February 2020
Lois Easton

Summary of Indigenous Vegetation Losses During Operative Phase of West Coast District Plans. – Effectiveness of Plan Provisions at Protecting Native Vegetation and Fauna Habitat.

Summary
The three Plans became operative at different times in the early 2000s.
[Westland 2002, Buller 28 January 2000, Grey 2005].
All three Plans contain rules regulating native vegetation clearance.

An analysis of the indigenous vegetation classes in the 2001, 2008, 2012 and 2018 Land Capability Database (LCDB) identifies that over the broad period of District Plan implementation a net 1029ha of indigenous vegetation classes (excl. Fernland) was lost.

Region-Wide losses of native vegetion
The detail of this at a regional level is outlined in the table below and also graphed.

Native vegetation Type	**Net Loss 2001-2008**	**Net Loss 2008-2012**	**Net Loss 2012-2018**	**Total Net Loss over Analysis Period**
Herbaceous Freshwater	-222	-71	-153	-446
Herbaceous Saline	0	0	-7	-7
Flaxland	-57	-25	-31	-113
Fernland	-223	286	469	532
Manuka and Kanuka	-1056	-631	-578	-2265
Broadleaved indigenous	-728	-473	-80	-1281
Sub Alpine Shrubland	3	-1	0	2
Grey Scrub	-1085	-2	0	-1087
Indigenous Forest	-1945	-1529	-1343	-4817
Total Indigenous Vegetation Loss	**-5313**	**-2446**	**-1723**	**-8497**
Indigeous Vegetation Loss excl. Fernland	**-5090**	**-2732**	**-2192**	**-10,029**
Total Wetland Classes Loss	**-222**	**-71**	**-160**	**-453**
Average annual indigenous vegetation loss (excl. fernland)	**727 ha/year**	**683 ha/year**	**365 ha/year**	**590 ha/year**

Key Points

- 10,029 ha of indigenous vegetation was cleared during the 17 year period.
- The annual rate of clearance has nearly halved in the most recent period compared to the first.
- Indigenous forest is the greatest land cover class lost during the period – 4817 ha
- This more than twice the next greatest class lost – manuka and kanuka – 2265ha.
- Broadleaved indigenous forest is the third largest class lost 1281ha
- Fernland appears to have been initially cleared (and converted to pasture) but over time it has increased – either due to recovery, or perhaps as a result of other indigenous classes cleared becoming fernland
- Grey Scrub had 1085ha cleared in the first period, but after this minimal clearance.

Analysis by Ecological District

Analysis by ecological district identifies that the largest native vegetation losses in this period were:

In Westland

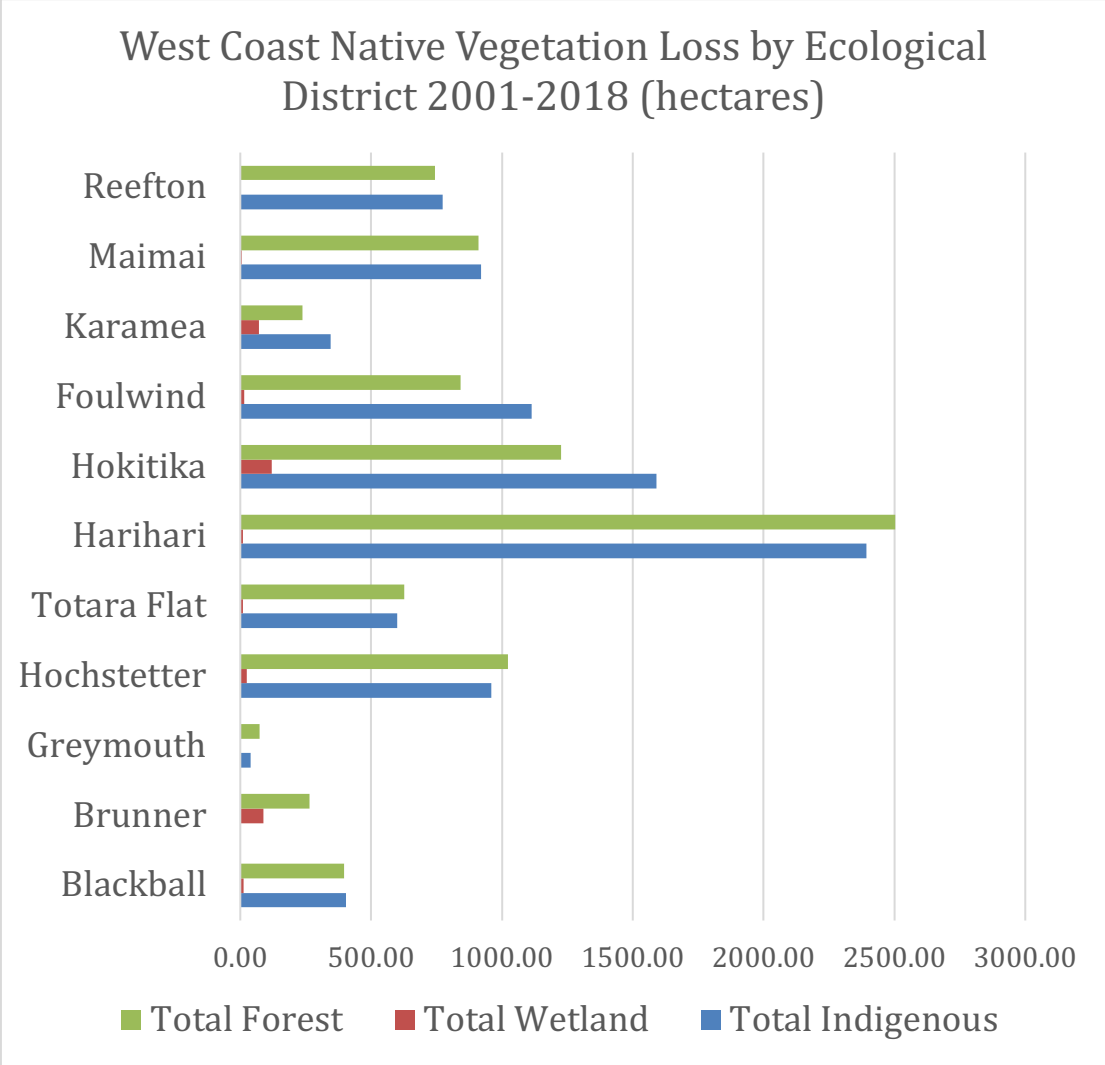
- Harihari Ecological District – 601 ha of broadleaved indigenous forest, 574ha of indigenous forest, 1035ha of Grey Scrub with a total of 2392ha of indigenous vegetation loss
- Hokitika Ecological District – 434 ha of broadleaved indigenous forest, 115ha of wetland, 435 ha of indigenous forest and 341 ha of manuka/kanuka with a total of 1590ha of indigenous vegetation loss

In Buller

- Foulwind Ecological District – 103ha of broadleaved indigenous forest, 95 ha of indigenous forest, 231 ha of fernland and 642 ha of manuka/kanuka with a total of 1113ha of indigenous vegetation loss
- Maimai Ecological District – 785ha of indigenous forest, 97ha of manuka/kanuka with a total 921ha of indigenous forest loss.
- Reefton Ecological District – 510ha of indigenous forest, 77ha of broadleaved forest, 157ha of manuka and kanuka with a total of 772ha of indigenous vegetation loss
- Karamea Ecological District – 156ha of indigenous forest, 110ha of manuka/kanuka with a total 344ha of indigenous vegetation loss

In Grey

- Hochstetter Ecological District -526ha of indigenous forest and 440 ha of manuka/kanuka with a total of 959ha of indigenous vegetation loss
- Totara Flat Ecological District – 120ha of broadleaved indigenous forest, 415ha of indigenous forest with a total 599ha of indigenous vegetation loss
- Blackball Ecological District – 287ha of indigenous forest, 86ha of manuka/kanuka with a total of 403ha of indigenous vegetation loss



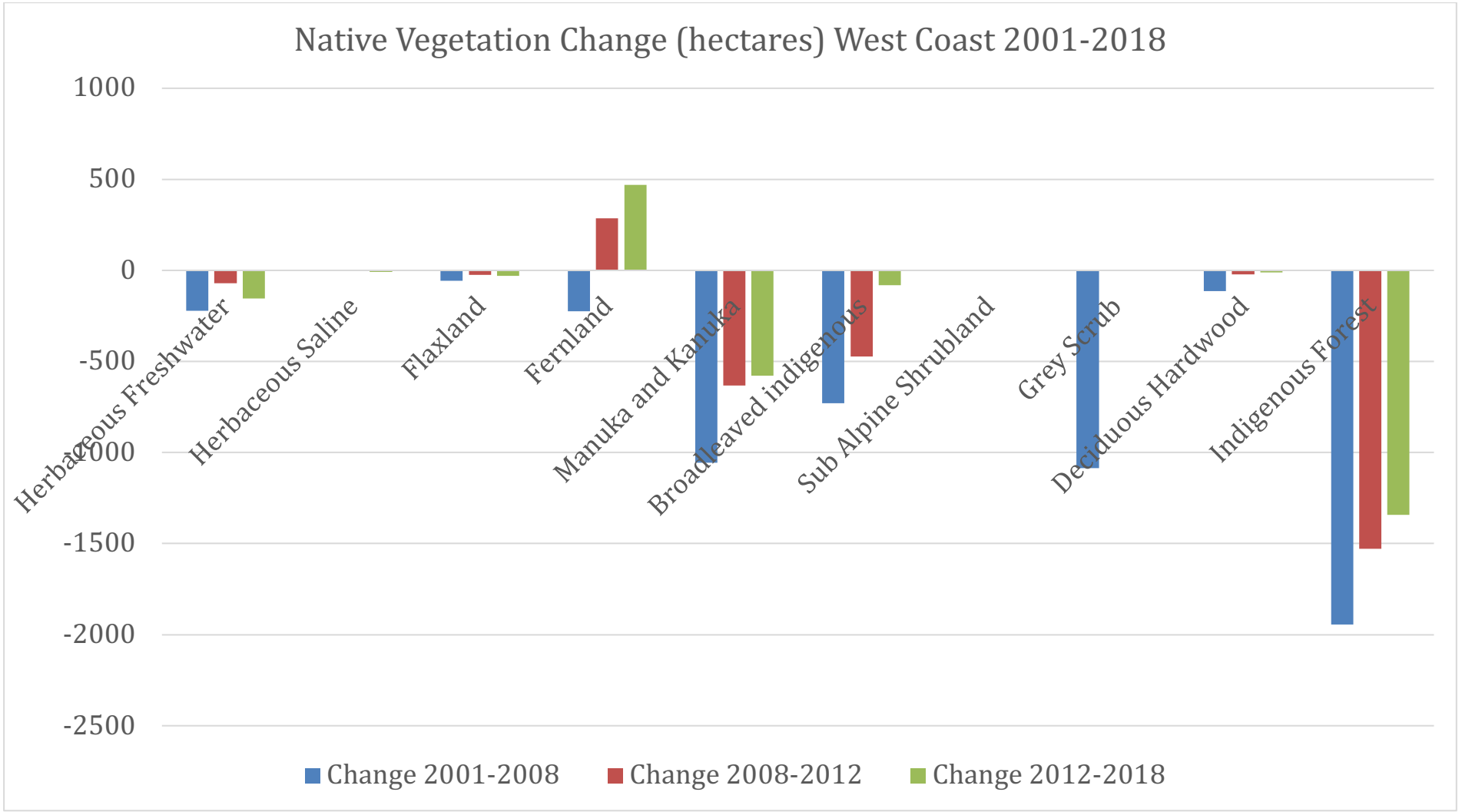
Discussion

In Buller and Westland a resource consent is required for any substantive native vegetation clearance.

In Grey a resource consent was required from 2005 to about 2012 when the SNA process was completed. After that clearance outside of an SNA became a Permitted Activity

Based on this analysis the greatest native vegetation losses were seen in the two districts with more stringent vegetation protection rules. In Grey, where only identified SNAs are protected, about 2000ha of indigenous vegetation has been lost in the last 17 years, whereas in Buller the figure is closer to 3600ha and in Westland around 4500ha of indigenous vegetation has been lost with 2500ha of this in the Harihari ecological district.

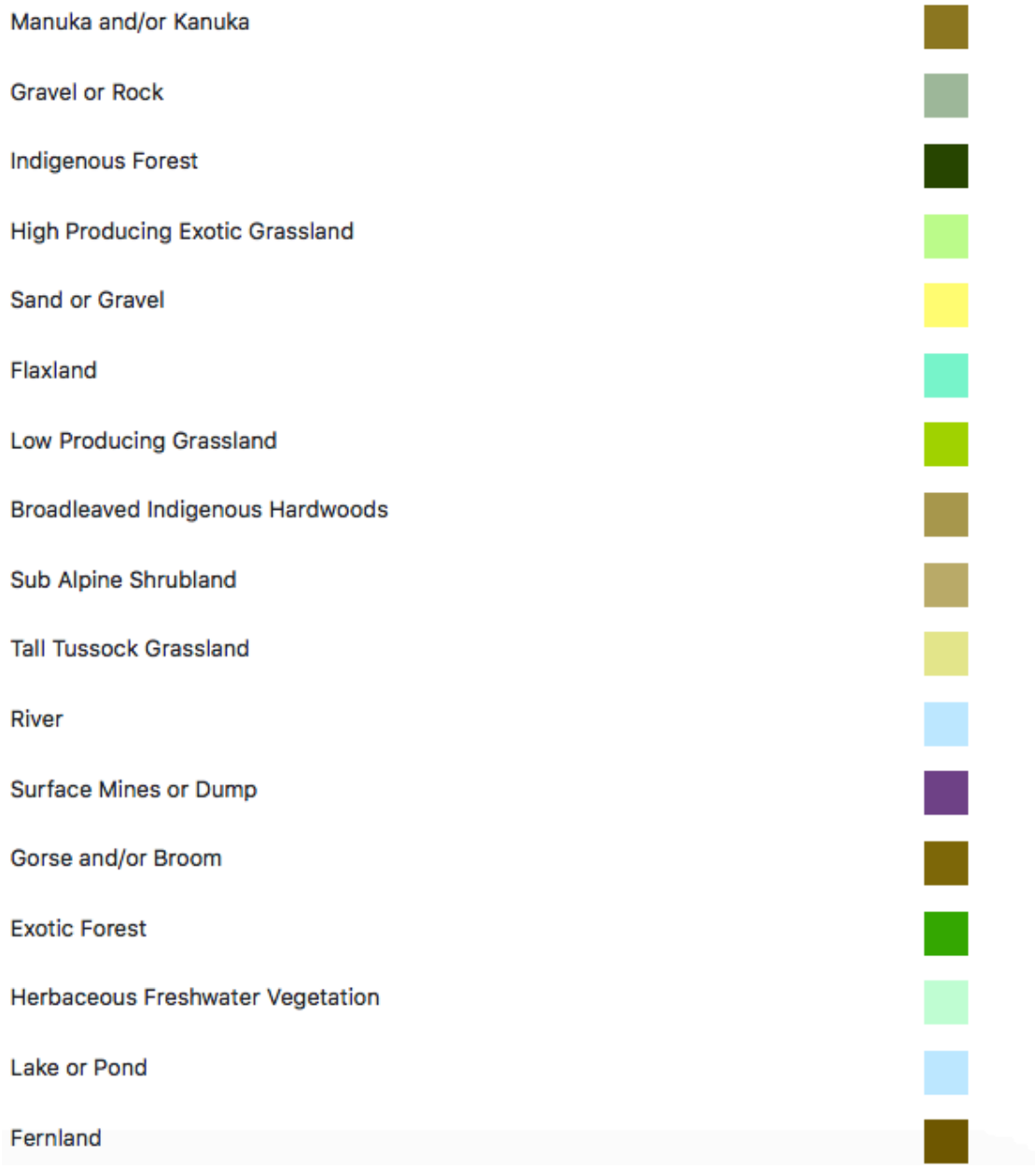
The greatest period of native vegetation loss was during the 2001-2008 period. This coincided with the dairy boom. It also represented the tail end of the substantive indigenous logging regime on the West Coast.

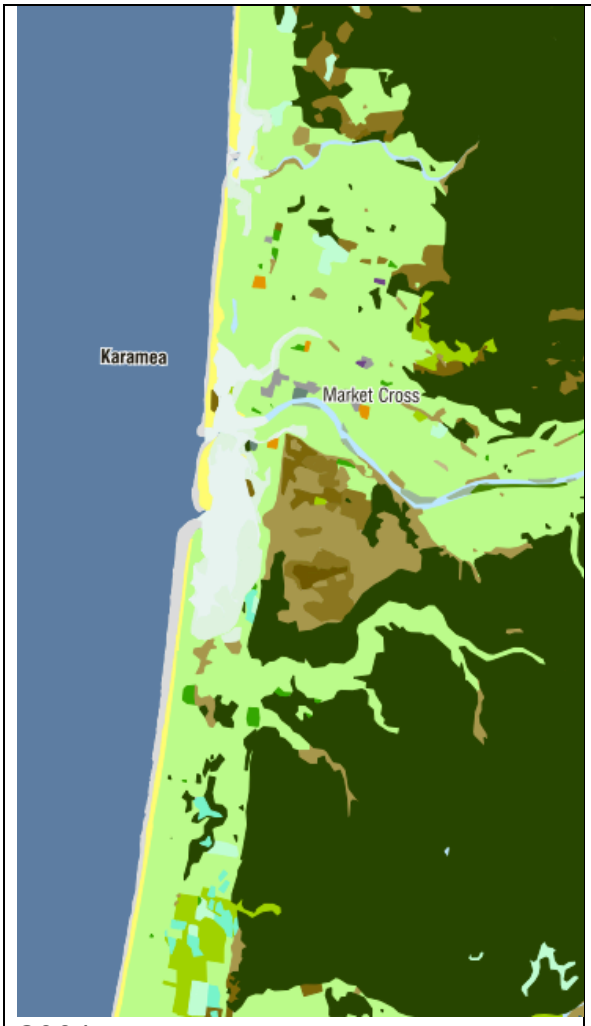

Native Vegetation Change (hectares) West Coast 2001-2018
1000
500
0
-500
-1000
-1500
-2000
-2500
Herbaceous Freshwater
Herbaceous Saline
Flaxland
Fernland
Manuka and Kanuka
Broadleaved indigenous
Sub Alpine Shrubland
Grey Scrub
Deciduous Hardwood
Indigenous Forest
Change 2001-2008
Change 2008-2012
Change 2012-2018

Native Vegetation Change by Ecological District (ha) 2001-2018 (source Landcare Research Land Cover Database)														
Land Cover Class	**Blackball**	**Brunner**	**Buller**	**Foulwind**	**Greymouth**	**Harihari**	**Hochstetter**	**Hokitika**	**Karamea**	**Maimai**	**Ngakawau**	**Reefton**	**Rotoroa**	**Totara Flat**
Broadleaved Indigenous Hardwoods	-23.29	-63.04	-30.62	-103.26	80.39	-601.43	-38.95	-434.62	28.89	-27.88	52.80	-77.24	-17.68	-120.70
Fernland	34.09	374.05		-231.97	33.60	119.76	94.72	-244.53	-8.43	-7.54	459.07	-27.70	-18.24	-5.85
Flaxland	-15.10	-4.17		-48.13	-5.03	0.00	-4.28	-4.64	-31.71	0.00	0.00	0.00	13.27	0.00
Herbaceous Freshwater Vegetation	-12.54	-88.48	0.00	-15.47	0.00	-9.80	-25.14	-119.34	-72.40	-4.14	-2.67	-1.71	-33.56	-10.51
Herbaceous Saline Vegetation				0.00	0.00	0.00		-6.53	0.00					
Indigenous Forest	-287.16	-184.11	-68.45	-95.26	-127.22	-574.06	-526.64	-435.65	-156.05	-785.74	-39.82	-510.51	-28.32	-415.35
Lake or Pond	0.95	0.00	0.00	22.97	6.26	0.86	-0.85	10.68	0.00	1.83	-13.43	0.00	0.77	43.54
Manuka and/or Kanuka	-85.97	-17.97	-5.45	-642.79	-26.33	-292.53	-440.80	-341.08	-110.68	-97.77	-47.33	-157.41	-94.14	-90.36
Matagouri or Grey Scrub	0.00	0.00				--1035.64	-17.07	-14.75						
Sub Alpine Shrubland	0.00	0.00	0.00			0.00	0.00		0.00	0.00	0.00	0.00		0.00
Tall Tussock Grassland	-14.14	0.00	0.00			0.00	0.00	0.00	6.20	0.00	-19.33	2.05		0.00
Total Indigenous	-403.17	16.27	-104.52	-1113.90	-38.33	-2392.85	-958.99	-1590.46	-344.19	-921.22	389.28	-772.50	-177.90	-599.23
Total Wetland	-11.59	-88.48	0.00	7.50	6.26	-8.94	-25.98	-115.19	-72.40	-2.30	-16.10	-1.71	-32.79	33.03
Total Forest	-396.43	-265.13	-104.52	-841.30	-73.16	-2503.66	-1023.45	-1226.09	-237.85	-911.38	-34.36	-745.15	-140.14	-626.41

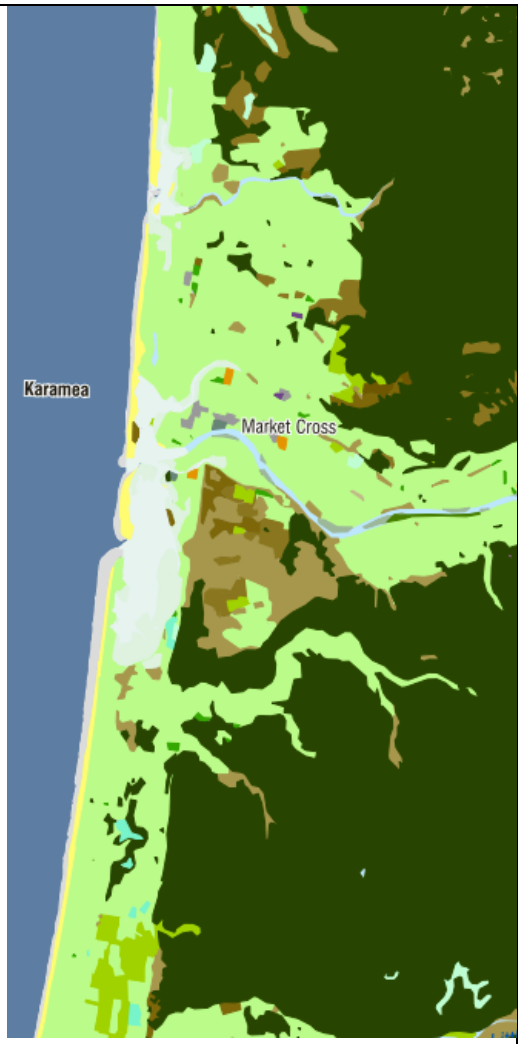
Visual Comparisons of Vegetation Change by Area (Source https://vizbe.landcareresearch.co.nz)

Key:

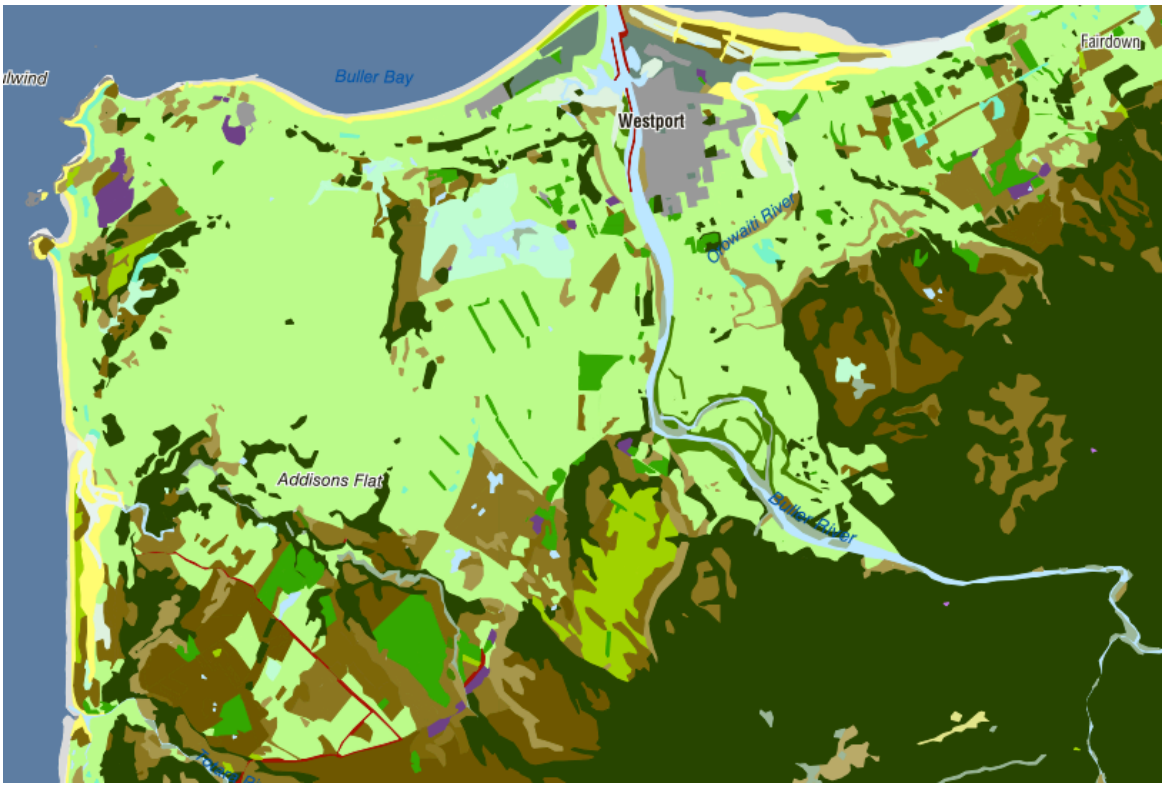




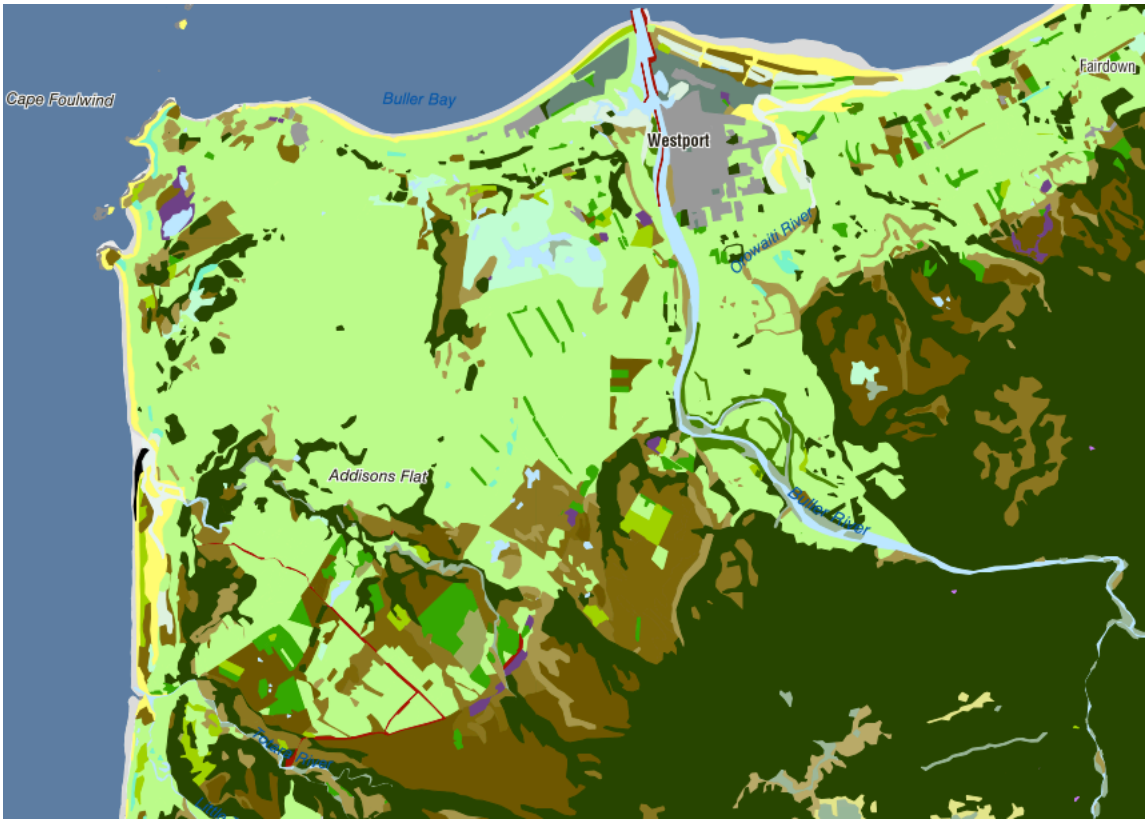
2001



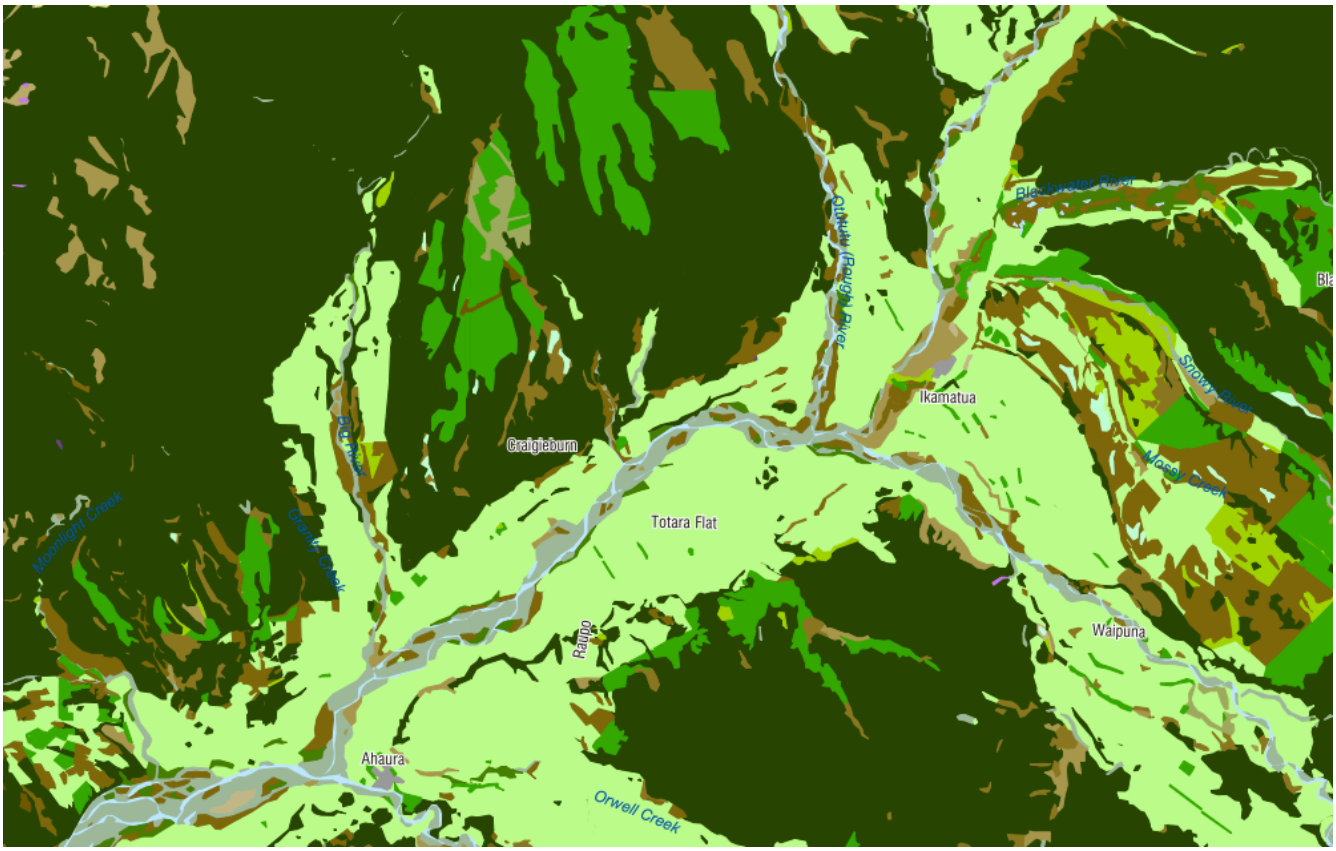
2018


Buller Bay
Westport
Fairdown
Addisons Flat

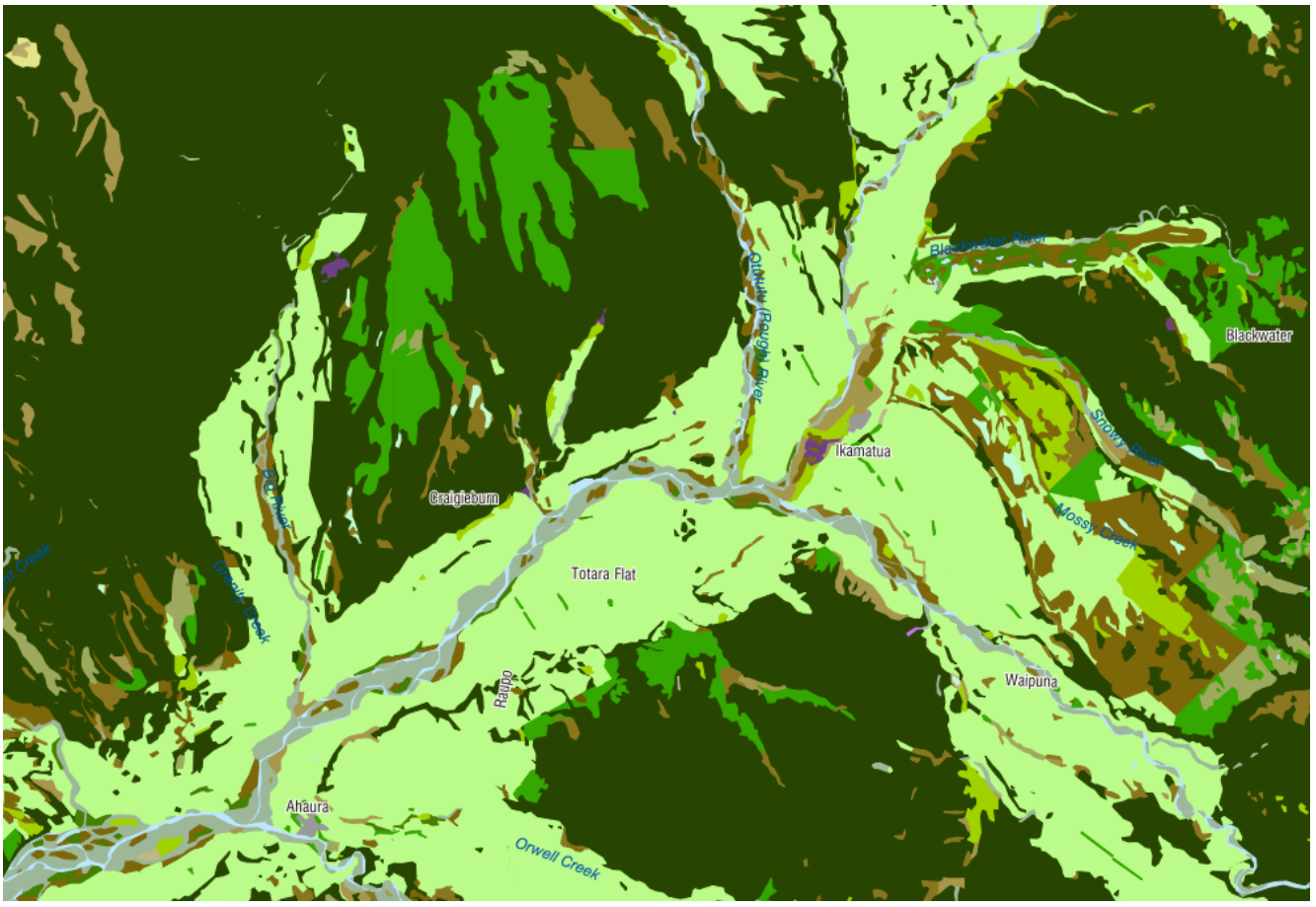
2001


Cape Foulwind
Buller Bay
Westport
Fairdown
Addisons Flat

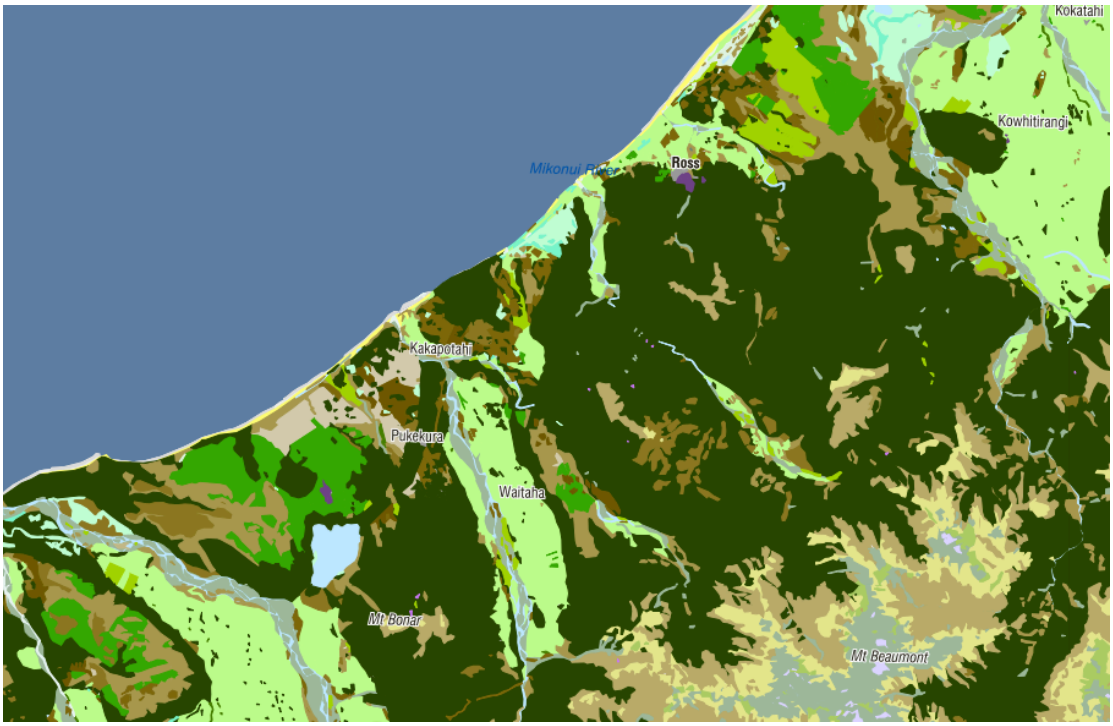
2018

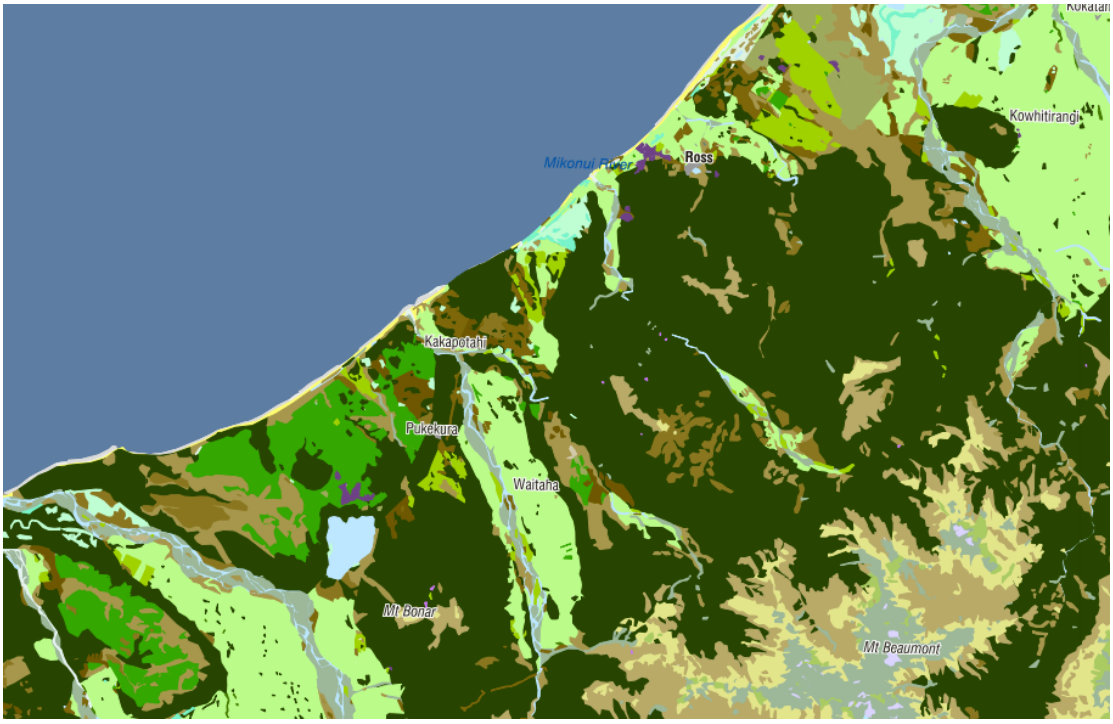

Craigieburn
Totara Flat
Ikamatua
Waipuna
Ahaura
Orwell Creek
Snowy River
Mossy Creek
Moonlight Creek
Gravity Creek
Rahoe

2001


Craigieburn
Totara Flat
Ikamatua
Waipuna
Ahaura
Orwell Creek
Blackwater
Snowy River
Mossy Creek
Gravity Creek
Rahoe

2018


Kokatahi
Kowhitirangi
Ross
Kakapotahi
Pukekura
Waitaha
Mt Bonar
Mt Beaumont
2001


Kowhitirangi
Ross
Kakapotahi
Pukekura
Waitaha
Mt Bonar
Mt Beaumont
2018