0	3
<i>Hypochaeris radicata</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Koeleria cheesemanii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Kelleria chidlii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Leptinella pectinata</i> subsp. <i>villosa</i>	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Lichens</i>	1	1	1	1	0	2	1	1	1	0	0	0	1
<i>Luzula pumila</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Luzula rufa</i> var. <i>rufa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Marsippospermum gracile</i>	0	0	0	0	0	0	0	0	0	0	0	0	1
<i>Meliccytus alpinus</i>	0	0	0	0	0	0	1	0	0	0	0	0	0
<i>Mosses</i>	1	1	3	1	1	1	1	2	2	0	0	1	1
<i>Myosotis lyallii</i> subsp. <i>elderii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Myrsine nummularia</i>	0	0	0	0	0	0	0	0	0	0	0	0	3
<i>Ophioglossum coriaceum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ourisia caespitosa</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ourisia glandulosa</i>	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Ozothamnus vauii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Phyllachne colensoi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ptilosella officinarum</i>	0	0	0	0	0	0	0	1	0	0	0	0	0
<i>Pimelia notia</i>	0	0	1	0	0	0	0	0	0	0	0	0	0
<i>Plantago lanigera</i>	2	1	0	1	0	1	0	1	0	1	0	0	0
<i>Poa colensoi</i>	1	1	2	0	1	1	1	2	2	1	1	2	2
<i>Polystichum cystostegia</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Polystichum vestitum</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Rhytidosperra pumilum</i>	0	0	1	0	0	1	0	1	1	1	0	0	0
<i>Rhytidosperra setifolium</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ranunculus multiscarpus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Raoulia hectorii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Raoulia grandiflora</i>	1	1	1	1	1	3	0	1	0	1	1	2	1
<i>Raoulia subsericea</i>	0	0	0	0	0	0	0	0	2	0	0	0	0
<i>Schoenus pauciflorus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Scleranthus uniflorus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Shawia cymbifolia</i>	not observed in a quadrat but noted in community during walk through												
<i>Azorella haastii</i> subsp. <i>haastii</i>	0	0	0	1	0	0	0	0	0	0	0	0	0
<i>Veronica densifolia</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Veronica hectorii</i> subsp. <i>hectorii</i>	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Viola cunninghamii</i>	2	1	0	1	0	1	1	1	1	0	0	1	0
<i>Wahlenbergia albomarginata</i> subsp. <i>albomarginata</i>	0	1	0	0	0	0	0	0	0	0	0	0	0

Abundant

Not Abundant

Snow tussock grassland

Species	Quadrat											
	54	55	26 (delineation)	51 (delineation)	19 (delineation)	18 (delineation)	6 (delineation)	46 (delineation)	44 (delineation)	41 (delineation)	38 (delineation)	31 (delineation)
	Aspect											
	E	N	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
<i>Abrotonella inconspicua</i>	0	0	1	0	0	0	0	5	0	0	0	20
<i>Acaena saccaticupula</i>	0	0	0	1	0	0	0	0	0	0	0	0
<i>Aceana caesiiglaucia</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Aciphylla aurea</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Aciphylla kirkii</i>	0	0	0	3	1	1	1	0	2	0	0	1
<i>Aciphylla lecomtei</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Aciphylla "Lomond"</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Agrostis capillaris</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Agrostis muelleriana</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Anisotome flexuosa</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Anisotome imbricata</i> var. <i>imbricata</i>	0	0	0	0	0	0	0	0	0	0	1	0
<i>Argyrotegium mackayi</i>	0	0	1	0	0	1	0	0	0	0	0	0
<i>Asperula perpusilla</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Astelina nervosa</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Austroblechnum penna-marina</i> subsp. <i>alpina</i>	0	0	0	20	0	0	1	0	1	0	10	0
<i>Austrolycopodium fastigiatum</i>	0	0	0	0	10	1	0	0	0	0	0	0
<i>Brachyglottis bellidioides</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Brachyscome montana</i>	0	0	1	0	0	0	0	0	0	0	0	0
<i>Caltha obtusa</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Carex edura</i>	0	0	7	0	0	0	1	0	0	0	1	0
<i>Carex penalpina</i>	1	1	0	0	0	0	0	0	0	0	0	0
<i>Carex pyrenaica</i> var. <i>cephalotes</i>	0	0	0	0	0	0	0	0	3	0	0	1
<i>Carex subviridis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Carex wakatipu</i>	1	1	0	0	0	0	0	0	0	0	0	0
<i>Celmisia haastii</i>	0	0	0	0	0	0	1	1	5	0	0	1
<i>Celmisia laricifolia</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Celmisia lyallii</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Chiloglottis comuta</i>	not observed in a quadrat but noted in community during walk through											
<i>Celmisia sessiliflora</i>	0	0	0	0	0	0	0	1	0	0	0	0
<i>Chionochoa macra</i>	6	4	20	15	7	20	40	15	55	100	10	30
<i>Chionochoa rigida</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Colobanthus buchanii</i>	0	0	1	0	0	0	0	0	0	0	0	0
<i>Coprosma atropurpurea</i>	0	0	1	0	0	0	0	0	0	0	0	0
<i>Coprosma niphophylla</i>	0	0	0	0	0	0	2	0	0	0	0	0
<i>Coprosma perpusilla</i> subsp. <i>perpusilla</i>	0	0	0	0	30	50	0	0	0	0	0	0
<i>Craspedia lanata</i> var. <i>lanata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Dracophyllum muscoides</i>	2	0	0	1	0	10	0	20	2	0	3	5
<i>Dracophyllum pronum</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Dracophyllum rosmarinifolium</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Epilobium alsinoides</i>	3	0	1	0	0	0	0	0	1	1	0	0
<i>Epilobium atriplicifolium</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Epilobium porphyrium</i>	0	0	0	0	0	0	0	0	0	0	1	0
<i>Euchiton lateralis</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Gautheria depressa</i> var. <i>novae-zelandiae</i>	0	0	0	0	2	1	1	0	0	0	0	0
<i>Gautheria nubicola</i>	0	0	0	0	0	0	0	50	2	0	25	20
<i>Gautheria parvula</i>	0	0	0	3	10	0	0	0	0	0	0	0
<i>Gentianella bellidifolia</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Gentianella corymbifera</i> subsp. <i>corymbifera</i>	0	0	0	0	0	1	0	0	0	0	0	0
<i>Geranium microphyllum</i>	0	0	0	0	0	1	0	0	0	0	0	0
<i>Geum leiospermum</i>	0	0	0	0	0	0	0	0	0	3	0	0
<i>Geum cockaynei</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hectorella caespitosa</i>	0	0	0	0	0	0	0	2	0	0	0	0
<i>Heiracium lepidulum</i>	0	0	0	0	0	1	0	0	0	0	0	0
<i>Huperzia australiana</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Hypochaeris radicata</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Koeleria cheesemanii</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Koeleria chidlii</i>	0	0	2	0	0	0	1	1	0	0	1	1
<i>Leptinella pectinata</i> subsp. <i>villosa</i>	0	0	15	1	0	0	0	0	5	0	0	0
<i>Lichens</i>	0	1	40	0	0	0	0	0	0	0	0	0
<i>Luzula pumila</i>	0	0	3	0	0	0	0	0	1	0	0	1
<i>Luzula rufa</i> var. <i>rufa</i>	0	0	0	0	0	1	0	0	0	0	0	0
<i>Marsippospermum gracile</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Meliccytus alpinus</i>	0	0	0	0	0	0	0	0	0	0	1	0
<i>Mosses</i>	1	3	0	7	0	0	0	0	0	0	0	0
<i>Myosotis lyallii</i> subsp. <i>elderii</i>	0	0	1	0	0	0	0	0	0	0	0	0
<i>Myrsine nummulana</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ophioglossum coriaceum</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ourisia caespitosa</i>	0	0	0	1	0	0	0	0	0	0	0	0
<i>Ourisia glandulosa</i>	0	0	0	0	0	0	1	0	1	0	0	0
<i>Ozothamnus vauvilliersii</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Phyllachne colensoi</i>	0	0	1	0	0	0	0	1	15	0	0	1
<i>Pilosella officinarum</i>	0	0	1	0	0	0	1	0	0	0	0	0
<i>Pimella notia</i>	0	0	0	0	2	0	0	0	0	0	0	0
<i>Plantago lanigera</i>	0	0	1	1	1	1	1	0	0	1	1	0
<i>Poa colensoi</i>	2	3	15	1	5	10	5	1	10	0	3	2
<i>Polystichum cystostegia</i>	0	0	0	0	0	0	2	0	1	0	0	0
<i>Polystichum vestitum</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Rytidosperma pumilum</i>	0	2	0	0	2	0	0	0	0	0	3	2
<i>Rytidosperma setifolium</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Ranunculus multiscarpus</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Raoulia hectorii</i>	0	0	1	0	0	0	0	0	0	0	0	0
<i>Raoulia grandiflora</i>	1	1	2	0	5	10	0	0	0	0	5	30
<i>Raoulia subsericea</i>	0	0	0	0	0	2	0	0	0	0	0	0
<i>Schoenus pauciflorus</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Scleranthus uniflorus</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Shawia cymbifolia</i>	not observed in a quadrat but noted in community during walk through											
<i>Azorella haastii</i> subsp. <i>haastii</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Veronica densifolia</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Veronica hectorii</i> subsp. <i>hectorii</i>	0	0	0	0	0	0	0	0	0	0	0	0
<i>Viola cunninghamii</i>	1	1	1	1	0	0	0	0	1	0	3	1
<i>Wahlenbergia albomarginata</i> subsp. <i>albomarginata</i>	0	0	0	0	1	1	0	0	0	0	0	0

Snow tussock grassland													
Species	Quadrat												
	29	21	14	11	8	1	84	86	74	78	94	98	WT2
	(delineation)	(delineation)	(delineation)	(delineation)	(delineation)	(delineation)							(delineation)
	n/a	n/a	n/a	n/a	n/a	n/a	Aspect	ENE	WNW	ENE	NW	NE	NE
Abrotanella inconspicua	0	0	0	0	0	0	0	0	0	0	0	0	0
Acaena saccaticupula	0	0	0	0	1	0	0	0	0	0	0	0	0
Aceana caesiglaucua	0	0	0	0	0	0	0	0	0	0	0	0	0
Aciphylla aurea	0	0	0	0	0	0	0	0	0	0	0	0	0
Aciphylla kirkii	1	0	0	0	2	1	0	0	0	0	0	0	0
Aciphylla lecomtei	0	0	0	0	0	0	0	0	0	0	0	0	0
Aciphylla "Lomond"	0	0	0	0	0	0	0	0	0	0	0	0	0
Agrostis capillaris	0	0	0	0	0	0	0	0	0	0	0	0	0
Agrostis muelleriana	0	0	0	0	0	0	0	0	0	0	0	0	0
Anisotome flexuosa	0	1	0	0	0	0	0	0	0	0	0	0	0
Anisotome imbricata var. imbricata	0	0	0	0	0	1	0	0	0	0	0	0	0
Argyrotegium mackayi	0	0	0	0	0	0	0	0	0	0	0	0	0
Asperula perpusilla	0	0	0	0	0	0	0	0	0	0	0	0	0
Astelia nervosa	0	0	0	15	0	0	0	0	0	0	0	0	0
Austroblechnum penna-marina subsp. alpina	0	0	0	0	10	0	0	0	0	0	0	0	0
Austrolycopodium fastigiatum	0	2	0	0	0	0	0	1	0	2	0	2	1
Brachyglottis bellidioides	0	0	0	0	0	0	0	0	0	0	0	0	0
Brachyscome montana	0	0	0	0	0	0	0	0	0	0	0	0	0
Caltha obtusa	0	0	0	0	0	0	0	0	0	0	0	0	0
Carex edura	0	0	0	0	5	0	0	0	0	0	0	0	0
Carex penalpina	2	0	0	0	0	0	0	0	1	0	1	1	5
Carex pyrenaica var. cephalotes	0	0	0	0	0	0	0	0	0	0	0	0	0
Carex subviridis	0	0	0	0	0	0	0	0	0	0	0	0	0
Carex wakatipu	0	0	0	0	0	0	0	0	2	0	0	1	0
Celmisia haastii	1	1	3	2	0	1	0	0	1	0	0	0	0
Celmisia laricifolia	0	0	0	0	0	1	0	0	0	0	0	0	0
Celmisia lyalii	0	1	25	1	0	1	0	0	0	0	0	0	0
Chiloglottis cornuta	not observed in a quadrat but noted in community during walk through												
Celmisia sessiliflora	0	0	0	0	0	0	0	0	0	0	0	0	0
Chionochoa macra	50	50	85	80	40	60	0	0	0	0	0	0	80
Chionochoa rigida	0	0	5	0	0	0	3	5	5	5	5	6	5
Colobanthus buchanii	0	0	0	0	0	0	0	0	0	0	0	0	0
Coprosma atropurpurea	0	0	0	0	0	0	0	0	0	0	0	0	0
Coprosma niphophylla	0	0	0	0	0	0	0	0	0	0	0	0	0
Coprosma perpusilla subsp. perpusilla	5	0	0	0	0	0	0	0	0	0	0	0	10
Craspedia lanata var. lanata	0	0	0	0	0	1	0	0	0	0	0	0	0
Dracophyllum muscoides	2	5	0	1	0	20	0	0	1	1	0	0	0
Dracophyllum prunum	0	0	0	0	0	0	0	0	0	0	0	0	0
Dracophyllum rosmarinifolium	0	2	0	0	0	0	0	0	0	0	0	0	0
Epilobium alsinoides	0	0	25	0	1	1	1	1	1	1	0	1	0
Epilobium atripicifolium	0	0	0	0	0	0	0	0	0	0	0	0	0
Epilobium porphyrium	0	0	0	0	0	0	0	0	0	0	0	0	0
Euchiton lateralis	1	0	0	0	0	0	0	0	0	0	0	0	0
Gaultheria depressa var. novae-zelandiae	0	1	0	1	0	1	0	1	1	1	0	1	1
Gaultheria nubicola	0	0	0	0	0	0	0	0	0	0	0	0	0
Gaultheria parvula	0	0	0	0	0	0	0	0	0	0	0	0	0
Gentianella bellidifolia	0	0	0	0	0	0	0	0	0	0	0	0	0
Gentianella corymbifera subsp. corymbifera	0	1	0	1	0	0	0	0	0	0	0	0	0
Geranium microphyllum	0	0	0	0	0	0	0	0	0	0	0	0	0
Geum leiospermum	0	0	0	0	0	0	0	0	0	0	0	0	0
Geum cockaynei	0	0	0	1	0	0	0	0	0	0	0	0	0
Hectorella caespitosa	0	0	0	0	0	0	0	0	0	0	0	0	0
Heiiracium lepidulum	0	0	0	0	0	0	0	0	0	0	0	0	0
Huperzia australiana	0	0	0	0	0	0	0	0	0	0	0	0	0
Hypochaeris radicata	0	0	0	0	0	0	0	0	0	0	0	0	0
Koeleria cheesemanii	0	0	0	0	0	0	0	0	0	0	0	0	0
Koeleria childii	0	0	0	0	0	0	0	0	0	0	0	0	0
Leptinella pectinata subsp. villosa	0	0	0	0	2	0	0	0	0	0	0	0	0
Lichens	0	0	0	0	0	0	2	1	0	0	0	0	0
Luzula pumila	0	1	0	0	0	1	0	0	0	0	0	0	0
Luzula rufa var. rufa	0	0	0	0	0	0	0	0	1	1	0	0	0
Marsippospermum gracile	0	0	0	0	0	3	0	0	0	0	0	0	0
Melicytus alpinus	0	0	0	0	0	0	0	0	1	1	0	0	0
Mosses	5	2	0	0	0	1	1	1	0	0	0	0	0
Myosotis lyatii subsp. elderii	0	0	0	0	0	0	0	0	0	0	0	0	0
Myrsine nummularia	0	0	0	0	0	0	0	0	0	0	0	0	0
Ophioglossum coriaceum	0	0	0	0	0	0	0	0	0	0	0	0	0
Ourisia caespitosa	0	0	0	0	0	0	0	0	0	0	0	0	0
Ourisia glandulosa	0	0	0	0	0	1	0	0	1	1	0	0	0
Ozothamnus vauvilliersii	0	0	0	0	0	0	0	0	0	0	0	0	0
Phyllachne colensoi	15	2	0	0	0	1	0	0	0	0	0	0	0
Pilosella officinarum	1	0	0	0	0	0	0	0	0	0	0	0	0
Pimelia notia	0	0	0	0	0	0	0	0	0	0	0	0	0
Plantago lanigera	0	1	0	0	1	0	0	0	1	1	0	0	1
Poa colensoi	25	15	15	5	5	1	1	3	2	2	2	2	0
Polystichum cystostegia	0	0	0	0	0	0	0	0	0	0	0	0	0
Polystichum vestitum	0	0	0	0	0	0	0	0	0	0	0	0	0
Rytidosperma pumilum	2	0	0	0	0	0	1	1	1	1	0	0	1
Rytidosperma setifolium	0	0	0	0	0	0	2	0	0	0	0	0	0
Ranunculus multiscarpus	0	0	0	0	0	0	0	0	0	0	0	0	0
Raoulia hectorii	0	0	0	0	0	0	0	0	0	0	0	0	0
Raoulia grandiflora	1	1	0	1	0	0	0	0	0	0	0	1	0
Raoulia subsericea	0	0	0	0	0	0	3	0	0	0	0	0	0
Schoenus pauciflorus	0	0	0	2	0	0	0	0	0	0	0	0	0
Scleranthus uniflorus	0	0	0	0	0	0	0	0	0	0	0	0	0
Shawia cymbifolia	not observed in a quadrat but noted in community during walk through												
Azorella haastii subsp. haastii	0	0	0	0	0	0	0	0	0	0	0	0	0
Veronica densifolia	0	0	0	0	0	0	0	1	1	1	0	0	0
Veronica hectorii subsp. hectorii	0	25	0	10	0	0	0	0	0	0	0	0	0
Viola cunninghamii	1	0	0	0	1	0	1	0	1	1	0	1	1
Wahlenbergia albomarginata subsp. albomarginata	0	1	0	0	0	0	0	0	1	1	0	0	0

Snow tussock grassland

[illegible]

Dracophyllum scrub			
Species	Quadrat		
	101	89	91
	Aspect		
	NE	NNE	N
<i>Draophyllum rosmarinifolium</i>	5	5	5
<i>Chionochloa rigida</i>	2	3	3
<i>Lichens</i>	2	0	0
<i>Muehlenbeckia axillaris</i>	0	0	0
<i>Poa colensoi</i>	0	0	0
<i>Gaultheria depressa</i> var. <i>novae-zealandiae</i>	0	0	0
<i>Austroblechnum penna-marina</i> subsp. <i>alpina</i>	0	0	0
<i>Raoulia subsericea</i>	0	0	0
<i>Aciphylla "lomond"</i>	0	0	1
<i>Austrolycopodium fastigiatum</i>	0	0	0
<i>Epilobium alsinoides</i>	0	0	0

Cushionfield

Species			
	72	49	52
	ESE	Flat/SE	SE
<i>Carex pyrenaica</i> var. <i>cephalotes</i>	0	0	0
<i>Phyllachne rubra</i>	2	0	0
<i>Raoulia</i> aff <i>bryoides</i>	0	0	0
<i>Abrotanella inconspicua</i>	2	0	1
<i>Aciphylla lecomptei</i>	0	0	0
<i>Aciphylla kirkii</i>	0	0	0
<i>Aciphylla simplex</i>	0	0	0
<i>Agrostis muelleriana</i>	1	1	1
<i>Anisotome flexuosa</i>	0	0	0
<i>Anisotome imbricata</i>	1	0	0
<i>Anisotome lanuginosa</i>	0	1	1
<i>Austroblechnum penna-marina</i> subsp. <i>alpina</i>	0	0	0
<i>Austrolycopodium fastigiatum</i>	0	0	2
<i>Azorella haastii</i> subsp. <i>haastii</i>	0	0	0
<i>Azorella exigua</i>	0	0	0
<i>Brachyglottis bellidioides</i>	0	0	0
<i>Brachyscome montana</i>	0	0	0
<i>Cardamine corymbosa</i>	0	0	0
<i>Carex pyrenaica</i> var. <i>cephalotes</i>	0	0	0
<i>Celmisia brevifolia</i>	0	0	0
<i>Celmisia haastii</i>	0	0	0
<i>Celmisia laricifolia</i>	0	0	0
<i>Celmisia lyallii</i>	0	0	0
<i>Chionochoa macra</i>	0	0	1
<i>Chionochoa rigida</i>	0	0	0
<i>Colobanthus buchananii</i>	0	0	0
<i>Coprosma niphophila</i>	0	0	0
<i>Dracophyllum muscoides</i>	2	3	4
<i>Dracophyllum pronum</i>	0	0	0
<i>Epilobium atriplicifolium</i>	0	0	0
<i>Epilobium porphyrium</i>	0	0	0
<i>Epilobium tasmanicum</i>	1	0	0
<i>Euphrasia zelandica</i>	0	0	0
<i>Gaultheria depressa</i> var. <i>novae-zelandiae</i>	0	0	0
<i>Gaultheria nubicola</i>	0	0	0
<i>Gentianella corymbifera</i> subsp. <i>corymbifera</i>	0	0	0
<i>Hectorella caespitosa</i>	0	1	0
<i>Hieracium lepidulum</i>	0	0	0

<i>Huperzia australiana</i>	0	0	0
<i>Kelleria childii</i>	3	0	0
<i>Koeleria cheesemanii</i>	0	0	0
<i>Leptinella goyenii</i>	0	2	0
<i>Leptinella pectinata</i> subsp. <i>villosa</i>	0	0	0
Lichens	1	2	2
<i>Luzula pumila</i>	1	2	1
Mosses	1	1	1
<i>Marsippospermum gracile</i>	0	0	0
Mouse ear chickweed	0	0	0
<i>Myosotis pulvinaris</i>	0	0	0
<i>Ourisia glandulosa</i>	1	0	0
<i>Pentapogon avenoides</i>	0	0	0
<i>Phyllachne colensoi</i>	0	0	0
<i>Phyllachne rubra</i>	2	0	0
<i>Pilosella officinarum</i>	0	0	0
<i>Poa colensoi</i>	1	2	2
<i>Polystichum cytotegia</i>	0	0	0
<i>Raoulia</i> aff. <i>bryoides</i>	0	1	0
<i>Raoulia grandiflora</i>	1	1	1
<i>Raoulia hectorii</i>	0	1	0
<i>Raoulia subsericea</i>	0	0	0
<i>Raoulia subulata</i>	0	0	0
<i>Raoulia youngii</i>	0	0	0
<i>Rumex acetosella</i>	0	0	0
<i>Rytidosperma pumilum</i>	0	0	2
<i>Rytidosperma setifolium</i>	0	0	0
<i>Veronica densifolia</i>	0	0	1
<i>Veronica hectorii</i>	0	0	0
<i>Veronica thompsonii</i>	0	1	0
<i>Viola cunninghamii</i>	0	0	0
<i>Wahlenbergia albomarginata</i> subsp. <i>albomarginata</i>	0	0	0
<i>Ranunculus pachyrrhizus</i>	0	0	0

Quadrat					
53	65	35 (delineation)	24 (delineation)	75	77
Aspect					
SE	SE	n/a	n/a	S	ENE
0	0	15	15	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	1	0	1	2	1
0	0	0	0	0	0
0	0	0	0	0	0
0	0	1	0	0	0
1	1	0	0	1	1
0	0	0	0	0	0
0	1	0	0	0	0
1	0	0	0	1	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	1	0
0	0	0	10	0	0
0	0	0	0	0	0
0	0	1	1	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	1	0	0
0	0	1	2	1	0
0	0	0	15	0	0
0	0	7	10	0	0
0	0	0	0	0	0
0	0	0	0	1	1
0	0	0	0	0	0
4	4	0	1	5	4
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	50	15	0	0
1	0	0	0	0	1
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	1	3	3	2	2
0	0	0	0	0	0

0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
1	1	2	1	0	1
0	0	5	10	0	0
2	2	0	0	0	4
2	1	0	0	2	2
0	0	2	0	3	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	20	1	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	1	0	0	0
0	0	3	2	0	0
0	0	0	0	0	0
2	1	0	0	1	0
0	0	0	0	0	0
0	0	15	5	0	0
1	1	0	0	0	0
0	0	0	0	0	0
0	2	0	0	0	0
1	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	1
1	0	0	0	0	2
0	0	0	0	0	2
0	0	0	0	0	1
0	0	0	0	0	0
1	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

High alpine cushionfield

Species	Quadrat			
	15	17	26	3
	Aspect			
	SSE	SE	S	n/a
<i>Carex pyrenaica</i> var. <i>cephalotes</i>	1	2	0	2
<i>Phyllachne rubra</i>	1	0	0	0
<i>Raoulia</i> aff <i>bryoides</i>	0	0	0	0
<i>Abrotanella inconspicua</i>	1	1	0	2
<i>Agrostis muelleriana</i>	0	1	1	0
<i>Anisotome flexuosa</i>	0	0	0	0
<i>Anisotome imbricata</i>	1	1	0	1
<i>Anisotome lanuginosa</i>	0	0	1	0
<i>Brachyscome montana</i>	0	0	1	0
<i>Celmisia brevifolia</i>	0	0	0	0
<i>Celmisia laricifolia</i>	0	0	1	0
<i>Chionochloa macra</i>	0	0	0	0
<i>Colobanthus buchananii</i>	1	1	0	0
<i>Dracophyllum muscoides</i>	2	2	4	0
<i>Epilobium tasmanicum</i>	1	1	0	0
<i>Hectorella caespitosa</i>	1	0	0	2
<i>Kelleria childii</i>	1	1	0	2
<i>Koeleria cheesemanii</i>	0	0	0	0
<i>Leptinella goyenii</i>	1	0	1	0
<i>Lichens</i>	0	2	4	1
<i>Luzula pumila</i>	1	1	1	1
<i>Mosses</i>	1	2	1	3
<i>Myosotis pulvinaris</i>	0	0	0	3
<i>Ourisia glandulosa</i>	0	0	0	0
<i>Poa colensoi</i>	2	1	2	2
<i>Raoulia grandiflora</i>	1	1	1	1
<i>Raoulia hectorii</i>	0	0	2	0
<i>Rytidosperma pumilum</i>	0	0	0	3
<i>Veronica thompsonii</i>	0	0	2	0

Cushion Bog

Species	Quadrat						
	36	28	24	43	44	25	30
	Aspect						
	NE	E	SE	WSW	S	SE	E
<i>Anisotome (b) (CHR 511716); ("Otago bog")</i>	1	1	1	1	1	1	1
<i>Abrotonella caespitosa</i>	0	2	3	2	3	1	3
<i>Agrostis muelleriana</i>	0	2	1	0	0	0	0
<i>Agrostis stolonifera</i>	0	0	0	0	1	0	1
<i>Anisotome flexulosa</i>	0	0	0	1	0	0	0
<i>Argyrotegium mackayi</i>	0	0	0	0	0	0	0
<i>Austrolycopodium fastigiatum</i>	0	0	0	0	0	0	0
<i>Caltha obtusa</i>	2	0	0	2	0	0	3
<i>Carex edura</i>	0	0	0	0	0	0	0
<i>Carex gaudichaudiana</i>	1	2	2	1	4	4	1
<i>Carex hectorii</i>	not observed in a quadrat but noted in community during walk through						
<i>Carex pyrenaica</i> var. <i>cephalotes</i>	0	0	0	0	0	1	0
<i>Carex wakatipu</i>	0	0	0	0	0	0	0
<i>Carpha alpina</i>	0	1	0	1	1	0	1
<i>Celmisia alpina</i>	1	0	0	0	0	0	3
<i>Celmisia gracilentia</i>	0	0	0	0	0	0	0
<i>Celmisia haastii</i>	0	0	0	0	0	0	0
<i>Celmisia lyallii</i>	0	0	0	0	0	0	0
<i>Celmisia sessiliflora</i>	0	0	1	0	0	0	0
<i>Centrolepis pallida</i>	0	1	0	0	0	0	0
<i>Chionochloa macra</i>	1	1	0	1	1	0	1
<i>Colobanthus apetalus</i>	0	0	1	0	0	0	0
<i>Coprosma perpusilla</i> subsp. <i>perpusilla</i>	1	2	0	0	1	0	1
<i>Craspedia uniflora</i> var. <i>uniflora</i>	0	0	0	0	0	0	0
<i>Dracophyllum muscoides</i>	0	0	0	0	0	1	0
<i>Dracophyllum prostratum</i>	0	0	0	2	0	0	0
<i>Drosera arcturi</i>	0	0	0	0	1	0	1
<i>Epilobium brunnsescens</i>	0	0	0	0	0	0	0
<i>Epilobium komarovianum</i>	0	0	1	0	0	0	0
<i>Epilobium macropus</i>	0	0	0	0	0	0	0
<i>Epilobium porphyrium</i>	0	0	0	0	0	0	0
<i>Euchiton lateralis</i>	1	2	1	1	1	1	1
<i>Euchiton traversii</i>	0	0	0	0	0	0	0
<i>Euphrasia zelandica</i>	0	0	0	1	0	0	1
<i>Gaultheria nubicola</i>	0	0	0	0	0	0	0
<i>Gaultheria parvula</i>	0	0	0	2	0	0	0
<i>Gentianella amabilis</i>	1	2	2	0	1	1	1
<i>Gingidia decipiens</i>	0	0	0	0	0	0	0
<i>Isolepis aucklandica</i>	0	0	2	0	0	1	0
<i>Juncus novae-zelandiae</i>	0	0	0	0	0	0	2
* <i>Juncus pusillus</i>	1	0	0	1	0	0	3
<i>Kelleria paludosa</i>	1	3	2	2	1	1	1
<i>Leptinella pectinata</i> subsp. <i>villosa</i>	0	0	1	0	0	0	0
Liverworts	0	0	0	0	0	0	1
<i>Luzula leptophylla</i>	0	0	1	1	0	0	0
<i>Marsippospermum gracile</i>	0	0	2	0	0	0	0
<i>Montia sessiliflora</i>	0	0	1	0	1	0	0
Mosses	0	2	5	0	2	2	2
<i>Nertera balfouriana</i>	0	0	0	0	0	0	3
<i>Oreobolus pectinatus</i>	6	2	0	5	3	3	5
<i>Phyllachne colensoi</i>	0	0	0	1	0	0	0
<i>Pilosella officinarum</i>	0	0	0	0	0	1	0
<i>Plantago novae-zelandiae</i>	1	0	0	0	1	0	0
<i>Plantago unibracteolata</i>	1	0	0	0	0	0	2
<i>Prasophyllum colensoi</i>	0	0	0	0	0	0	1
<i>Ranunculus gracilipes</i>	0	0	0	0	0	0	1
* <i>Ranunculus maculatus</i>	0	0	0	0	0	0	0
<i>Ranunculus multiscapus</i>	0	0	0	0	0	0	0
<i>Rytidosperma australe</i>	1	1	0	3	1	1	0
<i>Schoenus pauciflorus</i>	2	2	0	0	0	0	4
<i>Viola cunninghamii</i>	0	0	0	0	0	0	0

<i>Hydrocotyle novae-zeelandiae</i>	not observed in a quadrat but noted in community during walk through
<i>Leptinella squalida</i> subsp. <i>mediana</i>	not observed in a quadrat but noted in community during walk through
<i>Festuca novae-zeelandiae</i>	not observed in a quadrat but noted in community during walk through
<i>Lobelia angulata</i>	not observed in a quadrat but noted in community during walk through
<i>Ranunculus royi</i>	not observed in a quadrat but noted in community during walk through

Species	Quadrat								
	41	56	58	76	80	96	90	WT3 (Delineation)	27 (delineation)
	Aspect								
	Flat (drains to E)	ENE	SE	Flat/E	NNE	NE	NE	n/a	n/a
<i>Aciphylla kirkii</i>	0	0	0	2	0	0	0	0	1
<i>Anisotome (b)</i> (CHR 511716); ("Otago bog")	2	1	0	0	0	0	0	0	0
<i>Anisotome aromatica</i>	0	0	0	1	0	0	0	0	0
<i>Abrotonella caespitosa</i>	1	0	0	0	1	4	0	5	0
<i>Acaena saccaticupula</i>	0	2	1	1	0	0	0	0	2
<i>Agrostis capillaris</i>	0	0	2	0	0	0	1	0	1
<i>Agrostis muelleriana</i>	0	1	0	0	0	0	0	0	0
<i>Agrostis stolonifera</i>	0	0	0	0	0	0	0	0	0
<i>Anaphalioides bellidiodes</i>	0	0	0	1	0	1	1	0	0
<i>Austroblechnum penna-marina</i> subsp. <i>alpina</i>	0	0	0	0	0	0	0	0	0
<i>Austrolycopodium fastigiatum</i>	0	0	0	0	0	0	0	0	0
<i>Brachyscome longiscapa</i>	0	0	1	1	0	0	0	0	0
<i>Bulbinella angustifolia</i>	0	0	0	0	0	0	0	0	0
<i>Caltha obtusa</i>	1	0	2	3	0	1	0	10	0
<i>Carex edgariae</i>	0	0	0	0	0	0	0	0	1
<i>Carex edura</i>	0	2	0	1	0	0	0	0	3
<i>Carex gaudichaudiana</i>	1	0	0	0	0	2	0	5	0
<i>Carex hectorii</i>	0	0	0	0	1	1	0	1	0
<i>Carex petriei</i>	0	0	0	0	0	0	0	0	0
<i>Carex pyrenaica</i> var. <i>cephalotes</i>	0	0	0	0	0	0	0	0	2
<i>Carex talbotii</i>	0	1	0	0	0	0	0	0	0
<i>Carex wakatipu</i>	0	0	1	0	0	0	0	0	0
<i>Carpha alpina</i>	1	0	0	0	0	0	0	0	0
<i>Celmisia alpina</i>	2	0	1	0	0	0	1	2	0
<i>Celmisia glandulosa</i>	0	0	0	0	0	0	0	1	0
<i>Celmisia haastii</i>	0	1	0	1	0	0	0	2	2
<i>Celmisia sessiliflora</i>	0	0	3	0	0	0	0	0	0
<i>Centrolepis pallida</i>	3	0	0	0	0	0	0	0	0
<i>Chionocholea macra</i>	1	3	2	0	0	0	0	20	3
<i>Chionocholea rigida</i>	0	0	0	0	4	3	0	0	0
<i>Colobanthus apetalus</i>	0	1	0	0	0	0	0	0	0
<i>Coprosma niphophila</i>	0	0	0	0	0	0	0	0	0
<i>Coprosma perpusilla</i> subsp. <i>perpusilla</i>	1	0	3	2	0	0	0	5	35
<i>Craspedia uniflora</i> var. <i>uniflora</i>	1	2	2	0	0	0	0	0	0
<i>Craspedia lanata</i> var. <i>lanata</i>	0	0	0	2	0	0	0	0	0
<i>Dolichoglossis lyallii</i>	0	0	0	1	1	1	0	0	0
<i>Dracophyllum muscoides</i>	0	1	1	0	1	0	0	0	0
<i>Dracophyllum rosmarinifolium</i>	0	0	0	0	0	1	3	0	0
<i>Drosera arcturi</i>	1	0	0	0	0	0	0	0	0
<i>Epilobium alsinoides</i>	0	0	0	0	0	0	0	0	1
<i>Epilobium brunnescens</i>	0	1	0	1	0	1	0	0	0
<i>Epilobium macropus</i>	0	0	0	0	0	0	0	0	0
<i>Euchiton lateralis</i>	1	2	1	0	0	1	0	0	10
<i>Euphrasia zelandica</i>	0	0	1	0	0	0	0	0	0
<i>Forstera purpurata</i>	0	0	0	0	0	0	0	0	0
<i>Gaultheria depressa</i> var. <i>novae-zealandiae</i>	0	0	1	0	0	2	0	0	0
<i>Gaultheria nubicola</i>	0	0	0	1	0	0	0	0	0
<i>Gaultheria parvula</i>	0	0	0	0	0	0	0	25	0
<i>Gentianella amabilis</i>	1	0	0	0	0	0	0	0	0
<i>Gentianella corymbifera</i> subsp. <i>corymbifera</i>	0	0	0	0	0	0	0	0	1
<i>Geranium microphyllum</i>	0	0	0	0	0	0	1	0	0
<i>Geum cockaynei</i>	0	0	0	1	0	0	0	0	0
<i></i>									

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Seepage											
Species	Quadrat										
	12	38	40	46	47	68	79	82	25 (delineation)	36 (delineation)	34 (delineation)
	Aspect										
	E	NE	NE	WNW	E	n/a	NW	NW	n/a	n/a	n/a
Anisotome (b) (CHR 511716); ("Otogo bog")	0	0	2	0	1	1	1	0	0	0	0
Abrotanella caespitosa	1	2	2	1	2	0	2	0	0	0	0
Acaena saccaticucupula	1	0	0	0	0	1	0	0	0	1	1
Acaena caesiiglauca	0	0	0	0	0	0	0	0	0	0	0
Aciphylla kirkii	1	0	1	0	0	0	0	0	0	0	0
Agrostis stolonifera	0	2	1	0	0	0	0	0	0	0	0
Anaphaloides bellidiodes	1	0	0	0	0	0	0	0	20	0	0
Agrostis capillaris	0	0	0	0	0	0	0	0	0	0	0
Agrostis mulleriana	0	0	0	0	0	1	0	0	0	0	0
Anisotome aromatica	0	0	0	0	0	0	0	0	0	0	0
Austroblechnum penna-marina subsp. alpina	1	0	0	0	0	0	0	0	0	0	0
Austrolycopodium fastigiatum	0	0	0	0	0	0	0	0	0	0	0
Bulbinella angustifolia	1	0	0	0	0	0	0	0	0	0	0
Carex coriacea	0	0	0	0	0	0	0	0	0	0	0
Caltha obtusa	2	4	4	1	2	0	2	0	0	3	0
Carex edgariae	0	0	0	0	0	3	0	0	15	15	0
Carex edura	0	2	0	0	0	3	0	0	0	25	50
Carex gaudichaudiana	1	1	1	2	2	1	2	2	0	0	0
Carex hectorii	0	0	0	0	0	0	0	0	0	0	0
Carex petriei	0	0	0	0	0	0	0	0	0	0	0
Carex talbotii	1	0	0	0	0	0	0	0	0	0	0
Carex wakatipu	0	0	0	0	0	0	0	0	0	0	0
Carpha alpina	0	0	0	1	0	0	0	0	0	0	0
Celmisia alpina	0	1	0	0	1	0	0	1	0	0	0
Celmisia glandulosa	0	4	0	0	0	0	2	2	0	0	0
Celmisia gracilentia	0	0	1	0	0	0	0	0	0	0	0
Celmisia haastii	0	0	1	0	0	0	0	0	0	0	0
Celmisia laricifolia	0	0	0	0	0	0	0	0	0	0	0
Celmisia sessilifolora	0	0	0	0	0	0	0	0	0	0	0
Celmisia verbascifolia	0	0	0	0	0	0	0	0	0	0	0
Centrolepis pallida	0	0	0	0	1	0	0	0	0	0	0
Chaerophyllum colensoi var. colensoi	0	0	0	0	0	0	0	0	0	0	0
Chionochloa macra	2	3	2	1	0	0	0	0	3	0	0
Chionochloa rigida	0	0	0	0	0	0	0	2	0	0	0
Colobanthus apetalus	0	0	1	0	0	1	0	0	0	0	0
Coprosma niphophila	0	0	2	0	0	0	0	0	0	0	0
Coprosma perpusilla subsp. perpusilla	2	3	0	1	0	1	0	0	0	0	0
*Craspedia uniflora var. uniflora	1	0	0	0	0	1	1	1	0	0	0
Dolichoglossis lyallii	0	0	0	0	0	0	0	1	0	0	0
Dracophyllum muscoides	0	0	0	0	0	0	0	0	0	0	0
Dracophyllum rosmarinifolium	0	0	0	0	0	0	0	0	0	0	0
Drosera arcturi	0	0	0	1	0	0	0	1	0	0	0
Epilobium atriplicifolium	0	0	1	0	0	1	0	0	0	0	0
Epilobium brunnescens	0	0	0	0	0	1	0	0	1	1	1
Epilobium komarovianum	0	0	0	0	0	0	0	0	0	0	0
Epilobium macropus	0	1	1	0	0	0	0	0	0	0	0
Euchiton lateralis	2	0	1	1	2	2	1	1	5	3	2
Festuca novae-zeelandiae	0	0	0	0	0	0	0	0	0	0	0
Gaultheria depressa var. novae-zeelandiae	0	0	0	0	0	0	0	0	0	0	0
Gaultheria parvula	3	0	0	0	0	0	0	2	0	1	0
Gentianella amabilis	0	1	1	0	1	0	0	1	0	0	0
*Geranium microphyllum	0	1	1	0	0	0	0	0	0	0	0
Geum cockaynei	0	0	0	0	0	0	0	0	0	0	0
Geum leirospermum	0	0	0	0	0	0	0	0	0	0	0
Hieracium lepidulum	0	0	1	0	0	0	0	1	0	0	0
Hydrocotyle novae-zeelandiae	0	0	0	0	0	0	2	0	0	0	0
Hypochaeris radicata	0	0	0	0	0	0	0	0	0	0	0
Isolepis aucklandica	0	0	0	0	3	0	0	0	20	25	30
Juncus novae-zelandiae	0	0	0	0	6	0	0	0	0	0	0
Juncus pusillus	1	0	0	0	3	0	0	1	0	0	0
Kelleria paludosa	0	0	1	1	2	0	0	0	0	0	0
Koeleria cheesemanii	0	0	0	0	0	0	0	0	4	0	1
Leptinella pectinata subsp. villosa	0	0	0	0	0	1	0	0	0	0	1
Liverworts	0	0	1	0	0	0	0	0	0	0	0
Lobelia angulata	1	0	1	0	0	0	0	0	0	0	0
Luzula leptophylla	0	0	0	0	0	0	1	0	0	0	0
Marchantia macropora	1	0	0	0	0	0	0	0	0	0	0
Marsippospermum gracile	0	0	0	0	0	0	0	0	0	0	0
Montia sessiliflora	0	0	0	1	0	0	0	0	0	0	0
Mosses	1	0	0	3	2	3	0	0	40	5	15
Oreobolus pectinatus	3	4	4	4	1	0	4	2	0	0	0
Chaerophyllum colensoi var. colensoi	0	1	0	0	0	0	0	1	0	0	0
Ourisia glandulosa	0	0	0	0	0	0	0	0	0	0	0
Ozothamnus vauvilliersii	0	0	0	0	0	0	0	0	0	0	0
Phyllachne colensoi	0	0	0	0	0	0	0	0	0	0	0
Pilosella officinarum	1	0	0	0	0	0	0	1	0	0	0
Plantago lanigera	0	0	0	0	0	0	0	1	0	0	0
Plantago novae-zelandiae	0	0	2	0	0	0	0	0	0	0	0
Plantago unibracteolata	1	1	2	0	0	1	1	0	0	1	2
Poa colensoi	0	2	1	0	0	0	0	0	0	0	0
Prasophyllum colensoi	0	1	0	1	0	0	0	1	0	0	0
Ranunculus foliosus	0	0	0	0	0	0	0	0	0	0	0
Ranunculus gracilipes	0	2	3	1	0	2	0	0	0	0	0
Ranunculus maculatus	0	0	0	0	0	3	0	0	2	0	1
Rytidosperma pumilum	0	0	0	0	0	0	0	0	0	0	0

[illegible]

Seepage

Species	Quadrat										
	15 (delineation)	13 (delineation)	12 (delineation)	87	97	95	100	WT1 (Delineation)	WT8 (Delineation)	WT22 (Delineation)	WT24 (Delineation)
	n/a	n/a	n/a	E	Flat	N	Flat/NE	n/a	n/a	n/a	n/a
Anisotome (b) (CHR 511716); ("Otago bog")	0	0	0	0	0	0	0	0	0	0	0
Abrotanella caespitosa	2	20	0	0	1	0	0	0	7	0	0
Acaena saccaticupula	0	0	1	0	0	0	0	0	0	0	0
Acaena caesiiglauc	0	0	0	0	0	0	0	0	0	0	0
Aciphylla kirkii	0	0	0	0	0	0	0	1	0	0	0
Agrostis stolonifera	0	0	0	0	0	0	0	0	0	15	0
Anaphaloides bellidiodes	0	0	0	0	0	1	0	0	0	0	0
Agrostis capillaris	0	0	0	0	0	0	0	0	0	0	5
Agrostis multeriana	0	0	0	1	0	0	0	0	0	0	0
Anisotome aromatica	0	2	1	0	0	0	0	0	0	0	0
Austroblechnum penna-marina subsp. alpina	0	0	0	0	0	0	0	0	0	0	0
Austrocycopodium fastigiatum	0	0	0	1	0	0	0	1	0	0	0
Bulbinella angustifolia	0	0	0	0	0	0	0	0	0	0	0
Carex coriacea	0	0	0	0	0	0	0	0	0	0	0
Caltha obtusa	60	20	40	2	0	0	0	0	10	10	5
Carex edgariae	0	0	0	0	0	0	0	0	0	0	0
Carex edura	0	0	0	0	0	0	1	0	2	0	1
Carex gaudichaudiana	0	0	0	3	1	0	1	0	0	20	0
Carex hectorii	0	0	0	0	0	0	0	0	0	0	0
Carex petriei	0	0	0	0	0	0	0	0	0	0	0
Carex talbotii	0	0	0	0	0	0	0	0	0	0	0
Carex wakatipu	0	0	0	0	0	0	0	0	0	0	0
Carpha alpina	0	0	0	0	2	0	2	0	0	0	0
Celmisia alpina	0	1	1	1	1	0	0	0	1	0	5
Celmisia glandulosa	0	0	0	3	0	0	0	0	0	0	0
Celmisia gracilentia	0	0	0	0	0	0	0	0	0	0	0
Celmisia haastii	1	0	1	0	0	0	0	0	0	0	0
Celmisia laricifolia	0	0	0	1	0	0	0	0	0	0	0
Celmisia sessiliflora	10	3	0	0	0	0	0	0	0	0	0
Celmisia verbascifolia	0	0	0	0	0	0	0	0	0	0	0
Centrolepis pallida	0	0	0	0	0	0	0	0	0	0	0
Chaerophyllum colensoi var. colensoi	0	0	0	0	0	0	0	0	0	0	0
Chionochloa macra	10	5	15	0	0	0	0	30	30	0	0
Chionochloa rigida	0	0	0	3	1	2	1	0	0	30	25
Colobanthus apetalus	0	0	0	0	0	0	0	0	0	0	0
Coprosma niphophila	0	0	0	0	0	0	0	0	0	0	0
Coprosma perpusilla subsp. perpusilla	0	2	5	2	0	0	0	40	50	5	10
*Craspedia uniflora var. uniflora	0	1	1	0	1	0	0	0	0	0	0
Dolichoglossis lyallii	0	0	0	1	1	0	0	0	0	0	0
Dracophyllum muscoides	0	0	0	0	0	0	0	2	0	0	0
Dracophyllum rosmarinifolium	0	0	0	1	0	2	0	0	0	0	0
Drosera arcturi	0	0	0	2	1	0	0	0	0	0	0
Epilobium atriplicifolium	0	0	0	0	0	0	0	0	0	0	0
Epilobium brunnescens	0	0	0	0	0	0	0	0	0	0	0
Epilobium komarovianum	0	0	0	0	0	0	0	0	0	0	0
Epilobium macropus	0	0	0	0	0	0	0	0	0	0	0
Euchiton lateralis	0	1	1	0	0	0	0	0	0	0	0
Festuca novae-zeelandiae	0	0	0	0	0	0	0	0	0	0	0
Gautheria depressa var. novae-zeelandiae	0	0	0	0	0	0	0	2	0	0	0
Gautheria parvula	2	0	0	0	2	0	0	0	0	0	0
Gentianella amabilis	0	0	0	0	0	0	0	0	0	0	0
*Geranium microphyllum	0	0	1	0	0	0	0	0	1	1	0
Geum cockaynei	1	0	0	0	0	0	0	0	0	0	0
Geum telospermum	0	0	0	0	0	0	0	0	1	0	0
Hieracium lepidulum	0	0	0	0	0	0	0	0	0	0	0
Hydrocotyle novae-zeelandiae	0	0	0	0	0	0	0	0	0	5	0
Hypochaeris radicata	0	0	0	0	0	0	0	0	0	0	0
Isolepis aucklandica	0	0	0	0	0	0	0	0	0	0	0
Juncus novae-zeelandiae	0	0	0	0	0	0	0	0	0	0	0
Juncus pusillus	0	0	0	0	0	0	0	0	0	0	0
Kelleria paludosa	0	0	0	3	0	0	0	0	0	0	0
Koeleria cheesemanii	0	0	0	0	0	0	0	0	0	0	0
Leptinella pectinata subsp. villosa	0	0	0	0	0	0	0	0	0	0	0
Liverworts	0	0	0	0	0	0	0	0	0	0	0
Lobelia angulata	0	0	0	0	0	0	0	0	0	0	0
Luzula leptophylla	0	0	0	0	0	0	0	0	0	0	0
Marchantia macropora	0	0	0	0	0	0	0	0	0	0	0
Marsippospermum gracile	0	0	5	0	0	0	0	0	0	0	0
Montia sessiliflora	0	0	0	0	0	0	0	0	0	0	0
Mosses	0	0	0	0	0	2	2	2	0	0	0
Oreobolus pectinatus	2	0	0	2	3	0	5	0	5	2	0
Chaerophyllum colensoi var. colensoi	0	0	0	0	0	0	0	0	0	0	0
Ourisia glandulosa	0	1	0	0	0	0	0	0	0	0	0
Ozothamnus vauvilliersii	0	0	0	0	0	0	0	0	0	0	0
Phyllachne colensoi	3	0	0	0	0	0	0	0	0	0	0
Pilosetta officinarum	0	0	0	0	0	0	0	0	0	2	0
Plantago lanigera	0	0	0	0	0	0	0	1	0	0	0
Plantago novae-zeelandiae	0	0	0	1	0	0	0	0	7	5	5
Plantago unibracteolata	10	20	5	0	1	0	0	1	0	0	0
Poa colensoi	5	25	0	1	0	3	0	0	2	0	2
Prasophyllum colensoi	0	0	0	0	0	0	0	0	0	0	0
Ranunculus foliosus	0	0	0	0	0	0	0	0	0	0	0
Ranunculus gracilipes	0	0	0	0	0	0	0	0	1	0	5
Ranunculus maculatus	0	0	0	0	0	0	0	0	0	0	0
Rytidosperma pumilum	0	0	0	1	0	2	0	0	0	0	0
Rytidosperma australe	0	0	0	0	0	0	0	0	0	0	0
Salix cinerea	0	0	0	0	0	0	0	0	0	0	0
Schoenus pauciflorus	30	15	40	2	4	6	4	30	7	5	50
Trifolium repens	0	0	0	0	0	0	0	0	0	0	0
Veronica pauciramosa	0	0	0	0	0	0	0	0	0	0	0
Viola cunninghamii	0	0	0	0	0	1	0	0	1	0	1
Wahlenbergia albomarginata subsp. albomarginata	0	0	0	0	0	0	0	0	0	0	0
Gunnera dentata	0	0	0	0	0	0	0	0	0	0	0
Leptinella squalida subsp. mediana	not observed in a quadrat but noted in community during walk through										
Lobelia angulata	not observed in a quadrat but noted in community during walk through										
Ranunculus royi	not observed in a quadrat but noted in community during walk through										
Plantago udicola	not observed in a quadrat but noted in community during walk through										

Rockfield										
Species	Quadrat									
	4	14	16	23	22	27	69	57	60	4 (Delineation)
	Aspect									
	NW	ESE	SE	E	E	NE	S	E	ESE	
Carex pyrenaica var. cephalotes	0	0	0	0	0	0	0	1	1	0
Phyllachne rubra	0	0	0	0	0	0	0	0	1	0
Abrotonella inconspicua	0	0	0	0	0	0	0	0	0	0
Aciphylla kirkii	0	0	0	0	0	0	0	0	0	0
Aciphylla simplex	0	0	0	0	0	0	0	0	0	0
Agrostis muelleriana	0	0	0	0	0	1	0	0	0	0
Anaphaloides bellidioides	0	0	0	0	0	0	0	0	0	0
Anisotome imbricata var. imbricata	0	0	1	0	0	1	0	0	0	0
Austroblechnum penna-marina subsp. alpina	0	0	0	0	0	1	0	0	0	1
Brachyglottis bellidioides	0	0	0	0	0	0	0	0	0	0
Cardamine corymbosa	0	0	0	0	0	0	0	0	0	0
Celmsia haastii	0	0	0	0	0	1	0	0	0	0
Chionocholea macra	0	0	0	0	0	0	0	3	3	3
Colobanthus buchananii	0	0	0	0	1	0	1	0	0	0
Colobanthus strictus	0	0	0	0	0	0	0	1	0	0
Coprosma perpusilla subsp. perpusilla	0	0	0	0	0	0	0	0	0	1
Dracophyllum muscoides	0	0	0	0	0	0	0	0	0	0
Dracophyllum rosmarinifolium	0	0	0	0	0	0	0	0	0	0
Epilobium porphyrium	1	0	0	1	0	0	0	1	0	0
Epilobium tasmanicum	0	0	1	0	1	1	0	0	1	0
Asperula perpusilla	0	0	0	0	0	0	0	0	0	0
Geum leiospermum	0	0	0	0	0	0	0	0	0	0
Haastia sinclairii var. fulvida	0	0	0	0	2	0	0	0	0	0
Hectorella caespitosa	2	1	0	1	2	0	2	0	0	0
Kelleria childii	0	0	1	0	0	0	0	0	1	0
Leptinella goyenii	0	0	0	0	0	0	0	0	0	0
Lichen	0	0	0	0	1	0	0	1	0	0
Luzula pumila	0	0	0	0	0	0	1	0	0	0
Luzula rufa var. rufa	0	0	0	0	0	1	0	0	0	0
Meliccytus alpinus	0	0	0	0	0	1	0	1	0	2
Mosses	1	0	0	0	0	0	0	0	0	0
Pachycladon novae-zelandiae	0	0	0	0	0	0	0	0	0	0
Plantago lanigera	0	0	0	0	0	0	0	0	0	0
Poa colensoi	0	0	0	0	1	3	2	0	0	1
Poa NZ	0	0	0	0	0	0	0	0	0	0
Polystichum cystostegia	0	0	0	1	0	0	0	0	1	2
Polystichum vestitum	0	0	0	0	0	1	0	0	0	0
Raoulia apicinigra	0	0	0	0	0	0	0	0	0	0
Raoulia grandiflora	0	0	1	0	0	2	1	0	0	0
Raoulia subsericea	0	0	0	0	0	0	0	0	0	0
Raoulia youngii	0	0	0	0	0	0	0	0	0	0
Rytidosperma pumilum	0	0	0	0	0	0	0	1	0	0
Scleranthus uniflorus	0	0	0	0	0	0	0	0	0	0
Taraxacum officinale	0	0	0	0	0	0	0	0	0	0
Veronica epacridea	0	0	0	0	0	0	0	0	0	0
Viola cunninghamii	0	0	0	0	0	1	0	0	0	0
Luzula traversii var. traversii	not observed in a quadrat but noted in community during walk through									

Rocky outcrop							
Species	Quadrat						
	50	7	13	21	71	62	88
	Aspect						
	SE	NW	SE	SE	ENE	ENE	Flat/NE
<i>Abrotanella inconspicua</i>	1	0	0	0	0	0	0
<i>Acaena saccaticupula</i>	0	0	0	0	1	0	0
<i>Aciphylla kirkii</i>	0	0	0	0	0	0	0
<i>Aciphylla lecomtei</i>	0	0	0	0	0	0	0
<i>Aciphylla simplex</i>	0	0	0	0	0	0	0
<i>Agrostis muelleriana</i>	2	0	1	1	0	1	1
<i>Anaphalioides bellidioides</i>	0	0	0	0	1	0	0
<i>Anisotome imbricata</i> var. <i>imbricata</i>	0	0	0	1	0	0	0
<i>Anisotome lanuginosa</i>	1	0	0	0	0	0	0
<i>Austroblechnum penna-marina</i> subsp. <i>alpina</i>	0	0	0	0	0	0	0
<i>Azorella haastii</i> subsp. <i>haastii</i>	0	0	0	0	0	0	0
<i>Azorella exigua</i>	0	0	0	0	0	0	0
<i>Brachyglottis bellidioides</i> var. <i>bellidioides</i>	0	0	0	0	0	0	0
<i>Brachyscome montana</i>	0	0	0	0	0	0	0
<i>Carex wakatipu</i>	0	0	0	0	0	0	0
<i>Celmisia brevifolia</i>	0	0	0	0	2	0	0
<i>Celmisia laricifolia</i>	1	0	0	0	0	0	0
<i>Chaerophyllum colensoi</i> var. <i>colensoi</i>	0	0	0	0	0	0	0
<i>Chionochloa rigida</i>	0	0	0	0	0	0	0
<i>Chionochloa macra</i>	0	0	0	0	0	0	0
<i>Colobanthus buchanii</i>	1	0	0	1	0	0	0
<i>Craspedia lanata</i> var. <i>lanata</i>	0	0	0	0	0	0	0
<i>Dracophyllum muscoides</i>	2	0	0	0	1	3	0
<i>Epilobium alsinoides</i>	0	0	0	0	0	0	1
<i>Epilobium porphyrium</i>	0	1	1	0	1	0	0
<i>Epilobium tasmanicum</i>	1	0	1	0	0	0	0
<i>Gaultheria depressa</i> var. <i>novae-zelandiae</i>	0	0	0	0	0	0	0
<i>Gaultheria nubicola</i>	0	0	0	0	0	0	0
<i>Haastia sinclairii</i> var. <i>fulvida</i>	0	0	0	0	0	0	0
<i>Hectorella caespitosa</i>	1	2	3	1	1	1	0
<i>Kelleria childii</i>	0	0	0	0	0	0	0
<i>Koeleria cheesemanii</i>	0	2	0	0	0	0	0
<i>Koeleria spicata</i>	1	0	0	0	0	0	0
<i>Leptinella goyenii</i>	3	0	0	3	0	2	0
<i>Leptinella pectinata</i> var. <i>pectinata</i>	0	0	0	0	1	0	0
<i>Leucogenes grandiceps</i>	0	0	0	0	0	0	0
<i>Lichens</i>	1	1	2	3	0	2	3
<i>Luzula pumila</i>	3	2	0	2	1	2	0
<i>Luzula traversii</i> var. <i>traversii</i>	1	0	0	0	0	0	0
<i>Mosses</i>	1	0	0	0	0	2	2
<i>Cerastium fontanum</i>	0	0	0	0	0	0	0
<i>Myosotis pulvinaris</i>	0	0	0	0	0	0	0
<i>Notogrammitis angustifolia</i> subsp. <i>angustifolia</i>	1	0	0	0	0	0	0
<i>Ourisia glandulosa</i>	0	0	0	0	0	0	0
<i>Phyllachne rubra</i>	0	0	0	0	0	0	0
<i>Ptilosella officinarum</i>	0	0	0	0	0	0	0
<i>Poa colensoi</i>	3	3	2	2	0	2	3
<i>Poa lindsayi</i>	0	0	0	0	0	0	0
<i>Poa schistacea</i>	0	0	0	0	0	0	0
<i>Polystichum cystostegia</i>	0	0	0	0	0	0	0
<i>Raoulia</i> aff. <i>bryoides</i>	0	0	0	0	0	1	0
<i>Raoulia apicinigra</i>	0	0	0	0	0	0	0
<i>Raoulia grandiflora</i>	0	1	1	1	1	1	0
<i>Raoulia hectorii</i>	0	0	0	0	0	0	1
<i>Raoulia subsericea</i>	0	0	0	0	0	0	0
<i>Raoulia youngii</i>	0	0	0	0	0	0	0
<i>Rytidosperma pumilum</i>	0	1	0	0	1	0	1
<i>Rytidosperma setifolium</i>	0	0	0	0	0	0	0
<i>Scleranthus uniflorus</i>	0	0	0	0	0	0	0
<i>Stellaria gracilentia</i>	0	0	0	0	0	0	1
<i>Styelia nesophila</i>	0	0	0	0	0	0	1

Snowbank			
Species	Quadrat		
	1	73	70
	Aspect		
	ESE	NE	S
<i>Acaena saccaticupula</i>	0	0	0
<i>Abrotanella inconspicua</i>	2	2	0
<i>Abrotonella caespitosa</i>	1	0	0
<i>Agrostis muelleriana</i>	0	0	0
<i>Anisotome imbricata</i>	1	0	0
<i>Anisotome lanuginosa</i>	0	0	0
<i>Austroblechnum penna-marina</i> subsp. <i>alpina</i>	0	0	0
<i>Austrolycopodium fastigiatum</i>	0	0	0
<i>Carex lachenalii</i> subsp. <i>parkeri</i>	3	0	0
<i>Carex pyrenaica</i> var. <i>cephalotes</i>	0	5	0
<i>Celmisia brevifolia</i>	0	0	0
<i>Celmisia haastii</i>	1	0	0
<i>Celmisia laricifolia</i>	0	0	0
<i>Chionochloa macra</i>	0	1	0
<i>Colobanthus buechananii</i>	0	1	0
<i>Coprosma perpusilla</i> subsp. <i>Perpusilla</i>	2	0	0
<i>Dracophyllum muscoides</i>	1	1	3
<i>Epilobium porphyrium</i>	0	1	1
<i>Epilobium tasmanicum</i>	1	0	0
<i>Hectorella caespitosa</i>	2	1	0
<i>Kelleria childii</i>	3	2	0
<i>Leptinella goyenii</i>	0	0	1
<i>Lichens</i>	1	1	2
<i>Luzula pumila</i>	1	1	1
<i>Mosses</i>	2	1	1
<i>Myosotis pulvinaris</i>	0	0	0
<i>Ourisia glandulosa</i>	2	0	0
<i>Phyllachne rubra</i>	2	0	0
<i>Poa colensoi</i>	2	1	2
<i>Polystichum cystostegia</i>	0	0	0
<i>Raoulia grandiflora</i>	1	2	1
<i>Raoulia subsericea</i>	0	0	0
<i>Raoulia youngii</i>	0	0	0
<i>Raoulia hectorii</i>	0	0	0
<i>Veronica pulvinaris</i>	0	0	0
<i>Veronica thomsonii</i>	1	0	1

Appendix D: All Identified Invertebrate Taxa.

Filename:	E3 Remarkables Insect Data
Created by:	William Frost
Date created:	16/03/2025
Project name:	NZSki Entomological Survey of the Doolans region, the Remarkables, Queenstown, NZ
Project aim:	risk species within a proposed ski lift's footprint
Project objectives:	<ol style="list-style-type: none"> Determine a snapshot of the invertebrate fauna within the Doolan's area Identify noteworthy threatened species collected within the footprint area
Data collection description:	Specimen data for 100 pitfalls separated into 20 sites is identified with a generic/ specific name where possible and a family level taxonomic unit where generic/ specific identification is too difficult to discern.
Data entered by:	William Frost & Dustin Lamont
Data checked by:	William Frost
Worksheets:	
"Pitfall"	Contains information referring to all larval and adult specimens of invertebrates collected and identified from pitfall trapping within the Doolans.
"Hand collect"	Contains information referring to all larval and adult specimens collected and identified from hand collection surveys throughout the Doolans area.
"Light trap"	Contains information referring to all adult Lepidoptera specimens collected and identified from light trapping with a 200 watt mercury vapour bulb within the Doolans.
Variable name	Description
Set_Date	The date in which a given pitfall trap was set up and established, i.e the surveying period began on the date the pitfall was installed.
Collection_Date	The date in which samples from a given pitfall trap were collected and the pitfall was removed, i.e the surveying period ended on the date the pitfall was removed.
Site_No	A number from 1-20 referring to which pitfall site a specimen was collected from.
Pit_No	A number from 1-5 referring to which pitfall trap within a site a specimen was collected from.
Code	A combination of both the Site_No and Pit_No in one code to simplify labelling of specimens.
Class	The Class grouping classification for an invertebrate, i.e 'Insecta, Arachnida'.
Order	The order level taxonomic grouping for classification and identification of an invertebrate, i.e 'Orthoptera, Lepidoptera'.
Family	The family level taxonomic grouping for classification and identification of an invertebrate, i.e 'Anostomatidae, Crambidae'.
Genus	The genus level taxonomic grouping for classification and identification of an invertebrate, i.e 'Hemiandrus, Scoparia'.
Species	The species level taxonomic grouping for classification and identification of an invertebrate, i.e 'focalis, niphospora'.
Name	The genus and species taxonomic identification for a specimen are supplied here if possible.
Tentative Y/N	Was an identification made with uncertainty?
Life_Stage	What life stage was an invertebrate specimen, i.e nymph, larval, adult, pupal.
Count	What number of specimens of the same grouping were collected within a pitfall trap.
Threat_Classification	What is the threat status (if available) for an invertebrate specimen, note these are all derived from the New Zealand Threat Classification System, Lepidoptera are updated as per unpublished assessments for Hoare. et al 2025.
Determiner_Name	The person that made an identification, i.e Will Frost, Dustin Lamont
Notes	Any notes of relevance or value pertaining to a singular specimen/ set of specimens.
Collection_Method	How was the specimen hand collected? I.e sweeping net, hand collection.
Lat	What was the latitude where a specimen was collected.
Lon	What was the longitude where a specimen was collected.
Additional comments:	Any 'Indet.' (indeterminate identification) notations refer to specimens that could not be identified to the highest possible taxonomic level due to a lack of resources for identification of that group, difficulty of identification or damage to specimens. The 'Indet.' notation is also provided for threat classification where a species could not be identified to the highest possible taxonomic unit. Threat assessments made for Lepidoptera are updated pertaining to the most recent unpublished threat assessment, for which I was a panel member. The specimens collected and identified represent a small and suboptimal time frame of monitoring within the Doolans area and in no

Set Date	Collection Date	Site No	Pit No	Code	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
26/02/2025	10/03/2025	T1	1	T1-1	Arachnida	Araneae	Linyphiidae	Diplocephalus	cristatus	Diplocephalus cristatus	N	Adult	2	Introduced and Naturalised	Dustin Lamont
26/02/2025	10/03/2025	T1	1	T1-1	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Juvenile	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T1	1	T1-1	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	3	Indet.	Will Frost
26/02/2025	10/03/2025	T1	1	T1-1	Insecta	Hemiptera	Salididae	Kiwisaldula	cranshawi	Kiwisaldula cranshawi	N	Adult	2	Not assessed	Will Frost
26/02/2025	10/03/2025	T1	1	T1-1	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T1	1	T1-1	Insecta	Hymenoptera	Diapriidae	Stylaciasta	Indet.	Stylaciasta Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T1	1	T1-1	Insecta	Hymenoptera	Diapriidae	Basalys	Indet.	Basalys Indet.	Y	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T1	2	T1-2	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T1	2	T1-2	Insecta	Hemiptera	Salididae	Kiwisaldula	cranshawi	Kiwisaldula cranshawi	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T1	2	T1-2	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	subfamily Deltocephalinae	Y	Juvenile	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T1	2	T1-2	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	Y	Juvenile	1	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T1	2	T1-2	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T1	3	T1-3	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T1	4	T1-4	Insecta	Coleoptera	Coccinellidae	Indet.	Indet.	Indet.	N	Juvenile	1	Indet.	Will Frost
26/02/2025	10/03/2025	T1	4	T1-4	Insecta	Hemiptera	Lygaeidae	Nysius	huttoni	Nysius huttoni	N	Juvenile	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T1	4	T1-4	Insecta	Hemiptera	Pentatomidae	Indet.	Indet.	Indet.	N	Juvenile	1	Indet.	Will Frost
26/02/2025	10/03/2025	T1	4	T1-4	Arachnida	Araneae	Linyphiidae	Diplocephalus	cristatus	Diplocephalus cristatus	N	Adult	2	Introduced and Naturalised	Dustin Lamont
26/02/2025	10/03/2025	T1	4	T1-4	Insecta	Hymenoptera	Scelionidae	Baeus	Indet.	Baeus Indet.	N	Adult	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T1	4	T1-4	Arachnida	Araneae	Linyphiidae	Haplinis	inexacta	Haplinis inexacta	N	Adult	6	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T1	5	T1-5	Insecta	Coleoptera	Staphylinidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T1	5	T1-5	Insecta	Hymenoptera	Figitidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T1	5	T1-5	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T1	5	T1-5	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T1	5	T1-5	Insecta	Hemiptera	Salididae	Kiwisaldula	cranshawi	Kiwisaldula cranshawi	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T1	5	T1-5	Insecta	Lepidoptera	Plutellidae	Plutella	sp.1 (CO)	Plutella sp.1 (CO)	N	Adult	1	At Risk, Declining	Will Frost
26/02/2025	10/03/2025	T1	5	T1-5	Arachnida	Araneae	Linyphiidae	Haplinis	inexacta	Haplinis inexacta	N	Adult	2	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T1	5	T1-5	Arachnida	Araneae	Linyphiidae	Diplocephalus	cristatus	Diplocephalus cristatus	N	Adult	1	Introduced and Naturalised	Dustin Lamont
26/02/2025	10/03/2025	T1	5	T1-5	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T10	2	T10-2	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis indet.	Y	Juvenile	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T10	2	T10-2	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabilli	Craterostigmus crabilli	N	Juvenile	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T10	2	T10-2	Diplopoda	Chordeumatida	Metopidiotrichidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T10	3	T10-3	Insecta	Coleoptera	Carabidae	Mecodema	politatum	Mecodema politatum	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T10	3	T10-3	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	4	Not Threatened	Will Frost
26/02/2025	10/03/2025	T10	4	T10-4	Insecta	Coleoptera	Scarabaeidae	Scythrodes	squalidus	Scythrodes squalidus	N	Adult	1	Not assessed	John Marris
26/02/2025	10/03/2025	T10	4	T10-4	Insecta	Hymenoptera	Pompilidae	Priocnemis	nitidiventris	Priocnemis nitidiventris	N	Adult	4	Not assessed	Will Frost
26/02/2025	10/03/2025	T10	4	T10-4	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabilli	Craterostigmus crabilli	N	Adult	2	Not assessed	Will Frost
26/02/2025	10/03/2025	T10	5	T10-5	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Juvenile	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T11	1	T11-1	Insecta	Coleoptera	Staphylinidae	Pselaphus	Indet.	Pselaphus Indet.	N	Adult	6	Indet.	Will Frost
26/02/2025	10/03/2025	T11	1	T11-1	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T11	1	T11-1	Arachnida	Araneae	Cycloctenidae	Orepukia	sorenseni	Orepukia sorenseni	Y	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T11	2	T11-2	Insecta	Coleoptera	Staphylinidae	Pselaphus	Indet.	Pselaphus Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T11	2	T11-2	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	6	Indet.	Will Frost
26/02/2025	10/03/2025	T11	2	T11-2	Arachnida	Araneae	Hahnidae	Rinawa	otagoensis	Rinawa otagoensis	N	adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T11	2	T11-2	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Juvenile	3	Not assessed	Will Frost
26/02/2025	10/03/2025	T11	3	T11-3	Insecta	Coleoptera	Staphylinidae	Pselaphus	Indet.	Pselaphus Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T11	3	T11-3	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	22	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T11	3	T11-3	Arachnida	Araneae	Cycloctenidae	Orepukia	sorenseni	Orepukia sorenseni	Y	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T11	3	T11-3	Arachnida	Araneae	Hahnidae	Rinawa	otagoensis	Rinawa otagoensis	N	adult	6	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T11	4	T11-4	Insecta	Coleoptera	Staphylinidae	Pselaphus	Indet.	Pselaphus Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T11	4	T11-4	Insecta	Coleoptera	Coccinellidae	Rhyzobius	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T11	4	T11-4	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Juvenile	1	Not assessed	Will Frost

Set Date	Collection Date	Site No	Pit No	Code	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
26/02/2025	10/03/2025	T11	4	T11-4	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T11	4	T11-4	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	29	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T11	4	T11-4	Arachnida	Araneae	Hahnidae	Rinawa	otagoensis	Rinawa otagoensis	N	adult	4	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T11	4	T11-4	Arachnida	Araneae	Linyphiidae	Erigone	wiltoni	Erigone wiltoni	Y	Adult	1	Introduced and Naturalised	Dustin Lamont
26/02/2025	10/03/2025	T11	4	T11-4	Arachnida	Araneae	Desidae	Rorea	otagoensis	Rorea otagoensis	Y	Adult	1	Data Deficient	Dustin Lamont
26/02/2025	10/03/2025	T11	5	T11-5	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	Y	Adult	1	Data Deficient	Dustin Lamont
26/02/2025	10/03/2025	T11	5	T11-5	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	5	Indet.	Will Frost
26/02/2025	10/03/2025	T11	5	T11-5	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult + Juvenile	2	Not assessed	Will Frost
26/02/2025	10/03/2025	T12	1	T12-1	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T12	1	T12-1	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	N	Adult	1	Data Deficient	Dustin Lamont
26/02/2025	10/03/2025	T12	1	T12-1	Insecta	Diptera	Mycetophilidae	Indet.	Indet.	Indet.	N	Adult	4	Indet.	Will Frost
26/02/2025	10/03/2025	T12	1	T12-1	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T12	2	T12-2	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T12	2	T12-2	Insecta	Diptera	Mycetophilidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T12	2	T12-2	Insecta	Diptera	Empyridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T12	2	T12-2	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T12	2	T12-2	Arachnida	Araneae	Cycloctenidae	Orepukia	sorenseni	Orepukia sorenseni	Y	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T12	3	T12-3	Insecta	Coleoptera	Staphylinidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T12	3	T12-3	Insecta	Coleoptera	Leiodidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T12	4	T12-4	Insecta	Coleoptera	Staphylinidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T12	4	T12-4	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult + Juvenile	2	Not Threatened	Will Frost
26/02/2025	10/03/2025	T12	4	T12-4	Arachnida	Araneae	Linyphiidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T12	4	T12-4	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult + Juvenile	2	Indet.	Will Frost
26/02/2025	10/03/2025	T12	4	T12-4	Insecta	Diptera	Mycetophilidae	Indet.	Indet.	Indet.	N	Adult	4	Indet.	Will Frost
26/02/2025	10/03/2025	T12	4	T12-4	Insecta	Diptera	Empyridae	Scatella	nitidithorax	Scatella nitidithorax	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T12	5	T12-5	Insecta	Coleoptera	Scarabaeidae	Scythrodes	squalidus	Scythrodes squalidus	N	Adult	1	Not assessed	John Marris
26/02/2025	10/03/2025	T13	1	T13-1	Insecta	Coleoptera	Staphylinidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T13	1	T13-1	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabilli	Craterostigmus crabilli	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T13	1	T13-1	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	Y	Juvenile	1	Data Deficient	Dustin Lamont
26/02/2025	10/03/2025	T13	1	T13-1	Arachnida	Trombidiformes	Erythraeidae	Indet.	Indet.	Erythraeid mites	Y	Juvenile	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T13	1	T13-1	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	Y	Juvenile	1	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T13	1	T13-1	Arachnida	Araneae	Cycloctenidae	Orepukia	sorenseni	Orepukia sorenseni	Y	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T13	1	T13-1	Arachnida	Araneae	Hahnidae	Rinawa	otagoensis	Rinawa otagoensis	N	adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T13	2	T13-2	Insecta	Hymenoptera	Ichneumonidae	?Aclosmation	Indet.	Aclosmation Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T13	3	T13-3	Insecta	Diptera	Mycetophilidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T13	3	T13-3	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabilli	Craterostigmus crabilli	N	Adult	2	Not assessed	Will Frost
26/02/2025	10/03/2025	T13	4	T13-4	Insecta	Coleoptera	Staphylinidae	?Pselaphus	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T13	4	T13-4	Insecta	Coleoptera	Staphylinidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T13	4	T13-4	Insecta	Coleoptera	Byrrhidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T13	4	T13-4	Insecta	Hemiptera	Salididae	Kiwisaldula	cranshawi	Kiwisaldula cranshawi	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T13	5	T13-5	Insecta	Coleoptera	Staphylinidae	?Pselaphus	Indet.	Pselaphus Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T13	5	T13-5	Insecta	Coleoptera	Staphylinidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T13	5	T13-5	Insecta	Diptera	Sphaoceridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T13	5	T13-5	Insecta	Diptera	Phoridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T13	5	T13-5	Insecta	Hymenoptera	Pompilidae	Prioncnemis	nitdiventris	Prioncnemis nitdiventris	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T13	5	T13-5	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabilli	Craterostigmus crabilli	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T13	5	T13-5	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Juvenile	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T13	5	T13-5	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	Y	Juvenile	1	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T13	5	T13-5	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	3	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T14	1	T14-1	Insecta	Diptera	Mycetophilidae	Indet.	Indet.	Indet.	N	Adult	14	Indet.	Will Frost
26/02/2025	10/03/2025	T14	1	T14-1	Insecta	Hymenoptera	Diapriidae	?Spilomicrus	Indet.	Spilomicrus Indet.	N	Adult	1	Indet.	Will Frost

Set Date	Collection Date	Site No	Pit No	Code	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
26/02/2025	10/03/2025	T14	2	T14-2	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	3	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T14	2	T14-2	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	Y	Juvenile	1	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T14	2	T14-2	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T14	2	T14-2	Arachnida	Araneae	Salticidae	Ourea	saffrocylopeus	'Ourea saffrocylopeus'	N	Adult	1	Not assessed	Dustin Lamont
26/02/2025	10/03/2025	T14	3	T14-3	Insecta	Coleoptera	Carabidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	John Marris
26/02/2025	10/03/2025	T14	3	T14-3	Insecta	Coleoptera	Scarabaeidae	Prodontria	capito	Prodontria capito	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T14	3	T14-3	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T14	3	T14-3	Arachnida	Araneae	Linyphiidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T14	3	T14-3	Insecta	Hemiptera	Lygaeidae	Nysius	huttoni	Nysius huttoni	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T14	3	T14-3	Insecta	Diptera	Tachinidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T14	5	T14-5	Insecta	Orthoptera	Acrididae	Sigaus	australis	Sigaus australis	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T14	5	T14-5	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	2	Not Threatened	Will Frost
26/02/2025	10/03/2025	T15	1	T15-1	Insecta	Coleoptera	Staphylinidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T15	1	T15-1	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T15	1	T15-1	Arachnida	Araneae	Salticidae	Ourea	saffrocylopeus	'Ourea saffrocylopeus'	N	Adult	1	Not assessed	Dustin Lamont
26/02/2025	10/03/2025	T15	1	T15-1	Arachnida	Araneae	Linyphiidae	Erigone	wiltoni	Erigone wiltoni	Y	Adult	1	Introduced and Naturalised	Dustin Lamont
26/02/2025	10/03/2025	T15	2	T15-2	Insecta	Coleoptera	Byrrhidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T15	2	T15-2	Insecta	Coleoptera	Curculionidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T15	2	T15-2	Insecta	Coleoptera	Staphylinidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T15	2	T15-2	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	2	Not Threatened	Will Frost
26/02/2025	10/03/2025	T15	2	T15-2	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T15	3	T15-3	Insecta	Coleoptera	Curculionidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T15	3	T15-3	Insecta	Hymenoptera	Pompilidae	Prioncnemis	nitidiventris	Prioncnemis nitidiventris	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T15	3	T15-3	Arachnida	Araneae	Salticidae	Ourea	saffrocylopeus	'Ourea saffrocylopeus'	N	Adult	1	Not assessed	Dustin Lamont
26/02/2025	10/03/2025	T15	3	T15-3	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult + Juvenile	3	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T15	3	T15-3	Arachnida	Araneae	Linyphiidae	Erigone	wiltoni	Erigone wiltoni	N	Adult	1	Introduced and Naturalised	Dustin Lamont
26/02/2025	10/03/2025	T15	4	T15-4	Insecta	Orthoptera	Acrididae	Sigaus	australis	Sigaus australis	N	Nymph	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T15	4	T15-4	Insecta	Coleoptera	Staphylinidae	Pselaphus	Indet.	Pselaphus Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T15	4	T15-4	Insecta	Coleoptera	Curculionidae	Indet.	Indet.	Indet.	N	Adult	3	Indet.	Will Frost
26/02/2025	10/03/2025	T15	4	T15-4	Insecta	Diptera	Sciariidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T15	4	T15-4	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T15	4	T15-4	Arachnida	Araneae	Hahnidae	Rinawa	otagoensis	Rinawa otagoensis	N	adult	2	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T15	4	T15-4	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T15	5	T15-5	Insecta	Orthoptera	Anostostomatidae	Hemiandrus	focalis	Hemiandrus focalis	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T15	5	T15-5	Insecta	Coleoptera	Curculionidae	Indet.	Indet.	Indet.	N	Adult	3	Indet.	Will Frost
26/02/2025	10/03/2025	T15	5	T15-5	Insecta	Hymenoptera	Pompilidae	Prioncnemis	nitidiventris	Prioncnemis nitidiventris	N	Adult	2	Not assessed	Will Frost
26/02/2025	10/03/2025	T15	5	T15-5	Insecta	Diptera	Tachinidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T15	5	T15-5	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult + Juvenile	5	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T15	5	T15-5	Arachnida	Araneae	Linyphiidae	Erigone	wiltoni	Erigone wiltoni	N	Adult	1	Introduced and Naturalised	Dustin Lamont
26/02/2025	10/03/2025	T16	1	T16-1	Insecta	Orthoptera	Anostostomatidae	Hemiandrus	focalis	Hemiandrus focalis	N	Nymph	2	Not Threatened	Will Frost
26/02/2025	10/03/2025	T16	1	T16-1	Insecta	Diptera	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T16	2	T16-2	Insecta	Coleoptera	Staphylinidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T16	3	T16-3	Insecta	Coleoptera	Byrrhidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T16	3	T16-3	Arachnida	Araneae	Clubionidae	Clubiona	Indet.	Clubiona indet.	N	Juvenile	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T16	3	T16-3	Entognatha	Poduromorpha	Neanuridae	Holacanthella	Indet.	Holacanthella Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T16	3	T16-3	Insecta	Diptera	Tachinidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T16	3	T16-3	Insecta	Diptera	Empyridae	Scatella	nitidithorax	Scatella nitidithorax	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T16	3	T16-3	Arachnida	Araneae	Desidae	Rorea	otagoensis	Rorea otagoensis	Y	Adult	1	Data Deficient	Dustin Lamont
26/02/2025	10/03/2025	T16	3	T16-3	Entognatha	Poduromorpha	Neanuridae	Holacanthella	Indet.	Holacanthella Indet.	Y	Adult	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T16	4	T16-4	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T16	5	T16-5	Insecta	Orthoptera	Acrididae	Sigaus	australis	Sigaus australis	N	Nymph	1	Not Threatened	Will Frost

Set Date	Collection Date	Site No	Pit No	Code	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
26/02/2025	10/03/2025	T16	5	T16-5	Insecta	Coleoptera	Pompilidae	Priocnemis	nitidiventris	Priocnemis nitidiventris	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T17	1	T17-1	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabilli	Craterostigmus crabilli	N	Juvenile	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T17	1	T17-1	Arachnida		Araneae	Stiphidiidae	Neoramia	alta	N	Adult	1	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T17	1	T17-1	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	Y	Juvenile	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T17	1	T17-1	Arachnida	Araneae	Linyphiidae	Haplinis	Indet.	Haplinis indet.	N	Juvenile	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T17	2	T17-2	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	3	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T17	2	T17-2	Insecta	Diptera	Emphyridae	Scatella	nitidithorax	Scatella nitidithorax	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T17	2	T17-2	Chilopoda		Craterostigmidae	Craterostigmus	crabilli	Craterostigmus crabilli	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T17	3	T17-3	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T17	3	T17-3	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T17	4	T17-4	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Adult + Juvenile	4	Indet.	Will Frost
26/02/2025	10/03/2025	T17	5	T17-5	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	Y	Juvenile	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T17	5	T17-5	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	2	Not Threatened	Will Frost
26/02/2025	10/03/2025	T18	3	T18-3	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T18	3	T18-3	Arachnida	Araneae	Linyphiidae	Indet.	Indet.	Mynogleninae	N	Juvenile	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T18	3	T18-3	Diplopoda	Chordeumatida	Metopidiotrichidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T18	3	T18-3	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Juvenile	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T18	3	T18-3	Insecta	Diptera	Mycetophilidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T18	3	T18-3	Insecta		Emphyridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T18	3	T18-3	Insecta		Hymenoptera	Figitidae	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T18	4	T18-4	Entognatha	Poduromorpha	Neanuridae	Holacanthella	Indet.	Holacanthella Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T18	4	T18-4	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T18	4	T18-4	Insecta	Diptera	Emphyridae	Scatella	nitidithorax	Scatella nitidithorax	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T18	5	T18-5	Insecta		Cicadellidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T18	5	T18-5	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult + Juvenile	2	Not assessed	Will Frost
26/02/2025	10/03/2025	T18	5	T18-5	Arachnida	Araneae	Linyphiidae	Haplinis	inexacta	Haplinis inexacta	N	Adult	3	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T18	5	T18-5	Arachnida	Araneae	Linyphiidae	Haplinis	Indet.	Haplinis indet.	Y	Juvenile	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T18	5	T18-5	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Cicadellidae indet.	N	Adult	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T19	1	T19-1	Insecta	Coleoptera	Scirtidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T19	2	T19-2	Insecta	Coleoptera	Scirtidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T19	2	T19-2	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T19	2	T19-2	Insecta		Mycetophilidae	Indet.	Indet.	Indet.	N	Adult	9	Indet.	Will Frost
26/02/2025	10/03/2025	T19	2	T19-2	Insecta	Hemiptera	Lygaeidae	Nysius	huttoni	Nysius huttoni	N	Juvenile	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T19	2	T19-2	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	Y	Adult	1	Data Deficient	Dustin Lamont
26/02/2025	10/03/2025	T19	2	T19-2	Arachnida	Araneae	Cycloctenidae	Orepukia	sorenseni	Orepukia sorenseni	Y	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T19	2	T19-2	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T19	2	T19-2	Arachnida	Araneae	Indet.	Indet.	Indet.	Marronoidea	Y	Juvenile	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T19	4	T19-4	Insecta	Orthoptera	Acrididae	Siga	australis	Siga australis	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T19	5	T19-5	Insecta	Coleoptera	Scirtidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T2	1	T2-1	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T2	1	T2-1	Insecta		Cicadellidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T2	1	T2-1	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	3	Indet.	Will Frost
26/02/2025	10/03/2025	T2	1	T2-1	Arachnida		Araneae	Indet.	Indet.	Indet.	Y	Juvenile	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T2	3	T2-3	Insecta	Diptera	Emphyridae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T2	3	T2-3	Insecta		Canacidae	Indet.	Indet.	Indet.	Y	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T2	3	T2-3	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Juvenile	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T2	5	T2-5	Insecta	Orthoptera	Anostomatidae	Hemiandrus	focalis	Hemiandrus focalis	N	Nymph	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T2	5	T2-5	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T20	1	T20-1	Arachnida	Araneae	Cycloctenidae	Orepukia	sorenseni	Orepukia sorenseni	Y	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T20	1	T20-1	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	N	Adult	1	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T20	2	T20-2	Insecta	Coleoptera	Staphylinidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost

Set Date	Collection Date	Site No	Pit No	Code	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
26/02/2025	10/03/2025	T20	2	T20-2	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	Y	Juvenile	1	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T20	3	T20-3	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	Y	Juvenile	1	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T20	5	T20-5	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	Y	Juvenile	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T3	1	T3-1	Insecta	Coleoptera	Byrrhidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	1	T3-1	Insecta	Diptera	Emphyridae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T3	1	T3-1	Insecta	Hymenoptera	Pompilidae	Priocnemis	?nitidiventris	Priocnemis ?nitidiventris	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T3	1	T3-1	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	N	Adult + Juvenile	2	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T3	1	T3-1	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T3	2	T3-2	Insecta	Coleoptera	Curculionidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T3	2	T3-2	Insecta	Coleoptera	Byrrhidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	2	T3-2	Insecta	Coleoptera	Leiodidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	2	T3-2	Arachnida	Araneae	Hahnidae	Rinawa	otagoensis	Rinawa otagoensis	N	adult	2	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T3	2	T3-2	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T3	2	T3-2	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	5	Indet.	Will Frost
26/02/2025	10/03/2025	T3	2	T3-2	Insecta	Diptera	Muscidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	2	T3-2	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T3	2	T3-2	Entognatha	Poduromorpha	Neanuridae	Holacanthella	Indet.	Holacanthella Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	4	T3-4	Insecta	Coleoptera	Carabidae	Mecodema	politanum	Mecodema politanum	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T3	4	T3-4	Insecta	Coleoptera	Staphylinidae	Pselaphus	Indet.	Pselaphus Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	4	T3-4	Insecta	Coleoptera	Curculionidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	4	T3-4	Insecta	Coleoptera	Byrrhidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	4	T3-4	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabillii	Craterostigmus crabillii	N	Adult	2	Not assessed	Will Frost
26/02/2025	10/03/2025	T3	4	T3-4	Insecta	Hymenoptera	Pompilidae	Priocnemis	nitidiventris	Priocnemis nitidiventris	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T3	4	T3-4	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Juvenile	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	4	T3-4	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T3	4	T3-4	Insecta	Hymenoptera	Indet.	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	4	T3-4	Arachnida	Araneae	Cycloctenidae	Orepukia	sorenseni	Orepukia sorenseni	Y	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T3	4	T3-4	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T3	4	T3-4	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	3	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T3	5	T3-5	Insecta	Orthoptera	Anostostomatidae	Hemiandrus	focalis	Hemiandrus focalis	N	Nymph	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T3	5	T3-5	Insecta	Coleoptera	Carabidae	Mecodema	politanum	Mecodema politanum	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T3	5	T3-5	Insecta	Coleoptera	Melandryidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	John Marris
26/02/2025	10/03/2025	T3	5	T3-5	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	5	T3-5	Insecta	Hemiptera	Cicadidae	Indet.	Indet.	Indet.	N	Juvenile	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	5	T3-5	Insecta	Diptera	Emphyridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T3	5	T3-5	Arachnida	Araneae	Linyphiidae	Erigone	wiltoni	Erigone wiltoni	N	Adult	1	Introduced and Naturalised	Dustin Lamont
26/02/2025	10/03/2025	T3	5	T3-5	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	Y	Juvenile	1	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T3	5	T3-5	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T4	1	T4-1	Insecta	Orthoptera	Acrididae	Sigaus	australis	Sigaus australis	N	Nymph	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T4	1	T4-1	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T4	1	T4-1	Insecta	Hymenoptera	Ichneumonidae	Aucklandella	Indet.	Aucklandella Indet.	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T4	1	T4-1	Insecta	Hymenoptera	Scelionidae	Scelio	Indet.	Scelio Indet.	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T4	1	T4-1	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabillii	Craterostigmus crabillii	N	Juvenile	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T4	1	T4-1	Insecta	Diptera	Emphyridae	Scatella	nitidithorax	Scatella nitidithorax	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T4	1	T4-1	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Juvenile	1	Indet.	Will Frost
26/02/2025	10/03/2025	T4	2	T4-2	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T4	2	T4-2	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabillii	Craterostigmus crabillii	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T4	2	T4-2	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult	2	Not assessed	Will Frost
26/02/2025	10/03/2025	T4	2	T4-2	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Juvenile	1	Indet.	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Insecta	Orthoptera	Acrididae	Sigaus	australis	Sigaus australis	N	Nymph	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Insecta	Coleoptera	Carabidae	Mecodema	politanum	Mecodema politanum	N	Adult	2	Not Threatened	Will Frost

Set Date	Collection Date	Site No	Pit No	Code	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
26/02/2025	10/03/2025	T4	3	T4-3	Insecta	Coleoptera	Staphylinidae	?Pselaphus	Indet.	Pselaphus Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	4	Not Threatened	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Insecta	Diptera	Emphyridae	Scatella	nitidithorax	Scatella nitidithorax	N	Adult	3	Not assessed	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Insecta	Hymenoptera	Pompilidae	Prioncnemis	nitidiventris	Prioncnemis nitidiventris	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabillii	Craterostigmus crabillii	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Insecta	Diptera	Emphyridae	Indet.	Indet.	Indet.	N	Adult	4	Indet.	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Insecta	Hymenoptera	Scelionidae	Baeus	Indet.	Baeus Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T4	3	T4-3	Insecta	Diptera	Canacidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T4	3	T4-3	Arachnida	Araneae	Indet.	Indet.	Indet.	Marronoidea	Y	Juvenile	2	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T4	4	T4-4	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult + Juvenile	3	Not Threatened	Will Frost
26/02/2025	10/03/2025	T4	4	T4-4	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T4	4	T4-4	Insecta	Hymenoptera	Pteromalidae	Trichomalopsis	Indet.	Trichomalopsis Indet.	Y	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T4	4	T4-4	Insecta	Hymenoptera	Pompilidae	Prioncnemis	nitidiventris	Prioncnemis nitidiventris	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T4	4	T4-4	Entognatha	Poduromorpha	Neanuridae	Holacanthella	Indet.	Holacanthella Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T4	4	T4-4	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T4	5	T4-5	Insecta	Orthoptera	Acrididae	Sigaus	australis	Sigaus australis	N	Nymph	6	Not Threatened	Will Frost
26/02/2025	10/03/2025	T4	5	T4-5	Insecta	Coleoptera	Carabidae	Mecodema	politanum	Mecodema politanum	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T4	5	T4-5	Arachnida	Araneae	Stiphidiidae	Neoramia	Indet.	Neoramia alta	Y	Juvenile	1	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T4	5	T4-5	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	2	Not Threatened	Will Frost
26/02/2025	10/03/2025	T4	5	T4-5	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	5	Indet.	Will Frost
26/02/2025	10/03/2025	T4	5	T4-5	Insecta	Hemiptera	Cicadellidae	Indet.	Indet.	Indet.	N	Adult	3	Indet.	Will Frost
26/02/2025	10/03/2025	T4	5	T4-5	Insecta	Diptera	Sciaridae	Indet.	Indet.	Indet.	N	Adult	4	Indet.	Will Frost
26/02/2025	10/03/2025	T4	5	T4-5	Insecta	Diptera	Mycetophilidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T4	5	T4-5	Insecta	Coleoptera	Pompilidae	Prioncnemis	nitidiventris	Prioncnemis nitidiventris	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T4	5	T4-5	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabillii	Craterostigmus crabillii	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T5	2	T5-2	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult + Juvenile	9	Not assessed	Will Frost
26/02/2025	10/03/2025	T5	3	T5-3	Arachnida	Araneae	Linyphiidae	Haplinis	alticola	Haplinis alticola	Y	Adult	1	Data Deficient	Dustin Lamont
26/02/2025	10/03/2025	T5	3	T5-3	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult + Juvenile	3	Not Threatened	Will Frost
26/02/2025	10/03/2025	T5	3	T5-3	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult	11	Not assessed	Will Frost
26/02/2025	10/03/2025	T5	5	T5-5	Insecta	Coleoptera	Carabidae	Mecodema	politanum	Mecodema politanum	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T5	5	T5-5	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T6	1	T6-1	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T6	1	T6-1	Arachnida	Araneae	Cycloctenidae	Orepukia	sorenseni	Orepukia sorenseni	Y	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T6	1	T6-1	Insecta	Diptera	Mycetophilidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T6	1	T6-1	Insecta	Diptera	Emphyridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T6	1	T6-1	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabillii	Craterostigmus crabillii	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T6	1	T6-1	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Juvenile	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T6	3	T6-3	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T6	4	T6-4	Insecta	Coleoptera	Curculionidae	Sitona	obsoletus	Sitona obsoletus	N	Adult	1	Introduced and Naturalised	Will Frost
26/02/2025	10/03/2025	T6	4	T6-4	Diptopoda	Chordeumatida	Metopidiotrichidae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T6	4	T6-4	Insecta	Diptera	Emphyridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T6	4	T6-4	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T6	5	T6-5	Insecta	Orthoptera	Acrididae	Sigaus	australis	Sigaus australis	N	Nymph	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T6	5	T6-5	Arachnida	Araneae	Linyphiidae	Haplinis	inexacta	Haplinis inexacta	N	Adult	1	Not Threatened	Dustin Lamont
26/02/2025	10/03/2025	T6	5	T6-5	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Juvenile	1	Indet.	Will Frost
26/02/2025	10/03/2025	T7	3	T7-3	Insecta	Coleoptera	Carabidae	Mecodema	politanum	Mecodema politanum	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T7	3	T7-3	Diptopoda	Chordeumatida	Metopidiotrichidae	Indet.	Indet.	Indet.	N	Adult	1	Not assessed	Will Frost
26/02/2025	10/03/2025	T8	2	T8-2	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	3	Indet.	Dustin Lamont
26/02/2025	10/03/2025	T8	2	T8-2	Arachnida	Araneae	Cycloctenidae	Orepukia	sorenseni	Orepukia sorenseni	Y	Adult	1	Not Threatened	Dustin Lamont

Set Date	Collection Date	Site No	Pit No	Code	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
26/02/2025	10/03/2025	T8	4	T8-4	Insecta	Orthoptera	Acrididae	Sigaus	australis	Sigaus australis	N	Juvenile	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T8	4	T8-4	Insecta	Orthoptera	Anostomatidae	Hemiandrus	focalis	Hemiandrus focalis	N	Juvenile	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T8	4	T8-4	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	N	Adult	1	Naturally Uncommon	Dustin Lamont
26/02/2025	10/03/2025	T8	5	T8-5	Insecta	Coleoptera	Byrrhidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T8	5	T8-5	Diplopoda	Chordeumatida	Metopidiotrichidae	Indet.	Indet.	Indet.	N	Adult	2	Not assessed	Will Frost
26/02/2025	10/03/2025	T9	1	T9-1	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	10/03/2025	T9	2	T9-2	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
26/02/2025	10/03/2025	T9	2	T9-2	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost
26/02/2025	10/03/2025	T9	2	T9-2	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	Y	Adult	1	Data Deficient	Dustin Lamont
26/02/2025	10/03/2025	T9	4	T9-4	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	Y	Juvenile	1	Data Deficient	Dustin Lamont
26/02/2025	10/03/2025	T9	4	T9-4	Arachnida	Trombidiformes	Trombididae	Indet.	Indet.	Indet.	N	Adult	2	Indet.	Will Frost

Collection Date	Lat	Lon	Collection Method	Collector Name	Sample No	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
26/02/2025	45.058	168.84	Sweep net	Will Frost	1	Insecta	Lepidoptera	Geometridae	Dasyuris	partheniata	Dasyuris partheniata	N	Adult	1	At Risk, Declining	Will Frost
26/02/2025	45.06	168.838	Sweep net	Will Frost	2	Insecta	Lepidoptera	Plutellidae	Plutella	sp.1 (CO)	Plutella sp.1 (CO)	N	Adult	2	At Risk, Declining	Will Frost
26/02/2025	45.06	168.838	Sweep net	Will Frost	3	Insecta	Lepidoptera	Crambidae	Eudonia	indet.	Eudonia indet.	Y	Adult	1	Indet.	Will Frost
26/02/2025	45.061	168.829	Hand collect	Will Frost	4	Insecta	Orthoptera	Acrididae	Sigaus	campestris	Sigaus campestris	N	Adult	1	At Risk, Declining	Will Frost
26/02/2025	45.061	168.829	Hand collect	Will Frost	5	Insecta	Orthoptera	Acrididae	Sigaus	indet.	Sigaus indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	45.059	168.84	Hand collect	Will Frost	6	Insecta	Coleoptera	Curculionidae	Lyperobius	spedenii	Lyperobius spedenii	N	Adult	1	Not assessed	Will Frost
26/02/2025	45.06	168.834	Hand collect	Will Frost	7	Insecta	Coleoptera	Curculionidae	Lyperobius	hudsoni	Lyperobius hudsoni	N	Adult	1	Not Threatened	Will Frost
26/02/2025	45.067	168.833	Hand collect	Will Frost	8	Insecta	Coleoptera	Curculionidae	Anagotus	latirostris	Anagotus latirostris	N	Adult	1	Not assessed	Will Frost
25/02/2025	45.06	168.826	Hand collect	Will Frost	9	Insecta	Coleoptera	Scarabaeidae	Prodontria	capito	Prodontria capito	N	Adult	2	Not Threatened	Will Frost
26/02/2025	45.06	168.838	Hand collect	Will Frost	10	Insecta	Coleoptera	Byrrhidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	45.06	168.838	Hand collect	Will Frost	11	Insecta	Orthoptera	Anostomatidae	Hemideina	maori	Hemideina maori	N	Adult	3	Not Threatened	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	12	Insecta	Orthoptera	Anostomatidae	Hemideina	maori	Hemideina maori	N	Juvenile	1	Not Threatened	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	13	Insecta	Coleoptera	Curculionidae	Inophloeus	inuus	Inophloeus inuus	N	Adult	1	Not assessed	Will Frost
26/02/2025	45.06	168.838	Hand collect	Will Frost	14	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost/Dustin Lamont
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	15	Insecta	Lepidoptera	Nymphalidae	Pieris	rapae	Pieris rapae	N	Adult	1	Introduced and Naturalised	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	16	Insecta	Orthoptera	Rhaphidophoridae	Pharmacus	notabilis	Pharmacus notabilis	N	Adult	1	Not Threatened	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	17	Insecta	Lepidoptera	Geometridae	Pseudocoremia	indet.	Pseudocoremia indet.	N	Adult	1	Indet.	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	18	Insecta	Lepidoptera	Noctuidae	Bityla	defigurata	Bityla defigurata	N	Adult	1	Not assessed	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	19	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	N	Adult	1	Data Deficient	Dustin Lamont
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	20	Insecta	Coleoptera	Carabidae	Mecodema	politanum	Mecodema politanum	N	Adult	1	Not Threatened	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	21	Insecta	Coleoptera	Carabidae	Mecodema	politanum	Mecodema politanum	N	Adult	1	Not Threatened	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	22	Insecta	Lepidoptera	Erebidae	Metacrias	indet.	Metacrias indet.	N	Larva	1	Not Threatened	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	23	Insecta	Coleoptera	Scarabaeidae	Scythrodes	squalidus	Scythrodes squalidus	N	Adult	2	Not assessed	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	24	Insecta	Coleoptera	Byrrhidae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	25	Insecta	Orthoptera	Anostomatidae	Hemiandrus	focalis	Hemiandrus focalis	N	Adult	1	Not Threatened	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	26	Insecta	Lepidoptera	Hepialidae	Aoraia	indet.	Aoraia indet.	Y	Larva	1	Indet.	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	27	Insecta	Lepidoptera	Nymphalidae	Argyrophenga	antipodum	Argyrophenga antipodum	N	Adult	1	Not Threatened	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	28	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not Threatened	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	29	Gastropoda	Stylommatophora	Athoracophoridae	Indet.	Indet.	Indet.	N	Adult	1	Indet.	Will Frost
4/2/2025-30/3/25	NA	NA	Hand collect	Liam Salemink-Waldren	30	Insecta	Hemiptera	Pentatomidae	Cermatulus	nasalis	Cermatulus nasalis	N	Juvenile	1	Not assessed	Will Frost
4/2/2025-30/3/25	location 52 lizard trapping	NA	Hand collect	Liam Salemink-Waldren	31	Insecta	Hemiptera	Pentatomidae	Hypsithocus	hudsonae	Hypsithocus hudsonae	N	Adult	1	At Risk, Uncommon	Will Frost

Collection Date	Lat	Lon	Collection Method	Collector Name	Sample No	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	1	Insecta	Lepidoptera	Noctuidae	Meterana	meyricci	Meterana meyricki	N	Adult	2	Not assessed	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	2	Insecta	Lepidoptera	Noctuidae	Ichneutica	propria	Ichneutica propria	N	Adult	4	Not Threatened	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	3	Insecta	Lepidoptera	Noctuidae	Ichneutica	moderata	Ichneutica moderata	N	Adult	2	Not Threatened	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	4	Insecta	Lepidoptera	Noctuidae	Physetica	phricias	Physetica phricias	N	Adult	4	Not Threatened	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	5	Insecta	Lepidoptera	Noctuidae	Ichneutica	mutans	Ichneutica mutans	N	Adult	5	Not Threatened	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	6	Insecta	Lepidoptera	Noctuidae	Ichneutica	lithias	Ichneutica lithias	N	Adult	4	Not Threatened	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	7	Insecta	Lepidoptera	Noctuidae	Bityla	defigurata	Bityla defigurata	N	Adult	2	Not assessed	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	8	Insecta	Lepidoptera	Noctuidae	Persectania	aversa	Persectania aversa	N	Adult	3	Not assessed	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	9	Insecta	Lepidoptera	Noctuidae	Ichneutica	lissoxylla	Ichneutica lissoxylla	N	Adult	5	Not assessed	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	10	Insecta	Lepidoptera	Noctuidae	Ichneutica	indet.	Ichneutica indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	11	Insecta	Lepidoptera	Noctuidae	Ichneutica	indet.	Ichneutica indet.	N	Adult	1	Indet.	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	12	Insecta	Lepidoptera	Crambidae	Scoparia	rotuella	Scoparia rotuella	N	Adult	1	Not assessed	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	13	Insecta	Lepidoptera	Crambidae	Scoparia	niphospora	Scoparia niphospora	Y	Adult	2	Not assessed	Will Frost
26/02/2025	45.06	168.836	Light trap	Will Frost/ Liam Salemink	14	Insecta	Lepidoptera	Crambidae	Eudonia	cymatias	Eudonia cymatias	N	Adult	1	Not assessed	Will Frost

Filename:	E3 Remarkables Insect Data
Created by:	William Frost
Date created:	17/02/2026
Project name:	NZSki Entomological Survey of the Doolans region, the Remarkables, Queenstown, NZ
Project aim:	To survey the entomological fauna of the Doolan's area with a variety of collecting methods, to ascertain a snapshot view of the invertebrate fauna and at risk species within a proposed ski lift's footprint
Project objectives:	<div>1. Determine a snapshot of the invertebrate fauna within the Doolan's area</div> <div>2. Identify noteworthy threatened species collected within the footprint area</div>
Data collection description:	Specimen data for 40 pitfalls separated into 8 sites is identified with a generic/ specific name where possible and a family level taxonomic unit where generic/ specific identification is too difficult to discern.
Data entered by:	William Frost & Dustin Lamont
Data checked by:	William Frost
Worksheets:	
"Pitfall"	Contains information referring to all larval and adult specimens of invertebrates collected and identified from pitfall trapping within the Doolans.
"Hand collect"	Contains information referring to all larval and adult specimens collected and identified from hand collection surveys throughout the Doolans area.
"Light trap"	Contains information referring to all adult Lepidoptera specimens collected and identified from light trapping with a 200 watt mercury vapour bulb within the Doolans.
Variable name	Description
Set_Date	The date in which a given pitfall trap was set up and established, i.e the surveying period began on the date the pitfall was installed.
Collection_Date	The date in which samples from a given pitfall trap were collected and the pitfall was removed, i.e the surveying period ended on the date the pitfall was removed.
Site_No	A number from 1-20 referring to which pitfall site a specimen was collected from.
Pit_No	A number from 1-5 referring to which pitfall trap within a site a specimen was collected from.
Code	A combination of both the Site_No and Pit_No in one code to simplify labelling of specimens.
Class	The Class grouping classification for an invertebrate, i.e 'Insecta, Arachnida'.
Order	The order level taxonomic grouping for classification and identification of an invertebrate, i.e 'Orthoptera, Lepidoptera'.
Family	The family level taxonomic grouping for classification and identification of an invertebrate, i.e 'Anostomatidae, Crambidae'.
Genus	The genus level taxonomic grouping for classification and identification of an invertebrate, i.e 'Hemiandrus, Scoparia'.
Species	The species level taxonomic grouping for classification and identification of an invertebrate, i.e 'focalis, niphospora'.
Name	The genus and species taxonomic identification for a specimen are supplied here if possible.
Tentative Y/N	Was an identification made with uncertainty?
Life_Stage	What life stage was an invertebrate specimen, i.e nymph, larval, adult, pupal.
Count	What number of specimens of the same grouping were collected within a pitfall trap.
Threat_Classification	What is the threat status (if available) for an invertebrate specimen, note these are all derived from the New Zealand Threat Classification System, Lepidoptera are updated as per unpublished assessments for Hoare. et al 2025.
Determiner_Name	The person that made an identification, i.e Will Frost, Dustin Lamont
Notes	Any notes of relevance or value pertaining to a singular specimen/ set of specimens.
Collection_Method	How was the specimen hand collected? I.e sweeping net, hand collection.
Lat	What was the latitude where a specimen was collected.
Lon	What was the longitude where a specimen was collected.
Additional comments:	Any 'Indet.' (indeterminate identification) notations refer to specimens that could not be identified to the highest possible taxonomic level due to a lack of resources for identification of that group, difficulty of identification or damage to specimens. The 'Indet.' notation is also provided for threat classification where a species could not be identified to the highest possible taxonomic unit. Threat assessments made for Lepidoptera are updated pertaining to the most recent unpublished threat assessment, for which I was a panel member. The specimens collected and identified represent a small and suboptimal time frame of monitoring within the Doolans area and in no way represent a complete assessment of the Doolans area's invertebrate fauna. Will Frost.

Set Date	Collection Date	Code	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
19/01/2026	1/02/2026	T21	Insecta	Blattodea	Blattidae	Celatoblatta	indet.	Celatoblatta indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T21	Insecta	Diptera	Tipulidae	Leptotarsus	indet.	Leptotarsus indet.	N	Adult	8	Indet.	Will Frost
19/01/2026	1/02/2026	T21	Insecta	Trichoptera	Hydrobiosidae	Psilochorema	indet.	Psilochorema indet.	N	Adult	3	Indet.	Will Frost
19/01/2026	1/02/2026	T21	Insecta	Diptera	Limoniidae	indet.	indet.	indet.	N	Adult	17	Indet.	Will Frost
19/01/2026	1/02/2026	T21	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Juvenile	2	Not threatened	Will Frost
19/01/2026	1/02/2026	T21	Insecta	Coleoptera	Chrysomelidae	indet.	indet.	indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T21	Insecta	Coleoptera	Staphylinidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T21	Arachnida	Opiliones	indet.	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Orthoptera	Anostostomatidae	Hemideina	maori	Hemideina maori	N	Adult	11	Not threatened	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Diptera	Tachinidae	indet.	indet.	indet.	N	Adult	3	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Coleoptera	Curculionidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Lepidoptera	Geometridae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Diptera	Ephydriidae	indet.	indet.	indet.	N	Adult	19	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Orthoptera	Acrididae	Sigauss	tumidicauda	Sigauss tumidicauda	N	Adult	2	Not threatened	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Orthoptera	Acrididae	Sigauss	australis	Sigauss australis	N	Adult	2	Not threatened	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Diptera	Tipulidae	Zelandotipula	novarae	Zelandotipula novarae	N	Adult	3	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Diptera	Tipulidae	Leptotarsus	indet.	Leptotarsus indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	4	Not threatened	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Diptera	indet.	indet.	indet.	indet.	N	Adult	3	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Coleoptera	Chrysomelidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Arachnida	Opiliones	indet.	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Hemiptera	Pentatomidae	Hypsithocus	hudsonae	Hypsithocus hudsonae	N	Adult	1	At Risk, Uncommon	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Hemiptera	Lygaeidae	Nysius	huttoni	Nysius huttoni	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabilli	Craterostigmus crabilli	N	Juvenile	2	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Coleoptera	Leiodidae	indet.	indet.	indet.	N	Adult	1	Indet.	John Marris
19/01/2026	1/02/2026	T22	Insecta	Coleoptera	Hydrophilidae	indet.	indet.	indet.	N	Adult	1	Indet.	John Marris
19/01/2026	1/02/2026	T22	Insecta	Coleoptera	Anobiidae	indet.	indet.	indet.	N	Adult	1	Indet.	John Marris
19/01/2026	1/02/2026	T23	Arachnida	Opiliones	indet.	indet.	indet.	indet.	N	Adult	3	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Diptera	Mycetophilidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Diptera	Therevidae	indet.	indet.	indet.	N	Adult	3	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Diptera	Ephydriidae	indet.	indet.	indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Lepidoptera	Xyloryctidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Diptera	Tipulidae	Zelandotipula	novarae	Zelandotipula novarae	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Diptera	Therevidae	indet.	indet.	indet.	N	Adult	3	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Blattodea	Blattidae	Celatoblatta	indet.	Celatoblatta indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Lepidoptera	Gelechiidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Diptera	Therevidae	indet.	indet.	indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Hymenoptera	Pompilidae	Priocnemis	indet.	Priocnemis indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Diptera	indet.	indet.	indet.	indet.	N	Adult	9	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Arachnida	Opiliones	indet.	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T24	Insecta	Diptera	Ephydriidae	indet.	indet.	indet.	N	Adult	3	Indet.	Will Frost
19/01/2026	1/02/2026	T24	Insecta	Orthoptera	Anostostomatidae	Hemideina	maori	Hemideina maori	N	Adult	1	Not threatened	Will Frost
19/01/2026	1/02/2026	T24	Insecta	Blattodea	Blattidae	Celatoblatta	indet.	Celatoblatta indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T24	Insecta	Diptera	Tipulidae	Leptotarsus	indet.	Leptotarsus indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T24	Insecta	Diptera	indet.	indet.	indet.	indet.	N	Adult	6	Indet.	Will Frost
19/01/2026	1/02/2026	T24	Insecta	Diptera	Therevidae	indet.	indet.	indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T24	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T25	Insecta	Diptera	indet.	indet.	indet.	indet.	N	Adult	65	Indet.	Will Frost
19/01/2026	1/02/2026	T25	Insecta	Coleoptera	Staphylinidae	indet.	indet.	indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T25	Insecta	Lepidoptera	Gelechiidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T25	Insecta	Coleoptera	Scarabaeidae	Scythrodes	squalidus	Scythrodes squalidus	N	Adult	2	Not threatened	Will Frost
19/01/2026	1/02/2026	T25	Insecta	Coleoptera	Chrysomelidae	indet.	indet.	indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T25	Insecta	Coleoptera	Curculionidae	indet.	indet.	indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Orthoptera	Anostostomatidae	Hemideina	maori	Hemideina maori	N	Adult	1	Not threatened	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Lepidoptera	Gelechiidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Lepidoptera	Plutellidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Blattodea	Blattidae	Celatoblatta	indet.	Celatoblatta indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Orthoptera	Acrididae	Sigauss	australis	Sigauss australis	N	Adult	1	Not threatened	Will Frost
19/01/2026	1/02/2026	T26	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	7	Not threatened	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Coleoptera	Staphylinidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Diptera	Tipulidae	Leptotarsus	indet.	Leptotarsus indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Lepidoptera	Gelechiidae	indet.	indet.	indet.	N	Adult	4	Indet.	Will Frost
19/01/2026	1/02/2026	T27	Insecta	Diptera	indet.	indet.	indet.	indet.	N	Adult	30	Indet.	Will Frost
19/01/2026	1/02/2026	T27	Insecta	Orthoptera	Anostostomatidae	Hemideina	maori	Hemideina maori	N	Adult	1	Not threatened	Will Frost
19/01/2026	1/02/2026	T27	Insecta	Coleoptera	Scarabaeidae	Scythrodes	squalidus	Scythrodes squalidus	N	Adult	1	Not threatened	Will Frost
19/01/2026	1/02/2026	T27	Insecta	Diptera	Tipulidae	Leptotarsus	indet.	Leptotarsus indet.	N	Adult	9	Indet.	Will Frost
19/01/2026	1/02/2026	T27	Arachnida	Opiliones	indet.	indet.	indet.	indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T27	Insecta	Diptera	Tachinidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T27	Insecta	Blattodea	Blattidae	Celatoblatta	indet.	Celatoblatta indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T28	Insecta	Diptera	indet.	indet.	indet.	indet.	N	Adult	95	Indet.	Will Frost
19/01/2026	1/02/2026	T28	Insecta	Orthoptera	Anostostomatidae	Hemideina	maori	Hemideina maori	N	Adult	3	Not threatened	Will Frost

Set Date	Collection Date	Code	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
19/01/2026	1/02/2026	T28	Insecta	Blattodea	Blattidae	Celatoblatta	quinquemaculata	Celatoblatta quinquemaculata	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T28	Chilopoda	Craterostigmomorpha	Craterostigmidae	Craterostigmus	crabilli	Craterostigmus crabilli	N	Juvenile	3	Indet.	Will Frost
19/01/2026	1/02/2026	T21	Arachnida	Araneae	indet.	indet.	indet.	indet.	N	Juvenile	1	Indet.	Dustin Edmundson
19/01/2026	1/02/2026	T21	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	Y	Adult	1	Data deficient	Dustin Edmundson
19/01/2026	1/02/2026	T24	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	N	Adult	1	At Risk, Uncommon	Dustin Edmundson
19/01/2026	1/02/2026	T24	Arachnida	Araneae	Orsolobidae	Subantarctia	centralis	Subantarctia centralis	Y	Adult	1	Data deficient	Dustin Edmundson
19/01/2026	1/02/2026	T24	Arachnida	Araneae	indet.	indet.	indet.	indet.	N	Juvenile	1	Indet.	Dustin Edmundson
19/01/2026	1/02/2026	T23	Arachnida	Araneae	Huttoniidae	Huttonia	indet.	Huttonia indet.	N	Juvenile	1	Indet.	Dustin Edmundson
19/01/2026	1/02/2026	T25	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	N	Adult	1	Data deficient	Dustin Edmundson
19/01/2026	1/02/2026	T25	Arachnida	Araneae	Huttoniidae	Huttonia	indet.	Huttonia indet.	N	Adult	1	Indet.	Dustin Edmundson
19/01/2026	1/02/2026	T28	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	N	Adult	2	Data deficient	Dustin Edmundson
19/01/2026	1/02/2026	T28	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	N	Adult	1	Not threatened	Dustin Edmundson
19/01/2026	1/02/2026	T27	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	N	Adult	4	Data deficient	Dustin Edmundson
19/01/2026	1/02/2026	T27	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	Y	Adult	1	Not threatened	Dustin Edmundson
19/01/2026	1/02/2026	T27	Arachnida	Araneae	Stiphidiidae	Neoramia	indet.	Neoramia indet.	Y	Juvenile	1	Indet.	Dustin Edmundson
19/01/2026	1/02/2026	T27	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	N	Adult	3	At Risk, Uncommon	Dustin Edmundson
19/01/2026	1/02/2026	T27	Arachnida	Araneae	Cycloctenidae	Orepukia	aff. sorenseni	Orepukia aff. Sorenseni	Y	Adult	1	Not threatened	Dustin Edmundson
19/01/2026	1/02/2026	T27	Arachnida	Araneae	Linyphiidae	Haplinis	inexacta	Haplinis inexacta	Y	Adult	1	Not threatened	Dustin Edmundson
19/01/2026	1/02/2026	T22	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	N	Adult	6	Data deficient	Dustin Edmundson
19/01/2026	1/02/2026	T22	Arachnida	Araneae	Desidae	Mamoea	montana	Mamoea montana	Y	Juvenile	1	Data deficient	Dustin Edmundson
19/01/2026	1/02/2026	T22	Arachnida	Araneae	Lycosidae	Anoteropsis	hilaris	Anoteropsis hilaris	Y	Juvenile	1	Not threatened	Dustin Edmundson
19/01/2026	1/02/2026	T22	Arachnida	Araneae	Stiphidiidae	Neoramia	alta	Neoramia alta	N	Adult	1	At Risk, Uncommon	Dustin Edmundson
19/01/2026	1/02/2026	T22	Insecta	Hymenoptera	Diapriidae	Betyla	indet.	Betyla indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T22	Insecta	Hymenoptera	Ichneumonidae	Aucklandella	indet.	Aucklandella indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Coleoptera	Coccinellidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Coleoptera	Carabidae	Holcaspis	indet.	Holcaspis indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Hymenoptera	Braconidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T23	Insecta	Coleoptera	Carabidae	?Ctenognathus	indet.	Ctenognathus indet.	Y	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T24	Insecta	Coleoptera	Carabidae	Holcaspis	indet.	Holcaspis indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T24	Insecta	Coleoptera	Chrysomelidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T25	Insecta	Plecoptera	Austroperlidae	Austroperla	cyrene	Austroperla cyrene	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T25	Insecta	Coleoptera	Curculionidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T25	Insecta	Coleoptera	Scarabaeidae	Pryonota	festiva	Pryonota festiva	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Coleoptera	Carabidae	Megadromus	indet.	Megadromus indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Coleoptera	Carabidae	indet.	indet.	indet.	N	Adult	18	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Coleoptera	Elateridae	indet.	indet.	indet.	N	Adult	3	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Coleoptera	Leiodidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T26	Insecta	Coleoptera	Byrrhidae	indet.	indet.	indet.	N	Adult	2	Indet.	Will Frost
19/01/2026	1/02/2026	T27	Insecta	Orthoptera	Acrididae	Sigaus	tumidicauda	Not threatened	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T27	Insecta	Coleoptera	Curculionidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T28	Insecta	Coleoptera	Anobiidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T28	Insecta	Hymenoptera	Ichneumonidae	Aucklandella	indet.	Aucklandella indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T28	Insecta	Hymenoptera	Pompilidae	Priocnemis	conformis	Priocnemis conformis	N	Adult	1	Indet.	Will Frost
19/01/2026	1/02/2026	T28	Insecta	Coleoptera	Staphylinidae	indet.	indet.	indet.	N	Adult	1	Indet.	Will Frost

Collection Date	Lat	Lon	Collection Method	CollectorName	Sample No	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
19/01/2026	45.076	168.839	Hand collected	Will Frost	1	Insecta	Hemiptera	Pentatomidae	Hypsithocus	hudsonae	Hypsithocus hudsonae	N	Adult	2	At Risk, Uncommon At Risk, Declining At Risk, Declining At Risk, Declining	Will Frost
19/01/2026	45.067	168.832	Hand collected	Will Frost	2	Insecta	Lepidoptera	Geometridae	Dasyuris	micropolis	Dasyuris micropolis	N	Adult	1		Will Frost
19/01/2026	45.076	168.839	Hand collected	Will Frost	3	Insecta	Lepidoptera	Geometridae	Dasyuris	partheniata	Dasyuris partheniata	N	Adult	2		Will Frost
19/01/2026	45.074	168.836	Hand collected	Will Frost	4	Insecta	Lepidoptera	Geometridae	Dasyuris	partheniata	Dasyuris partheniata	N	Adult	3		Will Frost
19/01/2026	45.073	168.836	Hand collected	Will Frost	5	Insecta	Lepidoptera	Geometridae	Dasyuris	callicrena	Dasyuris callicrena	N	Adult	1		Will Frost
19/01/2026	45.072	168.837	Hand collected	Will Frost	6	Insecta	Lepidoptera	Geometridae	Aponotoreas	insignis	Aponotoreas insignis	N	Adult	2	Not Assessed	Will Frost
19/01/2026	45.072	168.835	Hand collected	Will Frost	7	Insecta	Lepidoptera	Geometridae	Aponotoreas	anthracias	Aponotoreas anthracias	N	Adult	3	Not Assessed	Will Frost
19/01/2026	45.072	168.835	Hand collected	Will Frost	8	Insecta	Lepidoptera	Geometridae	Paranotoreas	zopyra	Paranotoreas zopyra	N	Adult	2	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Hand collected	Will Frost	9	Insecta	Lepidoptera	Erebidae	Metacrias	erichrysa	Metacrias erichrysa	N	Adult	2	Not Threatened	Will Frost
19/01/2026	45.072	168.837	Hand collected	Will Frost	10	Insecta	Lepidoptera	Plutellidae	Orthenches	indet.	Orthenches indet.	N	Adult	1	Indet.	Will Frost
19/01/2026	45.072	168.835	Hand collected	Will Frost	11	Insecta	Lepidoptera	Geometridae	Notoreas	paradelpha	Notoreas paradelpha	N	Adult	4	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Hand collected	Will Frost	12	Insecta	Lepidoptera	Crambidae	Tawhitia	glaucophanes	Tawhitia glaucophanes	N	Adult	10	Not Assessed	Will Frost
19/01/2026	45.074	168.836	Hand collected	Will Frost	13	Insecta	Lepidoptera	Crambidae	Tauroscopa	notabilis	Tauroscopa notabilis	N	Adult	5	Not Assessed	Will Frost
indet.	indet.	indet.	Hand collected	E3 staff	14	Insecta	Orthoptera	Rhaphidophoridae	indet.	indet.	indet.	N	Adult	2	Indet.	Will Frost
indet.	indet.	indet.	Hand collected	E3 staff	15	Insecta	Coleoptera	Curculionidae	Inophloeus	inuus	Inophloeus inuus	N	Adult	2	Not Assessed	Will Frost
indet.	indet.	indet.	Hand collected	E3 staff	16	Insecta	Coleoptera	Carabidae	Megadromus	indet.	Megadromus indet.	N	Adult	2	Not Assessed	Will Frost

Collection Date	Lat	Lon	Class	Order	Family	Genus	Species	Name	Tentative Y/N	Life Stage	Count	Threat Classification	Determiner Name
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Ichneutica	ceraunias	Ichneutica ceraunias	N	Adult	10	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Persectania	aversa	Persectania aversa	N	Adult	6	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Bityla	defigurata	Bityla defigurata	N	Adult	4	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Peripyr	sanguinipuncta	Peripyr sanguinipuncta	N	Adult	1	Coloniser	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Geometridae	Anachloris	subochraria	Anachloris subochraria	N	Adult	1	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Geometridae	Chloroclystis	filata	Chloroclystis filata	N	Adult	30	Coloniser	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Agrotis	ipsilon	Agrotis ipsilon	N	Adult	2	Coloniser	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Psychidae	Orophora	unicolor	Liothula unicolor	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Geometridae	Xanthorhoe	occulta	Xanthorhoe occulta	N	Adult	2	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Crambidae	Eudonia	trivirgata	Eudonia trivirgata	N	Adult	5	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Physetica	phricias	Physetica phricias	N	Adult	2	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Nivetica	nervosa	Nivetica nervosa	N	Adult	2	At Risk, Declining	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Ichneutica	lissoxyla	Ichneutica lissoxyla	N	Adult	3	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Plutellidae	Plutella	antiphona	Plutella antiphona	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Crambidae	Eudonia	oculata	Eudonia oculata	N	Adult	2	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Crambidae	Eudonia	cataxesta	Eudonia cataxesta	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Ichneutica	falsidica	Ichneutica falsidica	N	Adult	10	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Ichneutica	cuneata	Ichneutica cuneata	N	Adult	2	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Physetica	caerulea	Physetica caerulea	N	Adult	2	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Physetica	cucullina	Physetica cucullina	N	Adult	2	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Ichneutica	lignana	Ichneutica lignana	N	Adult	2	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Crambidae	Eudonia	sabulosella	Eudonia sabulosella	N	Adult	2	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Crambidae	Scoparia	panopla	Scoparia panopla	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Crambidae	Scoparia	niphospora	Scoparia niphospora	N	Adult	2	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Pterophoridae	Amblyptilia	repletalis	Amblyptilia repletalis	N	Adult	10	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Tortricidae	Clepsis	leucaniana	Clepsis leucaniana	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Geometridae	Pasiphila	humilis	Pasiphila humilis	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Geometridae	Pasiphila	halianthes	Pasiphila halianthes	N	Adult	3	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Geometridae	Pasiphila	erratica	Pasiphila erratica	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Geometridae	Pasiphila	sandycias	Pasiphila sandycias	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Geometridae	Pasiphila	sp.n	Pasiphila sp.n	Y	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Geometridae	Pasiphila	indet.	Pasiphila indet.	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Noctuidae	Ichneutica	unica	Ichneutica unica	N	Adult	1	Not Threatened	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Crambidae	Orocrambus	ramosellus	Orocrambus ramosellus	N	Adult	2	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Crambidae	Orocrambus	lewisii	Orocrambus lewisii	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Crambidae	Eudonia	submarginalis	Eudonia submarginalis	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Crambidae	Eudonia	legnota	Eudonia legnota	N	Adult	1	Not Assessed	Will Frost
19/01/2026	45.067	168.832	Insecta	Lepidoptera	Plutellidae	Proditrix	megalynta	Proditrix megalynta	N	Adult	1	Not Assessed	Will Frost

Appendix E: New Zealand Wetland Data Forms.

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: 1 Doolans. Region: Doolans Sampling point/ID: Site 2
 Owner/address: DOC Date: 26/3/25 Land use: Conservation land
 Landform: adjacent farm. Local relief: gentle slope - 20m Land cover: tussock grassland
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): LSW, AD Slope: 23°
 GPS (NZTM): 643 Altitude m: _____ Photo Nos: LSW ph. 3273

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ YES ☐ NO (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? ☒ YES ☐ NO
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ exclusion? NO ☐ Hydrophytic vegetation present? YES ☐ NO ☐
 Hydric soils present? YES ☐ NO ☒ Wetland hydrology present? YES ☐ NO ☒
 Is the sampled area within a wetland? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover	Pasture Exclusion Test:
Tree Stratum (Plot size: _____)					Pasture cover/Total vegetation cover (P/TVC) x100 = _____%
1. _____					☐ Rapid Pasture Test
2. _____					☐ Pasture Exclusion Test is >50%
3. _____					
4. _____					
Total tree cover (TT) = _____	50%	20%			
Sapling/Shrub Stratum (Plot size: <u>4m²</u>)					Dominance Test:
1. <u>Chimac</u>	<u>60</u>				No. Dominant Spp. OBL/FACW/FAC (A) <u>n/a</u>
2. <u>Dio</u>					Tot. Dominant Spp. across strata (B) <u>2</u>
3. _____					% OBL/FACW/FAC (A/B) <u>n/a</u>
4. _____					
5. _____					
Total sapling/shrub cover (TS) = _____	50%	20%			Prevalence Index:
Herb Stratum (Plot size: <u>2x2</u>)					Total % cover of: Multiply by:
1. <u>Draecyns</u>	<u>30</u>	<u>Y</u>	<u>N/a</u>		OBL <u>/</u> x 1 = _____
2. <u>Aci Kauri</u>	<u>1</u>	<u>-</u>	<u>N/a</u>		FACW <u>/</u> x 2 = _____
3. <u>Mosi</u>	<u>1</u>	<u>-</u>	<u>N/a</u>		FAC <u>4</u> x 3 = <u>12</u>
4. <u>Cel lyallii</u>	<u>1</u>	<u>-</u>	<u>N/a</u>		FACU <u>63</u> x 4 = <u>252</u>
5. <u>Chimac</u>	<u>60</u>	<u>Y</u>	<u>N/a (FACU)</u>		UPL/Na <u>29</u> x 5 = <u>145</u>
6. <u>Phy colensoi</u>	<u>1</u>	<u>-</u>	<u>FAC</u>		Total <u>96</u> (A) <u>409</u> (B)
7. <u>Gau dop</u>	<u>1</u>	<u>-</u>	<u>FACU</u>		Prevalence Index (B/A) = <u>4.26</u>
8. <u>Cel hestii</u>	<u>1</u>	<u>-</u>	<u>N/a</u>		
9. <u>Cre linata</u>	<u>1</u>	<u>-</u>	<u>N/a</u>		
10. <u>Cel latis</u>	<u>1</u>	<u>-</u>	<u>N/a</u>		
11. <u>Dunsg gla</u>	<u>1</u>	<u>-</u>	<u>N/a</u>		
12. <u>Poa col</u>	<u>1</u>	<u>-</u>	<u>N/a</u>		
13. <u>Elm imb</u>	<u>1</u>	<u>-</u>	<u>FACU</u>		
14. <u>Epi als</u>	<u>1</u>	<u>-</u>	<u>FACU</u>		
15. <u>Luz pum</u>	<u>1</u>	<u>-</u>	<u>UPL</u>		
16. <u>Marispermum</u>	<u>3</u>	<u>-</u>	<u>FAC</u>		
17. <u>Rock</u>	<u>10</u>	<u>-</u>	<u>-</u>		
18. _____					
Total herb cover (TH) = <u>106</u>	50%	20%			
<u>96 not inc rock</u>					
Total Vegetation Cover (TVC): TT+TS+TH = <u>96</u>	50%	20%			

Hydrophytic vegetation indicators:
☐ Rapid Test
☐ Dominance Test is >50%
☐ Prevalence Index is $\leq 3.0^1$
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks: unable to be assessed due to indicator status not being assigned.

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-8	10YR 3/2		-			unmineral	shallow profile - rock

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Cause of wetness (circle appropriate):

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley OR
☐ Mottled

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Layers: Depth (cm) 8cm Rock

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

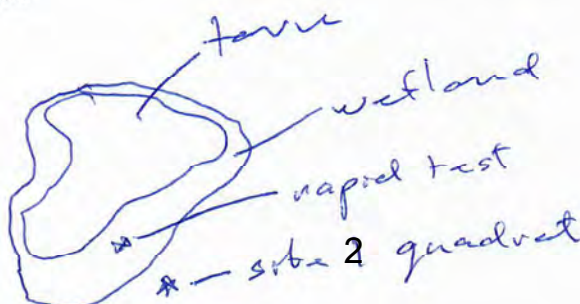
- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/soil:



Remarks:

#5269 - NM Phone.

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Doolans. Region: Remarks Sampling point/ID: site 4
 Owner/address: DOC Date: 26/03/25 Land use: Conservation.
 Landform: slope Local relief: long hill 50m Land cover: rock
 Is the land drained? YES ☒ UNKNOWN ☐ Investigator(s): CSW, GID Slope: 10°
 GPS (NZTM): 646 Altitude m: Photo Nos: # 3276

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ YES ☐ NO (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? ☒ YES ☐ NO
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ exclusion? NO ☐ Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size:) % cover Species? Status % cover

1.
 2.
 3.
 4.

Total tree cover (TT) = 50% 20%

Sapling/Shrub Stratum (Plot size:)

1.
 2.
 3.
 4.
 5.

Total sapling/shrub cover (TS) = 50% 20%

Herb Stratum (Plot size:)

1. Cop per 1 Y FAC
 2. Ch. mac 3 Y N/A (FACU)
 3. Mel alp 2 Y FACU
 4. poly cystostegia 2 Y N/A
 5. austroblechnum PM <1 Y FAC
 6. Poa col <1 Y N/A
 7. rock 90% Y ✓

8.
 9.
 10.
 11.
 12.
 13.
 14.
 15.
 16.
 17.
 18.

Total herb cover (TH) = 100 50% 0 20% 0

10 not inc rock

Total (P) =

Total Vegetation Cover (TVC): TT+TS+TH = 10 50%

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) 2
 Tot. Dominant Spp. across strata (B) 6
 % OBL/FACW/FAC (A/B) 33.33%

Prevalence Index:

Total % cover of: Multiply by:
 OBL ✓ x 1 =
 FACW ✓ x 2 =
 FAC 2 x 3 = 6
 FACU 5 x 4 = 20
 UPL 3 x 5 = 15
 Total 10 (A) 44 (B)

Prevalence Index (B/A) = 4.4

Hydrophytic vegetation indicators:

☐ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
							Rock

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductomorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

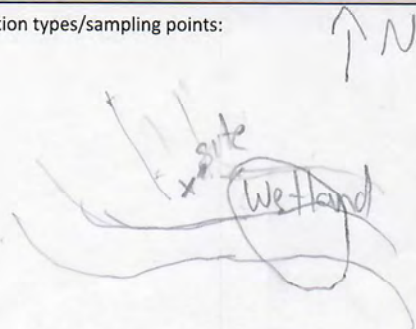
- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:



Remarks:

Site 4 Lram photo

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Poohans Region: Remarke (of age) Sampling point/ID: site 6
 Owner/address: DOC Date: 26/03/26 Land use: Conservation
 Landform: slope/hillside Local relief: 50-100 Land cover: Tussock
 Is the land drained? YES NO UNKNOWN NO Investigator(s): CSW GD Slope: 10°
 GPS (NZTM): 648 Altitude m: Photo Nos: #3279

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (if NO explain in Remarks)
 Are Vegetation Soil or Hydrology significantly disturbed? NO Are 'Normal Circumstances' present? YES NO
 Are Vegetation Soil or Hydrology naturally problematic? NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 exclusion? NO ☐ Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: <u> </u>)				
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
Total tree cover (TT) = <u> </u>	50% <u> </u>	20% <u> </u>		
Sapling/Shrub Stratum (Plot size: <u> </u>)				
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
Total sapling/shrub cover (TS) = <u> </u>	50% <u> </u>	20% <u> </u>		
Herb Stratum (Plot size: <u> </u>)				
1. <u>chi mac</u>	40	Y	N/a (FACU)	
2. <u>poa col</u>	5	N	N/a	
3. <u>poly cyst</u>	2	N	N/a	
4. <u>cop nephopila</u>	2	N	N/a	
5. <u>plantago lanigera</u>	1	N	FAC	
6. <u>aci kirk</u>	1	N	N/a	
7. <u>cel haast</u>	1	N	N/a	
8. <u>gau dep</u>	1	N	FACU	
9. <u>Kelleria childii</u>	1	N	N/a	
10. <u>carissa gland</u>	1	N	N/a	
11. <u>carax edura</u>	1	N	FAC	
12. <u>blechnum PM</u>	1	N	FAC	
13. <u>rock</u>	60	N	✓	
14. <u> </u>				
15. <u> </u>				
16. <u> </u>				
17. <u> </u>				
18. <u> </u>				
Total herb cover (TH) = <u>117</u>	50% <u>0</u>	20% <u>1</u>		
<u>57 not inc rock</u>				
Total (P) = <u> </u>				
Total Vegetation Cover (TVC): TT+TS+TH = <u>57</u>	50% <u>0</u>			

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover (P/TVC) x100 = %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:
 Total % cover of: Multiply by:
 OBL x 1 =
 FACW x 2 =
 FAC 3 x 3 = 9
 FACU 41 x 4 = 164
 UPL 13 x 5 = 65
 Total 57 (A) 238 (B)
 Prevalence Index (B/A) = 4.17

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-3	10YR 3/2					mineral	Gravelly sand
3+						Rock	silt loam

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) ☒ W ☐ MW ☐ P ☐ VP

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:



Remarks:

Site 6
Photo NM-5272

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Doodans. Region: Remarke Sampling point/ID: site 8
 Owner/address: DOC Date: 26/03/25 Land use: tussock
 Landform: Slope Local relief: 50-100m Land cover: Conservation
 Is the land drained? YES ☒ UNKNOWN ☐ Investigator(s): CSW, GP Slope: 15-20°
 GPS (NZTM): 650 Altitude m: Photo Nos: # 3281

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ exclusion? NO ☐ Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size: 1m) % cover Species? Status % cover

1.
 2.
 3.
 4.

Total tree cover (TT) = 50% 20%

Sapling/Shrub Stratum (Plot size: 1m)

1.
 2.
 3.
 4.
 5.

Total sapling/shrub cover (TS) = 50% 20%

Herb Stratum (Plot size: 2m)

1. chi mac 40 X N/A (FACU)
 2. Acaena sacc 1 N FACU
 3. aci Kirk 2 N N/A
 4. viola cunninghamii 1 N FAC
 5. blechnum P.M 10 N FAC
 6. lept pect 2 N N/A
 7. carex edura 5 N FAC
 8. epi alsinoides 1 N FACU
 9. plantago lag 1 N FAC
 10. poa col 5 N N/A
 11. rock 50 1 ✓

Total herb cover (TH) = 118 50% 0 20% 1
68 not inc rock

Total Vegetation Cover (TVC): TT+TS+TH = 68 50% 0

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:

Total % cover of: Multiply by:
 OBL x 1 =
 FACW x 2 =
 FAC 17 x 3 = 51
 FACU 42 x 4 = 168
 UPL/NA 9 x 5 = 45
 Total 68 (A) 264 (B)
 Prevalence Index (B/A) = 3.88

Hydrophytic vegetation indicators:

☐ Rapid Test
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-6	10YR 2/7					Roots / litter - organic	
6+						Rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) ☒ W ☐ MW ☐ P ☐ VP

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductomorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:



Remarks:

Site 8
photo = NM 5273

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Pedans Region: Remarks Sampling point: Site 11
 Owner: DOC Date: 26/03/05 Land use: Conservation
 Landform: _____ Local relief: Convex Land cover: Tussock
 Is the land drained (circle) YES NO Investigator(s): 100+ m LSW, GP Soil °C: / Slope°: <30
 GPS (NZTM): 654 Altitude m: _____ Photo Nos: #3289-LSW

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) No Are 'normal circumstances' present? (circle) YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____			
2. _____			
3. _____			
4. _____			
5. _____			
Total cover = _____			
Herb Stratum (Plot size: _____)			
1. <u>Chy mac</u>	<u>80</u>	<u>Y</u>	<u>N/A (FACU)</u>
2. <u>astelia nerv</u>	<u>15</u>	<u>N</u>	<u>FACU</u>
3. <u>ver hec</u>	<u>10</u>	<u>N</u>	<u>N/A</u>
4. <u>Dra mns</u>	<u>1</u>		<u>N/A</u>
5. <u>rao gra</u>	<u>1</u>		<u>N/A</u>
6. <u>gan dep</u>	<u>1</u>		<u>FACU</u>
7. <u>tel lya</u>	<u>1</u>		<u>N/A</u>
8. <u>gen chromolaena</u>	<u>1</u>		<u>N/A</u>
9. <u>rel haa</u>	<u>2</u>		<u>N/A</u>
10. <u>geum rockaynei</u>	<u>1</u>		<u>N/A</u>
11. <u>poa col</u>	<u>5</u>		<u>N/A</u>
12. <u>sch pac</u>	<u>2</u>		<u>FACU</u>
Total cover = <u>120</u>			
Total veg cover = <u>120</u>		<u>50% = 1</u>	<u>50% = 1</u>

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:

Total % cover of: Multiply by:
 OBL 1 x1 = 1
 FACW 2 x2 = 4
 FAC 96 x3 = 288
 FACU 22 x4 = 88
 UPL 120 x5 = 600
 Total 120 (A) 498 (B)
 Prevalence Index (B/A) = 4.15

Hydrophytic vegetation Indicators:

☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-3	2.5Y4/1					mineral	medium roots + OM
3-19	2.5Y5/1					mineral	fine roots
19+						Rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W (MW) I P VP

Organic layers:

☐ Organic soil material

☐ Litter

☐ Fibric

☐ Mesic

☐ Humic

☐ Peaty topsoil

☐ Peaty subsoil

Concretions:

☐ Iron concretions

☐ Manganese concretions

☐ Nodular

Consistence:

☐ Plastic

☐ Sticky

☐ Fluid

Colours: profile form either:

☐ Gley profile OR

☐ Mottled profile

Horizon:

☐ Reductimorphic

☐ Redox mottled

☐ Redox segregations

☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present? YES ☐ NO ☒ UNCERTAIN ☐ NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply Soil °C _____

☐ Surface water (1A)

☐ Groundwater <30 cm (1B)

☐ Soil saturation <30 cm (1C)

☐ Water marks (2A)

☐ Sediment deposits (2B)

☐ Drift deposits (2C)

☐ Algal mat/crust (2D)

☐ Iron deposits (2E)

☐ Surface soil cracks (2F)

☐ Inundation on aerial imagery (2G)

☐ Sparsely vegetated concave surface (2H)

☐ Salt crust (2I)

☐ Aquatic invertebrates (2J)

☐ Hydrogen sulphide odour (3A)

☐ Oxidised rhizosphere on roots (3B)

☐ Reduced iron (3C)

☐ Reduced iron in tilled soil (3D)

☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

☐ Water-stained leaves (2K)

☐ Drainage patterns (2L)

☐ Dry-season water table (3E)

☐ Saturation in aerial imagery (3F)

☐ Geomorphic position (4B)

☐ Shallow aquitard (4C)

☐ FAC-neutral test (4D)

☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)

2. No. FACU & UPL dominant species _____ (B)

3. Total _____ (A+B)

4. FAC-neutral (>50%) _____ (A/(A+B)*100)

Wetland hydrology present? YES ☐ NO ☒

Sketch of site/vegetation types/sampling points:

Remarks: Site 11
photo - NM 8274

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doodans. Region: Remarke Sampling point: site 12
 Owner: DOC Date: 26/03/25 Land use: Conservation
 Landform: Seepage Local relief: concave Land cover: rushes
 Is the land drained (circle) YES ☒ NO ☐ Investigator(s): LSW GP Soil °C: _____ Slope°: 5°
 GPS (NZTM): 655 Altitude m: _____ Photo Nos: #3290

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ YES ☐ NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) ☒ YES ☐ NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☒ NO ☐ Is the sampled area within a wetland? YES ☒ NO ☐
 Hydric soils present? YES ☒ NO ☐
 Wetland hydrology present? YES ☒ NO ☐

SECTION B – VEGETATION

Use scientific names of plants.	Absolute	Dominant	Indicator
Tree Stratum (Plot size: _____)	% cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. <u>ger micro</u>	<u>1</u>	_____	_____
Total cover = _____			
Herb Stratum (Plot size: <u>2x2</u>)			
1. <u>chi mac</u>	<u>15</u>	<u>N</u>	<u>N/a (FACU)</u>
2. <u>sch pac</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>
3. <u>caltha obt</u>	<u>40</u>	<u>Y</u>	<u>OBL</u>
4. <u>mars</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
5. <u>craspedia</u>	<u>1</u>	<u>N</u>	<u>N/a</u>
6. <u>plantago unibr</u>	<u>5</u>	<u>N</u>	<u>OBL</u>
7. <u>euchiton lat</u>	<u>1</u>	<u>N</u>	<u>FACW</u>
8. <u>acaena sac</u>	<u>1</u>	<u>N</u>	<u>FACU</u>
9. <u>celmisia alpina</u>	<u>1</u>	<u>N</u>	<u>OBL</u>
10. <u>cop perpusilla</u>	<u>5</u>	<u>N</u>	<u>N/a</u>
11. <u>cel haast</u>	<u>1</u>	<u>N</u>	<u>N/a</u>
12. <u>anisotome aromatica</u>	<u>1</u>	<u>N</u>	<u>FACU</u>
Total cover = <u>116</u>			

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 2
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 100%

Prevalence Index:
 Total % cover of: Multiply by:
 OBL 41 x 1 = 41
 FACW 41 x 2 = 82
 FAC 5 x 3 = 15
 FACU 12 x 4 = 68
 UPL/N/a 7 x 5 = 35
 Total 111 (A) 241 (B)
 Prevalence Index (B/A) = 2.17

Hydrophytic vegetation indicators:
☒ Dominance Test is >50%
☒ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☒
 NO ☐
 UNCERTAIN ☐

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-10						humic organic	
10-25						mineral med + fine rocks	
25-	SR 25/2					Rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Organic layers:

- ☐ Organic soil material
☒ Litter
☐ Fibric
☒ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☒ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley OR
☐ Mottled

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Layers: Depth (cm) 25cm rock

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☒

NO ☐

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- | | | |
|---|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☒ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☒ Geomorphic position (4B) |
| ☒ Drainage patterns (2L) | ☒ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

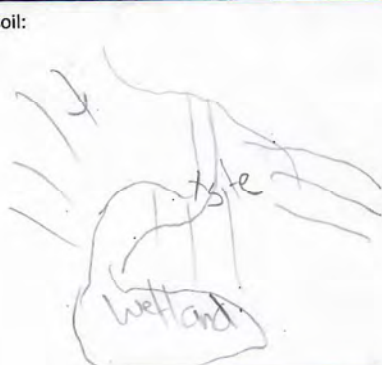
- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☒

NO ☐

Sketch of site/soil:



Remarks:

Site 12

Photo - NM 5275

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Pootams Region: Remarks Sampling point: site 13
 Owner: DOC Date: 26/03/95 Land use: Conservation
 Landform: Seepage wetland Local relief: 50+ m Land cover: herb/rushes
 Is the land drained (circle) YES ☒ NO ☐ Investigator(s): CSW, GP Soil °C: _____ Slope: 5°
 GPS (NZTM): 656 Altitude m: _____ Photo Nos: # 3291

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) No Are 'normal circumstances' present? (circle) ☒ YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☒ NO ☐ Is the sampled area within a wetland? YES ☒ NO ☐
 Hydric soils present? YES ☒ NO ☐
 Wetland hydrology present? YES ☒ NO ☐

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator
 Tree Stratum (Plot size: _____) % cover Species? Status
 1. _____
 2. _____
 3. _____
 4. _____

Total cover = _____

Sapling/Shrub Stratum (Plot size: _____)
 1. _____
 2. _____
 3. _____
 4. _____
 5. Sch pac 15 FACW

Total cover = _____

Herb Stratum (Plot size: _____)
 1. Poa col 25 Y N/A
 2. caltha obt 20 Y OBL
 3. chi mac 5 N/A
 4. cal sess 3 FACW
 5. abrotanella caes 20 Y FACW
 6. anisotome aro 2 FACW
 7. ourisia gland 1 N/A
 8. plantago unifr 20 Y OBL
 9. erachiton lat 1 OBL
 10. craspedi lanata 1 N/A
 11. caprosma perp 2 N/A
 12. calmisia alpina 1 OBL
 Total cover = 116

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) 3
 Tot. Dominant Spp. across strata (B) 4
 % OBL/FACW/FAC (A/B) 75%

Prevalence Index:

Total % cover of: Multiply by:
 OBL 42 x 1 = 42
 FACW 20 x 2 = 40
 FAC 1 x 3 = 3
 FACU 10 x 4 = 40
 UPL 29 x 5 = 145
 Total 101 (A) 267 (B)
 Prevalence Index (B/A) = 2.643

n/a taken as UPL to show whether it is wetland regardless

Hydrophytic vegetation indicators:

☒ Dominance Test is >50%
☒ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☒
 NO ☐
 UNCERTAIN ☐

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-10	7.5YR 2.5/2					humic	med + fine roots
10-30	2.5Y 4/1					mineral	fine roots
30+						rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☒ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley OR
☐ Mottled

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Layers: Depth (cm) rock 30

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☒

NO ☐

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- ☐ Surface water (1A)
☐ Groundwater <30 cm (1B)
☐ Soil saturation <30 cm (1C)
☐ Water marks (2A)
☐ Sediment deposits (2B)
☐ Drift deposits (2C)

- ☐ Algal mat/crust (2D)
☒ Iron deposits (2E)
☐ Surface soil cracks (2F)
☐ Inundation on aerial imagery (2G)
☐ Sparsely vegetated concave surface (2H)
☐ Salt crust (2I)

- ☐ Aquatic invertebrates (2J)
☐ Hydrogen sulphide odour (3A)
☐ Oxidised rhizosphere on roots (3B)
☐ Reduced iron (3C)
☐ Reduced iron in tilled soil (3D)
☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
☐ Drainage patterns (2L)
☐ Dry-season water table (3E)
☐ Saturation in aerial imagery (3F)

- ☒ Geomorphic position (4B)
☒ Shallow aquitard (4C)
☐ FAC-neutral test (4D)
☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)

2. No. FACU & UPL dominant species _____ (B)

3. Total _____ (A+B)

4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☒

NO ☐

Sketch of site/soil:



Remarks:

site 13
 photo - NM 5276

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarks Sampling point: Site 14
 Owner: Doc Date: 26/03/26 Land use: Conservation
 Landform: hills Local relief: 50-100 Convex Land cover: Tussock
 Is the land drained (circle) YES ☒ NO ☐ Investigator(s): LSW, GD Soil °C: Slope: 1-2
 GPS (NZTM): 658 LSW Altitude m: Photo Nos: #3292 LSW

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) ☒ NO Are 'normal circumstances' present? (circle) ☒ YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) ☒ NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: <u> </u>)			
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Total cover = <u> </u>			
Sapling/Shrub Stratum (Plot size: <u> </u>)			
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Total cover = <u> </u>			
Herb Stratum (Plot size: <u>2x2</u>)			
1. <u>Poa col</u>	<u>15</u>	<u>N</u>	<u>N/a</u>
2. <u>chi mac</u>	<u>85</u>	<u>X</u>	<u>N/a / FACU</u>
3. <u>cel lyallii</u>	<u>25</u>	<u>N</u>	<u>N/a</u>
4. <u>cel haastii</u>	<u>3</u>	<u>N</u>	<u>N/a</u>
5. <u>epi alsinoides</u>	<u><1</u>	<u>N</u>	<u>FACU</u>
6. <u>chi rid</u>	<u>5</u>	<u>N</u>	<u>FAC</u>
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>
12. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Total cover = <u>134</u>			

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) n/a
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B)

Prevalence Index:
 Total % cover of: Multiply by:
 OBL x1 =
 FACW x2 =
 FAC 5 x3 = 15
 FACU 86 x4 = 344
 UPL 128 x5 = 640
 Total 134 (A) 574 (B)
 Prevalence Index (B/A) = 4.28

Hydrophytic vegetation Indicators:
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations² (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐
 NO ☒
 UNCERTAIN ☒ X

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
7cm	10YR4/1					mineral	fine roots
7+						Rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley OR
☐ Mottled

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Layers: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)

2. No. FACU & UPL dominant species _____ (B)

3. Total _____ (A+B)

4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/soil:



Remarks:

Site 14
Photo - NM 5277

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Doodans. Region: Remarcks Sampling point/ID: site 15
 Owner/address: DOC Date: 26/03/25 Land use: Conservation.
 Landform: Scarp Local relief: 50-100+m Land cover: herbs
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): CSW, GP Slope: 2°
 GPS (NZTM): 659 Altitude m: _____ Photo Nos: # 3293

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO ☐

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ exclusion? NO ☐ Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☒ NO ☐
 Hydric soils present? YES ☐ NO ☐
 Wetland hydrology present? YES ☐ NO ☐

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size: _____) % cover Species? Status % cover

1. _____
 2. _____
 3. _____
 4. _____

Total tree cover (TT) = _____ 50% _____ 20% _____

Sapling/Shrub Stratum (Plot size: _____)

1. _____
 2. _____
 3. _____
 4. _____
 5. _____

Total sapling/shrub cover (TS) = _____ 50% _____ 20% _____

Herb Stratum (Plot size: _____)

Scientific Name	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
1. <u>chi mac</u>	10	N	N/A	FAC
2. <u>cel sess</u>	10	N	FAC	
3. <u>caltha obt</u>	60	Y	OBL	
4. <u>schoenus pac</u>	30	Y	FACW	
5. <u>plumbago unibr</u>	10	N	OBL	
6. <u>Abrotonella caes</u>	2	N	FACW	
7. <u>oreoholus pect</u>	2	N	OBL	
8. <u>phyllachne colen</u>	3	N	FAC	
9. <u>cat haast</u>	1	N	N/A	
10. <u>gantheria parvula</u>	2	N	FAC	
11. <u>poa col</u>	5	N	N/A	
12. <u>gemma covy</u>	1	N	N/A	
13. _____				
14. _____				
15. _____				
16. _____				
17. _____				
18. _____				

Total herb cover (TH) = 136 50% 1 20% 1

Total (P) = _____

Total Vegetation Cover (TVC): TT+TS+TH = _____ 50% _____

Pasture Exclusion Test:

Pasture cover/Total vegetation cover
 (P/TVC) x100 = _____ %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) 2
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 100

Prevalence Index:

Total % cover of:	Multiply by:
OBL <u>72</u>	x 1 = <u>72</u>
FACW <u>32</u>	x 2 = <u>64</u>
FAC <u>5</u>	x 3 = <u>15</u>
FACU <u>20</u>	x 4 = <u>80</u>
UPL <u>7</u>	x 5 = <u>35</u>
Total <u>136</u> (A)	<u>266</u> (B)

Prevalence Index (B/A) = 1.955

Hydrophytic vegetation indicators:

☒ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is $\leq 3.0^1$
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☒ NO ☐ UNCERTAIN ☐

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-3	10YR 3/2					organic	very little
3-16	2.5Y 5/1					mineral	silt
16-22						mineral	gravelly silt

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Organic layers:

- ☒ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☒ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☒ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

- Location: Depression Flat Valley Gully Slope
 Water table: Depth (cm) _____
 High GW Perched Seepage Tidal Lithic
 Pans: Depth (cm) _____
 Pan Humus Fe-pan Densi- Duri- Fragi Ortstein
 Restricting layers: Depth (cm) _____
 Slow perm argillic
☐ Pugged

Hydric soils present?

YES ☒

NO ☐

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☒ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☒ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)
 2. No. FACU & UPL dominant species _____ (B)
 3. Total _____ (A+B)
 4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☒

NO ☐

Sketch of site/vegetation types/sampling points:



Remarks:

Site 15
 photo-NM 5278

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Conservation Region: Remarks Sampling point/ID: site 18
 Owner/address: DOC Date: 26/03/25 Land use: Conservation
 Landform: hill slope Local relief: convex/flat slope Land cover: tussock/herb
 Is the land drained? YES NO UNKNOWN NO Investigator(s): SOM Slope: 3-50
 GPS (NZTM): 665 Altitude m: Photo Nos: #3298

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (if NO explain in Remarks)
 Are Vegetation Soil or Hydrology significantly disturbed? NO Are 'Normal Circumstances' present? YES NO
 Are Vegetation Soil or Hydrology naturally problematic? NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within YES ☐
 exclusion? NO ☐ Hydric soils present? YES ☐ NO ☒ a wetland? NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size:) % cover Species? Status % cover

1.
 2.
 3.
 4.
 Total tree cover (TT) = 50% 20%

Sapling/Shrub Stratum (Plot size:)

1.
 2.
 3.
 4.
 5.
 Total sapling/shrub cover (TS) = 50% 20%

Herb Stratum (Plot size:)

1. Dra mus 10 N/A
 2. poa col 10 N/A
 3. chi mac 20 Y N/A (FACU)
 4. rao sub 2 N/A
 5. cop perp 50 Y N/A
 6. rao grand 10 N/A
 7. aci kerk 1 N/A
 8. lycopodium fast 1 FAC
 9. luzula rufa 1 N/A
 10. gan dep 1 FACU
 11. gent corum 1 N/A
 12. Wahlen alba 1 FACU
 13. plantago tog lan 1 FAC
 14. pilosella sll 1 FACU
 15. tussock hawkewood 1 UPL
 16. ger micro 1 FACU
 17. Agrostegium mackayii 1 FACU
 18.

Total herb cover (TH) = 113 50% 1 20% 1

Total (P) =

Total Vegetation Cover (TVC): TT+TS+TH = 113 50%

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = %
☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 0%

Prevalence Index:
 Total % cover of: Multiply by:
 OBL x 1 =
 FACW x 2 =
 FAC 2 x 3 = 6
 FACU 25 x 4 = 100
 UPL x 5 =
 Total 113 (A) 536 (B)
 Prevalence Index (B/A) = 4.743

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-3						Organic	
3-15	10YR 4/2					Mineral	fine roots
15+						Rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope Slight
 Water table: Depth (cm) _____
 High GW Perched Seepage Tidal Lithic
 Pans: Depth (cm) _____
 Pan Humus Fe-pan Densi- Duri- Fragi Ortstein
 Restricting layers: Depth (cm) 15cm rock
 Slow perm argillic
☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☒ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)
 2. No. FACU & UPL dominant species _____ (B)
 3. Total _____ (A+B)
 4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:



Remarks:

Site 18
 photo: NM 5279

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarks Sampling point/ID: site 19
 Owner/address: DOC Date: 26/03/25 Land use: Conservation
 Landform: hillslope Local relief: 20 convex, 100+ above Land cover: herb/grassland
 Is the land drained? YES NO UNKNOWN Investigator(s): CSW, GP Slope: 2°
 GPS (NZTM): 667 Altitude m: Photo Nos: #3301

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (if NO explain in Remarks)
 Are Vegetation Soil or Hydrology significantly disturbed? No Are 'Normal Circumstances' present? YES NO
 Are Vegetation Soil or Hydrology naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐ NO ☒
 exclusion? NO ☐ Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size:) % cover Species? Status % cover

1.
 2.
 3.
 4.

Total tree cover (TT) = 50% 20%

Sapling/Shrub Stratum (Plot size:)

1.
 2.
 3.
 4.
 5.

Total sapling/shrub cover (TS) = 50% 20%

Herb Stratum (Plot size:)

1. Chi mac 7 n n/a FACU
 2. poa col 5 n n/a
 3. copp perp 30 x FAC
 4. kuia fast 10 x FAC
 5. rao ground 5 n N/a
 6. pimella notia 2 n N/a
 7. aci Kirk 1 n N/a
 8. gan dep 2 n FAC
 9. plantago lag 1 n FAC
 10. wahlen albo 1 n FAC
 11. gan parv 10 x FAC
 12. rytido sperm pum 2 n N/a
 13. bare ground ~40% - -
 14.
 15.
 16.
 17.
 18.

Total herb cover (TH) = 116 50% 20%

76 not inc bare ground

Total (P) =

Total Vegetation Cover (TVC): TT+TS+TH = 50%

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 3
 Tot. Dominant Spp. across strata (B) 3
 % OBL/FACW/FAC (A/B) 100%

Prevalence Index:
 Total % cover of: Multiply by:
 OBL 1 x 1 = 1
 FACW 1 x 2 = 2
 FAC 23 x 3 = 39
 FACU 8 x 4 = 32
 UPL 45 x 5 = 225
 Total 76 (A) 296 (B)
 Prevalence Index (B/A) = 3.894

Hydrophytic vegetation indicators:

☒ Rapid Test
☒ Dominance Test is >50%
☒ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-13	7.5YR 3/2					mineral	med - v fine roots
3-13	7.5YR 3/2					mineral	fine - v fine roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators: <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Organic layers:</p> <p>☐ Organic soil material</p> <p>☐ Litter</p> <p>☐ Fibric</p> <p>☐ Mesic</p> <p>☐ Humic</p> <p>☐ Peaty topsoil</p> <p>☐ Peaty subsoil</p> </div> <div style="width: 45%;"> <p>Concretions:</p> <p>☐ Iron concretions</p> <p>☐ Manganese concretions</p> <p>☐ Nodular</p> <p>Consistence:</p> <p>☐ Plastic</p> <p>☐ Sticky</p> <p>☐ Fluid</p> </div> <div style="width: 45%;"> <p>Colours: profile form either:</p> <p>☐ Gley profile OR</p> <p>☐ Mottled profile</p> <p>Horizon:</p> <p>☐ Reductomorphic</p> <p>☐ Redox mottled</p> <p>☐ Redox segregations</p> <p>☐ Perch-gley features</p> </div> </div>		<p>Soil drainage (circle) W MW I P VP</p> <p>Cause of wetness (circle appropriate):</p> <p>Location: Depression Flat Valley Gully Slope</p> <p>Water table: Depth (cm) _____</p> <p>High GW Perched Seepage Tidal Lithic</p> <p>Pans: Depth (cm) _____</p> <p>Pan Humus Fe-pan Densi- Duri- Fragi Ortstein</p> <p>Restricting layers: Depth (cm) _____</p> <p>Slow perm argillic</p> <p>☐ Pugged</p>
Hydric soils present? YES ☐ NO ☒ UNCERTAIN ☐ NZSC subgroup _____		

Primary hydrology indicators: minimum of 1 required; check all boxes that apply Soil °C _____

☐ Surface water (1A)	☐ Algal mat/crust (2D)	☐ Aquatic invertebrates (2J)
☐ Groundwater <30 cm (1B)	☐ Iron deposits (2E)	☐ Hydrogen sulphide odour (3A)
☐ Soil saturation <30 cm (1C)	☐ Surface soil cracks (2F)	☐ Oxidised rhizosphere on roots (3B)
☐ Water marks (2A)	☐ Inundation on aerial imagery (2G)	☐ Reduced iron (3C)
☐ Sediment deposits (2B)	☐ Sparsely vegetated concave surface (2H)	☐ Reduced iron in tilled soil (3D)
☐ Drift deposits (2C)	☐ Salt crust (2I)	☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

☐ Water-stained leaves (2K) ☐ Drainage patterns (2L) ☐ Dry-season water table (3E) ☐ Saturation in aerial imagery (3F)	☒ Geomorphic position (4B) ☐ Shallow aquitard (4C) ☐ FAC-neutral test (4D) ☐ Frost-heave hummocks (4E)	<p>FAC-neutral test (4D); refer to Section B: Vegetation</p> <p>1. No. OBL & FACW dominant species _____ (A)</p> <p>2. No. FACU & UPL dominant species _____ (B)</p> <p>3. Total _____ (A+B)</p> <p>4. FAC-neutral (>50%) _____ (A/A+B)*100</p>
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Wetland hydrology present? YES ☐ NO ☒

Sketch of site/vegetation types/sampling points:



Remarks: Site II 19
photo-NM 5287

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Deatons. Region: Remarks Sampling point/ID: 21
 Owner/address: DOC Date: 26/03/25 Land use: Conservation.
 Landform: hillslope Local relief: convex / flat Land cover: tussock.
 Is the land drained? YES NO UNKNOWN NO Investigator(s): whole above basin Slope: 2°
 GPS (NZTM): 670 Altitude m: Photo Nos: 3306

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (if NO explain in Remarks)
 Are Vegetation Soil or Hydrology significantly disturbed? No Are 'Normal Circumstances' present? YES NO
 Are Vegetation Soil or Hydrology naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within YES ☐
 exclusion? NO ☐ Hydric soils present? YES ☐ NO ☒ a wetland? NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size:) % cover Species? Status % cover
 1.
 2.
 3.
 4.
 Total tree cover (TT) = 50% 20%
 Sapling/Shrub Stratum (Plot size:)
 1.
 2.
 3.
 4.
 5.
 Total sapling/shrub cover (TS) = 50% 20%
 Herb Stratum (Plot size:)
 1. chi mac 50 Y n/a/FACU
 2. Ver hae 25 Y N/a
 3. dca ros 2 N N/a
 4. poa col 15 N N/a
 5. ani flex 1 N N/a
 6. lyco fast 2 N FAC
 7. dca mus 5 N N/a
 8. cal lyallii 1 N N/a
 9. gen comynbif 1 N N/a
 10. wah albo 1 N FACU
 11. rao grand 1 N N/a
 12. phyllachne scol 2 N FAC
 13. gan dnp 1 N FACU
 14. plantago lani 1 N FAC
 15. cel haastii 1 N N/a
 16. moss 2 N
 17. luzula pumila 1 N UPL
 18.
 Total herb cover (TH) = 112 50% 1 20% 1

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) n/a
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) n/a

Prevalence Index:
 Total % cover of: Multiply by:
 OBL x 1 =
 FACW x 2 =
 FAC 5 x 3 = 15
 FACU 52 x 4 = 208
 UPL 55 x 5 = 275
 Total 112 (A) 498 (B)
 Prevalence Index (B/A) = 4.44

Hydrophytic vegetation indicators:
☐ Rapid Test
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

Total Vegetation Cover (TVC): TT+TS+TH = 50%

Total (P) =

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-5	5Y4/1					mineral	med fine root
5-22	5Y5/1	5YR 6/6	5	12mm	root face	mineral	fine U finer roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W (MW) I P VP

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☒ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

- Location: Depression Flat Valley Gully Slope
 Water table: Depth (cm) _____
 High GW Perched Seepage Tidal Lithic
 Pans: Depth (cm) _____
 Pan Humus Fe-pan Densi- Duri- Fragi Ortstein
 Restricting layers: Depth (cm) 25cm rock
 Slow perm argillic
☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☒ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☒ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

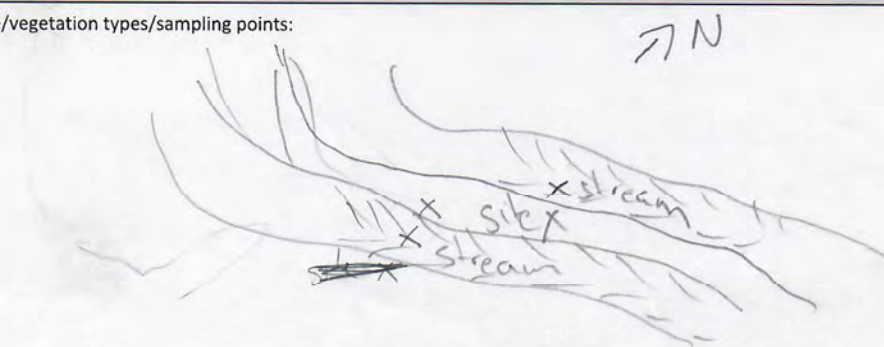
1. No. OBL & FACW dominant species _____ (A)
 2. No. FACU & UPL dominant species _____ (B)
 3. Total _____ (A+B)
 4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:



Remarks:

site: 21
 photo - NM 5284

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remark Region: Remarks (otago) Sampling point/ID: site 24
 Owner/address: DOC Date: 1/04/25 Land use: conservation
 Landform: cushionfield above wetland Local relief: ~100m N→NE Land cover: cushionfield
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): LSW, NM Slope°: 10°
 GPS (NZTM): 3437 (screenshot) Altitude m: Photo Nos: 3436

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation Soil or Hydrology significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation Soil or Hydrology naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 exclusion? NO ☐ Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: <u> </u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Total tree cover (TT) =	<u> </u>	<u>50%</u>	<u>20%</u>	<u> </u>
Sapling/Shrub Stratum (Plot size: <u> </u>)				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
Total sapling/shrub cover (TS) =	<u> </u>	<u>50%</u>	<u>20%</u>	<u> </u>
Herb Stratum (Plot size: <u> </u>)				
1. <u>Abrotanella inc</u>	<u>15</u>	<u>X</u>	<u>N/a</u>	<u> </u>
2. <u>Poa col</u>	<u>2</u>	<u>N</u>	<u>N/a</u>	<u> </u>
3. <u>chi mac</u>	<u>2</u>	<u>N</u>	<u>N/a (FACU)</u>	<u> </u>
4. <u>Carex proserpinaca</u>	<u>10</u>	<u>X</u>	<u>FAC</u>	<u> </u>
5. <u>Luz pum</u>	<u>1</u>	<u>N</u>	<u>UPL</u>	<u> </u>
6. <u>Act Kirk</u>	<u>1</u>	<u>N</u>	<u>N/a</u>	<u> </u>
7. <u>Kellaria child</u>	<u>3</u>	<u>N</u>	<u>N/a</u>	<u> </u>
8. <u>gan rub</u>	<u>15</u>	<u>X</u>	<u>FAC</u>	<u> </u>
9. <u>phy col</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	<u> </u>
10. <u>cel haast</u>	<u>1</u>	<u>N</u>	<u>N/a</u>	<u> </u>
11. <u>cel sess</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	<u> </u>
12. <u>rao ara</u>	<u>5</u>	<u>N</u>	<u>N/a</u>	<u> </u>
13. <u>Sop Anapholia</u>	<u>15</u>	<u>X</u>	<u>N/a</u>	<u> </u>
14. <u>Dra mus</u>	<u>10</u>	<u>X</u>	<u>N/a</u>	<u> </u>
15. <u>Ep: pophoriun</u>	<u>1</u>	<u>N</u>	<u>N/a</u>	<u> </u>
16. <u>rock</u>	<u>TS</u>	<u>/</u>	<u>N/a</u>	<u> </u>
17. <u>moss</u>	<u>10</u>	<u>X</u>	<u>N/a</u>	<u> </u>
18. <u>bare</u>	<u>10</u>	<u>/</u>	<u>N/a</u>	<u> </u>
Total herb cover (TH) =	<u>118</u>	<u>50%</u>	<u>20%</u>	<u> </u>
<u>103 not inc rock</u>				
Total (P) = <u> </u>				
Total Vegetation Cover (TVC): TT+TS+TH = <u> </u> 50% <u> </u>				

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover (P/TVC) x100 = %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) n/a
 Tot. Dominant Spp. across strata (B) 5
 % OBL/FACW/FAC (A/B) N/a

Prevalence Index:
 Total % cover of: Multiply by:
 OBL 1 x 1 = 1
 FACW 1 x 2 = 2
 FAC 26 x 3 = 78
 FACU 3 x 4 = 12
 UPL 79 x 5 = 395
 Total 103 (A) 485 (B)
 Prevalence Index (B/A) = 4.708

Hydrophytic vegetation indicators:
☐ Rapid Test
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-3	10YR 3/1		~			mineral	
3-10	2.5Y 4/1	7.5YR 4/4	25	5mm	ped face	mineral	Rocky
10+						Rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators: Soil drainage (circle) ☒ MW P VP			Cause of wetness (circle appropriate): Location: Depression Flat Valley Gully <u>Slope</u> Water table: Depth (cm) _____ High GW Perched Seepage Tidal Lithic Pans: Depth (cm) _____ Pan Humus Fe-pan Densi- Duri- Fragi Ortstein Restricting layers: Depth (cm) <u>10</u> Slow perm argillic ☐ Pugged
Organic layers: ☐ Organic soil material ☐ Litter ☐ Fibric ☐ Mesic ☐ Humic ☐ Peaty topsoil ☐ Peaty subsoil	Concretions: ☐ Iron concretions ☐ Manganese concretions ☐ Nodular Consistence: ☐ Plastic ☐ Sticky ☐ Fluid	Colours: profile form either: ☐ Gley profile OR ☐ Mottled profile Horizon: ☐ Reductimorphic ☐ Redox mottled ☐ Redox segregations ☐ Perch-gley features	
Hydric soils present? YES ☐ NO ☒ UNCERTAIN ☐ NZSC subgroup _____			

Primary hydrology indicators: minimum of 1 required; check all boxes that apply			Soil °C _____
☐ Surface water (1A) ☐ Groundwater <30 cm (1B) ☐ Soil saturation <30 cm (1C) ☐ Water marks (2A) ☐ Sediment deposits (2B) ☐ Drift deposits (2C)	☐ Algal mat/crust (2D) ☐ Iron deposits (2E) ☐ Surface soil cracks (2F) ☐ Inundation on aerial imagery (2G) ☐ Sparsely vegetated concave surface (2H) ☐ Salt crust (2I)	☐ Aquatic invertebrates (2J) ☐ Hydrogen sulphide odour (3A) ☐ Oxidised rhizosphere on roots (3B) ☐ Reduced iron (3C) ☐ Reduced iron in tilled soil (3D) ☐ High water table stunted/stressed plants (4A)	

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply		
☐ Water-stained leaves (2K) ☐ Drainage patterns (2L) ☐ Dry-season water table (3E) ☐ Saturation in aerial imagery (3F)	☐ Geomorphic position (4B) ☐ Shallow aquitard (4C) ☐ FAC-neutral test (4D) ☐ Frost-heave hummocks (4E)	FAC-neutral test (4D); refer to Section B: Vegetation 1. No. OBL & FACW dominant species _____ (A) 2. No. FACU & UPL dominant species _____ (B) 3. Total _____ (A+B) 4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present? YES ☐ NO ☒
--

Sketch of site/vegetation types/sampling points:

Remarks:

site 24

photo 3NM5402

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-8	5YR3/2					Peat	mass on surface
8-11	2.5Y3/2	2.5YR4/4	20	5mm	within matrix	humic	fine roots
11-15	5Y3/1					mineral	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P (VP)

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) 0

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) _____

Slow perm argillic

☐ Pugged

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☒ Humic
☒ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☒ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☒ Mottled profile

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Hydric soils present?

YES



NO



UNCERTAIN



NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|---|--|---|
| ☒ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☒ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☒ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☒ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☒ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES



NO



Sketch of site/vegetation types/sampling points:



Remarks:

site 25
 photo # 5377 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remarks Region: Remarks (otago) Sampling point/ID: site 26
 Owner/address: DOC Date: 1/04/25 Land use: Conservation
 Landform: Slight depression Local relief: 20-30m Land cover: herb/tussack
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): LSW, NM Slope: <2°
 GPS (NZTM): 1271 nm Altitude m: Photo Nos: 3375

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)

Are Vegetation ☒ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO ☐

Are Vegetation ☒ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ exclusion? NO ☐ Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size:) % cover Species? Status % cover

1.
 2.
 3.
 4.

Total tree cover (TT) = 50% 20%

Sapling/Shrub Stratum (Plot size:)

1.
 2.
 3. Cop. antipodensis 1 N N/A
 4.
 5. Carex edura 7 N FAC

Total sapling/shrub cover (TS) = 50% 20%

Herb Stratum (Plot size:)

1. chi mac 20 Y N/A (FACU)
 2. Poa col 15 N N/A
 3. Int pun 3 N UPL
 4. raoulia grand 2 N N/A
 5. colobanthus buch 1 N N/A
 6. lept pect 15 N N/A
 7. viola can 1 N N/A
 8. moss 40 Y N/A
 9. epi alsi 1 N FACU
 10. Kallieria childia 2 N N/A
 11. Abro inconspicua 1 N N/A
 12. phyllachne cal 1 N FAC
 13. Raoulia Hect 1 N N/A
 14. brachycome Mon 1 N N/A
 15. Plantago lanigera 1 N FAC
 16. pirosella oot 1 N FACU
 17. agrostis machayii 1 N FACU
 18. myosotis lyallii 1 N N/A

Total herb cover (TH) = 116 50% 0 20% 2

Total (P) =

Total Vegetation Cover (TVC): TT+TS+TH = 50%

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 0%

Prevalence Index:
 Total % cover of: Multiply by:
 OBL ☐ x 1 =
 FACW ☐ x 2 =
 FAC 9 x 3 = 27
 FACU 23 x 4 = 92
 UPL 84 x 5 = 420
 Total 116 (A) 539 (B)
 Prevalence Index (B/A) = 4.64

Hydrophytic vegetation indicators:
☐ Rapid Test
☐ Dominance Test is >50%
☐ Prevalence Index is $\leq 3.0^1$
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:
stream
depression

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-3						mineral	
3-25	2.5B/1	7.5YR 4/4	15	5	ped face	mineral	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators: Soil drainage (circle) W MW ☒ P VP			Cause of wetness (circle appropriate): Location: Depression Flat Valley <u>Gully</u> Slope Water table: Depth (cm) _____ High GW Perched Seepage Tidal Lithic Pans: Depth (cm) _____ Pan Humus Fe-pan Densi- Duri- Fragi Ortstein Restricting layers: Depth (cm) _____ Slow perm argillic ☐ Pugged
Organic layers: ☐ Organic soil material ☐ Litter ☐ Fibric ☐ Mesic ☐ Humic ☐ Peaty topsoil ☐ Peaty subsoil	Concretions: ☐ Iron concretions ☐ Manganese concretions ☐ Nodular Consistence: ☐ Plastic ☐ Sticky ☐ Fluid	Colours: profile form either: ☐ Gley profile OR ☐ Mottled profile Horizon: ☐ Reductimorphic ☐ Redox mottled ☐ Redox segregations ☐ Perch-gley features	
Hydric soils present? YES ☐ NO ☒ UNCERTAIN ☐ NZSC subgroup _____			

Primary hydrology indicators: minimum of 1 required; check all boxes that apply			Soil °C _____
☐ Surface water (1A) ☐ Groundwater <30 cm (1B) ☐ Soil saturation <30 cm (1C) ☐ Water marks (2A) ☐ Sediment deposits (2B) ☐ Drift deposits (2C)	☐ Algal mat/crust (2D) ☐ Iron deposits (2E) ☐ Surface soil cracks (2F) ☐ Inundation on aerial imagery (2G) ☐ Sparsely vegetated concave surface (2H) ☐ Salt crust (2I)	☐ Aquatic invertebrates (2J) ☐ Hydrogen sulphide odour (3A) ☐ Oxidised rhizosphere on roots (3B) ☐ Reduced iron (3C) ☐ Reduced iron in tilled soil (3D) ☐ High water table stunted/stressed plants (4A)	

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply		
☐ Water-stained leaves (2K) ☐ Drainage patterns (2L) ☐ Dry-season water table (3E) ☒ Saturation in aerial imagery (3F)	☒ Geomorphic position (4B) ☐ Shallow aquitard (4C) ☐ FAC-neutral test (4D) ☐ Frost-heave hummocks (4E)	FAC-neutral test (4D); refer to Section B: Vegetation 1. No. OBL & FACW dominant species _____ (A) 2. No. FACU & UPL dominant species _____ (B) 3. Total _____ (A+B) 4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present? YES ☐ NO ☒
--

Sketch of site/vegetation types/sampling points:



Remarks:

site 26

photo #NM 5378

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remarks Region: remarks (otago) Sampling point/ID: site 27
 Owner/address: DOC Date: 1/04/25 Land use: conservation.
 Landform: hillslope below wetland Local relief: 30m (S) contour Land cover: herbs
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): LSW, NM Slope°: 10°
 GPS (NZTM): 1272 Altitude m: _____ Photo Nos: # 3381

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ exclusion? NO ☐ Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒ Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover	Pasture Exclusion Test:
Tree Stratum (Plot size: _____)					Pasture cover/Total vegetation cover (P/TVC) x100 = _____%
1. _____	_____	_____	_____	_____	☐ Rapid Pasture Test
2. _____	_____	_____	_____	_____	☐ Pasture Exclusion Test is >50%
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
Total tree cover (TT) = _____	50% _____	20% _____			
Sapling/Shrub Stratum (Plot size: _____)					Dominance Test:
1. _____	_____	_____	_____	_____	No. Dominant Spp. OBL/FACW/FAC (A) <u>n/a</u>
2. _____	_____	_____	_____	_____	Tot. Dominant Spp. across strata (B) <u>3</u>
3. <u>Aciphylla kirk</u>	<u>1</u>	<u>-</u>	<u>N/a</u>	_____	% OBL/FACW/FAC (A/B) <u>n/a</u>
4. <u>Isotria medeoloides</u>	<u>5</u>	<u>-</u>	<u>OBL</u>	_____	
5. <u>Plantago NZ</u>	<u>1</u>	<u>-</u>	<u>FAC</u>	_____	
Total sapling/shrub cover (TS) = _____	50% _____	20% _____			Prevalence Index:
Herb Stratum (Plot size: _____)					Total % cover of:
1. <u>Chi mac</u>	<u>3</u>	<u>-</u>	<u>N/a</u>	_____	OBL <u>5</u> x 1 = <u>5</u>
2. <u>Poa cal</u>	<u>2</u>	<u>-</u>	<u>N/a</u>	_____	FACW <u>11</u> x 2 = <u>22</u>
3. <u>Euchiton lath</u>	<u>10</u>	<u>-</u>	<u>FACW</u>	_____	FAC <u>51</u> x 3 = <u>153</u>
4. <u>Plantago lanigera</u>	<u>10</u>	<u>-</u>	<u>FAC</u>	_____	FACU <u>8</u> x 4 = <u>32</u>
5. <u>cel haast</u>	<u>2</u>	<u>-</u>	<u>N/a</u>	_____	UPL <u>48</u> x 5 = <u>240</u>
6. <u>lept ped</u>	<u>15</u>	<u>Y</u>	<u>N/a</u>	_____	Total <u>123</u> (A) <u>452</u> (B)
7. <u>Carax pycnantha</u>	<u>2</u>	<u>-</u>	<u>FAC</u>	_____	Prevalence Index (B/A) = <u>3.67</u>
8. <u>Cop pwp</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>	_____	
9. <u>Epi als</u>	<u>1</u>	<u>-</u>	<u>FACU</u>	_____	Hydrophytic vegetation indicators:
10. <u>taraxicum</u>	<u>1</u>	<u>-</u>	<u>FACU</u>	_____	☐ Rapid Test
11. <u>browntop</u>	<u>1</u>	<u>-</u>	<u>FACU</u>	_____	☐ Dominance Test is >50%
12. <u>Kellera childii</u>	<u>1</u>	<u>-</u>	<u>N/a</u>	_____	☐ Prevalence Index is ≤3.0 ¹
13. <u>Acaena saec</u>	<u>2</u>	<u>-</u>	<u>FACU</u>	_____	☐ Morphological adaptations ¹ (supporting data in Remarks)
14. <u>Carax edura</u>	<u>3</u>	<u>-</u>	<u>FAC</u>	_____	☐ Problematic hydrophytic vegetation ¹
15. <u>moss</u>	<u>25</u>	<u>Y</u>	<u>N/a</u>	_____	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
16. <u>gentianella corum</u>	<u>1</u>	<u>-</u>	<u>N/a</u>	_____	Hydrophytic vegetation present?
17. <u>Schoenus pal</u>	<u>1</u>	<u>-</u>	<u>FACW</u>	_____	YES ☐ NO ☐ UNCERTAIN ☒
18. <u>Carax edgariae</u>	<u>1</u>	<u>-</u>	<u>N/a</u>	_____	Remarks:
Total herb cover (TH) = <u>123</u>	50% _____	20% _____			
Total (P) = _____					
Total Vegetation Cover (TVC): TT+TS+TH = _____	50% _____				

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-5	2.5YR 2.5/2					humic	mostly raprosma root mass
5-10	2.5Y 3/1					mineral	silt & gravel

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Duri- Fragi Ortstein

Restricting layers: Depth (cm) 16

Slow perm argillic

☐ Pugged

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☒ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/(A+B))*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:

See drawing site 25

Remarks:

site 27
photo - NM 5379

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remarks Region: Remarks (otago) Sampling point/ID: Site 29
 Owner/address: DOC Date: 1/04/25 Land use: Conservation
 Landform: hillsides Local relief: 10+ (S) Land cover: herb
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): CSW, NM Slope°: 10°
 GPS (NZTM): 1276 nm Altitude m: _____ Photo Nos: # 3383

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ YES ☐ NO (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? ☒ YES ☐ NO
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☒ Hydrophytic vegetation present? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
Total tree cover (TT) = _____	50% _____	20% _____		
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
Total sapling/shrub cover (TS) = _____	50% _____	20% _____		
Herb Stratum (Plot size: _____)				
1. <u>chi mas</u>	<u>50%</u>	<u>Y</u>	<u>N/A</u>	<u>FACU</u>
2. <u>Aci korik</u>	<u>1</u>	<u>1</u>	<u>N/A</u>	
3. <u>Carax penulpmu</u>	<u>2</u>	<u>1</u>	<u>N/A</u>	
4. <u>Cop purp</u>	<u>5</u>	<u>1</u>	<u>FAC</u>	
5. <u>Enchiton tal</u>	<u>1</u>	<u>1</u>	<u>FACW</u>	
6. <u>Dra mus</u>	<u>2</u>	<u>1</u>	<u>N/A</u>	
7. <u>Phyllachne col</u>	<u>15</u>	<u>1</u>	<u>FAC</u>	
8. <u>Poa col</u>	<u>25</u>	<u>Y</u>	<u>N/A</u>	
9. <u>Rao grand</u>	<u>1</u>	<u>1</u>	<u>N/A</u>	
10. <u>Noss</u>	<u>5</u>	<u>1</u>	<u>N/A</u>	
11. <u>Viola Cunningham</u>	<u>1</u>	<u>1</u>	<u>N/A</u>	
12. <u>pilosella all</u>	<u>1</u>	<u>1</u>	<u>FACU</u>	
13. <u>rutidosperma pum</u>	<u>2</u>	<u>1</u>	<u>N/A</u>	
14. <u>cul pnaest</u>	<u>1</u>	<u>1</u>	<u>N/A</u>	
15. <u>rock/bare ground</u>	<u>(80)</u>	<u>N/A</u>	<u>N/A</u>	
16. _____				
17. _____				
18. _____				
Total herb cover (TH) = <u>132</u> <u>112 not inc rock</u>	50% _____	20% _____		
Total (P) = _____				
Total Vegetation Cover (TVC): TT+TS+TH = _____	50% _____			

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover (P/TVC) x100 = _____ %
☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 0%

Prevalence Index:
 Total % cover of: Multiply by:
 OBL ☐ x 1 = ☐
 FACW 1 x 2 = 2
 FAC 20 x 3 = 60
 FACU 51 x 4 = 204
 UPL 40 x 5 = (200)
 Total 112 (A) 466 (B)
 Prevalence Index (B/A) = 4.16

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-5	10YR 3/2					mineral	Fine roots
5+							Gravel

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW P VP

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) 5-10cm

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:



Remarks:

Site 28

Photo: NM S381

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remarks Region: Remarks (otago) Sampling point/ID: Site 31
 Owner/address: DOC Date: 1/04/25 Land use: conservation
 Landform: S-facing slope Local relief: 20-30m (N) Land cover: herb/fussock
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): CSW/UM Slope°: 5°
 GPS (NZTM): 1329 (NM) Altitude m: _____ Photo Nos: 3390

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☒ Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover	Pasture Exclusion Test:
Tree Stratum (Plot size: _____)					Pasture cover/Total vegetation cover (P/TVC) x100 = _____%
1. _____	_____	_____	_____	_____	☐ Rapid Pasture Test
2. _____	_____	_____	_____	_____	☐ Pasture Exclusion Test is >50%
3. _____	_____	_____	_____	_____	
4. _____	_____	_____	_____	_____	
Total tree cover (TT) = _____	50% _____	20% _____			
Sapling/Shrub Stratum (Plot size: _____)					Dominance Test:
1. _____	_____	_____	_____	_____	No. Dominant Spp. OBL/FACW/FAC (A) <u>n/a</u>
2. _____	_____	_____	_____	_____	Tot. Dominant Spp. across strata (B) <u>4</u>
3. _____	_____	_____	_____	_____	% OBL/FACW/FAC (A/B) <u>n/a</u>
4. _____	_____	_____	_____	_____	
5. _____	_____	_____	_____	_____	
Total sapling/shrub cover (TS) = _____	50% _____	20% _____			
Herb Stratum (Plot size: _____)					Prevalence Index:
1. <u>chi mac</u>	<u>30</u>	<u>Y</u>	<u>n/a</u>	<u>FACU</u>	Total % cover of: Multiply by:
2. <u>Poa col</u>	<u>2</u>	<u>1</u>	<u>N/a</u>		OBL <u>1</u> x 1 = <u>1</u>
3. <u>abro incan</u>	<u>20</u>	<u>Y</u>	<u>N/a</u>		FACW <u>1</u> x 2 = <u>1</u>
4. <u>dva mus</u>	<u>5</u>	<u>1</u>	<u>N/a</u>		FAC <u>22</u> x 3 = <u>66</u>
5. <u>gan nub</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>		FACU <u>30</u> x 4 = <u>120</u>
6. <u>vaoulia ground</u>	<u>30</u>	<u>Y</u>	<u>N/a</u>		UPL <u>64</u> x 5 = <u>320</u>
7. <u>luz pum</u>	<u>1</u>	<u>1</u>	<u>UPL</u>		Total <u>116</u> (A) <u>506</u> (B)
8. <u>Kelleria childii</u>	<u>1</u>	<u>1</u>	<u>N/a</u>		Prevalence Index (B/A) = <u>4.362</u>
9. <u>rytido pum</u>	<u>2</u>	<u>1</u>	<u>N/a</u>		
10. <u>cel haast</u>	<u>1</u>	<u>1</u>	<u>N/a</u>		
11. <u>Carex pygmaea</u>	<u>1</u>	<u>1</u>	<u>FAC</u>		
12. <u>viola cunn</u>	<u>1</u>	<u>1</u>	<u>N/a</u>		
13. <u>Aci Kirk</u>	<u>1</u>	<u>1</u>	<u>N/a</u>		
14. <u>phyllachne col</u>	<u>1</u>	<u>1</u>	<u>FAC</u>		
15. <u>rock</u>	<u>(10)</u>	<u>1</u>	<u>N/a</u>		
16. _____	_____	_____	_____	_____	
17. _____	_____	_____	_____	_____	
18. _____	_____	_____	_____	_____	
Total herb cover (TH) = <u>126</u>	50% <u>0</u>	20% <u>4</u>			
<u>116 not inc rock</u>					
Total (P) = _____					
Total Vegetation Cover (TVC): TT+TS+TH = _____	50% _____				

Hydrophytic vegetation indicators:

☐ Rapid Test

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.0¹

☐ Morphological adaptations¹ (supporting data in Remarks)

☐ Problematic hydrophytic vegetation¹

Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-2	5YR 3/3					mineral	lots of fine roots
2-8	2.5Y 4/2		5	1-2mm	Roots	mineral	
8+							Gravelly

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W (MW) P VP

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) 10

Slow perm argillic

☐ Pugged

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

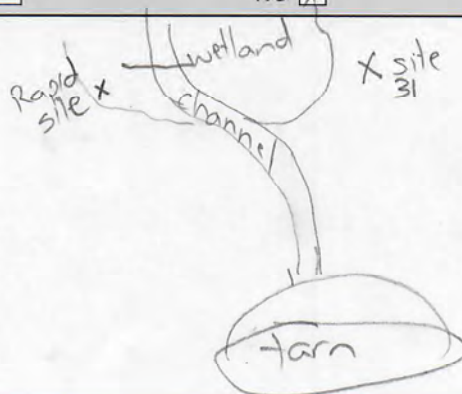
- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:



Remarks:

Site 31
 Photo: NM 5383

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remarks Region: Remarks (otago) Sampling point/ID: site 34
 Owner/address: DOC Date: 1/04/25 Land use: conservation
 Landform: scarp Local relief: 100+ m Land cover: sedge / herbs
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): CSW, NM Slope°: 5-10°
 GPS (NZTM): 1444 NM Altitude m: _____ Photo Nos: # 3401 CSW

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☐ Hydrophytic vegetation present? YES ☒ NO ☐ Is the sampled area within a wetland? YES ☒ NO ☐
 Hydric soils present? YES ☒ NO ☐
 Wetland hydrology present? YES ☒ NO ☐

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover	Pasture Exclusion Test:
Tree Stratum (Plot size: _____)					Pasture cover/Total vegetation cover (P/TVC) x100 = _____%
1. _____					☐ Rapid Pasture Test
2. _____					☐ Pasture Exclusion Test is >50%
3. _____					
4. _____					
Total tree cover (TT) = _____	50%	20%			
Sapling/Shrub Stratum (Plot size: _____)					Dominance Test:
1. _____					No. Dominant Spp. OBL/FACW/FAC (A) <u>2</u>
2. _____					Tot. Dominant Spp. across strata (B) <u>2</u>
3. _____					% OBL/FACW/FAC (A/B) <u>100%</u>
4. _____					
5. _____					
Total sapling/shrub cover (TS) = _____	50%	20%			
Herb Stratum (Plot size: _____)					Prevalence Index:
1. <u>Isoplepis anch</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>		Total % cover of: Multiply by:
2. <u>Carex edura</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>		OBL <u>33</u> x 1 = <u>33</u>
3. <u>lept pect</u>	<u>1</u>	<u>1</u>	<u>N/a</u>		FACW <u>5</u> x 2 = <u>10</u>
4. <u>Ranunculus mac</u>	<u>1</u>	<u>1</u>	<u>OBL</u>		FAC <u>50</u> x 3 = <u>150</u>
5. <u>plantago unibra</u>	<u>2</u>	<u>1</u>	<u>OBL</u>		FACU <u>1</u> x 4 = <u>4</u>
6. <u>Koeleria cheese</u>	<u>1</u>	<u>1</u>	<u>N/a</u>		UPL <u>17</u> x 5 = <u>85</u>
7. <u>Euchiton. lat</u>	<u>2</u>	<u>1</u>	<u>FACW</u>		Total <u>106</u> (A) <u>197282</u> (B)
8. <u>Epi prun</u>	<u>1</u>	<u>1</u>	<u>FACW</u>		Prevalence Index (B/A) = <u>2.660</u>
9. <u>acacna Saec</u>	<u>1</u>	<u>1</u>	<u>FACU</u>		
10. <u>Shoenus pac</u>	<u>2</u>	<u>1</u>	<u>FACW</u>		
11. <u>moss</u>	<u>15</u>	<u>1</u>	<u>1</u>		
12. <u>rock</u>	<u>5</u>	<u>1</u>	<u>1</u>		
13. _____					
14. _____					
15. _____					
16. _____					
17. _____					
18. _____					
Total herb cover (TH) = <u>116</u>	50%	1	20%	1	
<u>106 not incl rock</u>					
Total (P) = _____					
Total Vegetation Cover (TVC): TT+TS+TH = _____	50%				

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☒ Prevalence Index is $\leq 3.0^1$
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☒ NO ☐ UNCERTAIN ☐

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-4	5YR2.5/1					humic	fine - v fine roots
4-8	5YR3/1					mineral	gravelly sand
8+						Rocky	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I (P) VP

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) 8

Slow perm argillic

☐ Pugged

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☒ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☒ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Hydric soils present?

YES



NO



UNCERTAIN



NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|---|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☒ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☒ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☒ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES



NO



Sketch of site/vegetation types/sampling points:



Remarks:

Site 34
photo: NM 5386

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remarks Region: Remarks (otago) Sampling point/ID: Site 3S
 Owner/address: DOC Date: 1/04/25 Land use: Conservation
 Landform: slope between wetlands Local relief: 100 + m (W) Land cover: Cushionfield
 Is the land drained? YES NO UNKNOWN NO Investigator(s): LSW, NM Slope°: 15°
 GPS (NZTM): 1445 (NM) Altitude m: Photo Nos: #3402 (LSW)

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (if NO explain in Remarks)
 Are Vegetation Soil or Hydrology significantly disturbed? No Are 'Normal Circumstances' present? YES NO
 Are Vegetation Soil or Hydrology naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☐ Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover	Pasture Exclusion Test:
Tree Stratum (Plot size: <u> </u>)					Pasture cover/Total vegetation cover (P/TVC) x100 = <u> </u> %
1. <u> </u>					☐ Rapid Pasture Test
2. <u> </u>					☐ Pasture Exclusion Test is >50%
3. <u> </u>					
4. <u> </u>					
Total tree cover (TT) = <u> </u>	50% <u> </u>	20% <u> </u>			
Sapling/Shrub Stratum (Plot size: <u> </u>)					Dominance Test:
1. <u> </u>					No. Dominant Spp. OBL/FACW/FAC (A) <u>2</u>
2. <u> </u>					Tot. Dominant Spp. across strata (B) <u>2</u>
3. <u> </u>					% OBL/FACW/FAC (A/B) <u>100</u>
4. <u> </u>					
5. <u> </u>					
Total sapling/shrub cover (TS) = <u> </u>	50% <u> </u>	20% <u> </u>			
Herb Stratum (Plot size: <u> </u>)					Prevalence Index:
1. <u>gan nub</u>	50%	Y	FAC		Total % cover of: Multiply by:
2. <u>ourtsia glau</u>	2%	/	N/A		OBL <u> </u> x1 = <u> </u>
3. <u>phyllachne col</u>	20%	Y	FAC		FACW <u> </u> x2 = <u> </u>
4. <u>luc gum</u>	2%	/	WPL		FAC <u>71</u> x3 = <u>213</u>
5. <u>dra mus</u>	7%	/	N/A		FACU <u>1</u> x4 = <u>4</u>
6. <u>Poa col</u>	3%	/	N/A		UPL <u>54</u> x5 = <u>270</u>
7. <u>abroto tucon</u>	15%	/	N/A		Total <u>126</u> (A) <u>488</u> (B)
8. <u>raoulia grand</u>	15%	/	N/A		Prevalence Index (B/A) = <u>3.81</u>
9. <u>Kelleria childii</u>	3%	/	N/A		
10. <u>cal haast</u>	1%	/	N/A		
11. <u>chi mac</u>	1%	/	N/A (FACU)		
12. <u>ani imb</u>	1%	/	N/A		
13. <u>plantago lanigera</u>	1%	/	FAC		
14. <u>moss</u>	5	/	/		
15. <u>rock</u>	5	/	/		
16. <u> </u>					
17. <u> </u>					
18. <u> </u>					
Total herb cover (TH) = <u>131</u>	50% <u>1</u>	20% <u>1</u>			
<u>126 not inc rock</u>					
Total (P) = <u> </u>					
Total Vegetation Cover (TVC): TT+TS+TH = <u> </u>	50% <u> </u>				

Hydrophytic vegetation indicators:
☒ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-2	25YR 25/3					mineral	high OM
2-8	10YR 3/1	5YR 3/3	30	1mm	Roots	mineral	silt, sand lots fine roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators: Soil drainage (circle) W <u>(MW)</u> I P VP			Cause of wetness (circle appropriate): Location: Depression Flat Valley Gully <u>Slope</u> Water table: Depth (cm) _____ High GW Perched Seepage Tidal Lithic Pans: Depth (cm) _____ Pan Humus Fe-pan Densi- Duri- Fragi Ortstein Restricting layers: Depth (cm) <u>8cm</u> Slow perm argillic ☐ Pugged		
Organic layers: ☐ Organic soil material ☐ Litter ☐ Fibric ☐ Mesic ☐ Humic ☐ Peaty topsoil ☐ Peaty subsoil	Concretions: ☐ Iron concretions ☐ Manganese concretions ☐ Nodular Consistence: ☐ Plastic ☐ Sticky ☐ Fluid	Colours: profile form either: ☐ Gley profile OR ☒ Mottled profile Horizon: ☐ Reductimorphic ☐ Redox mottled ☐ Redox segregations ☐ Perch-gley features			
Hydric soils present? YES ☐ NO ☒ UNCERTAIN ☐			NZSC subgroup _____		

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- | | |
|------------------------------------|-------------------|
| 1. No. OBL & FACW dominant species | _____ (A) |
| 2. No. FACU & UPL dominant species | _____ (B) |
| 3. Total | _____ (A+B) |
| 4. FAC-neutral (>50%) | _____ (A/A+B)*100 |

Wetland hydrology present? YES ☐ NO ☒

Sketch of site/vegetation types/sampling points:

Ref site 34

Remarks:

Site 35
photo; NM 5387

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remarks Region: Remarks Sampling point/ID: site 36
 Owner/address: DOC Date: 1/04/25 Land use: conservation.
 Landform: Seepage Local relief: 100+ m Land cover: rushes/sedges
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): LSW, NM Slope: 5°
 GPS (NZTM): 1468 Altitude m: _____ Photo Nos: #3403

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☐ NO ☐ (if NO explain in Remarks)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are 'Normal Circumstances' present? YES ☐ NO ☐

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☐ Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☒ NO ☐
 Hydric soils present? YES ☒ NO ☐
 Wetland hydrology present? YES ☒ NO ☐

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size: _____) % cover Species? Status % cover

1. _____
 2. _____
 3. _____
 4. _____

Total tree cover (TT) = _____ 50% _____ 20% _____

Sapling/Shrub Stratum (Plot size: _____)

1. _____
 2. _____
 3. _____
 4. _____
 5. _____

Total sapling/shrub cover (TS) = _____ 50% _____ 20% _____

Herb Stratum (Plot size: _____)

1. Schoenus pal 15 ☒ FACW
 2. Carex edura 25 ☒ FAC
 3. Euchorion lat 3 ☒ FACW
 4. Isolepis acic 25 ☒ OBL
 5. Carex edgaviana 15 ☒ N/A
 6. Caltha obt 3 ☒ OBL
 7. acarya sall 1 ☒ FACU
 8. plantago unibra 1 ☒ OBL
 9. gawthieria parv 1 ☒ FAC
 10. rock 15 ☒ ☒
 11. moss 5 ☒ ☒
 12. Epi bra 1 ☒ FACW

13. _____
 14. _____
 15. _____
 16. _____
 17. _____
 18. _____

Total herb cover (TH) = 110 50% 0 20% 2
95 not inc rock

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = _____ %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 2
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 100

Prevalence Index:
 Total % cover of: Multiply by:
 OBL 29 x1 = 29
 FACW 19 x2 = 38
 FAC 25 x3 = 75
 FACU 1 x4 = 4
 UPL 20 x5 = 100
 Total 95 (A) 249 (B)
 Prevalence Index (B/A) = 2.621

Hydrophytic vegetation indicators:
☒ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations² (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

Total Vegetation Cover (TVC): TT+TS+TH = _____ 50% _____

Total (P) = _____

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-2	5YR 2S/2					Peat	
2-8	2.5Y 4/2					mineral	with some humus
8+						Rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW **P** VP

Organic layers:

☐ Organic soil material

☐ Litter

☐ Fibric

☐ Mesic

☒ Humic

☒ Peaty topsoil

☐ Peaty subsoil

Concretions:

☐ Iron concretions

☐ Manganese concretions

☐ Nodular

Consistence:

☐ Plastic

☐ Sticky

☐ Fluid

Colours: profile form either:

☐ Gley profile OR

☐ Mottled profile

Horizon:

☐ Reductimorphic

☐ Redox mottled

☐ Redox segregations

☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope **Slope**

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Duri- Fragi Ortstein

Restricting layers: Depth (cm) **8cm**

Slow perm argillic

☐ Pugged

Hydric soils present? YES ☒ NO ☐ UNCERTAIN ☐ NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

☐ Surface water (1A)

☐ Groundwater <30 cm (1B)

☒ Soil saturation <30 cm (1C)

☐ Water marks (2A)

☐ Sediment deposits (2B)

☐ Drift deposits (2C)

☐ Algal mat/crust (2D)

☐ Iron deposits (2E)

☐ Surface soil cracks (2F)

☐ Inundation on aerial imagery (2G)

☐ Sparsely vegetated concave surface (2H)

☐ Salt crust (2I)

☐ Aquatic invertebrates (2J)

☐ Hydrogen sulphide odour (3A)

☐ Oxidised rhizosphere on roots (3B)

☐ Reduced iron (3C)

☐ Reduced iron in tilled soil (3D)

☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

☐ Water-stained leaves (2K)

☐ Drainage patterns (2L)

☐ Dry-season water table (3E)

☐ Saturation in aerial imagery (3F)

☒ Geomorphic position (4B)

☒ Shallow aquitard (4C)

☐ FAC-neutral test (4D)

☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)

2. No. FACU & UPL dominant species _____ (B)

3. Total _____ (A+B)

4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present? YES ☒ NO ☐

Sketch of site/vegetation types/sampling points:

see site 34 diagram

Remarks:

Site 36
photo NM 5388

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-4	10YR 3/2					mineral	
4+						Rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) 4

Slow perm argillic

☐ Pugged

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductomorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:

1 Apr 2019 PM watch waypoint.



Remarks:

Site 38
photo : NM 5390

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remarks Region: Remarks (otago) Sampling point/ID: site 41
 Owner/address: DOC Date: 1/04/25 Land use: conservation
 Landform: hill slope Local relief: 20m W Land cover: tussock
 Is the land drained? YES ☒ UNKNOWN Investigator(s): CSW, NM Slope°: 15°
 GPS (NZTM): screenshot #3412 (CSW) Altitude m: _____ Photo Nos: #3413

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO _____ (if NO explain in Remarks)
 Are Vegetation _____ Soil _____ or Hydrology _____ significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO _____
 Are Vegetation _____ Soil _____ or Hydrology _____ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☒ Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size: _____) % cover Species? Status % cover

1. _____
 2. _____
 3. _____
 4. _____

Total tree cover (TT) = _____ 50% _____ 20% _____

Sapling/Shrub Stratum (Plot size: _____)

1. _____
 2. _____
 3. _____
 4. _____
 5. _____

Total sapling/shrub cover (TS) = _____ 50% _____ 20% _____

Herb Stratum (Plot size: _____)

1. chi mac 100 Y N/A FACU
 2. epi als 1 - FACU
 3. plantago lanigera 1 - FAC
 4. geum cockayi 3 - N/A

5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____
 11. _____
 12. _____
 13. _____
 14. _____
 15. _____
 16. _____
 17. _____
 18. _____

Total herb cover (TH) = 105 50% 1 20% 0

Total (P) = _____

Total Vegetation Cover (TVC): TT+TS+TH = _____ 50% _____

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = _____ %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 6
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0%

Prevalence Index:
 Total % cover of: Multiply by:
 OBL ☐ x 1 = ☐
 FACW ☐ x 2 = ☐
 FAC 1 x 3 = 3
 FACU 100 x 4 = 400
 UPL 3 x 5 = 15
 Total 105 (A) 418 (B)
 Prevalence Index (B/A) = 3.98

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-15						mineral	
15+	257 5/1					Gravelly	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) _____

Slow perm argillic

☐ Pugged

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☐ Mottled profile

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:



Remarks:

Site 41
photo: 5393

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remarks Region: Remarks (otago) Sampling point/ID: site 44
 Owner/address: DOC Date: 1 Land use: conservation
 Landform: hillslope Local relief: 30-40m Land cover: tusssock
 Is the land drained? YES ☐ NO ☒ UNKNOWN ☐ Investigator(s): LSW Slope°: 5°
 GPS (NZTM): #3425 (screenshot) Altitude m: Photo Nos: #3424

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☒ Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size:) % cover Species? Status % cover

1.
 2.
 3.
 4.
 Total tree cover (TT) = 50% 20%

Sapling/Shrub Stratum (Plot size:)
 1.
 2.
 3.
 4.
 5.
 Total sapling/shrub cover (TS) = 50% 20%

Herb Stratum (Plot size:)

Scientific Name	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
1. <u>chi Mac</u>	<u>55%</u>	<u>Y</u>	<u>N/a</u>	<u>FACU</u>
2. <u>Aci Kirk</u>	<u>2%</u>	<u>1</u>	<u>N/a</u>	<u></u>
3. <u>cal haast</u>	<u>5%</u>	<u>1</u>	<u>N/a</u>	<u></u>
4. <u>gau nmb</u>	<u>2%</u>	<u>1</u>	<u>FAC</u>	<u></u>
5. <u>lep pec</u>	<u>5%</u>	<u>1</u>	<u>N/a</u>	<u></u>
6. <u>Poa col</u>	<u>10%</u>	<u>1</u>	<u>N/a</u>	<u></u>
7. <u>phyllachne col</u>	<u>15%</u>	<u>1</u>	<u>FAC</u>	<u></u>
8. <u>epi als</u>	<u>1%</u>	<u>1</u>	<u>FACU</u>	<u></u>
9. <u>luz pum</u>	<u>1%</u>	<u>1</u>	<u>UPL</u>	<u></u>
10. <u>vio ran</u>	<u>1%</u>	<u>1</u>	<u>N/a</u>	<u></u>
11. <u>Carex prorepens</u>	<u>3%</u>	<u>1</u>	<u>FAC</u>	<u></u>
12. <u>Dra nmb</u>	<u>2%</u>	<u>1</u>	<u>N/a</u>	<u></u>
13. <u>Gurisia gland</u>	<u>1%</u>	<u>1</u>	<u>N/a</u>	<u></u>
14. <u>Hedovella Caes</u>	<u>2%</u>	<u>1</u>	<u>N/a</u>	<u></u>
15. <u>Blechnum P.M</u>	<u>1%</u>	<u>1</u>	<u>FAC</u>	<u></u>
16. <u>Polystichum cystostegium</u>	<u>10%</u>	<u>1</u>	<u>N/a</u>	<u></u>
17. <u>rock</u>	<u>10%</u>	<u>1</u>	<u>1</u>	<u></u>
18. <u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Total herb cover (TH) = 119 50% 1 20% 0
 107 not r/c rock

Total Vegetation Cover (TVC): TT+TS+TH = 50%

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0%

Prevalence Index:
 Total % cover of: Multiply by:
 OBL 1 x1 = 1
 FACW 1 x2 = 1
 FAC 21 x3 = 63
 FACU 56 x4 = 224
 UPL 30 x5 = 150
 Total 109 (A) (B) 440
 Prevalence Index (B/A) = 4.036

Hydrophytic vegetation indicators:
☐ Rapid Test
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations² (supporting data in Remarks)
☐ Problematic hydrophytic vegetation³
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-8	5YR 2.5/1					Organic/mineral	
8+		Very stony / rocky				Very rocky	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Cause of wetness (circle appropriate):

Organic layers:

- ☒ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☒ Mottled profile

Horizon:

- ☐ Reductimorphic
☒ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layers: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

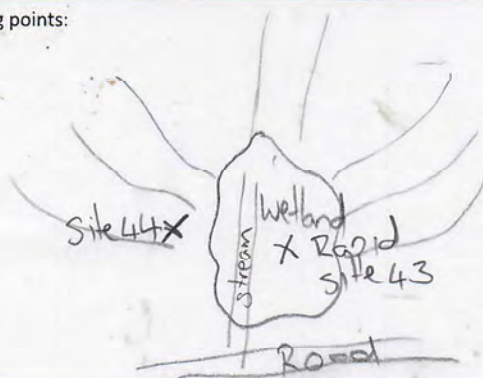
- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/vegetation types/sampling points:



Remarks:

Site 44
photo NM

Remarks:

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-10	2.5Y4/1	7.5YR 3/4	15	3-5mm	ped faces mineral		
10+						Rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) <u>W</u> MW I P VP		Cause of wetness (circle appropriate): Location: Depression Flat Valley Gully <u>Slope</u> Water table: Depth (cm) _____ High GW Perched Seepage Tidal Lithic Pans: Depth (cm) _____ Pan Humus Fe-pan Densi- Duri- Fragi Ortstein Restricting layers: Depth (cm) <u>10</u> Slow perm argillic ☐ Pugged
Organic layers: ☐ Organic soil material ☐ Litter ☐ Fibric ☐ Mesic ☐ Humic ☐ Peaty topsoil ☐ Peaty subsoil	Concretions: ☐ Iron concretions ☐ Manganese concretions ☐ Nodular Consistence: ☐ Plastic ☐ Sticky ☐ Fluid	Colours: profile form either: ☐ Gley profile OR ☐ Mottled profile Horizon: ☐ Reductimorphic ☐ Redox mottled ☐ Redox segregations ☐ Perch-gley features

Hydric soils present? YES ☐ NO ☒ UNCERTAIN ☐ NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

☐ Water-stained leaves (2K) ☐ Drainage patterns (2L) ☐ Dry-season water table (3E) ☐ Saturation in aerial imagery (3F)	☐ Geomorphic position (4B) ☐ Shallow aquitard (4C) ☐ FAC-neutral test (4D) ☐ Frost-heave hummocks (4E)	FAC-neutral test (4D); refer to Section B: Vegetation 1. No. OBL & FACW dominant species _____ (A) 2. No. FACU & UPL dominant species _____ (B) 3. Total _____ (A+B) 4. FAC-neutral (>50%) _____ (A/A+B)*100
---	---	--

Wetland hydrology present? YES ☐ NO ☒ XX

Sketch of site/vegetation types/sampling points:



Remarks:

Site 46
photo: NM 5379

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Remark Region: Remark (otago) Sampling point/ID: Site 51
 Owner/address: DOC Date: 1/04/25 Land use: Conservation
 Landform: hillslope Local relief: 10m NE Land cover: rock/furn/Hussock
 Is the land drained? YES ☐ NO ☐ UNKNOWN ☐ Investigator(s): CSW, NM Slope: 20°
 GPS (NZTM): 3441 (screenshot) Altitude m: Photo Nos: #3440

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation Soil or Hydrology Soil significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation Soil or Hydrology Soil naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☐ Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size:) % cover Species? Status % cover

1.
 2.
 3.
 4.
 Total tree cover (TT) = 50% 20%

Sapling/Shrub Stratum (Plot size:)
 1.
 2.
 3.
 4.
 5.
 Total sapling/shrub cover (TS) = 50% 20%

Herb Stratum (Plot size:)
 1. Blechnum P.M 20 Y FAC
 2. ch: mac 15 N n/a FACU
 3. vio cunn 1 N N/a
 4. aci Kirk 3 N N/a
 5. rock 60 X N/a
 6. moss 5 N N/a
 7. ourisia caes 1 N N/a
 8. gan parv 3 N FAC
 9. Plantago lanigera 1 N FAC
 10. lept pect 1 N N/a
 11. Poa col 1 N N/a
 12. Dra mus 1 N N/a
 13. Irchen 2 N N/a
 14. acarna Sacc 1 N FACU
 15.
 16.
 17.
 18.

Total herb cover (TH) = 115 50% 1 20% 1
55 not inc rock

Total Vegetation Cover (TVC): TT+TS+TH = 50%

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 11
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 50 10

Prevalence Index:
 Total % cover of: Multiply by:
 OBL ☐ x 1 =
 FACW ☐ x 2 =
 FAC 24 x 3 = 72
 FACU 16 x 4 = 64
 UPL 20 x 5 = 100
 Total 60 (A) 236 (B)
 Prevalence Index (B/A) = 3.93

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations² (supporting data in Remarks)
☐ Problematic hydrophytic vegetation³
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

Total (P) =

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-5	7.5YR 4/2					unreal	gravelly
5+						Rock	fine roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators: Organic layers: ☐ Organic soil material ☐ Litter ☐ Fibric ☐ Mesic ☐ Humic ☐ Peaty topsoil ☐ Peaty subsoil		Concretions: ☐ Iron concretions ☐ Manganese concretions ☐ Nodular Consistence: ☐ Plastic ☐ Sticky ☐ Fluid	Colours: profile form either: ☐ Gley profile OR ☐ Mottled profile Horizon: ☐ Reductomorphic ☐ Redox mottled ☐ Redox segregations ☐ Perch-gley features	Cause of wetness (circle appropriate): Location: Depression Flat Valley Gully <u>Slope</u> Water table: Depth (cm) _____ High GW Perched Seepage Tidal Lithic Pans: Depth (cm) _____ Pan Humus Fe-pan Densi- Duri- Fragi Ortstein Restricting layers: Depth (cm) <u>5</u> Slow perm argillic ☐ Pugged
Hydric soils present? YES ☐ NO ☒ UNCERTAIN ☐ NZSC subgroup _____				

Primary hydrology indicators: minimum of 1 required; check all boxes that apply Soil °C _____

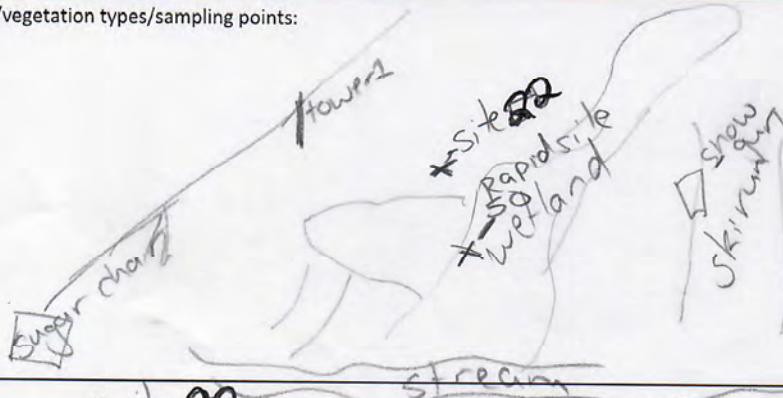
☐ Surface water (1A)	☐ Algal mat/crust (2D)	☐ Aquatic invertebrates (2J)
☐ Groundwater <30 cm (1B)	☐ Iron deposits (2E)	☐ Hydrogen sulphide odour (3A)
☐ Soil saturation <30 cm (1C)	☐ Surface soil cracks (2F)	☐ Oxidised rhizosphere on roots (3B)
☐ Water marks (2A)	☐ Inundation on aerial imagery (2G)	☐ Reduced iron (3C)
☐ Sediment deposits (2B)	☐ Sparsely vegetated concave surface (2H)	☐ Reduced iron in tilled soil (3D)
☐ Drift deposits (2C)	☐ Salt crust (2I)	☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

☐ Water-stained leaves (2K)	☐ Geomorphic position (4B)	FAC-neutral test (4D); refer to Section B: Vegetation 1. No. OBL & FACW dominant species _____ (A) 2. No. FACU & UPL dominant species _____ (B) 3. Total _____ (A+B) 4. FAC-neutral (>50%) _____ (A/A+B)*100
☐ Drainage patterns (2L)	☐ Shallow aquitard (4C)	
☐ Dry-season water table (3E)	☐ FAC-neutral test (4D)	
☐ Saturation in aerial imagery (3F)	☐ Frost-heave hummocks (4E)	

Wetland hydrology present? YES ☐ NO ☒

Sketch of site/vegetation types/sampling points:



Remarks:

site 22
photo: NM 5404

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Dootams Water Lake Region: Remutaka Sampling point/ID: WT1
 Owner/address: DOC Date: 13/01/2016 Land use: conservation
 Landform: seepage @ toe of slope Local relief: small plateau/terrace Land cover: hemp/rush/tussock
 Is the land drained? YES ☐ NO ☐ UNKNOWN ☐ Investigator(s): LSW, NM Slope: 23°
 GPS (NZTM): 288 Altitude m: 1627 m Photo Nos: # 7041 (LSW)
8582 (NM)

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? No Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☐ Hydrophytic vegetation present? YES ☐ NO ☐
 Hydric soils present? YES ☒ NO ☐ Is the sampled area within a wetland? YES ☒ NO ☐
 Wetland hydrology present? YES ☒ NO ☐

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: _____)				
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
Total tree cover (TT) = _____	50% _____	20% _____		
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
Total sapling/shrub cover (TS) = _____	50% _____	20% _____		
Herb Stratum (Plot size: <u>2x2</u>)				
1. <u>Lycopodium obs.</u>	<u>1%</u>		FAC	
2. <u>Chi Mac</u>	<u>30%</u>	y	n/a (FACU)	
3. <u>Scheuchzeria pal.</u>	<u>50%</u>	y	FACW	
4. <u>gan dpp</u>	<u>2%</u>		n/a	
5. <u>Dra mus</u>	<u>2%</u>		n/a	
6. <u>plantago uni.</u>	<u>1%</u>		n/a	
7. <u>plantago lanigera</u>	<u><1%</u>		FAC	
8. <u>Aci Kirk</u>	<u>1%</u>		n/a	
9. <u>Coprosma perpusilla</u>	<u>40%</u>	y	FAC	
10. <u>moss</u>	<u>2%</u>		n/a	
11. _____	_____	_____	_____	_____
12. _____	_____	_____	_____	_____
13. _____	_____	_____	_____	_____
14. _____	_____	_____	_____	_____
15. _____	_____	_____	_____	_____
16. _____	_____	_____	_____	_____
17. _____	_____	_____	_____	_____
18. _____	_____	_____	_____	_____
Total herb cover (TH) = _____	50% _____	20% _____		
Total (P) = _____				
Total Vegetation Cover (TVC): TT+TS+TH = _____ 50% _____				

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover (P/TVC) x100 = _____ %
☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 2
 Tot. Dominant Spp. across strata (B) 3
 % OBL/FACW/FAC (A/B) 66.6

Prevalence Index:
 Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total (A) _____ (B) _____
 Prevalence Index (B/A) = _____

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

WT1

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-6	10YR 2.5/1					mesic	Organic layer w/o mottles
6-20	10YR 5/1	5YR 4/6	20	2mm	within ped + along roots	mineral	
20+						Red rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☒ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☒ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☒ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile OR
☒ Mottled profile

Horizon:

- ☐ Reductimorphic
☒ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

- Location: Depression (Flat Valley Gully Slope)
 Water table: Depth (cm) 20cm
 High GW (Perched Seepage Tidal Lithic)
 Pans: Depth (cm) 20cm Red rock
 Pan Humus Fe-pan Densi- Duri- Fragi Ortstein
 Restricting layers: Depth (cm) _____
 Slow perm argillic
☐ Pugged

Hydric soils present?

YES



NO



UNCERTAIN



NZSC subgroup

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

Soil °C _____

- ☐ Surface water (1A)
☒ Groundwater <30 cm (1B)
☒ Soil saturation <30 cm (1C)
☐ Water marks (2A)
☐ Sediment deposits (2B)
☐ Drift deposits (2C)
☐ Algal mat/crust (2D)
☒ Iron deposits (2E)
☐ Surface soil cracks (2F)
☐ Inundation on aerial imagery (2G)
☐ Sparsely vegetated concave surface (2H)
☐ Salt crust (2I)
☐ Aquatic invertebrates (2J)
☐ Hydrogen sulphide odour (3A)
☐ Oxidised rhizosphere on roots (3B)
☐ Reduced iron (3C)
☐ Reduced iron in tilled soil (3D)
☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
☐ Drainage patterns (2L)
☐ Dry-season water table (3E)
☒ Saturation in aerial imagery (3F)
☒ Geomorphic position (4B)
☐ Shallow aquitard (4C)
☐ FAC-neutral test (4D)
☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)
 2. No. FACU & UPL dominant species _____ (B)
 3. Total _____ (A+B)
 4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

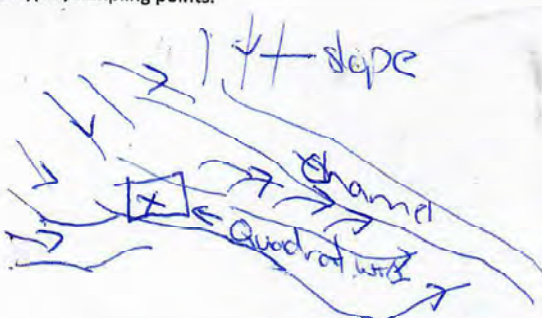
YES



NO



Sketch of site/vegetation types/sampling points:



Remarks:

H 8582

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point/ID: WT2
 Owner/address: DOC Date: 13/01/25 Land use: Conservation
 Landform: slope Local relief: Slope (increased) Land cover: tussock
 Is the land drained? YES ☐ NO ☒ UNKNOWN ☐ Investigator(s): CSW, NM Slope: 2-5°
 GPS (NZTM): 289 Altitude m: 1627 Photo Nos: # 7042 (CSW)

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? NO Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☒ Hydrophytic vegetation present? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
Total tree cover (TT) = _____	50% _____	20% _____		
Sapling/Shrub Stratum (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
Total sapling/shrub cover (TS) = _____	50% _____	20% _____		
Herb Stratum (Plot size: _____)				
1. <u>Ch. mac</u>	<u>80%</u>	<u>y</u>	<u>n/a (FACU)</u>	
2. <u>Ch. rig</u>	<u>5%</u>		<u>FACU</u>	
3. <u>Op. pur</u>	<u>16%</u>		<u>FAC</u>	
4. <u>Uc. fast</u>	<u>1%</u>		<u>FAC</u>	
5. <u>Pla. lani</u>	<u><1%</u>		<u>FAC</u>	
6. <u>Carex penulpinia</u>	<u>5%</u>		<u>n/a</u>	
7. <u>Poa col</u>	<u>5%</u>		<u>n/a</u>	
8. <u>gan. dip</u>	<u>1%</u>		<u>n/a</u>	
9. <u>Ryt. pum</u>	<u>1%</u>		<u>n/a</u>	
10. <u>Vio. kunn</u>	<u><1%</u>		<u>n/a</u>	
11. _____				
12. _____				
13. _____				
14. _____				
15. _____				
16. _____				
17. _____				
18. _____				
Total herb cover (TH) = _____	50% _____	20% _____		

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover (P/TVC) x100 = _____ %
☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:
 Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total _____ (A) _____ (B)
 Prevalence Index (B/A) = _____

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

Total Vegetation Cover (TVC): TT+TS+TH = _____ 50%

Total (P) = _____

WT2

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-4	7.5YR4/2					clay humus	some humus in top
4-25	10YR 5/1					clay silty clay	
25+							Bedrock

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) ☒ W ☐ MW ☐ P ☐ VP

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
☐ Mottled profile form

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

- Location: Depression Flat Valley Gully ☒ Slope
 Water table: Depth (cm) _____
 High GW Perched Seepage Tidal Lithic
 Pans: Depth (cm) _____
 Pan Humus Fe-pan Densi- Duri- Fragi Ortstein
 Restricting layer: Depth (cm) _____
 Slow perm argillic
☐ Pugged

Hydric soils present?

YES ☐NO ☒UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- ☐ Surface water (1A)
☐ Groundwater <30 cm (1B)
☐ Soil saturation <30 cm (1C)
☐ Water marks (2A)
☐ Sediment deposits (2B)
☐ Drift deposits (2C)
☐ Algal mat/crust (2D)
☐ Iron deposits (2E)
☐ Surface soil cracks (2F)
☐ Inundation on aerial imagery (2G)
☐ Sparsely vegetated concave surface (2H)
☐ Salt crust (2I)
☐ Aquatic invertebrates (2J)
☐ Hydrogen sulphide odour (3A)
☐ Oxidised rhizosphere on roots (3B)
☐ Reduced iron (3C)
☐ Reduced iron in tilled soil (3D)
☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
☐ Drainage patterns (2L)
☐ Dry-season water table (3E)
☐ Saturation in aerial imagery (3F)
☐ Geomorphic position (4B)
☐ Shallow aquitard (4C)
☐ FAC-neutral test (4D)
☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)
 2. No. FACU & UPL dominant species _____ (B)
 3. Total _____ (A+B)
 4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐NO ☒

Sketch of site/soil:

☒ WT1
 slope - ☒ WT2

Remarks:

photo I/8583 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point/ID: WT 3
 Owner/address: DOC Date: 13.01.26 Land use: Conservation
 Landform: riparian edge Local relief: stream edge Land cover: herbs
 Is the land drained? YES NO UNKNOWN Investigator(s): LSW NM Slope: < 2°
 GPS (NZTM): 291 Altitude m: 1682 Photo Nos: #7045 (LSW)

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (if NO explain in Remarks)
 Are Vegetation Soil or Hydrology significantly disturbed? Are 'Normal Circumstances' present? YES NO
 Are Vegetation Soil or Hydrology naturally problematic? Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☐ Hydrophytic vegetation present? YES ☒ NO ☐
 Hydric soils present? YES ☒ NO ☐ Is the sampled area within a wetland? YES ☒ NO ☐
 Wetland hydrology present? YES ☒ NO ☐

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: _____)				
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
Total tree cover (TT) = _____ 50% 20%				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
Total sapling/shrub cover (TS) = _____ 50% 20%				
Herb Stratum (Plot size: _____)				
1. <u>Oreob pect</u>	<u>15%</u>	_____	<u>OBL</u>	_____
2. <u>Ranunculus gra</u>	<u>< 1%</u>	_____	<u>n/a</u>	_____
3. <u>Chi Mac</u>	<u>20%</u>	<u>y</u>	<u>n/a (FACU)</u>	_____
4. <u>Cel haastii</u>	<u>2%</u>	_____	<u>n/a</u>	_____
5. <u>Caltha obt</u>	<u>10%</u>	_____	<u>OBL</u>	_____
6. <u>Phyllachne col</u>	<u>5%</u>	_____	<u>FAC</u>	_____
7. <u>Scleranthus parv</u>	<u>20%</u>	<u>y</u>	<u>FACW</u>	_____
8. <u>Isotria Auck</u>	<u>10%</u>	_____	<u>OBL</u>	_____
9. <u>Celmisia alpina</u>	<u>2%</u>	_____	<u>OBL</u>	_____
10. <u>Celmisia gland</u>	<u>1%</u>	_____	<u>FACW</u>	_____
11. <u>gan H. parv</u>	<u>25%</u>	<u>y</u>	<u>FAC</u>	_____
12. <u>Ourisia gland</u>	<u>1%</u>	_____	<u>n/a</u>	_____
13. <u>Cop perp</u>	<u>5%</u>	_____	<u>FAC</u>	_____
14. <u>Carax hest</u>	<u>1%</u>	_____	<u>FAC</u>	_____
15. <u>Abro Caus</u>	<u>3%</u>	_____	<u>FACW</u>	_____
16. <u>Plantago NZ</u>	<u>1%</u>	_____	<u>FAC</u>	_____
17. <u>Carax gandichardi</u>	<u>5%</u>	_____	<u>OBL</u>	_____
18. <u>Plantago tan</u>	<u>1%</u>	_____	<u>FAC</u>	_____
Total herb cover (TH) = _____ 50% 20%				
Total (P) = _____				
Total Vegetation Cover (TVC): TT+TS+TH = _____ 50%				

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover (P/TVC) x100 = _____ %
☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 2
 Tot. Dominant Spp. across strata (B) 3
 % OBL/FACW/FAC (A/B) 66.6

Prevalence Index:
 Total % cover of: Multiply by:
 OBL 42 x 1 = 42
 FACW 26 x 2 = 52
 FAC 38 x 3 = 114
 FACU 20 x 4 = 80
 UPL _____ x 5 = _____
 Total 126 (A) 288 (B)
 Prevalence Index (B/A) = 2.28

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☒ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☒ NO ☐ UNCERTAIN ☐

Remarks: n/a riparian width
Ran. pachyrrhizus also nearby in community

WT3

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-5	2.5YR 2.5/3					Organic fibric	
5-12	10YR 4/1	5YR 4/6	20%	3-5mm	Ped faces	peat	clay & gravel small
12+							gravel large

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW ☒ P VP

Organic layers:

- ☐ Organic soil material
☐ Litter
☒ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☒ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☒ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
☒ Mottled profile form

Horizon:

- ☐ Reductomorphic
☒ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully SlopeWater table: Depth (cm) 25cmHigh GW Perched Seepage Tidal Lithic Stream

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present?

YES



NO



UNCERTAIN



NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- | | | |
|---|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☒ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☒ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☒ Geomorphic position (4B) |
| ☒ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES



NO



Sketch of site/soil:



Remarks:

#18586 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point/ID: WT 4
 Owner/address: DOC Date: 13.01.26 Land use: Conservation
 Landform: slope Local relief: steep slope & angle to stream Land cover: tussock
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): _____ Slope: ~ 20°
 GPS (NZTM): 192 Altitude m: 1628 Photo Nos: #7046

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation Soil or Hydrology significantly disturbed? YES ☒ NO ☐ Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation Soil or Hydrology naturally problematic? YES ☒ NO ☐ Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☒ Hydrophytic vegetation present? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒ Wetland hydrology present? YES ☐ NO ☒
 Is the sampled area within a wetland? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: _____)				
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
Total tree cover (TT) = _____ 50% _____ 20% _____				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
Total sapling/shrub cover (TS) = _____ 50% _____ 20% _____				
Herb Stratum (Plot size: _____)				
1. <u>Ch: Mac</u>	<u>90%</u>	<u>y</u>	<u>n/a (FACU)</u>	_____
2. <u>Aci Kiok</u>	<u>10%</u>	_____	<u>n/a</u>	_____
3. <u>Brachy Bell</u>	<u>1%</u>	_____	<u>n/a</u>	_____
4. <u>Wahlerburgia albo</u>	<u>2%</u>	_____	<u>n/a</u>	_____
5. <u>Geum cockaynei</u>	<u>1%</u>	_____	<u>n/a</u>	_____
6. <u>Ran multiscopus</u>	<u><1%</u>	_____	<u>UPL</u>	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
12. _____	_____	_____	_____	_____
13. _____	_____	_____	_____	_____
14. _____	_____	_____	_____	_____
15. _____	_____	_____	_____	_____
16. _____	_____	_____	_____	_____
17. _____	_____	_____	_____	_____
18. _____	_____	_____	_____	_____
Total herb cover (TH) = _____ 50% _____ 20% _____				
Total (P) = _____				
Total Vegetation Cover (IVC): TT+TS+TH = _____ 50% _____				

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover (P/TVC) x100 = _____ %
☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:
 Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total _____ (A) _____ (B)
 Prevalence Index (B/A) = _____

Hydrophytic vegetation indicators:
☐ Rapid Test
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

WT4

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-22							
0-5	7.5 YRL 4/2	—	—	—		mineral	Fine roots
5-22	7.5 YRL 4/2	—	—	—	—	mineral	gravel & roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Organic layers:

- ☐ Organic soil material
- ☐ Litter
- ☐ Fibric
- ☐ Mesic
- ☐ Humic
- ☐ Peaty topsoil
- ☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
 - ☐ Sticky
 - ☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
☐ Mottled profile form

Horizon:

- ☐ Reductimorphic
- ☐ Redox mottled
- ☐ Redox segregations
- ☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present?

YES

NO

UNCERTAIN

NZSC subgroup

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- ☐ Surface water (1A)
- ☐ Groundwater <30 cm (1B)
- ☐ Soil saturation <30 cm (1C)
- ☐ Water marks (2A)
- ☐ Sediment deposits (2B)
- ☐ Drift deposits (2C)

- ☐ Algal mat/crust (2D)
- ☐ Iron deposits (2E)
- ☐ Surface soil cracks (2F)
- ☐ Inundation on aerial imagery (2G)
- ☐ Sparsely vegetated concave surface (2H)
- ☐ Salt crust (2I)

- ☐ Aquatic invertebrates (2I)
- ☐ Hydrogen sulphide odour (3A)
- ☐ Oxidised rhizosphere on roots (3B)
- ☐ Reduced iron (3C)
- ☐ Reduced iron in tilled soil (3D)
- ☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
- ☐ Drainage patterns (2L)
- ☐ Dry-season water table (3E)
- ☐ Saturation in aerial imagery (3F)

- ☐ Geomorphic position (4B)
- ☐ Shallow aquitard (4C)
- ☐ FAC-neutral test (4D)
- ☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

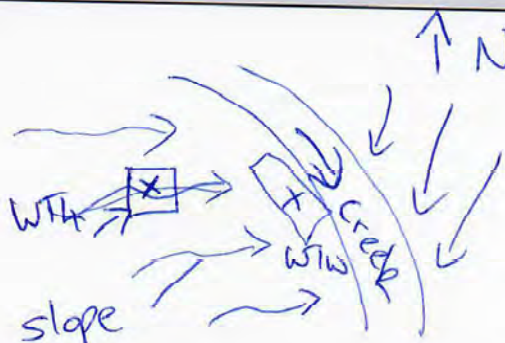
1. No. OBL & FACW dominant species _____ (A)
2. No. FACU & UPL dominant species _____ (B)
3. Total _____ (A+B)
4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES

NO ☒

Sketch of site/soil:



Remarks:

#8586 UM

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point/ID: WT6
 Owner/address: DOC Date: 13/01/26 Land use: Conservation
 Landform: knoll Local relief: ~10 to North Land cover: tussock/herb
 Is the land drained? YES ☐ NO ☐ UNKNOWN ☐ Investigator(s): CSOJ/NM Slope*: 2-5°
 GPS (NZTM): 295 (294 possibly blanked.) Altitude m: 1628 Photo Nos: #7058

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☐ NO ☐ (if NO explain in Remarks)
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are 'Normal Circumstances' present? YES ☐ NO ☐
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture exclusion? YES ☐ NO ☐ Hydrophytic vegetation present? YES ☐ NO ☐
 Hydric soils present? YES ☐ NO ☒ Wetland hydrology present? YES ☐ NO ☒
 Is the sampled area within a wetland? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status	Pasture % cover
Tree Stratum (Plot size: <u> </u>)				
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
Total tree cover (TT) =		50%	20%	
Sapling/Shrub Stratum (Plot size: <u> </u>)				
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
Total sapling/shrub cover (TS) =		50%	20%	
Herb Stratum (Plot size: <u>2x2</u>)				
1. <u>chi Mac</u>	<u>60</u>	<u>y</u>	<u>n/a (FACU)</u>	
2. <u>Aci Kirk</u>	<u>37%</u>		<u>n/a</u>	
3. <u>Rao grand</u>	<u>10%</u>		<u>n/a</u>	
4. <u>Uenla rufa</u>	<u>1%</u>		<u>n/a</u>	
5. <u>Dra mus</u>	<u>15%</u>		<u>n/a</u>	
6. <u>Cop perp</u>	<u>15%</u>		<u>FAC</u>	
7. <u>Poa col</u>	<u>5%</u>		<u>n/a</u>	
8. <u>Iye fast</u>	<u>1%</u>		<u>FAC</u>	
9. <u>Gau dp</u>	<u>1%</u>		<u>n/a</u>	
10. <u>Corax edura</u>	<u>1%</u>		<u>FAC</u>	
11. <u>Gentianella corym</u>	<u>1%</u>		<u>n/a</u>	
12. <u>↳ subsp. corym</u>				
13. <u> </u>				
14. <u> </u>				
15. <u> </u>				
16. <u> </u>				
17. <u> </u>				
18. <u> </u>				
Total herb cover (TH) =		50%	20%	
Total (P) =				
Total Vegetation Cover (TVC): TT+TS+TH =		50%		

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover (P/TVC) x100 = %
☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:
 Total % cover of: Multiply by:
 OBL x 1 =
 FACW x 2 =
 FAC x 3 =
 FACU x 4 =
 UPL x 5 =
 Total (A) (B)
 Prevalence Index (B/A) =

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

WT6

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-4	Z.5YR 3/1					mineral	many fine roots
4-23	10YR 5/1					mineral	fine roots + some gravel

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
☐ Mottled profile form

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

- Location: Depression Flat Valley Gully Slope
 Water table: Depth (cm) _____
 High GW Perched Seepage Tidal Lithic
 Pans: Depth (cm) _____
 Pan Humus Fe-pan Densi- Duri- Fragi Ortstein
 Restricting layer: Depth (cm) _____
 Slow perm argillic
☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- ☐ Surface water (1A)
☐ Groundwater <30 cm (1B)
☐ Soil saturation <30 cm (1C)
☐ Water marks (2A)
☐ Sediment deposits (2B)
☐ Drift deposits (2C)
☐ Algal mat/crust (2D)
☐ Iron deposits (2E)
☐ Surface soil cracks (2F)
☐ Inundation on aerial imagery (2G)
☐ Sparsely vegetated concave surface (2H)
☐ Salt crust (2I)
☐ Aquatic invertebrates (2J)
☐ Hydrogen sulphide odour (3A)
☐ Oxidised rhizosphere on roots (3B)
☐ Reduced iron (3C)
☐ Reduced iron in tilled soil (3D)
☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
☐ Drainage patterns (2L)
☐ Dry-season water table (3F)
☐ Saturation in aerial imagery (3F)
☐ Geomorphic position (4B)
☐ Shallow aquitard (4C)
☐ FAC-neutral test (4D)
☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)
 2. No. FACU & UPL dominant species _____ (B)
 3. Total _____ (A+B)
 4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/soil:



Remarks:

#8589 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM: PASTURE TEST

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point/ID: WT8
 Owner/address: DOC Date: 13/01/05 Land use: Conservation
 Landform: Seepage Local relief: upslope seepages Land cover: herbs
 Is the land drained? YES ☒ NO ☐ UNKNOWN ☐ Investigator(s): LSW Slope: 6°
 GPS (NZTM): 298 Altitude m: 1668 Photo Nos: 7060 (LSW)

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO ☐ (if NO explain in Remarks)
 Are Vegetation Soil or Hydrology significantly disturbed? NO Are 'Normal Circumstances' present? YES ☒ NO ☐
 Are Vegetation Soil or Hydrology naturally problematic? NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Pasture YES ☐ exclusion? NO ☐ Hydrophytic vegetation present? YES ☐ NO ☐
 Hydric soils present? YES ☒ NO ☐ Wetland hydrology present? YES ☒ NO ☐
 Is the sampled area within a wetland? YES ☒ NO ☐

SECTION B – VEGETATION

Use scientific names of plants. Absolute Dominant Indicator Pasture
 Tree Stratum (Plot size:) % cover Species? Status % cover

1.
 2.
 3.
 4.

Total tree cover (TT) = 50% 20%

Sapling/Shrub Stratum (Plot size:)

1.
 2.
 3.
 4.
 5.

Total sapling/shrub cover (TS) = 50% 20%

Herb Stratum (Plot size: 2x2)

1. <u>sch pac</u>	<u>7%</u>		<u>FACW</u>
2. <u>abr caus</u>	<u>7%</u>		<u>FACW</u>
3. <u>plantago NZ</u>	<u>7%</u>		<u>FAC</u>
4. <u>Chi Mac</u>	<u>30%</u>	<u>y</u>	<u>n/a (FACU)</u>
5. <u>Cal abt</u>	<u>10%</u>		<u>OBL</u>
6. <u>gauranium micro</u>	<u>1%</u>		<u>FACU</u>
7. <u>Tarax edura</u>	<u>2%</u>		<u>FAC</u>
8. <u>Cop perp</u>	<u>50%</u>	<u>y</u>	<u>FAC</u>
9. <u>Celmisia alp</u>	<u>1%</u>		<u>OBL</u>
10. <u>oreo pec</u>	<u>5%</u>		<u>OBL</u>
11. <u>Ran gra</u>	<u>1%</u>		<u>n/a</u>
12. <u>Poa col</u>	<u>2%</u>		<u>n/a</u>
13. <u>viola cunn</u>	<u>1%</u>		<u>n/a</u>
14. <u>geum leiospermum</u>	<u>1%</u>		<u>n/a</u>
15. <u> </u>			
16. <u> </u>			
17. <u> </u>			
18. <u> </u>			

Total herb cover (TH) = 50% 20%

Total (P) =

Total Vegetation Cover (TVC): TT+TS+TH = 50%

Pasture Exclusion Test:
 Pasture cover/Total vegetation cover
 (P/TVC) x100 = %

☐ Rapid Pasture Test
☐ Pasture Exclusion Test is >50%

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 1
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 50

Prevalence Index:
 Total % cover of: Multiply by:
 OBL x 1 =
 FACW x 2 =
 FAC x 3 =
 FACU x 4 =
 UPL x 5 =
 Total (A) (B)
 Prevalence Index (B/A) =

Hydrophytic vegetation indicators:
☐ Rapid Test
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☐ NO ☐ UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

WT8

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-5	2.5YR 2.5/2					mesic C	one worm
5-15	2.5Y 5/1	2.5YR 4/6	40%	3-5mm	Ped faces	mineral	fine roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Organic layers:

- ☐ Organic soil material
☐ Litter
☒ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☒ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☒ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
☒ Mottled profile form

Horizon:

- ☐ Reductimorphic
☒ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present?

YES

☒

NO

☐

UNCERTAIN

☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- ☒ Surface water (1A)
☐ Groundwater <30 cm (1B)
☒ Soil saturation <30 cm (1C)
☐ Water marks (2A)
☐ Sediment deposits (2B)
☐ Drift deposits (2C)
☐ Algal mat/crust (2D)
☒ Iron deposits (2E)
☐ Surface soil cracks (2F)
☐ Inundation on aerial imagery (2G)
☐ Sparsely vegetated concave surface (2H)
☐ Salt crust (2I)
☐ Aquatic invertebrates (2J)
☐ Hydrogen sulphide odour (3A)
☐ Oxidised rhizosphere on roots (3B)
☐ Reduced iron (3C)
☐ Reduced iron in tilled soil (3D)
☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
☐ Drainage patterns (2L)
☐ Dry-season water table (3E)
☒ Saturation in aerial imagery (3F)
☒ Geomorphic position (4B)
☐ Shallow aquitard (4C)
☐ FAC-neutral test (4D)
☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)
 2. No. FACU & UPL dominant species _____ (B)
 3. Total _____ (A+B)
 4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

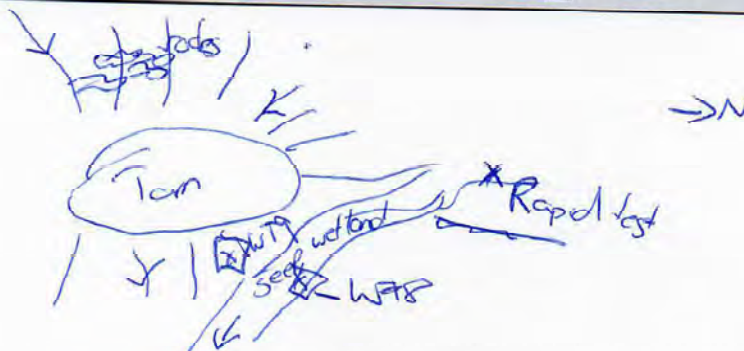
YES

☒

NO

☐

Sketch of site/soil:



Remarks:

8595 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT9
 Owner: DOC Date: 13/01/26 Land use: Conservation
 Landform: slope Local relief: → LSW, NM Land cover: tussock
 Is the land drained (circle) YES ☒ NO ☐ Investigator(s): Slope between Knott and Soil °C: _____ Slope°: 5-10°
 GPS (NZTM): 299 Altitude m: _____ Photo Nos: 7061

Are climatic/hydrologic conditions on the site typical for this time of year? YES ☒ NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) YES ☒ NO ☐
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐
 Hydric soils present? YES ☐ NO ☒ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total cover = _____			
Herb Stratum (Plot size: <u>2x2</u>)			
1. <u>Chi Mac</u>	<u>90%</u>	<u>y</u>	<u>n/a (FACU)</u>
2. <u>Carex penulima</u>	<u>2%</u>		<u>n/a</u>
3. <u>Aci kik.</u>	<u>1%</u>		<u>n/a</u>
4. <u>gar micro</u>	<u>1%</u>		<u>UPL</u>
5. <u>lyco fast</u>	<u>2%</u>		<u>FAC</u>
6. <u>epi als</u>	<u>1%</u>		<u>FACU</u>
7. <u>gan alp.</u>	<u>1%</u>		<u>n/a</u>
8. <u>Plantago lami</u>	<u>2%</u>		<u>FAC</u>
9. <u>Rao grand</u>	<u>2%</u>		<u>n/a</u>
10. <u>Dra ros</u>	<u>2%</u>		<u>n/a</u>
11. <u>pim natia</u>	<u>1%</u>		<u>n/a</u>
12. <u>Argyrotegium mach</u>	<u>1%</u>		<u>FACU</u>
Total cover = _____			
<u>Poa col</u>	<u>3%</u>		<u>n/a</u>

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:

Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total _____ (A) _____ (B)
 Prevalence Index (B/A) = _____

Hydrophytic vegetation indicators:

☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks: • WP 300 still connected to wetland WT8
 ↳ lots of ?? Ranunculus at WP → assumed to be R. grac
 • WP 301 tightens to ~2-3m for ~10m downslope and then returns to shape.

WT9

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-6	7.5YR 4/2					mineral	fine roots
6-24	10YR 4/2	7.5YR 4/4	40%	3-5mm	red faces	mineral	fine roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) ☒ W ☐ MW ☐ P ☐ VP

Organic layers:

- ☐ Organic soil material
- ☐ Litter
- ☐ Fibric
- ☐ Mesic
- ☐ Humic
- ☐ Peaty topsoil
- ☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
- ☐ Manganese concretions
- ☐ Nodular

Consistence:

- ☐ Plastic
- ☐ Sticky
- ☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
- ☒ Mottled profile form

Horizon:

- ☐ Reductomorphic
- ☐ Redox mottled
- ☐ Redox segregations
- ☐ Perch-gley features

Cause of wetness (circle appropriate):

- Location: Depression ☒ Flat ☐ Valley ☐ Gully ☐ Slope
- Water table: Depth (cm) _____
- High GW ☐ Perched ☐ Seepage ☐ Tidal ☐ Lithic
- Pans: Depth (cm) _____
- Pan Humus ☐ Fe-pan ☐ Densi- ☐ Duri- ☐ Fragi ☐ Ortstein
- Restricting layer: Depth (cm) _____
- Slow perm ☐ argillic
- ☐ Pugged

Hydric soils present?

YES

☐

NO

☒

UNCERTAIN

☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- ☐ Surface water (1A)
- ☐ Groundwater <30 cm (1B)
- ☐ Soil saturation <30 cm (1C)
- ☐ Water marks (2A)
- ☐ Sediment deposits (2B)
- ☐ Drift deposits (2C)
- ☐ Algal mat/crust (2D)
- ☐ Iron deposits (2E)
- ☐ Surface soil cracks (2F)
- ☐ Inundation on aerial imagery (2G)
- ☐ Sparsely vegetated concave surface (2H)
- ☐ Salt crust (2I)
- ☐ Aquatic invertebrates (2J)
- ☐ Hydrogen sulphide odour (3A)
- ☐ Oxidised rhizosphere on roots (3B)
- ☐ Reduced iron (3C)
- ☐ Reduced iron in tilled soil (3D)
- ☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
- ☐ Drainage patterns (2L)
- ☐ Dry-season water table (3E)
- ☐ Saturation in aerial imagery (3F)
- ☐ Geomorphic position (4B)
- ☐ Shallow aquitard (4C)
- ☐ FAC-neutral test (4D)
- ☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)
2. No. FACU & UPL dominant species _____ (B)
3. Total _____ (A+B)
4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES

☐

NO

☒

Sketch of site/soil:



Remarks:

8596 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT 11
 Owner: DOC Date: 13/01/20 Land use: Conservation
 Landform: slope to creek Local relief: normal upslope 2m to stream Land cover: tussock / ex grass
 Is the land drained (circle) YES NO Investigator(s): CSW Soil °C: _____ Slope: 20°
 GPS (NZTM): 317 Altitude m: 1366 Photo Nos: 3 7145 (CSW)

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐
 Hydric soils present? YES ☐ NO ☒ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute	Dominant	Indicator
Tree Stratum (Plot size: _____)	% cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total cover = _____			
Herb Stratum (Plot size: _____)			
1. <u>Chl nig</u>	<u>80%</u>	<u>y</u>	<u>FACU</u>
2. <u>pilosella off</u>	<u>2%</u>		<u>FACU</u>
3. <u>Vio can</u>	<u>2%</u>		<u>n/a</u>
4. <u>gum leio</u>	<u>1%</u>		<u>n/a</u>
5. <u>Acaena caesi glauca</u>	<u>1%</u>		<u>n/a</u>
6. <u>plantago tri</u>	<u>1%</u>		<u>FACW</u>
7. <u>Har-ohs cap</u>	<u>2%</u>		<u>FACU</u>
8. <u>galium perp</u>	<u><1%</u>		<u>FAC</u>
9. <u>epi als</u>	<u><1%</u>		<u>FACU</u>
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
Total cover = _____			

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:

Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total _____ (A) _____ (B)

Prevalence Index (B/A) = _____

Hydrophytic vegetation indicators:

- ☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks: 0.5m riparian strip/stream vegetation margin
→ flatter ground containing flood plain wetland
5m up and down stream.

WT 11

SECTION C – SOIL AND HYDROLOGY

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-8	7SYR2.5/2					Organic	Roots not peat
8-24	m 1'					mineral	fine roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Cause of wetness (circle appropriate):

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
☐ Mottled profile form

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic Invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

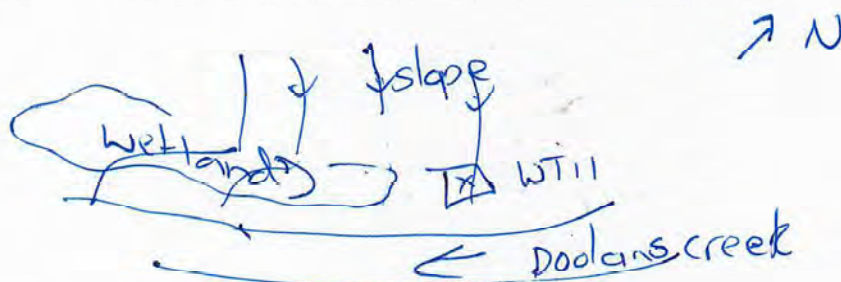
- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/soil:



Remarks:

A 8617 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT14
 Owner: DOC Date: 13/01/26 Land use: Conservation
 Landform: Platcan Local relief: raised area at plateau Land cover: tussock
 Is the land drained (circle) YES NO Investigator(s): LSW Soil °C: _____ Slope°: <5°
 GPS (NZTM): 335 Altitude m: 1373 Photo Nos: 7163

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐
 Hydric soils present? YES ☐ NO ☒ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute	Dominant	Indicator
Tree Stratum (Plot size: _____)	% cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total cover = _____			
Herb Stratum (Plot size: _____)			
1. <u>Chi nig</u>	<u>85%</u>	<u>y</u>	<u>FACU</u>
2. <u>Luz rufa v. rufa</u>	<u>1%</u>	<u>y</u>	<u>n/a</u>
3. <u>Poa col</u>	<u>20%</u>	<u>y</u>	<u>n/a</u>
4. <u>Vio can</u>	<u>1%</u>	<u>y</u>	<u>n/a</u>
5. <u>Argyrost Mack</u>	<u>1%</u>	<u>y</u>	<u>n/a</u>
6. <u>Acaena caesioides</u>	<u>1%</u>	<u>y</u>	<u>n/a</u>
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
Total cover = _____			

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) n/a
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) _____

Prevalence Index:

Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total _____ (A) _____ (B)

Prevalence Index (B/A) = _____

Hydrophytic vegetation indicators:

- ☐ Dominance Test is >50%
☐ Prevalence Index is $\leq 3.0^1$
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks: WOP 318 - 348
↓
leptinella sp. ? Photos

= wetland edge. → connects to mapped boundary

SECTION C – SOIL AND HYDROLOGY

WT 14

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-3	10YR 4/2					mineral	lots small roots
3-14	2.5Y 5/1	10YR 5/8	15	2mm	red matrix	mineral	silt

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Organic layers:

- ☐ Organic soil material
- ☐ Litter
- ☐ Fibric
- ☐ Mesic
- ☐ Humic
- ☐ Peaty topsoil
- ☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
- ☐ Manganese concretions
- ☐ Nodular

Consistence:

- ☐ Plastic
- ☐ Sticky
- ☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
- ☒ Mottled profile form

Horizon:

- ☐ Reductimorphic
- ☐ Redox mottled
- ☐ Redox segregations
- ☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression ☒ Flat ☐ Valley ☐ Gully ☐ Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- ☐ Surface water (1A)
- ☐ Groundwater <30 cm (1B)
- ☐ Soil saturation <30 cm (1C)
- ☐ Water marks (2A)
- ☐ Sediment deposits (2B)
- ☐ Drift deposits (2C)
- ☐ Algal mat/crust (2D)
- ☐ Iron deposits (2E)
- ☐ Surface soil cracks (2F)
- ☐ Inundation on aerial imagery (2G)
- ☐ Sparsely vegetated concave surface (2H)
- ☐ Salt crust (2I)
- ☐ Aquatic invertebrates (2J)
- ☐ Hydrogen sulphide odour (3A)
- ☐ Oxidised rhizosphere on roots (3B)
- ☐ Reduced iron (3C)
- ☐ Reduced iron in tilled soil (3D)
- ☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
- ☐ Drainage patterns (2L)
- ☐ Dry-season water table (3E)
- ☐ Saturation in aerial imagery (3F)
- ☐ Geomorphic position (4B)
- ☐ Shallow aquitard (4C)
- ☐ FAC-neutral test (4D)
- ☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

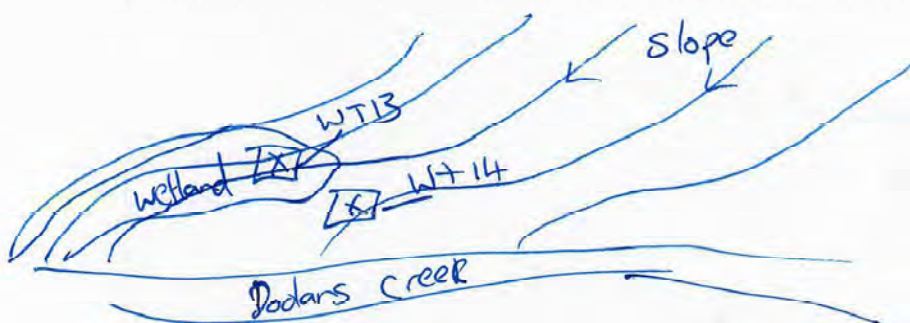
1. No. OBL & FACW dominant species _____ (A)
2. No. FACU & UPL dominant species _____ (B)
3. Total _____ (A+B)
4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/soil:



Remarks:

8620 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT 16
 Owner: DOC Date: 13/01/26 Land use: Conservation
 Landform: hill rise Local relief: ~30m upslope gradual from 15m, NN Land cover: Tussack
 Is the land drained (circle) YES NO Investigator(s): SW, NM Soil °C: Slope: ~5°-10°
 GPS (NZTM): 353 Altitude m: 1386m Photo Nos: #7165

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐
 Hydric soils present? YES ☐ NO ☒ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute	Dominant	Indicator
Tree Stratum (Plot size: <u> </u>)	% cover	Species?	Status
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Total cover = <u> </u>			
Sapling/Shrub Stratum (Plot size: <u> </u>)			
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Total cover = <u> </u>			
Herb Stratum (Plot size: <u> </u>)			
1. <u>chi rig</u>	<u>85%</u>	<u>y</u>	<u>FACU</u>
2. <u>Dra ros</u>	<u>10%</u>	<u> </u>	<u>n/a</u>
3. <u>Lyc fas</u>	<u>1%</u>	<u> </u>	<u>FAC</u>
4. <u>Poa col</u>	<u>2%</u>	<u> </u>	<u>n/a</u>
5. <u>Carex pen</u>	<u>1%</u>	<u> </u>	<u>n/a</u>
6. <u>Irthar</u>	<u>10%</u>	<u> </u>	<u>n/a</u>
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>
12. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Total cover = <u> </u>			

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:

Total % cover of: Multiply by:
 OBL x 1 =
 FACW x 2 =
 FAC x 3 =
 FACU x 4 =
 UPL x 5 =
 Total (A) (B)
 Prevalence Index (B/A) =

Hydrophytic vegetation indicators:

- ☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks:

SECTION C – SOIL AND HYDROLOGY

WT16

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-4	7.5YR 3/2					mineral	root mass
4-22	10YR 4/1					mineral	fine roots
							8 warm m.m.

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) ☒ W ☐ MW ☐ P ☐ VP

Organic layers:

- ☐ Organic soil material
- ☐ Litter
- ☐ Fibric
- ☐ Mesic
- ☐ Humic
- ☐ Peaty topsoil
- ☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
- ☐ Manganese concretions
- ☐ Nodular

Consistence:

- ☐ Plastic
- ☐ Sticky
- ☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
- ☐ Mottled profile form

Horizon:

- ☐ Reductomorphic
- ☐ Redox mottled
- ☐ Redox segregations
- ☐ Perch-gley features

Cause of wetness (circle appropriate):

- Location: Depression Flat Valley Gully Slope
- Water table: Depth (cm) _____
- High GW Perched Seepage Tidal Lithic
- Pans: Depth (cm) _____
- Pan Humus Fe-pan Densi- Duri- Fragi Ortstein
- Restricting layer: Depth (cm) _____
- Slow perm argillic
- ☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- ☐ Surface water (1A)
- ☐ Groundwater <30 cm (1B)
- ☐ Soil saturation <30 cm (1C)
- ☐ Water marks (2A)
- ☐ Sediment deposits (2B)
- ☐ Drift deposits (2C)
- ☐ Algal mat/crust (2D)
- ☐ Iron deposits (2E)
- ☐ Surface soil cracks (2F)
- ☐ Inundation on aerial imagery (2G)
- ☐ Sparsely vegetated concave surface (2H)
- ☐ Salt crust (2I)
- ☐ Aquatic invertebrates (2J)
- ☐ Hydrogen sulphide odour (3A)
- ☐ Oxidised rhizosphere on roots (3B)
- ☐ Reduced iron (3C)
- ☐ Reduced iron in tilled soil (3D)
- ☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
- ☐ Drainage patterns (2L)
- ☐ Dry-season water table (3E)
- ☐ Saturation in aerial imagery (3F)
- ☐ Geomorphic position (4B)
- ☐ Shallow aquitard (4C)
- ☐ FAC-neutral test (4D)
- ☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

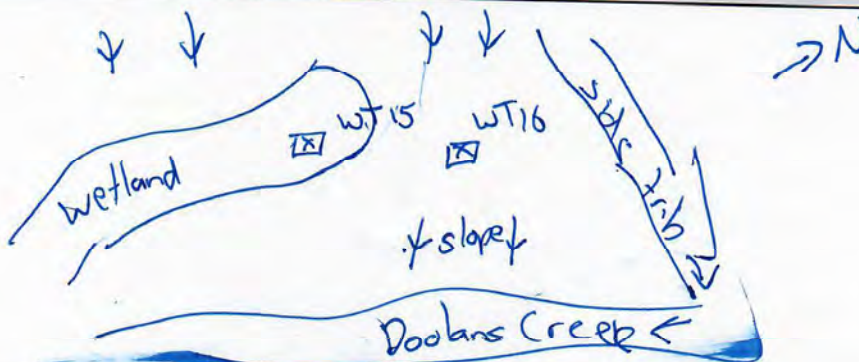
1. No. OBL & FACW dominant species _____ (A)
2. No. FACU & UPL dominant species _____ (B)
3. Total _____ (A+B)
4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/soil:



Remarks:

Fl 8622 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT18
 Owner: DOC Date: 18/01/26 Land use: Conservation
 Landform: Knoll Local relief: Convex (slight) Land cover: herb / tussock
 Is the land drained (circle) YES ☒ NO ☐ Investigator(s): LSW, NM Soil °C: Slope: < 5°
 GPS (NZTM): 363 Altitude m: 1599 Photo Nos: 7227

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ YES ☐ NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) No Are 'normal circumstances' present? (circle) ☒ YES ☐ NO
 Are vegetation, soil or hydrology naturally problematic? (circle) No Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐
 Hydric soils present? YES ☐ NO ☒ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute	Dominant	Indicator
Tree Stratum (Plot size: <u> </u>)	% cover	Species?	Status
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Total cover = <u> </u>			
Sapling/Shrub Stratum (Plot size: <u> </u>)			
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Total cover = <u> </u>			
Herb Stratum (Plot size: <u> </u>)			
1. <u>Aci Kirk</u>	<u>2%</u>	<u> </u>	<u>n/a</u>
2. <u>Chi Mac</u>	<u>30%</u>	<u>y</u>	<u>n/a (FACU)</u>
3. <u>Cop perp</u>	<u>40</u>	<u>y</u>	<u>FAC</u>
4. <u>gan dep</u>	<u>1%</u>	<u> </u>	<u>n/a</u>
5. <u>Poa col</u>	<u>10%</u>	<u> </u>	<u>n/a</u>
6. <u>Rao grand</u>	<u>2%</u>	<u> </u>	<u>n/a</u>
7. <u>Astelia nervosa</u>	<u>10%</u>	<u> </u>	<u>n/a</u>
8. <u>Plantago hani</u>	<u>1%</u>	<u> </u>	<u>FAC</u>
9. <u>Argyrostachys mack</u>	<u>1%</u>	<u> </u>	<u>n/a</u>
10. <u>Carex pectin</u>	<u>1%</u>	<u> </u>	<u>n/a</u>
11. <u>Dra prostrum</u>	<u>3%</u>	<u> </u>	<u>n/a</u>
12. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Total cover = <u> </u>			

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) 1
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 50

Prevalence Index:

Total % cover of: Multiply by:
 OBL x 1 =
 FACW x 2 =
 FAC x 3 =
 FACU x 4 =
 UPL x 5 =
 Total (A) (B)
 Prevalence Index (B/A) =

Hydrophytic vegetation indicators:

- ☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks:

Handwritten notes and sketch:
 WT18, WT17, stream, wetland, 7m, 1m wetland width, 2m wetland width, N

SECTION C – SOIL AND HYDROLOGY

WT 18

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-5	7.5YR2.5/2					humic	
5-20	10YR4/2					mineral clay, lots fine roots	
20+						mineral clay & silt, w roots fine gravel	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☒ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
☐ Mottled profile form

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

- Location: Depression Flat Valley Gully Slope slight
 Water table: Depth (cm) _____
 High GW Perched Seepage Tidal Lithic
 Pans: Depth (cm) _____
 Pan Humus Fe-pan Densi- Duri- Fragi Ortstein
 Restricting layer: Depth (cm) _____
 Slow perm argillic
☐ Pugged

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- ☐ Surface water (1A)
☐ Groundwater <30 cm (1B)
☐ Soil saturation <30 cm (1C)
☐ Water marks (2A)
☐ Sediment deposits (2B)
☐ Drift deposits (2C)
☐ Algal mat/crust (2D)
☐ Iron deposits (2E)
☐ Surface soil cracks (2F)
☐ Inundation on aerial imagery (2G)
☐ Sparsely vegetated concave surface (2H)
☐ Salt crust (2I)
☐ Aquatic invertebrates (2J)
☐ Hydrogen sulphide odour (3A)
☐ Oxidised rhizosphere on roots (3B)
☐ Reduced iron (3C)
☐ Reduced iron in tilled soil (3D)
☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K)
☐ Drainage patterns (2L)
☐ Dry-season water table (3E)
☐ Saturation in aerial imagery (3F)
☐ Geomorphic position (4B)
☐ Shallow aquitard (4C)
☐ FAC-neutral test (4D)
☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)
 2. No. FACU & UPL dominant species _____ (B)
 3. Total _____ (A+B)
 4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/soil:



Remarks:

8634 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT 21
 Owner: DOC Date: 15/11/20 Land use:
 Landform: slip Local relief: convex Land cover: Tussock
 Is the land drained (circle) YES 40 Investigator(s): convex 45W, NM Soil °C: Slope: 20°
 GPS (NZTM): 370 Altitude m: Photo Nos: #7231

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ YES ☐ NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) ☒ YES ☐ NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: <u></u>)			
1. <u></u>	<u></u>	<u></u>	<u></u>
2. <u></u>	<u></u>	<u></u>	<u></u>
3. <u></u>	<u></u>	<u></u>	<u></u>
4. <u></u>	<u></u>	<u></u>	<u></u>
Total cover = <u></u>			
Sapling/Shrub Stratum (Plot size: <u></u>)			
1. <u></u>	<u></u>	<u></u>	<u></u>
2. <u></u>	<u></u>	<u></u>	<u></u>
3. <u></u>	<u></u>	<u></u>	<u></u>
4. <u></u>	<u></u>	<u></u>	<u></u>
5. <u></u>	<u></u>	<u></u>	<u></u>
Total cover = <u></u>			
Herb Stratum (Plot size: <u></u>)			
1. <u>chi mac</u>	<u>85%</u>	<u>y</u>	<u>n/a (FACU)</u>
2. <u>Lyc Fast</u>	<u>5%</u>	<u></u>	<u>FAC</u>
3. <u>pta lan</u>	<u>1%</u>	<u></u>	<u>FAC</u>
4. <u>Astrolech PM</u>	<u>1%</u>	<u></u>	<u>FAC</u>
5. <u>Carax penul</u>	<u>1%</u>	<u></u>	<u>n/a</u>
6. <u>Vso can</u>	<u>1%</u>	<u></u>	<u>n/a</u>
7. <u>bare ground/litter</u>	<u>10%</u>	<u></u>	<u>n/a</u>
8. <u></u>	<u></u>	<u></u>	<u></u>
9. <u></u>	<u></u>	<u></u>	<u></u>
10. <u></u>	<u></u>	<u></u>	<u></u>
11. <u></u>	<u></u>	<u></u>	<u></u>
12. <u></u>	<u></u>	<u></u>	<u></u>
Total cover = <u></u>			

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 1
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:
 Total % cover of: Multiply by:
 OBL x 1 =
 FACW x 2 =
 FAC x 3 =
 FACU x 4 =
 UPL x 5 =
 Total (A) (B)
 Prevalence Index (B/A) =

Hydrophytic vegetation indicators:
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks:

WT 21
WT 20
slight change in slope.
rocks

SECTION C – SOIL AND HYDROLOGY

W121

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-2	7.5YR3/2					mineral	Ahor-20m
2-15	10YR4/2					mineral	B horizon Pine roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) _____

Slow perm argillic

☐ Pugged

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
☐ Mottled profile form

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- ☐ Surface water (1A) ☐ Algal mat/crust (2D) ☐ Aquatic invertebrates (2I)
☐ Groundwater <30 cm (1B) ☐ Iron deposits (2E) ☐ Hydrogen sulphide odour (3A)
☐ Soil saturation <30 cm (1C) ☐ Surface soil cracks (2F) ☐ Oxidised rhizosphere on roots (3B)
☐ Water marks (2A) ☐ Inundation on aerial imagery (2G) ☐ Reduced iron (3C)
☐ Sediment deposits (2B) ☐ Sparsely vegetated concave surface (2H) ☐ Reduced iron in tilled soil (3D)
☐ Drift deposits (2C) ☐ Salt crust (2I) ☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- ☐ Water-stained leaves (2K) ☐ Geomorphic position (4B)
☐ Drainage patterns (2L) ☐ Shallow aquitard (4C)
☐ Dry-season water table (3E) ☐ FAC-neutral test (4D)
☐ Saturation in aerial imagery (3F) ☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

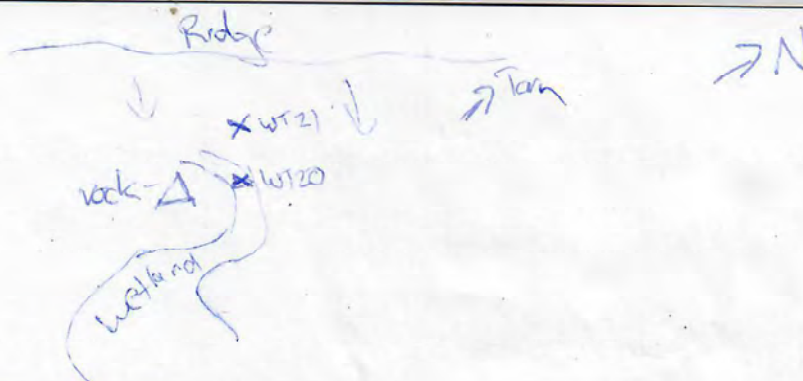
1. No. OBL & FACW dominant species _____ (A)
2. No. FACU & UPL dominant species _____ (B)
3. Total _____ (A+B)
4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/soil:



Remarks:

H8037 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT82
 Owner: DOC Date: 15/01/86 Land use: Conservation
 Landform: Seepage Local relief: concave depression Land cover: herb/tussock
 Is the land drained (circle) YES NO Investigator(s): CSW/AM Soil °C: _____ Slope°: <5°
 GPS (NZTM): 399 Altitude m: 1495 Photo Nos: #7250

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) ☒ YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☒ NO ☐
 Hydric soils present? YES ☒ NO ☐
 Wetland hydrology present? YES ☒ NO ☐

SECTION B – VEGETATION

Use scientific names of plants.	Absolute	Dominant	Indicator
Tree Stratum (Plot size: _____)	% cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total cover = _____			
Herb Stratum (Plot size: <u>2x2</u>)			
1. <u>chi rig</u>	<u>30%</u>	<u>y</u>	<u>FACU</u>
2. <u>sch par</u>	<u>5%</u>		<u>FACW</u>
3. <u>plant NZ</u>	<u>7%</u>		<u>FAC</u>
4. <u>caltha obt</u>	<u>10%</u>		<u>OBL</u>
5. <u>agrostis stolonifera</u>	<u>15%</u>	<u>y</u>	<u>FACW</u>
6. <u>Leptinella squalida subsp</u>	<u>10%</u>		<u>FACW</u>
7. <u>Hyd NZ</u>	<u>5%</u>		<u>FAC</u>
8. <u>viola cunn</u>	<u>1%</u>		<u>n/a</u>
9. <u>Cop perp</u>	<u>5%</u>		<u>FAC</u>
10. <u>Cardex gaud</u>	<u>20%</u>	<u>y</u>	<u>FACW</u>
11. <u>pilosella off</u>	<u>2%</u>		<u>FACU</u>
12. <u>Geranium micro</u>	<u>1%</u>		<u>FACU</u>
Total cover = <u>Schleranthus apetalis ~5%</u>			

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 2
 Tot. Dominant Spp. across strata (B) 3
 % OBL/FACW/FAC (A/B) 66.6

Prevalence Index:
 Total % cover of: Multiply by:
 OBL 10 x 1 = 10
 FACW 50 x 2 = 100
 FAC 17 x 3 = 51
 FACU 33 x 4 = 132
 UPL _____ x 5 = _____
 Total 110 (A) 293 (B)
 Prevalence Index (B/A) = 2.66

Hydrophytic vegetation indicators:
☒ Dominance Test is >50%
☒ Prevalence Index is $\leq 3.0^1$
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?
 YES ☒
 NO ☐
 UNCERTAIN ☐

Remarks:

SECTION C – SOIL AND HYDROLOGY

WT22

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-10	5YR 2.5/1					Fibric peat	
10-30	2.5Y 4/2	2.5YR 4/4	30	3-5 mm	matrix	humic peat & clay same	
							Sand deeper in profile

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Organic layers:

☐ Organic soil material

☐ Litter

☒ Fibric

☐ Mesic

☒ Humic

☐ Peaty topsoil

☐ Peaty subsoil

Concretions:

☒ Iron concretions

☐ Manganese concretions

☐ Nodular

Consistence:

☐ Plastic

☒ Sticky

☐ Fluid

Colours: profile form either:

☐ Gley profile form OR

☒ Mottled profile form

Horizon:

☐ Reductimorphic

☒ Redox mottled

☐ Redox segregations

☐ Perch-gley features

Cause of wetness (circle appropriate): depression

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) 35

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present? YES ☒ NO ☐ UNCERTAIN ☐ NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

☐ Surface water (1A)

☐ Groundwater <30 cm (1B)

☒ Soil saturation <30 cm (1C)

☐ Water marks (2A)

☐ Sediment deposits (2B)

☐ Drift deposits (2C)

☐ Algal mat/crust (2D)

☒ Iron deposits (2E)

☐ Surface soil cracks (2F)

☐ Inundation on aerial imagery (2G)

☐ Sparsely vegetated concave surface (2H)

☐ Salt crust (2I)

☐ Aquatic invertebrates (2J)

☐ Hydrogen sulphide odour (3A)

☐ Oxidised rhizosphere on roots (3B)

☒ Reduced iron (3C)

☐ Reduced iron in tilled soil (3D)

☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

☐ Water-stained leaves (2K)

☐ Drainage patterns (2L)

☒ Dry-season water table (3E)

☐ Saturation in aerial imagery (3F)

☒ Geomorphic position (4B)

☐ Shallow aquitard (4C)

☐ FAC-neutral test (4D)

☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)

2. No. FACU & UPL dominant species _____ (B)

3. Total _____ (A+B)

4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present? YES ☒ NO ☐

Sketch of site/soil:

Remarks:

±8669 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT 23
 Owner: DOC Date: 15/01/26 Land use: Conservation
 Landform: Slope Local relief: Flat to concave Land cover: tussock
 Is the land drained (circle) YES NO Investigator(s): LSW NM Soil °C: ✓ Slope: 20°
 GPS (NZTM): 400 Altitude m: 1495 Photo Nos: 7255 (LSW)

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐
 Hydric soils present? YES ☐ NO ☒ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total cover = _____			
Herb Stratum (Plot size: _____)			
1. <u>chi rid</u>	<u>80</u>	<u>y</u>	<u>FACU</u>
2. <u>agrostis cap</u>	<u>25%</u>	<u>y</u>	<u>FACU</u>
3. <u>pro cunh</u>	<u>3%</u>		<u>n/a</u>
4. <u>Carax pum.</u>	<u>2%</u>		<u>n/a</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
Total cover = _____			

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:
 Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total _____ (A) _____ (B)
 Prevalence Index (B/A) = _____

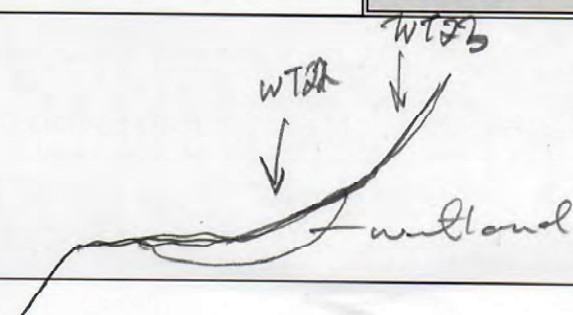
Hydrophytic vegetation indicators:
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks:



SECTION C – SOIL AND HYDROLOGY

WT23

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-5	7.5YR 2.5/2					mineral	lots fine roots
5-16	10YR 4/2					mineral	silt & clay

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Organic layers:

☐ Organic soil material

☐ Litter

☐ Fibric

☐ Mesic

☐ Humic

☐ Peaty topsoil

☐ Peaty subsoil

Concretions:

☐ Iron concretions

☐ Manganese concretions

☐ Nodular

Consistence:

☐ Plastic

☐ Sticky

☐ Fluid

Colours: profile form either:

☐ Gley profile form OR

☐ Mottled profile form

Horizon:

☐ Reductimorphic

☐ Redox mottled

☐ Redox segregations

☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present? YES ☐ NO ☒ UNCERTAIN ☐ NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | | |
|--|--|---|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) | FAC-neutral test (4D); refer to Section B: Vegetation
1. No. OBL & FACW dominant species _____ (A)
2. No. FACU & UPL dominant species _____ (B)
3. Total _____ (A+B)
4. FAC-neutral (>50%) _____ (A/A+B)*100 |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) | |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) | |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) | |

Wetland hydrology present? YES ☐ NO ☒

Sketch of site/soil:

See diagram for WT22

Remarks:

H 8651 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT 24
 Owner: DOC Date: 15/01/26 Land use: _____
 Landform: Seepage adjacent creek Local relief: concave slope Land cover: herb/tussock
 Is the land drained (circle) YES NO Investigator(s): LSW, NM Soil °C: _____ Slope: < 3°
 GPS (NZTM): 408 Altitude m: 1455 Photo Nos: 7265

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☒ NO ☐
 Hydric soils present? YES ☒ NO ☐
 Wetland hydrology present? YES ☒ NO ☐

SECTION B – VEGETATION

Use scientific names of plants.	Absolute	Dominant	Indicator
Tree Stratum (Plot size: _____)	% cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total cover = _____			
Herb Stratum (Plot size: <u>2x2</u>)			
1. <u>Chi rig</u>	<u>25%</u>	<u>y</u>	<u>FACU</u>
2. <u>Sch pac</u>	<u>50</u>	<u>y</u>	<u>FACW</u>
3. <u>Caltha obt</u>	<u>5%</u>		<u>OBL</u>
4. <u>Ran grac</u>	<u>5%</u>		<u>n/a</u>
5. <u>Plantago NE</u>	<u>3%</u>		<u>FAC</u>
6. <u>Cel alp</u>	<u>5%</u>		<u>OBL</u>
7. <u>Cop perp</u>	<u>10%</u>		<u>FAC</u>
8. <u>Carex eduna</u>	<u>1%</u>		<u>FAC</u>
9. <u>Oreo pec</u>	<u>2%</u>		<u>OBL</u>
10. <u>Agrostis cap</u>	<u>5%</u>		<u>FACU</u>
11. <u>Plantago NE</u>			
12. <u>Poa col</u>	<u>2%</u>		<u>n/a</u>
Total cover = _____			

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 1
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 50

Prevalence Index:
 Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total _____ (A) _____ (B)
 Prevalence Index (B/A) = _____

Hydrophytic vegetation indicators:
☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks:

wetland
toe of slope.
wetland
upland
creek
→ N

SECTION C – SOIL AND HYDROLOGY

WT24

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-8	7.5YR 3/1					mineral	lots roots
8-22	5Y 5/1	10YR 4/6	5-10	1-2mm	matrix	mineral	fine roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW **VP** VP

Organic layers:

☐ Organic soil material

☐ Litter

☐ Fibric

☐ Mesic

☐ Humic

☐ Peaty topsoil

☐ Peaty subsoil

Concretions:

☐ Iron concretions

☐ Manganese concretions

☐ Nodular

Consistence:

☐ Plastic

☐ Sticky

☐ Fluid

Colours: profile form either:

☒ Gley profile form OR

☐ Mottled profile form

Horizon:

☐ Reductimorphic

☐ Redox mottled

☐ Redox segregations

☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope **Sloping depression**

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) **15**

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) **25cm rock**

Slow perm argillic

☐ Pugged

Hydric soils present? YES ☒ NO ☐ UNCERTAIN ☐ NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

☐ Surface water (1A)

☐ Groundwater <30 cm (1B)

☒ Soil saturation <30 cm (1C)

☐ Water marks (2A)

☐ Sediment deposits (2B)

☐ Drift deposits (2C)

☐ Algal mat/crust (2D)

☒ Iron deposits (2E)

☐ Surface soil cracks (2F)

☐ Inundation on aerial imagery (2G)

☐ Sparsely vegetated concave surface (2H)

☐ Salt crust (2I)

☐ Aquatic invertebrates (2J)

☐ Hydrogen sulphide odour (3A)

☐ Oxidised rhizosphere on roots (3B)

☐ Reduced iron (3C)

☐ Reduced iron in tilled soil (3D)

☐ High water table stunted/stressed plants (4A)

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

☐ Water-stained leaves (2K)

☒ Drainage patterns (2L)

☐ Dry-season water table (3E)

☐ Saturation in aerial imagery (3F)

☒ Geomorphic position (4B)

☐ Shallow aquitard (4C)

☐ FAC-neutral test (4D)

☐ Frost-heave hummocks (4E)

FAC-neutral test (4D); refer to Section B: Vegetation

1. No. OBL & FACW dominant species _____ (A)

2. No. FACU & UPL dominant species _____ (B)

3. Total _____ (A+B)

4. FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present? YES ☒ NO ☐

Sketch of site/soil:

Remarks:

#8654 NM

8660

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT 2S
 Owner: DOC Date: 15/01/26 Land use: Conservation
 Landform: Slope adjacent plateau Local relief: Convex Land cover: Short/tall tussock
 Is the land drained (circle) YES NO Investigator(s): CSW, NM Soil °C: _____ Slope: 10-15°
 GPS (NZTM): 409 Altitude m: 1454 Photo Nos: 7260

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute	Dominant	Indicator
Tree Stratum (Plot size: _____)	% cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total cover = _____			
Herb Stratum (Plot size: _____)			
1. <u>Poa col</u>	<u>20%</u>	<u>y</u>	<u>n/a</u>
2. <u>Chi ria</u>	<u>35%</u>	<u>y</u>	<u>FACU</u>
3. <u>choenus pac</u>	<u>10</u>		<u>FACW</u>
4. <u>cop perp</u>	<u>10%</u>		<u>FAC</u>
5. <u>Viola cunn</u>	<u>1%</u>		<u>n/a</u>
6. <u>hypochaeris rad</u>	<u>1%</u>		<u>FACU</u>
7. <u>Wahlen alba</u>	<u>2%</u>		<u>n/a</u>
8. <u>Rytidosperma pum</u>	<u>30%</u>	<u>y</u>	<u>n/a</u>
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
Total cover = _____			

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) n/a
 Tot. Dominant Spp. across strata (B) 3
 % OBL/FACW/FAC (A/B) _____

Prevalence Index:
 Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total _____ (A) _____ (B)
 Prevalence Index (B/A) = _____

Hydrophytic vegetation indicators:
☐ Dominance Test is >50%
☐ Prevalence Index is $\leq 3.0^1$
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks: receives some runoff from wetland allowing some wetland plants to establish.

SECTION C – SOIL AND HYDROLOGY

WT 25

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-5	7.5YR 2.5/2					mineral	OM lvs root mass
5-20	10YR 3/2					mineral	Silty clay

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) _____

Slow perm argillic

☐ Pugged

Organic layers:

- ☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

- ☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

- ☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

- ☐ Gley profile form OR
☐ Mottled profile form

Horizon:

- ☐ Reductimorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Hydric soils present?

YES ☐

NO ☒

UNCERTAIN ☐

NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | |
|--|--|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) |

FAC-neutral test (4D); refer to Section B: Vegetation

- No. OBL & FACW dominant species _____ (A)
- No. FACU & UPL dominant species _____ (B)
- Total _____ (A+B)
- FAC-neutral (>50%) _____ (A/A+B)*100

Wetland hydrology present?

YES ☐

NO ☒

Sketch of site/soil:

See diagram WT 24

Remarks:

#8601 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT 26
 Owner: DOC Date: 15/01/26 Land use: Conservation
 Landform: slope Local relief: convex Land cover: tussock/shrubland
 Is the land drained (circle) YES NO Investigator(s): LSW/NM Soil °C: 17 Slope: ~20°
 GPS (NZTM): 433 Altitude m: 1431 Photo Nos: 7273 & 74

Are climatic/hydrologic conditions on the site typical for this time of year? YES NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) YES NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☒ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute	Dominant	Indicator
Tree Stratum (Plot size: _____)	% cover	Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total cover = _____			
Herb Stratum (Plot size: <u>2x2</u>)			
1. <u>shi rig</u>	<u>35</u>	<u>y</u>	<u>FACU</u>
2. <u>dva ras</u>	<u>45</u>	<u>y</u>	<u>n/a</u>
3. <u>Lyc pas</u>	<u>1%</u>		<u>FAC</u>
4. <u>gan dep</u>	<u>1%</u>		<u>n/a</u>
5. <u>cop perp</u>	<u>8%</u>		<u>FAC</u>
6. <u>bare ground/loose</u>	<u>25%</u>	<u>y</u>	<u>n/a</u>
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
Total cover = _____			

Dominance Test:

No. Dominant Spp. OBL/FACW/FAC (A) n/a
 Tot. Dominant Spp. across strata (B) 3
 % OBL/FACW/FAC (A/B) _____

Prevalence Index:

Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total _____ (A) _____ (B)
 Prevalence Index (B/A) = _____

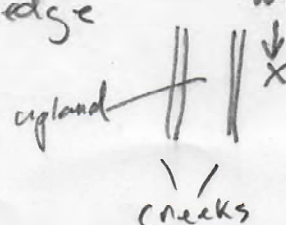
Hydrophytic vegetation indicators:

- ☐ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☒

Remarks: ~1.5m from creek edge WT26


SECTION C – SOIL AND HYDROLOGY

WT26

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
0-183	7.5 YR 3/1					mineral	fine roots
3-15	10 YR 4/1					mineral	slit med & fine roots

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) W MW I P VP

Organic layers:

☐ Organic soil material

☐ Litter

☐ Fibric

☐ Mesic

☐ Humic

☐ Peaty topsoil

☐ Peaty subsoil

Concretions:

☐ Iron concretions

☐ Manganese concretions

☐ Nodular

Consistence:

☐ Plastic

☐ Sticky

☐ Fluid

Colours: profile form either:

☐ Gley profile form OR

☐ Mottled profile form

Horizon:

☐ Reductimorphic

☐ Redox mottled

☐ Redox segregations

☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully Slope

Water table: Depth (cm) _____

High GW Perched Seepage Tidal Lithic

Pans: Depth (cm) _____

Pan Humus Fe-pan Densi- Duri- Fragi Ortstein

Restricting layer: Depth (cm) _____

Slow perm argillic

☐ Pugged

Hydric soils present? YES ☐ NO ☒ UNCERTAIN ☐ NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | | |
|--|--|---|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) | FAC-neutral test (4D); refer to Section B: Vegetation
1. No. OBL & FACW dominant species _____ (A)
2. No. FACU & UPL dominant species _____ (B)
3. Total _____ (A+B)
4. FAC-neutral (>50%) _____ (A/A+B)*100 |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) | |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) | |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) | |

Wetland hydrology present? YES ☐ NO ☒

Sketch of site/soil:



Remarks:

8663 NM

NEW ZEALAND WETLAND DELINEATION DATA FORM

SECTION A – SITE INFORMATION

Site: Doolans Region: Remarkables Sampling point: WT 28
 Owner: DOC Date: 15/01/26 Land use: Conservation
 Landform: slope Local relief: steep convex Land cover: tussock
 Is the land drained (circle) YES ☒ NO ☐ Investigator(s): LSW Soil °C: _____ Slope°: 35°
 GPS (NZTM): 437 Altitude m: 1421 Photo Nos: 7282 (LSW)

Are climatic/hydrologic conditions on the site typical for this time of year? ☒ YES ☐ NO (circle appropriate; if NO explain in Remarks)
 Are vegetation, soil or hydrology significantly disturbed? (circle) NO Are 'normal circumstances' present? (circle) ☒ YES ☐ NO
 Are vegetation, soil or hydrology naturally problematic? (circle) NO Explain answers in Remarks if needed

SUMMARY OF FINDINGS—Attach site map showing sampling point locations, transects, important features etc.

Hydrophytic vegetation present? YES ☐ NO ☐ Is the sampled area within a wetland? YES ☐ NO ☒
 Hydric soils present? YES ☐ NO ☒
 Wetland hydrology present? YES ☐ NO ☒

SECTION B – VEGETATION

Use scientific names of plants.	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total cover = _____			
Sapling/Shrub Stratum (Plot size: _____)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total cover = _____			
Herb Stratum (Plot size: _____)			
1. <u>chi ry</u>	<u>60%</u>	<u>y</u>	<u>FACU</u>
2. <u>Aci lomond</u>	<u>3%</u>	_____	<u>n/a</u>
3. <u>Lyc fas</u>	<u>1%</u>	_____	<u>FAC</u>
4. <u>Poa cal</u>	<u>25%</u>	<u>y</u>	<u>n/a</u>
5. <u>Agro cap</u>	<u>5%</u>	_____	<u>FACU</u>
6. <u>Vib cur</u>	<u>1%</u>	_____	<u>n/a</u>
7. <u>Ophioglossum corniculatum</u>	<u>1%</u>	_____	<u>n/a</u>
8. <u>Craspediia lanata</u>	<u>1%</u>	_____	<u>n/a</u>
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
Total cover = _____			

Dominance Test:
 No. Dominant Spp. OBL/FACW/FAC (A) 0
 Tot. Dominant Spp. across strata (B) 2
 % OBL/FACW/FAC (A/B) 0

Prevalence Index:
 Total % cover of: Multiply by:
 OBL _____ x 1 = _____
 FACW _____ x 2 = _____
 FAC _____ x 3 = _____
 FACU _____ x 4 = _____
 UPL _____ x 5 = _____
 Total (A) _____ (B) _____
 Prevalence Index (B/A) = _____

Hydrophytic vegetation indicators:
☒ Dominance Test is >50%
☐ Prevalence Index is ≤3.0¹
☐ Morphological adaptations¹ (supporting data in Remarks)
☐ Problematic hydrophytic vegetation¹

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present?

YES ☐
 NO ☐
 UNCERTAIN ☐

Remarks:

fern (sample)
Craspediia (sample).

SECTION C – SOIL AND HYDROLOGY

WT28

Profile description: (Describe to the depth needed to confirm indicator presence/absence, 30 cm default)

Depth (cm)	Matrix colour (moist)	Mottles colour (moist)	Mottles % ¹	Mottles Size ²	Mottle location ³	Material ⁴	Remarks
07	10YR 4/1					mineral	silt
25						Rock	

¹Use % area charts; ²Use size classes; ³Ped face, pore, within ped along roots, within matrix; ⁴Organic (peaty), humic, mineral soil

Hydric soil indicators:

Soil drainage (circle) ☒ W ☐ MW ☐ P ☐ VP

Organic layers:

☐ Organic soil material
☐ Litter
☐ Fibric
☐ Mesic
☐ Humic
☐ Peaty topsoil
☐ Peaty subsoil

Concretions:

☐ Iron concretions
☐ Manganese concretions
☐ Nodular

Consistence:

☐ Plastic
☐ Sticky
☐ Fluid

Colours: profile form either:

☐ Gley profile form OR
☐ Mottled profile form

Horizon:

☐ Reductomorphic
☐ Redox mottled
☐ Redox segregations
☐ Perch-gley features

Cause of wetness (circle appropriate):

Location: Depression Flat Valley Gully ☒ Slope
Water table: Depth (cm) _____
High GW Perched Seepage Tidal Lithic
Pans: Depth (cm) _____
Pan Humus Fe-pan Densi- Duri- Fragi Ortstein
Restricting layer: Depth (cm) _____
Slow perm argillic
☐ Pugged

Hydric soils present? YES ☐ NO ☒ UNCERTAIN ☐ NZSC subgroup _____

Primary hydrology indicators: minimum of 1 required; check all boxes that apply

- | | | |
|--|--|--|
| ☐ Surface water (1A) | ☐ Algal mat/crust (2D) | ☐ Aquatic invertebrates (2J) |
| ☐ Groundwater <30 cm (1B) | ☐ Iron deposits (2E) | ☐ Hydrogen sulphide odour (3A) |
| ☐ Soil saturation <30 cm (1C) | ☐ Surface soil cracks (2F) | ☐ Oxidised rhizosphere on roots (3B) |
| ☐ Water marks (2A) | ☐ Inundation on aerial imagery (2G) | ☐ Reduced iron (3C) |
| ☐ Sediment deposits (2B) | ☐ Sparsely vegetated concave surface (2H) | ☐ Reduced iron in tilled soil (3D) |
| ☐ Drift deposits (2C) | ☐ Salt crust (2I) | ☐ High water table stunted/stressed plants (4A) |

Secondary hydrology indicators: minimum of 2 required; check all boxes that apply

- | | | |
|--|--|---|
| ☐ Water-stained leaves (2K) | ☐ Geomorphic position (4B) | FAC-neutral test (4D); refer to Section B: Vegetation
1. No. OBL & FACW dominant species _____ (A)
2. No. FACU & UPL dominant species _____ (B)
3. Total _____ (A+B)
4. FAC-neutral (>50%) _____ (A/A+B)*100 |
| ☐ Drainage patterns (2L) | ☐ Shallow aquitard (4C) | |
| ☐ Dry-season water table (3E) | ☐ FAC-neutral test (4D) | |
| ☐ Saturation in aerial imagery (3F) | ☐ Frost-heave hummocks (4E) | |

Wetland hydrology present? YES ☐ NO ☒

Sketch of site/soil:



Remarks:

18665

Appendix F: Wildlife Act Application

This application seeks Wildlife Act approval to, as a last resort destroy nests (to force renesting within the same breeding season) of New Zealand pipit/pīhoihoi (*Anthus novaeseelandiae* subsp. *novaeseelandiae*) from within the earthwork's footprint. While potential adverse effects on native avifauna are predicted, such effects under the Wildlife Act would be largely be avoided through pre-works surveys and implementation of consent conditions.

This section addresses the information required for an application for wildlife approval as set out in Schedule 7, clause 2(1) of the FTAA.

The purpose of the proposed activities (clause 2(1)(a))

The purpose of the Project is to upgrade the existing infrastructure within the Remarkables Ski Area and expand the skiable terrain available through an expansion into the adjacent Doolans Basin. The Doolans Basin will be accessed via a newly established gondola and ski trails. Sections 1.1 and 1.2 of this report provide further detail regarding the project. Section 7 of this report identifies the need for mitigation measures to avoid and minimise the impacts on New Zealand pipit. The purpose of the proposed conditions is to avoid injury and mortality to native birds.

The proposed activities and their location (clause 2(1)(b), (h) and (i))

NZSki is applying for wildlife approvals to, as a last resort, destroy nests (to force renesting within the same breeding season) of New Zealand pipit from within the earthwork's footprint. NZSki are not applying to hold any protected species.

New Zealand pipit are recorded to have a high tolerance to disturbance, with records of chick raising in close proximity to publicly maintained (mown) trails (Beauchamp, 2019). Further, breeding populations already occur within and adjacent to skifields (Coronet Peak and the Remarkables). Therefore, a 50 m exclusion around pipit nests will be suitable and monitored by the SQEP. The location of the proposed works is within public conservation land however, the exact nest locations is not known. Figure 1 depicts the areas within 50 m of the disturbance footprint where suitable habitat is present (green), representing the area where mitigatory actions may be needed regarding avifauna.

New Zealand pipit are in relatively low abundance within the Doolans Basin, as described within the TEcIA (e3Scientific, Remarkables Ski Area Upgrade and Doolans Expansion - Terrestrial Ecological Impact Assessment. May 2026, 2026c). Therefore, the presence of nesting individuals within the disturbance footprint and/or 50 m surrounding this, is considered low.



Figure 1: Pipit nesting habitat.

Assessment against the purpose of the Wildlife Act (clause 2(1)(c))

The purpose of the Wildlife Act includes the protection of wildlife. The Wildlife Act protects animals classed as wildlife and controls how people interact with wildlife. The application is relevant to the Wildlife Act because it proposes vegetation removal activities that provide habitat to protected wildlife species, and these species may be killed or injured if unmanaged. Specifically, New Zealand pipit (*Anthus novaeseelandiae* subsp. *novaeseelandiae*). All other protected indigenous birds are not expected to be harmed or killed as a result of works proposed under the project. Section 6 (specifically, Sections 6.3, 6.6, and 6.8) of this report provides an assessment of the potential impacts upon the protected species. Section 7 of this report identifies actions that will be undertaken to avoid and minimise impacts on protected wildlife.

The numbers of wildlife potentially impacted and the nature of the potential impacts/effects (clause 2(1)(d), (e) and (j))

Section 4.3.1 of this report, specifically Figure 23 identifies the protected wildlife species known or predicted to be in the Project area. The number of observations

of NZ pipit is detailed in Section 4.3.1 and 6.6.1. The total area surveyed for the presence of birds is >277 ha. The proposed direct disturbance footprint is over 15.94 ha, accounting for less than 7.5% of the surveyed area. As such, the maximum number of NZ pipit that could be directly disturbed is described below. The estimate below is a conservative approach given that pipit nesting habitat is limited above 1700 m.

- New Zealand pipit (*Anthus novaeseelandiae* subsp. *novaeseelandiae*) –
- < 5 pairs affected.

Assessment of potential effects

Section 6.6 (specifically, Sections 6.3, 6.6, and 6.8) of this report addresses and outlines the impacts of habitat loss and indirect disturbance under the assessment criteria of the EIANZ guidelines for New Zealand pipit. Sections 6.2, 6.3, 6.4, and 6.5 list the effects on ecosystem at the site.

Methods to ensure best practice standards and to ensure safe, efficient and humane treatment (clause 2(1)(f) and (g))

Section 7 of this report describes the recommended measures. Specifically, all associated work will be undertaken and managed by a suitably qualified and experienced Ecologist/Ornithologist. It is preferable that nests are not moved greater than a few metres from its origin, if at all, due to physical markers being important for birds to locate nests. Therefore, encouraging renesting of a new clutch is assessed as the most suitable alternative in the unlikely scenario of a nest being present, therefore the following mitigation methodology / steps are proposed:

Step 1 - Prior to vegetation clearance or alteration (i.e. Step 2), a Suitably Qualified and Experienced Professional (SQEP) Ecologist/Ornithologist will undertake a survey to identify any nests within the proposed disturbance footprint (see Figure 1) and the surrounding 50 m buffer. The nest survey will be completed within five days of proposed vegetation clearance or alteration. Where works are undertaken within five days of the survey and no nests are identified, works may proceed.

Step 2 – Below 1,700 m asl, in areas of suitable pipit habitat where no nests are identified during Step 1 and earthworks are scheduled to occur more than five days after the nest survey, the following vegetation reduction steps are proposed. These measures are intended to minimise the future risk of injury or mortality by

removing suitable nesting habitat within the works footprint before egg laying occurs, thereby encouraging pipits to establish nests in adjacent, unaffected habitat.

- e) Vegetation will be reduced within the earthwork's footprint to a height of 20 cm in places where suitable pipit nesting habitat overlaps with the earthworks footprint (hatched polygon over green and yellow in Figure 1).
- f) All vegetation reduction work is to be undertaken as soon as able, immediately following the initial survey outlined in Step 1 (i.e. within five days).
- g) The area that is to be subject to vegetation clearance is to be clearly marked on site.
- h) Alternative to Step 2, Step 1 may be repeated by a SQEP, where the area of disturbance will occur within five days of survey.

Following completion of the vegetation clearance, earthworks can occur within the cleared areas for the remainder of the construction season unless pipit nests are identified within the area after the vegetation clearance has occurred or extensive regrowth of tussock occurs that would result in the reestablishment of viable nesting habitat (characterised as natural tussock form and density, greater than 40 cm in height).

Step 3 – If a nest is present within the earthworks footprint, the first action is to determine if it can be actively avoided through timing of works. If such avoidance measures are not possible, as a last resort, the nest will be removed and eggs destroyed to encourage renesting outside of the disturbance footprint. The method in which the nest will be destroyed is as follows:

- a) The eggs will be collected, recorded (date, time, location, and number of eggs), transported in a protective and insulated casing, and candled to ascertain each egg's relative development.
- b) If the embryo is observed to be less than 80% developed (i.e. has not developed a nervous system yet), the egg will be placed in a standard freezer (-18°C) for 24 hours (Leary, et al., 2020).
- c) If the embryo is observed to be more than 80% developed, the egg will be destroyed via controlled and instantaneous crushing.
- d) All dispatched eggs are then to be handed to DOC for research, cultural, or storage purposes.

Step 4 – Where nests are present outside the disturbance footprint but within the 50 m buffer, monitoring of the nest will be undertaken by a SQEP, as the pair may

be tolerant of nearby disturbance and may therefore be unaffected by disturbance within 50 m of their nest location. If the nest is observed to be abandoned (more than six hours of inactivity) the SQEP will record the date, time, location, number of eggs, and the distance from nearest point of disturbance. The eggs will then be collected and dispatched as per Step 3 above.

If works within the disturbance footprint are ongoing, do not cease for more than 5 days, and/or works have not increased in extent, and a pipit then establishes a nest within 50 m of the works no action is required to be undertaken.

Step 5 – All losses of eggs will be recorded and should be retrospectively compensated for.

How adverse effects are avoided and minimised, and the offsetting/compensation proposed to address unmitigated adverse effects (clause 2(1)(k))

The assessment of effects following the implementation of the proposed management measures concludes that the level of effect will be Low for NZ pipit. No offset or compensation has been assessed as necessary as part of this application as there are no unmitigated adverse effects.

Other matters (clause 2(1)(l), (m), (n), (o))

The AEE addresses the other relevant matters for wildlife approvals, including confirmation that NZSki is not associated with any offence or criminal charge under the Wildlife Act, details of consultation with hapū and iwi, and all relevant expert advice received in relation to the Project.

**Appendix G: Protocol for the Rehabilitation of Natural Alpine Environments
Following Ski Area Development.**

PROTOCOL FOR THE REHABILITATION OF NATURAL ALPINE ENVIRONMENTS FOLLOWING SKI AREA DEVELOPMENT

Between

DEPARTMENT OF CONSERVATION and NZSKI LTD.

1. Introduction

The protocol sets out practical means of achieving a high standard of environmental rehabilitation during and following development works at either Coronet Peak or The Remarkables Ski Areas. NZSki will require its staff and contractors to act in accordance with the protocol.

The scope includes any work that results in any environmental disturbance including (not not limited to) the indigenous vegetation, native fauna, soil, wetlands, streams, lakes and natural landforms of the ski area. Works may only be exempted from the protocol with prior agreement from DOC.

DOC staff will conduct regular monitoring to observe progress and assess effectiveness of the measures. This will include providing advice, troubleshooting unexpected problems, adjusting management approaches and, if necessary, require corrective action to ensure the objectives of the protocol are met.

2. Objectives of the protocol

To ensure that during the course of ski area developments there is a minimum of interference with the natural environment, and avoidance of disturbance to areas outside approved work areas;

To ensure that any indigenous vegetation disturbed by development is restored as near as possible to its original density and diversity, within the shortest practical timeframe;

To minimise the erosion and sedimentation of exposed soils (and soil among transplanted vegetation), optimising the longer term regeneration of indigenous vegetation through natural dispersal;

To otherwise replicate a high standard of natural appearance to any ground not occupied by permanent structures or required to regularly bear mechanised traffic; and

To establish a clear understanding between the staff and contractors of both the Department of Conservation (DOC) and NZSki on the required standards for:

- Work site control measures;
- Removal and replacement of vegetation and top soil;
- Management of soil erosion and sediment control;
- Ongoing monitoring and maintenance of rehabilitated areas;
- Contracted monitoring; and
- DOC's ability to suspend works.

3. Work Site control measures:

- a. Only machinery operators with a demonstrated ability in low impact earthworks and vegetation rehabilitation in an alpine setting are to undertake construction;
- b. Prior to works NZSki shall ensure that a briefing occurs between its staff, contractors and DOC to ensure a common understanding of how works will be conducted;

- c. NZSki must minimise disturbing non target areas when accessing and working within development sites. If machinery is required to move off existing tracks the least damaging route must be used and any disturbed vegetation must be rehabilitated when works are completed;
- d. The risk of soil erosion over denuded areas must be carefully managed until rehabilitation works are undertaken and soil is no longer exposed;
- e. Works must be conducted to ensure no contaminants are discharged onto the land or into watercourses (directly or indirectly). All vehicles, machinery, equipment and aggregate material must be cleaned of weeds, seeds and soils before entering the works area. Refuelling must be undertaken on hard surfaces away from watercourses and vegetation.
- f. Sensitive natural features including streams, wetlands, tarns, lakes and rare habitats are not to be disturbed, either for development works or access to development sites. Where disturbance is unavoidable prior approval must be sought and additional environmental protection measures may be required;
- g. All development and rehabilitation works impacting the natural environment must be completed by the 1st May. Any unfinished work must be stabilised to prevent soil erosion until works can recommence.

4. Removal and replacement of vegetation and top soil:

- a. Vegetation must be carefully removed in a manner to minimise damage to both the above ground plant and to protect as much soil material around the roots as possible;
- b. The remaining topsoil must also be removed before excavation of rock material may commence. If not used quickly with the replanting of vegetation this topsoil may be stockpiled for later use;
- c. All vegetation removed should be quickly replanted into areas where works have already been completed. This will usually occur through progressive reinstatement on completed formations behind the main work “face”;
- d. Priority for replanting shall be given to areas prone to erosion;
- e. Individual plants or clumps of vegetated material (“sod”) shall be reinstated by careful use of a digger bucket. Spacing should be no greater than 1 metre, unless directed otherwise by DOC.
- f. Final positioning of transplanted vegetation and sods should be conducted by hand tools, with top soil packed around each plant or sod to maximise survivorship and to achieve a result that closely resembles the surrounding natural areas;
- g. When transplanted plants and sods are insufficient to cover the disturbed area additional vegetation may be sourced through splitting indigenous vegetation from adjacent areas. This should only be done where there is sufficient plant and humic material to allow survival of both ‘parent’ and ‘split’ plants.
- h. Nursery reared plants (usually tussocks) may also be used to supplement transplanted vegetation and sods. Only locally sourced seeds may be used to grow plants for the ski area. Nursery reared plants are susceptible to rapid die off and browsing and must be handled carefully as follows:
 - Fertiliser is to be placed in the root well prior to planting;
 - Plants must be well bedded to lessen risk of uprooting by feral animals; and
 - Plants may be treated with suitable chemicals to deter browsing by feral animals.

- i. Locally sourced seed of appropriate species may be broadcast to promote vegetation growth between transplanted vegetation and sods. Exotic seeds may be spread only with prior approval;
- j. Special care must be taken when replanting on steep slopes between 30 and 45 degrees:
 - Plants should be transplanted quickly, steep slopes require plants to be in the healthiest possible condition;
 - Indented troughs or depressions should be formed to create “bedding” for the tussocks or sods to be transplanted. Replanting should not occur on sheer surfaces;
 - Replanting should be as close together as practical, leaving little exposed ground;
 - Large heavy plants and sods should be staked for support where possible;
 - Steep slopes should be closely monitored and any plants or sods released from the slope quickly retrieved, split into smaller, lighter clumps and replanted back into the slope as described above;
 - Consideration should be provided to planting small nursery reared plants where possible;
 - Attempts at replanting vegetation on slopes steeper than 45 degrees should only proceed with prior approval;
- k. The vegetation removed at one site may be used at another development site within the ski area only with prior approval;
- l. If no areas are available for a quick reinstatement, vegetation may be temporarily stored in designated areas with prior agreement;
 - All handling of vegetation for longer term storage must be done with great care to minimise cumulative damage to plants;
 - Vegetation may only be stockpiled up to one metre high to avoid die off resulting from smothering and crushing; and
 - All vegetation temporarily stored must be watered when protracted dry conditions may impact on survivorship.
- m. If NZSki expects to have a surplus of vegetation and/or topsoil at the end of works, this must be replanted /spread over other areas of rehabilitation, under direction from DOC.
- n. Any surplus rock material must not be stockpiled and/or spread over nearby terrain without prior approval.
- o. NZSki will actively eradicate any noxious weeds from all development and rehabilitation areas; and
- p. No rock landscaping may be used as a substitute for vegetation unless by prior agreement.

5. Management of soil erosion and sediment control

- a. The surface of vehicle tracks, formed ski trails and any other disturbed ground without a cover of indigenous vegetation will be managed to improve water infiltration, minimise rilling and sheet erosion, reduce suspension of sediment and provide micro sites for wind borne seed to settle. Control measures include;
 - shaping / crowning the surface;
 - applying an appropriate gravel surface in problem areas;
 - forming of earth, rock or vegetation bunds;

- Ripping or roughening soils perpendicular to the slope angle; and
 - Constructing water tables/swale drains to intercept and divert surface flows.
- b. Where the slope angle exceeds 30 degrees natural features such as rocks could be incorporated into the slope where this lends to the stability of the site; this would require prior approval from DOC and potentially the support of geotechnical experts. This solution would be considered on a site by site basis.
 - c. Water tables/swales must have a catchment area no greater than 2,000m². Ski trails must have functioning swales no less than 60m apart. All water tables/swales must be clear of sediment and able to convey water.
 - d. Water tables and swales must lead to an appropriately designed and armoured settlement pond to capture sediment so only clear water disperses into the surrounding landscape.
 - These ponds must be large enough to ‘settle’ the flow and allow sediment to be deposited, particularly from heavy rainfall events. Precise dimensions will depend on the area and erosion potential of catchment above, however, these may be graduated areas 1m wide x 2m long x 1m deep. They should be armoured with rocks or surrounded by soil mounds and tussocks or geotextile materials.
 - Sediment captured by settlement ponds are to be redistributed to assist re-vegetation of disturbed areas, whether previous or planned earthworks e.g. used to fill gaps between transplanted tussocks or to improve the mineral soil content when planting nursery tussocks.
 - Settlement ponds must be maintained such that they provide a means of monitoring the effectiveness of control measures thereby assist adjusting management approaches to reduce the potential for recurrent erosion.
 - e. To protect wetlands and wetland vegetation from sediment no surface water carrying sediment must be allowed to run into wetland areas. Settlement ponds must not exit onto wetland areas. Water tables and swales must be designed to maintain the hydrological integrity of adjacent seepages and wetlands.
 - f. Areas requiring erosion control measures are to be prioritised based on the following criteria:
 - Vulnerability to erosion (e.g. slopes > 20 degrees, unconsolidated soils, disturbed ground adjacent to compacted soils)
 - Saturated soils on cut faces where seepages have been intercepted,
 - Remediation of slips or slumped land and stabilisation of land to prevent further or repeated slope failures.
 - Settlement areas that require armouring or treatment in order to filter water,
 - Stabilisation works required to facilitate revegetation.
 - g. Areas identified for erosion control and soil conservation work may vary from year to year as revegetation occurs and slope and soil stability is achieved. Areas prioritised for erosion control in the 2015 – 2016 works programme are outlined in **Attachment A** below.
 - h. Significant developments will have a soil conservation and erosion control plan in place prior to the commencement of works. This plan will demonstrate how the objectives of this protocol will be achieved.

6. Ongoing monitoring and maintenance of the rehabilitated area

- a. The purpose of the monitoring is to assess the progress of rehabilitation and advise NZSki how to prevent or minimise risks to re-growth becoming self sustaining;

- b. All development and rehabilitation works will be monitored at least once prior to the commencement of work and again at completion of works. Interim monitoring may be required, depending on the nature of work. Following completion, regular monitoring will continue until DOC resolves, at its sole discretion, that the rehabilitation of the natural environment can progress unaided;
- c. Additional monitoring of erosion and sediment control measures will be made during or following significant periods of rainfall.
- d. Where monitoring establishes significant risks to rehabilitation, DOC will require NZSki to take any reasonable steps to rectify the situation and return the area to its desired condition. Any additional work required will be carried out at the cost of NZSki;
- e. In the event that an area is not rehabilitated following works, monitoring will continue until rehabilitation works have begun. Attention will be paid to preventing erosion during any lay period;
- f. DOC should reserve the right to recover the actual and reasonable costs of monitoring work.

7. Contracted monitoring:

DOC may contract monitoring to an external person/s. This approach not only provides time savings, but can also source specialist expertise on how to rehabilitate the sensitive alpine vegetation. This expertise is also vital to advise on appropriate remedial actions for any issues, and to provide expert input to planning processes. Contracted monitoring will take place as follows;

- a. The contractor is generally tasked to monitor the implementation of this protocol during any ski area development work that disturbs the natural environment;
- b. The monitor is to resolve any concerns of a routine nature directly with NZSki. Issues should be referred to DOC when problems are recurrent, significant in scale, unconventional or if a mutual agreement cannot be reached;
- c. To advise both DOC and NZSki whenever their action (or inaction) may present a problem for ski area environment, whether related to a specific development or any other activity;
- d. The monitor is to immediately advise DOC and NZSki if unauthorised works may be occurring, of significant risks to the natural environment that warrant suspension of works, and of any concerns with geotechnical hazards and/or public safety;
- e. Monitoring visits are to be scheduled in consultation with NZSki and DOC at a frequency of no more than once a week and no less than three times a summer (depending on nature of works over summer);
- f. If agreement on scheduling cannot be reached, DOC will make a final decision and notify NZSki of when monitoring is to occur;
- g. A brief written report of each monitoring visit is to be forwarded to DoC and NZSki in a timely manner. Reports should take a broad approach to assess overall performance, record agreements reached on site and highlight unresolved issues. Reports should take advantage of photo monitoring where possible;
- h. The time required for visits (and reports) are to be appropriate to the works in progress. The monitor is to notify and seek agreement from NZSki on where the combined time required for site visits and reporting is likely to exceed 5 hours;
- i. Support tasks supplementary to monitoring and reporting (eg research and meetings) are to be agreed with DOC and NZSki prior work occurring;

- j. The time spent on monitoring visits, reporting and support work will be billed directly to NZSki at a rate equivalent to DOC's current hourly rate for field staff, plus gst. Disbursements are to be billed separately.
- k. All monitoring reports and discussions between the contractor, NZSki and DOC will be kept confidential.

8. Right to suspend works

- a. DOC will, at its sole discretion, suspend any development work or activity should contracted monitoring, public feedback or DOCs own observations determine there are unexpected and/or significant impacts on the natural environment that are not being adequately rehabilitated.
- b. Any suspension shall remain in place until a response plan is agreed with NZSki.

ATTACHMENT A

The Remarkables: Priority Areas for erosion control measures and monitoring 2015 - 2016:

In the 2013 – 2014 and 2014 – 2015 substantial development occurred at the Remarkables Skifield. As a result, the following areas have been prioritised for soil erosion control works in 2015 – 2016 growth season (November – April).¹

Curvey Basin Trail

- Curvey A trail from chainage 60m through to 360m.
- Curvey B trail from chainage 60m through to 360m.
- Curvey main trail chainage 360m through to 600m.
- Curvey main trail chainage 600m through to 800m.
- Curvey main trail triangle at 820m through to 860m.
- Curvey main trail 'old road' 860m through 1040m.
- Curvey main trail 'Ford' 1040m through 1072m.

Lower Alta Green trail

- Trail chainage 0m through to 72m

Summer access road

- Road on Alta Green trail elevation 1,660m asl down to 1,640m asl.
- Road up Turquoise trail including elevations 1,660m asl to 1,726m asl.

Learners Area

- Elevations between 1,607m asl and 1,624m asl.

Description of Planned Soil Conservation Measures (2015 – 2016)

Curvey Basin Trail

- Curvey A trail from chainage 60m through to 360m.
 - 4 swales crossing the trail left to right (looking downhill)
 - Settlement area at the end of the swale
 - Swales need to be maintained in good working order
- Curvey B trail from chainage 60m through to 360m.
 - 2 swales in the lower section of this area. The trail material is very porous here as it was all fill in course aggregate
 - Swales need to be maintained in good working order
- Curvey main trail chainage 400m through to 640m.
 - 3 swales running right to left²
 - 1 swale running left to right at the 640m chainage
 - All have settlement areas at their terminals
 - Swales need to be maintained in good working order
- Curvey main trail chainage 640m through to 800m.

¹ Where chainage details are provided, refer to the approved Cut and Fill Plans prepared by Clark Fortune McDonald for the development of the Curvey Trail.

² Orientation – facing down the trail/ track

- 3 swales running left to right
 - All have settlement areas at their terminals
 - Swales need to be maintained in good working order
- Curvey main trail triangle at 800m through to 860m.
 - Once the slope was reshaped it was roughened across the exposed area to mitigate downhill run off.
 - Tussocks have been planted / transplanted here, although currently sparse these will mature to provide ground cover over the next 5 years.
- Curvey main trail 'old road' 860m through 1040m.
 - The road has been reinstated back to natural landscape with areas of rock scree where vegetation was scarce.
 - Ground slopes and the seepage flows were reinstated as near as practicable to pre-development condition.
- Curvey main trail 'Ford' 1040m through 1072m.
 - Surface water from the development of Curvey trail has been contained within a swale drain and flows into the Rastus Burn immediately upstream of the Ford.
 - Scoured land east of the Ford to be smoothed over/ re-contoured by hand and planted.
 - The access road to the base of Sugar Bowl chair requires another 300mm depth of surface material on it to help control surface flow and reduce scouring of the ford in this area. Raising the access track level will enable water to drain into the swale above the Rastus Burn Ford.

Lower Alta Green trail

- Trail chainage 0m through to 72m
 - Natural drainage from Turquoise trail and the tank farm runs across the summer access road and into depression north of Tower 6 of the Curvey Chairlift. A bund was formed using earth and tussocks to prevent sediment carrying beyond this point. The bund has suffered a minor breach with sediment extending down slope which requires repair and maintenance.
 - The area needs to be monitored to make sure run off is still retained and sediment settles within the intended area.
 - Build up of sediment in this area may require removal to retain the integrity of the structure until such time as surface runoff and sediment flow are reduced.
 - Water tables and Swales on the Turquoise trail need to be maintained in good working order, this will follow maintenance of the summer access road – see below.

Summer access road

- Road on Alta Green trail elevation 1,660m asl down to 1,640m asl.
 - 2 water tables are in place to remove surface water from the track.
 - Currently there are no effective settlement areas to capture/ retain sediment flows. These need to be introduced in a manner that prevents sediment from entering the Alta Green wetland.
 - Roading material about 300mm deep is to be placed, compacted and shaped on the road with a design that will eliminate any transfer of sediment from the road to the off- site areas in the future.

- Swales designed to reduce the erosive potential of water carried off the access road need to be maintained in good working order; these may require rock armouring. These need to be designed such that they prevent sediment from entering the Alta Green wetland.
- Road up Turquoise trail including elevations 1,660m asl to 1,726m asl.
 - 3 water tables exist across the road access running left to right.
 - The outflow runs into tussock
 - Minimal transfer of sediment occurs here since road surfacing has been laid, shaped & compacted.
 - Swales need to be maintained in good working order

Learners Area

- Elevations between 1,607m asl and 1,624m asl.
 - Once final landscaping is complete the area, roughly 16,000m², will be ripped and roughened across the trail.
 - A seed mix of Chewing Fescue (*Festuca rubra*) will be broadcast to secure short term cover. Sowing rates should be light such that Fescue does not form a competitive thatch that inhibits natural regeneration of native herbs.
 - Additional broadcasting of native seed harvested from site will also occur.
 - Consideration is being given to applying a spray on mulch to assist in protecting the soil until such time as grasses and native cover can be established.

Summary:

The protocol and prioritised soil conservation works are intended to prevent loss of soil from site and enable the successful revegetation of disturbed areas.

Soil erosion control measures additionally aim to avoid or minimise sedimentation of adjacent wetlands and tussock grasslands during and following earthworks.

Appendix H: Skifield Revegetation (Simpson N. , 2018)