LINKONLINE

Manaaki Whenua
Landcare Research

LCDB v5 Tracks New Zealand's Changing Landscape

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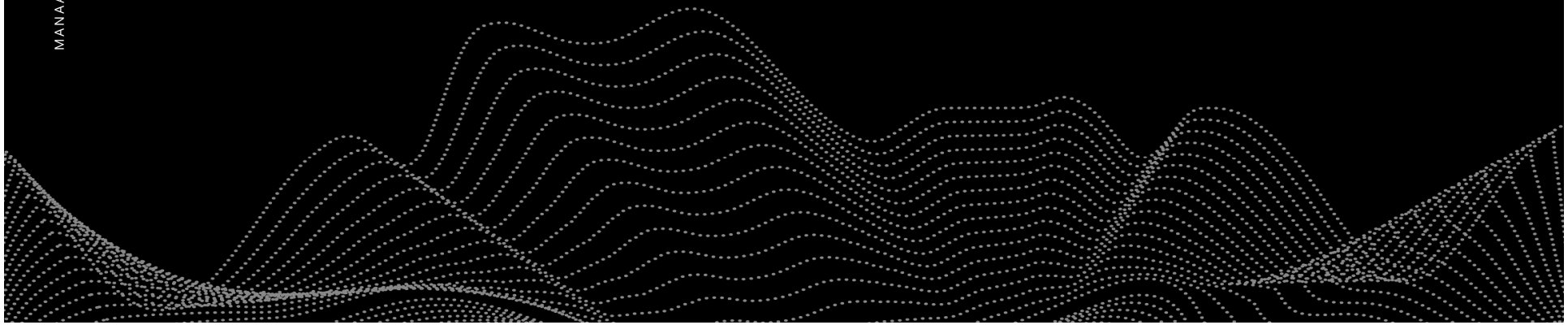
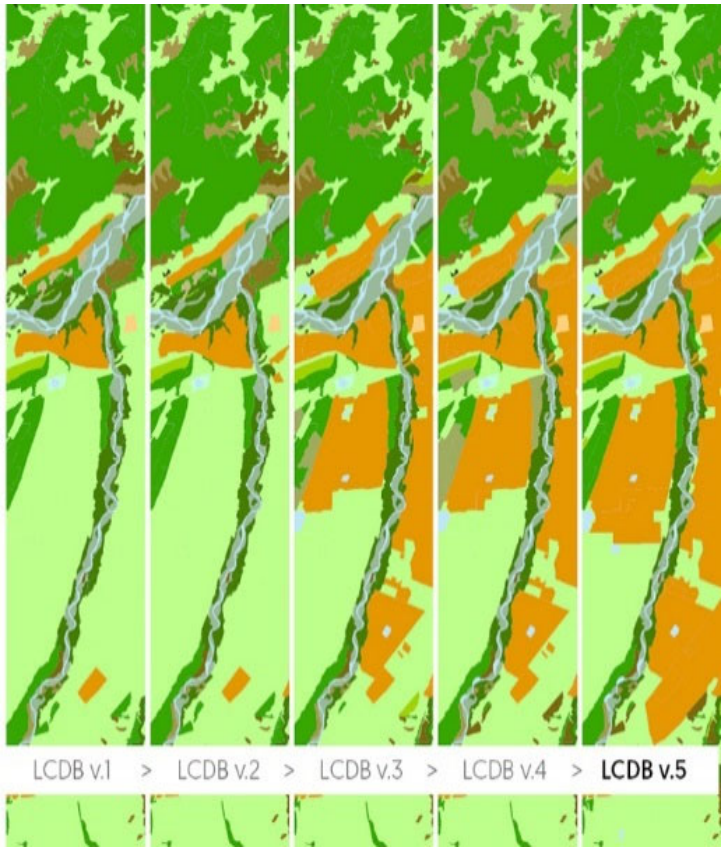
MANAAKI WHENUA – LANDCARE RESEARCH



Outline

- Brief details on LCDB v5.0
- Changes from earlier versions
- Where to get it and how to view it
- Ancillary files and other information
- Feedback on mistakes and improvements
- Change analysis summaries
- Significant improvements in LCDB v5.0
- Usage issues



LCDB v5.0 brief details

- Land cover map of NZ (1ha minimum) – at five points in time
- Funded on behalf of Government, by the Ministry for the Environment, Te Uru Rākau (Ministry for Primary Industries), and Department of Conservation.
- Publicly released on 31st January 2020
- Available since 20th December 2019 to funders - for feedback

- Compatible with earlier versions
- New timestep – nominally summer 2018/19
- Significant improvement across all timesteps
- First revision using Sentinel-2 imagery

- LCDB v4.1 and earlier versions now deprecated – **Please use LCDB v5.0**
- Over 5400 views and over 700 downloads

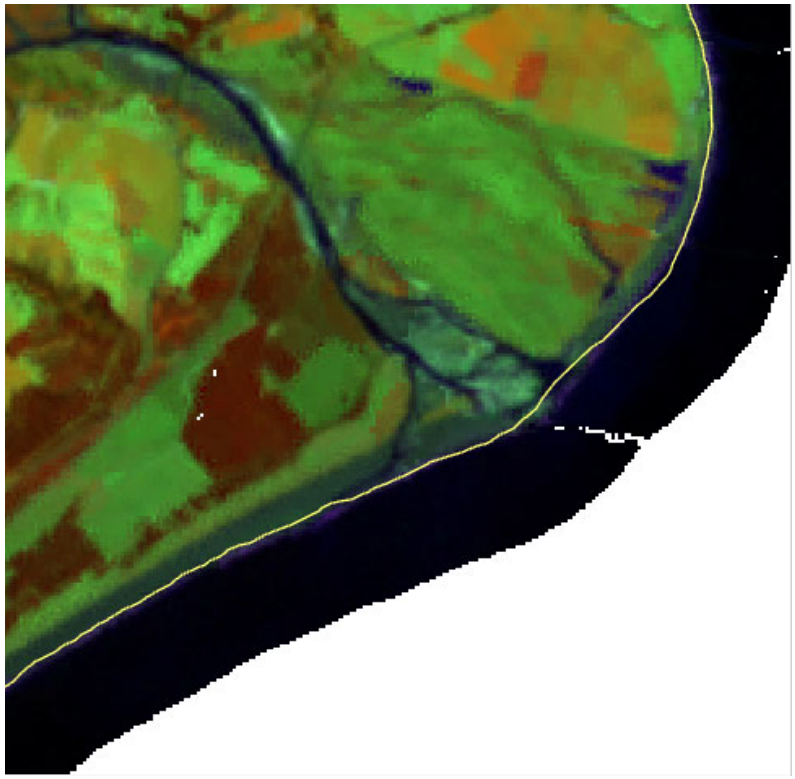
Attribute changes from earlier versions

- Added **Name_2018** and **Class_2018**

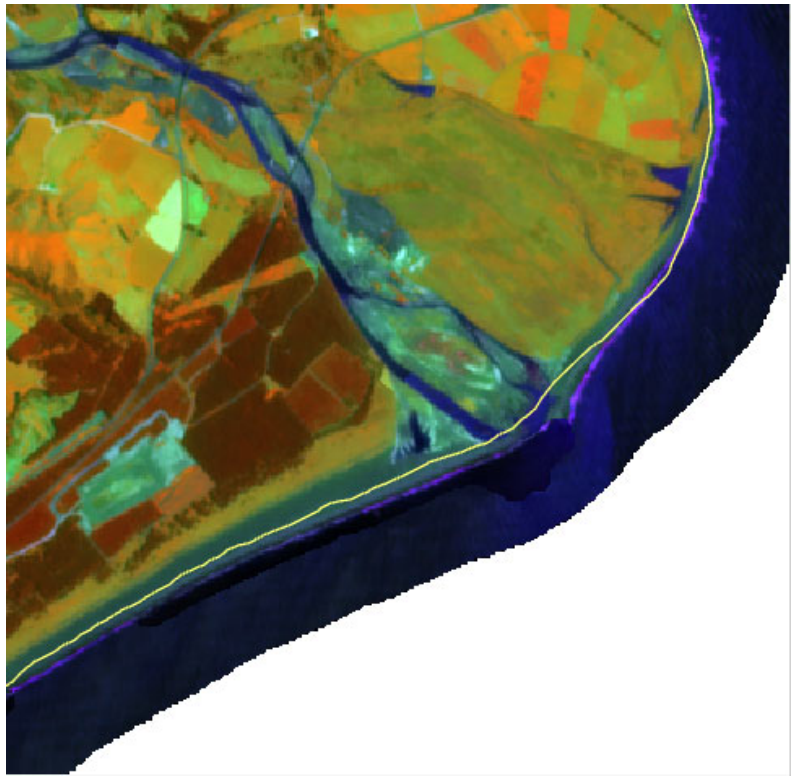
- Wetland flags
  - Previously **WET_CONTEXT**
  - Now one **Wetland** flag per timestep
  - Covers ***all*** wetlands
  - Lakes, Rivers, Estuarine open water are not considered wetlands

- Onshore flags
  - One **Onshore** flag per timestep
  - From LINZ coastlines
  - Few changes – not suitable for costal movement tracking

No coastline change mapped near Clarence River mouth



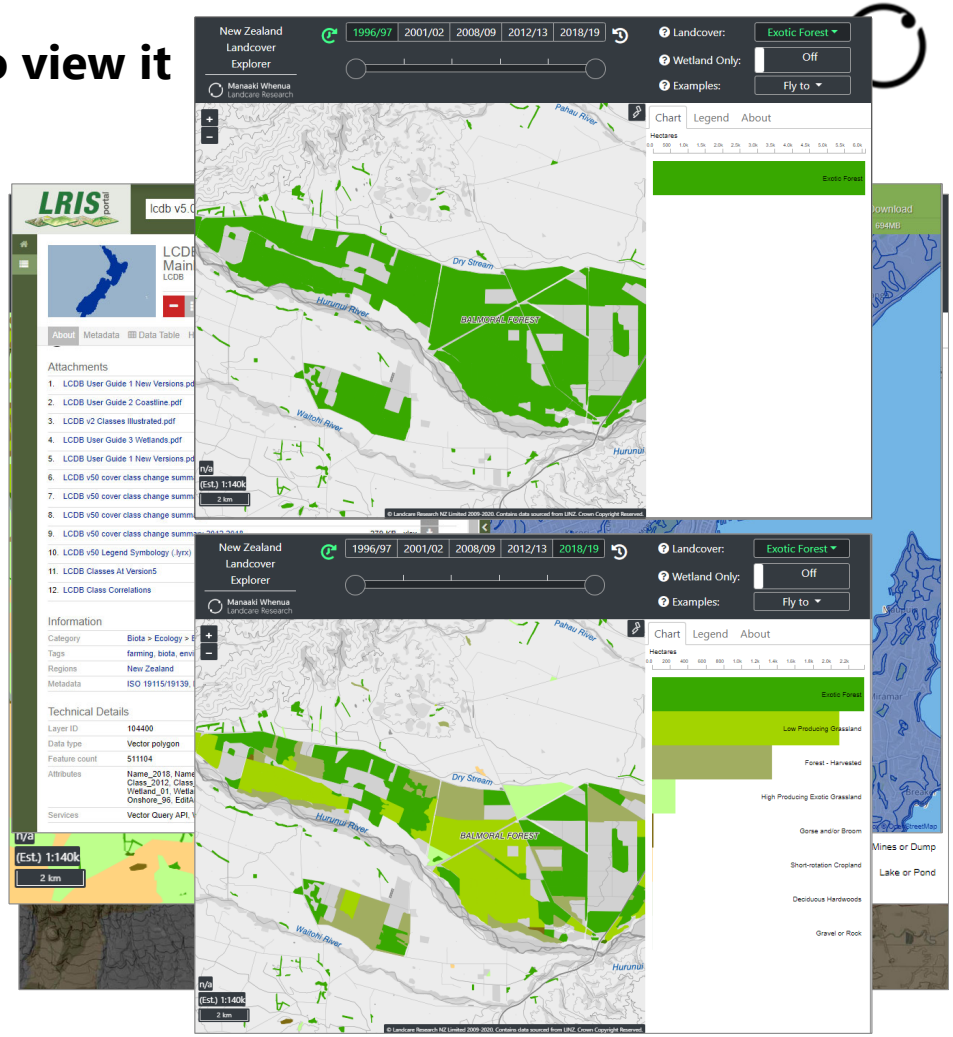
2013/14 Landsat 8 mosaic



2018/19 Sentinel 2 mosaic

Where to get LCDB v5.0 and how to view it

- Data – Via the LRIS Portal
  https://lris.scinfo.org.nz/
- LCDB Explorer – using Our Environment
  https://ourenvironment.scinfo.org.nz/
- Web Map Service (API)
  http://maps.scinfo.org.nz/
- OGC API Features service
  Experimental – contact us

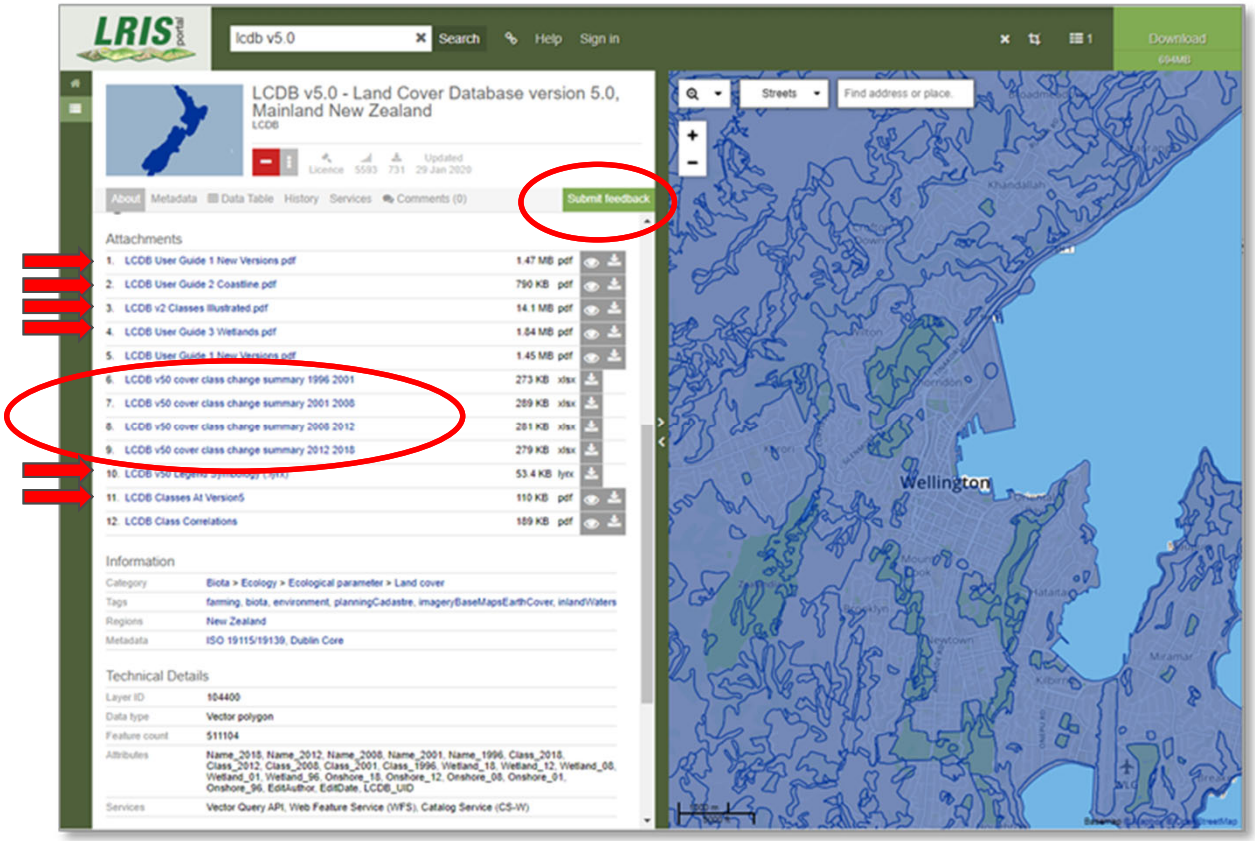


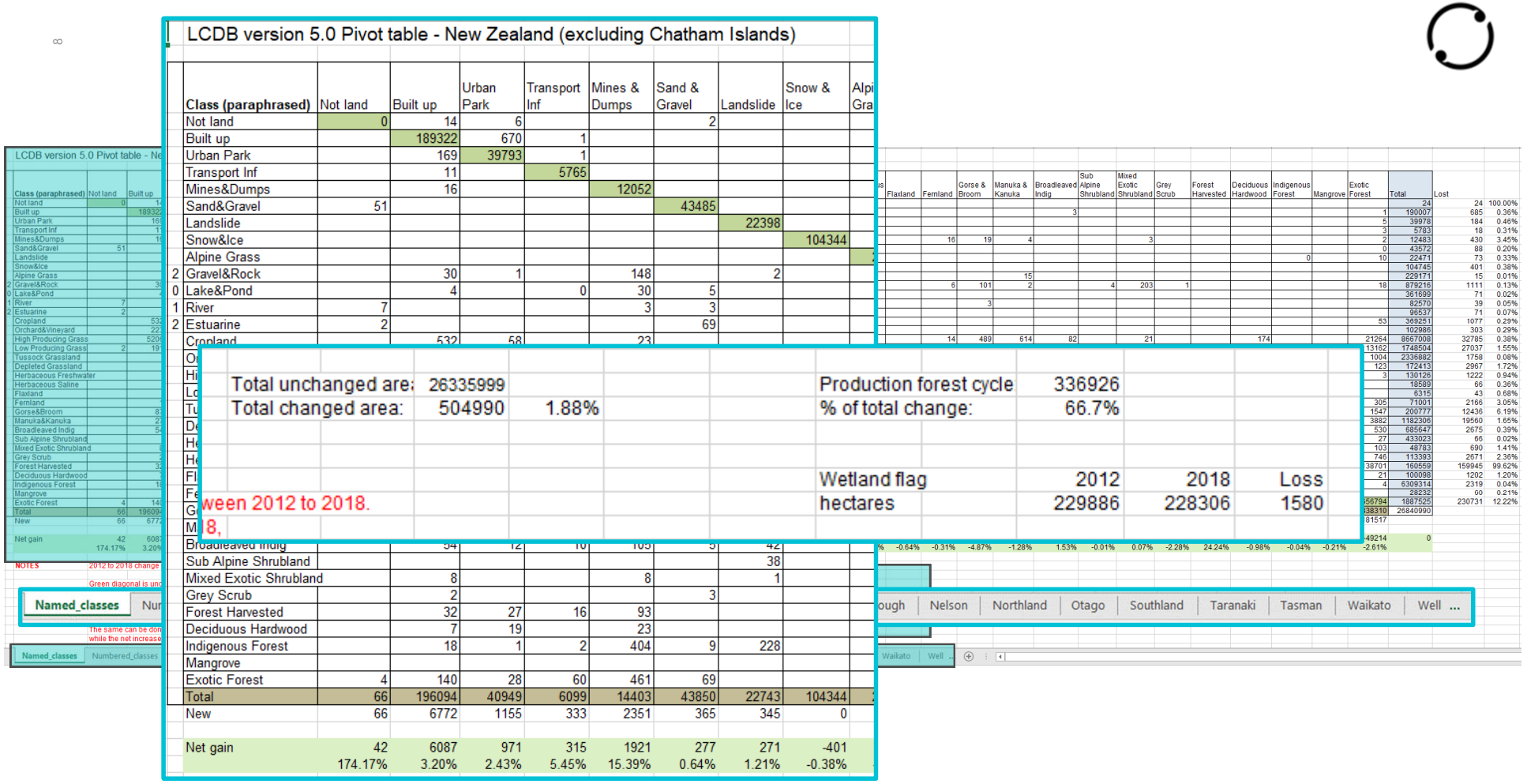
Ancillary files and other information

- Guides
- Class definitions
- Symbology (ArcPro)

- Feedback

- Change summaries





LCDB version 5.0 Pivot table - New Zealand (excluding Chatham Islands)

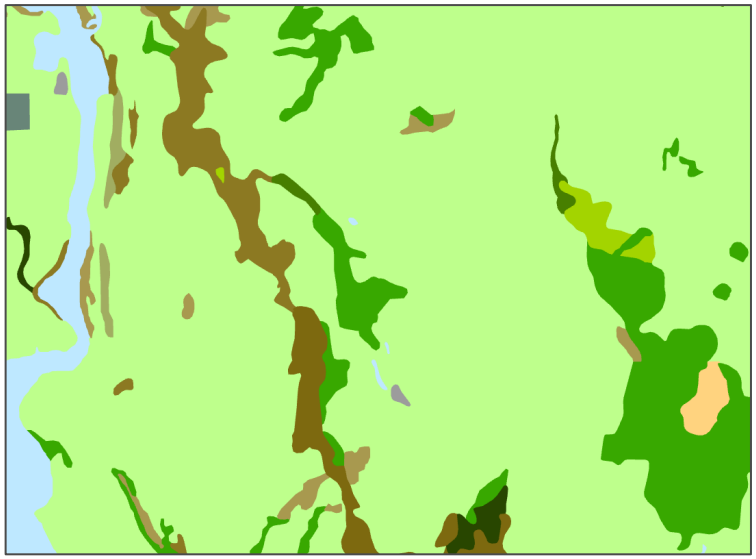
	Class (paraphrased)	Not land	Built up	Urban Park	Transport Inf	Mines & Dumps	Sand & Gravel	Landslide	Snow & Ice	Alpi Gra
	Not land	0	14	6			2			
	Built up		189322	670	1					
	Urban Park		169	39793	1					
	Transport Inf		11		5765					
	Mines&Dumps		16			12052				
	Sand&Gravel	51					43485			
	Landslide							22398		
	Snow&Ice								104344	
	Alpine Grass									
2	Gravel&Rock		30	1		148		2		
0	Lake&Pond		4		0	30	5			
1	River	7				3	3			
2	Estuarine	2					69			
	Cropland		532	58		23				
	Orchard&Vineyard									
	High Producing Grass									
	Low Producing Grass									
	Tussock Grassland									
	Depleted Grassland									
	Herbaceous Freshwater									
	Herbaceous Saline									
	Flaxland									
	Fernland									
	Gorse&Broom									
	Manuka&Kanuka									
	Broadleaved Indig		54	12	10	105	5	42		
	Sub Alpine Shrubland							38		
	Mixed Exotic Shrubland		8			8		1		
	Grey Scrub		2				3			
	Forest Harvested		32	27	16	93				
	Deciduous Hardwood		7	19		23				
	Indigenous Forest		18	1	2	404	9	228		
	Mangrove									
	Exotic Forest	4	140	28	60	461	69			
	Total	66	196094	40949	6099	14403	43850	22743	104344	
	New	66	6772	1155	333	2351	365	345	0	
	Net gain	42	6087	971	315	1921	277	271	-401	
		174.17%	3.20%	2.43%	5.45%	15.39%	0.64%	1.21%	-0.38%	

Total unchanged are:	26335999		
Total changed area:	504990	1.88%	
ween 2012 to 2018.			
8,			

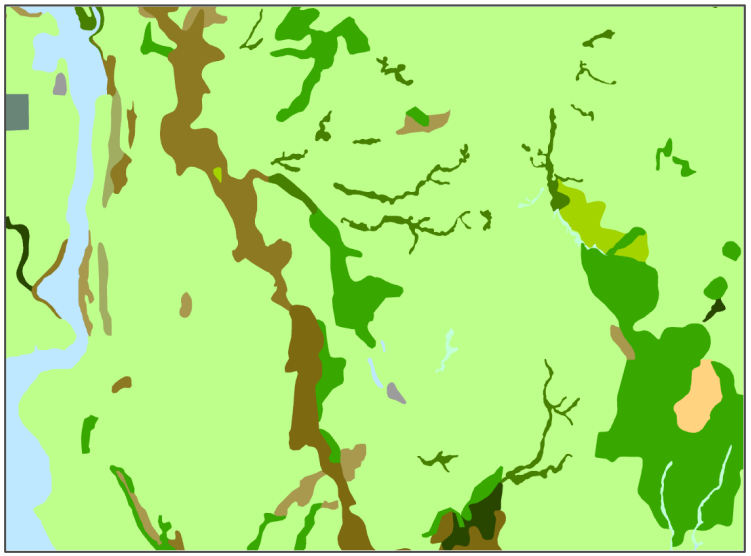
Production forest cycle	336926			
% of total change:	66.7%			
Wetland flag	2012	2018	Loss	
hectares	229886	228306	1580	

Named_classes | Nelson | Northland | Otago | Southland | Taranaki | Tasman | Waikato | Well ...

Significant improvements – Wetlands, especially in Waikato



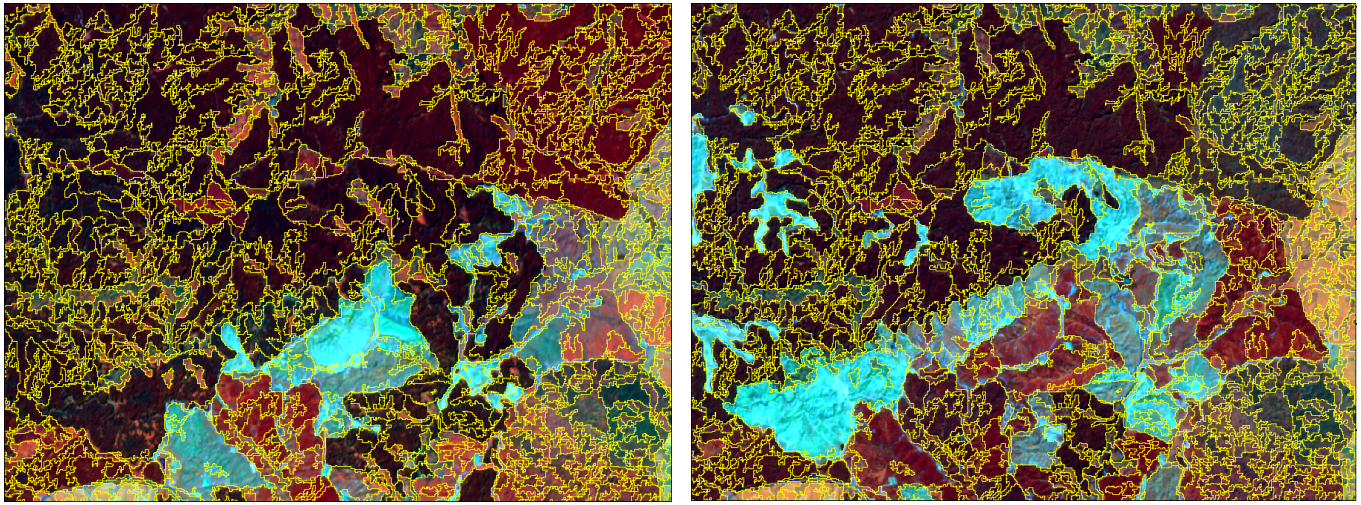
LCDB v4.1 (2012)

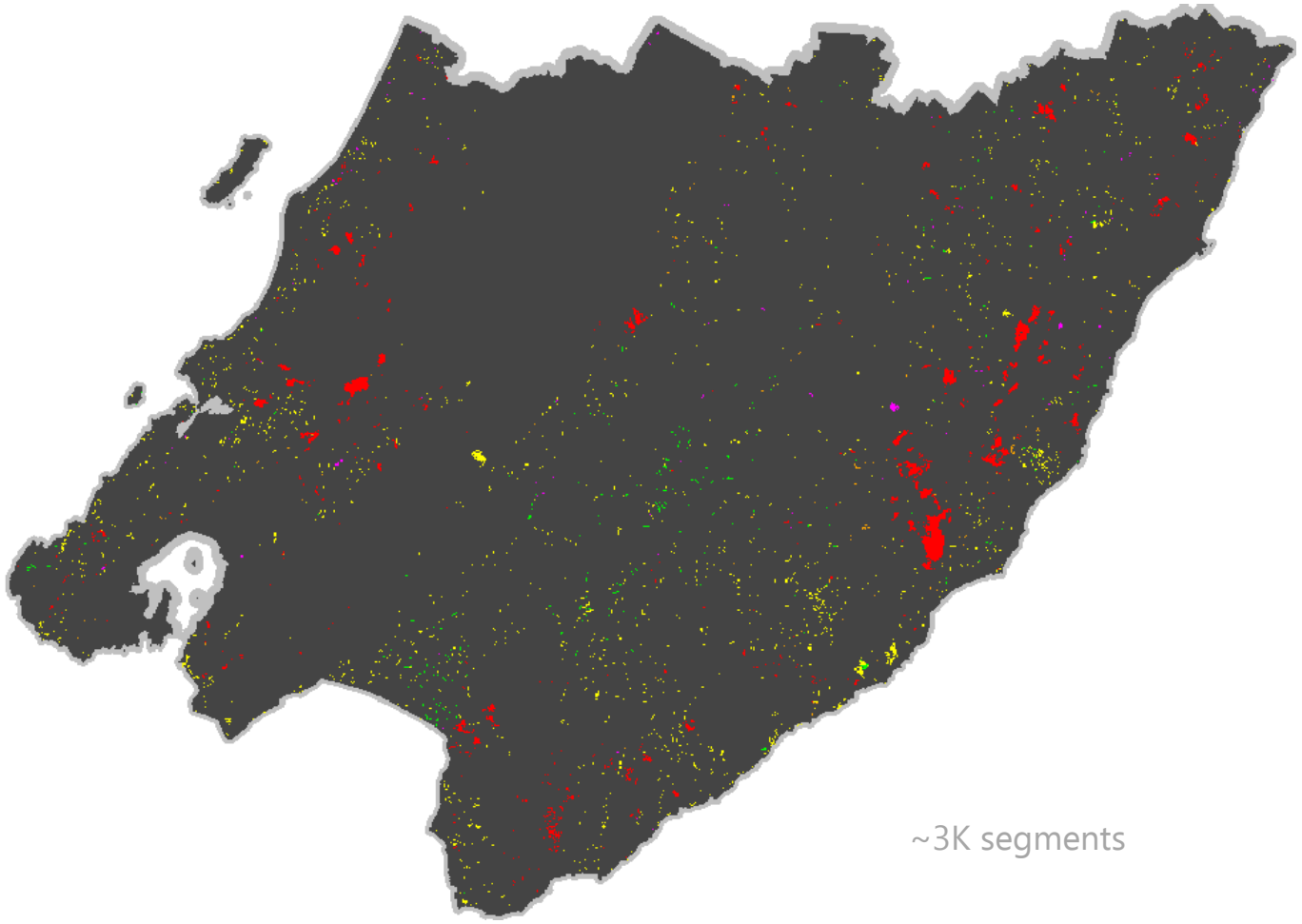


LCDB v5.0 (2012)

Targeted change polygon generation

- Change polygons identified (destock, re-stock, scrub, urban, water)
  - Multidate image segmentation
  - Additional attributes, e.g. radar, dem
  - Rules and thresholds based on polygon statistics identify likely change
  - Visual confirmation
- LUM mapping (up to 2016)
- New 2016-18 target polygons identified and mapped



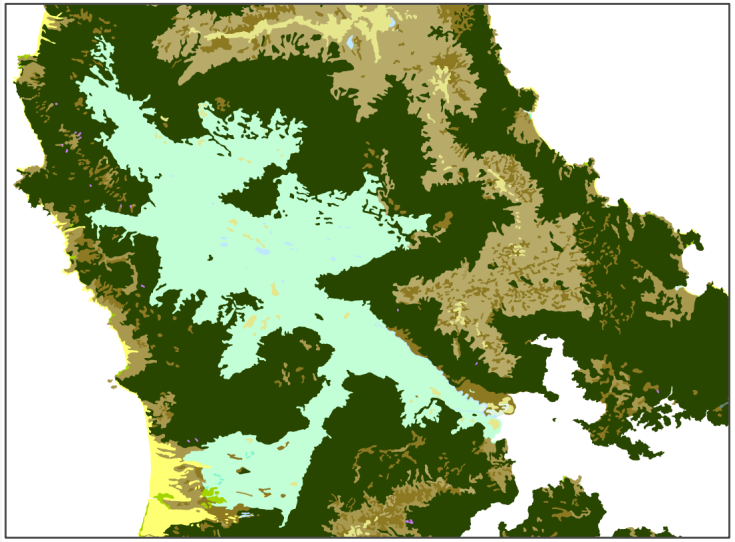

~3K segments

Significant improvements – Stewart Island / Paterson Inlet

Grassland, Sedge and Saltmarsh
- High Producing Exotic Grassland
- Low Producing Grassland
- Tall Tussock Grassland
- Depleted Grassland
- Herbaceous Freshwater Vegetation
- Herbaceous Saline Vegetation
- Flaxland

Scrub and Shrubland
- Fernland
- Gorse and/or Broom
- Manuka and/or Kanuka
- Broadleaved Indigenous Hardwoods
- Sub Alpine Shrubland
- Mixed Exotic Shrubland
- Matagouri or Grey Scrub
- Peat Shrubland (Chatham Is)
- Dune Shrubland (Chatham Is)

Forest
- Forest - Harvested
- Deciduous Hardwoods
- Indigenous Forest
- Exotic Forest



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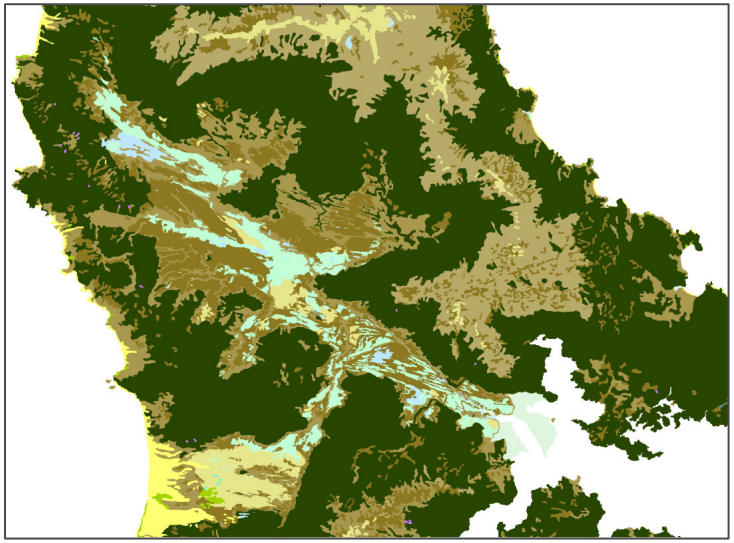


LCDB v5.0 (2012)

Significant improvements – Post Earthquake Christchurch

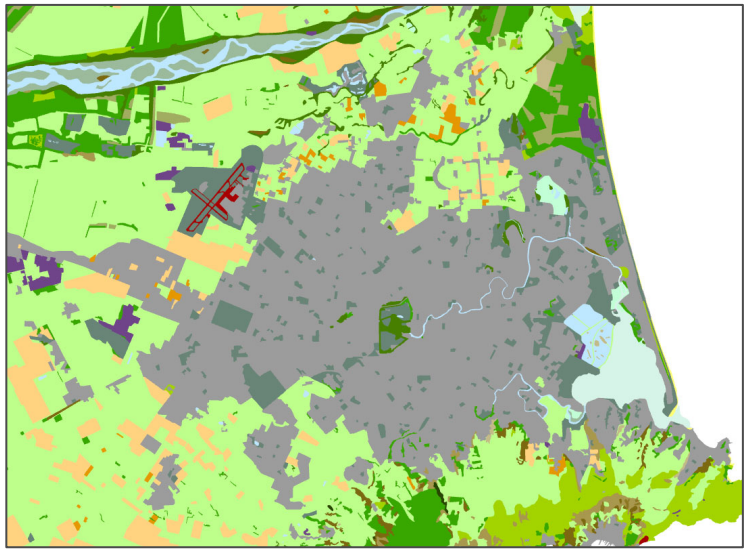
Artificial Surfaces
- Built-up Area (settlement)
- Surface Mines and Dumps
- Transport Infrastructure
- Urban Parkland/Open Space

Bare or Lightly Vegetated Surfaces
- Sand and Gravel
- Landslide
- Alpine Grass/Herbfield
- Gravel and Rock
- Permanent Snow and Ice

Water Bodies
- Lake or Pond
- River
- Estuarine Open Water

Cropland
- Short-rotation Cropland
- Orchard Vineyard and Other Perennial

Grassland, Sedge and Saltmarsh
- High Producing Exotic Grassland
- Low Producing Grassland
- Tall Tussock Grassland
- Depleted Grassland
- Herbaceous Freshwater Vegetation
- Herbaceous Saline Vegetation
- Flaxland



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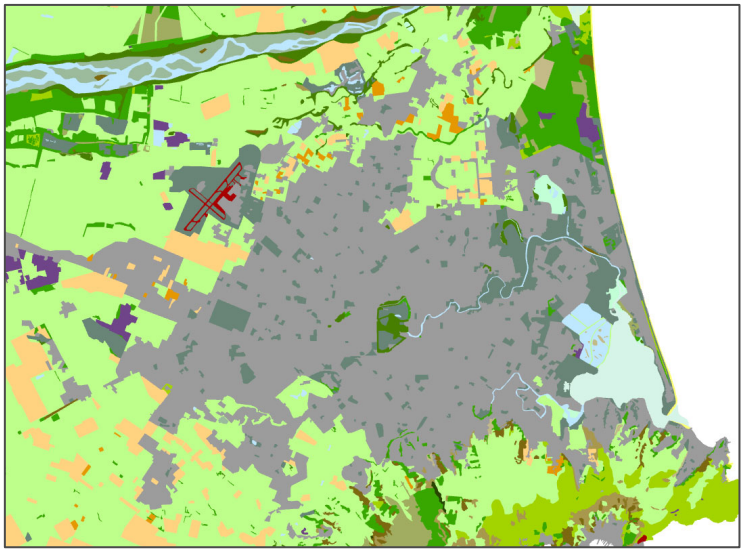
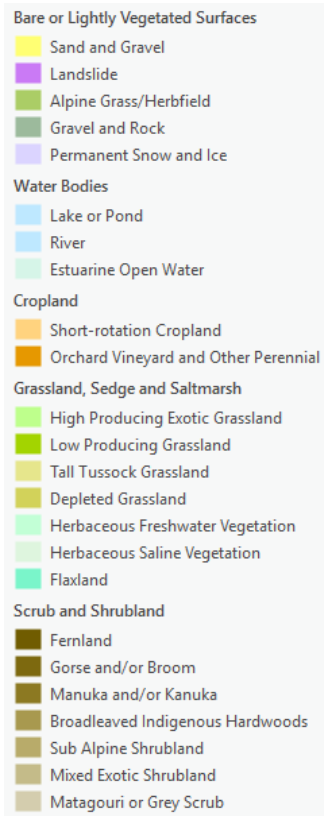
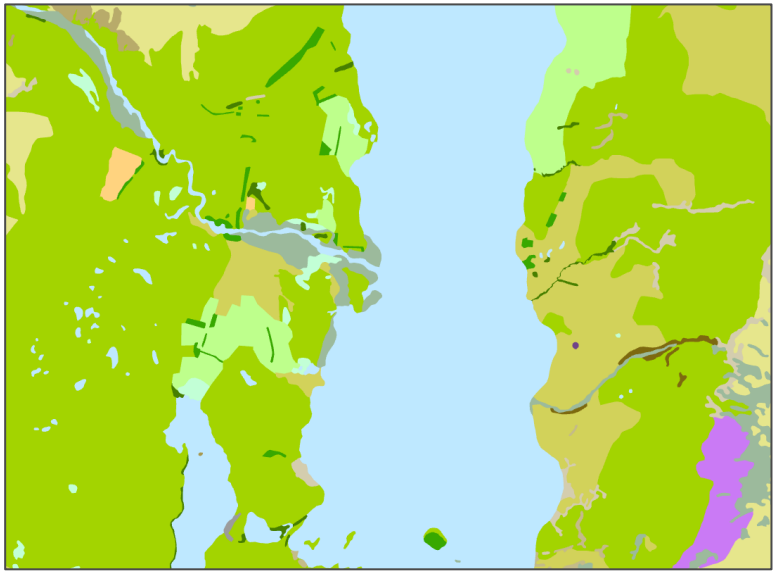


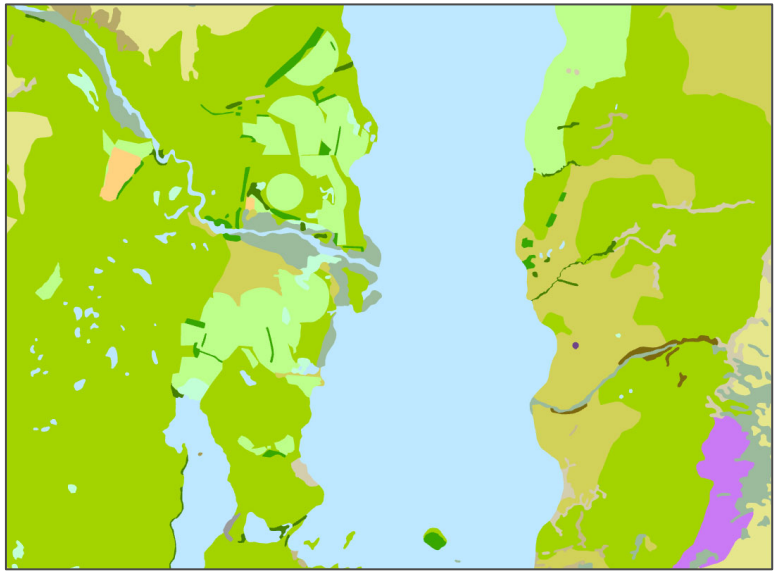
LCDB v5.0 (2018)

Significant improvements – Irrigated Grassland





LCDB v4.1



LCDB v5.0

Other Significant improvements

- User feedback from v4.1 (known errors)
- Mappers spent two weeks “freestyle scanning” their areas

Quality Assurance, and Usage issues

- A variety of means used to pick up errors
  - Unexpected significant changes in class areas
  - Improbable transitions
  - Stakeholder feedback (MfE, MPI, DOC)

- Usage issues
  - Fundamentally still a 1 hectare mapping scale
  - Will pick up broader scale patterns of change
  - Can miss an accumulation of smaller changes if they are inherently small

Summary

- LCDB v5.0 is available – please use this new version
- New 2018 timestep, but also really significant improvements throughout
- Summary information available from portal
- Please feed back errors or other datasets that could improve future versions

- Thank you for listening