



# Change in Landcover of the Rotorua District



*Percentage change in land cover types*

## Purpose of indicator

Different types of land use result in different environmental impacts. For example native bush has greater biodiversity values and ecosystem services than cleared land. The urban environment has a greater area of hard surfaces which sheds more water/rainfall than grassed or vegetated areas. Monitoring land use change also keeps track of changes to indigenous vegetation and habitats.

## Current information and trend

The most recent data available on land use is the national Land Cover Database 3 (LCDB3) released in July 2012. It shows land use for the year 2008. Table 1 shows the extent of land cover types in 2001 and percentage change from 2001 to 2005 and 2005 to 2008.

Land cover type	2001 (LCDB1) Extent (ha)	Percentage change 2001 to 2005 (LCDB1- LCDB2)	Percentage change 2005 to 2008 (LCDB2- LCDB3)
Urban	3286.873	0.10	0.05
Urban Open Space	708.845	-0.01	0.01
Bare Ground	1180.8390	-0.65	0.00
Scrub	12150.5	-0.42	0.15
Tussock Grassland	444.497	0.25	0.00
Primarily Horticulture	4.015	302.88	-0.03
Primarily Pastoral	125795.8	-0.11	0.00
Planted Forest	53372.5	0.21	-0.01
Indigenous Forest	41416.98	0.18	-0.01
Inland Water	22204.86	0.00	0.00
Inland Wetland	573.978	0.01	-0.17
Total	261139.6 ha		

Table 1.

From 2001 to 2005 there was a large increase in Primarily Horticulture (302.88%) but this only made up 0.45% of the district's land cover in 2008. There was also a small increase in Tussock Grassland (0.25%), Planted Forest (0.21%), and Indigenous Forest (0.18%) from 2001 to 2005. In the same time period there was a decrease in Bare Ground (-0.65%), Scrub (-0.42%) and Primarily Pastoral land (-0.11%).

Some of these changes may be due in changes to categories between the two periods, while others may be due to natural attrition such as bare ground to indigenous forest. There was very little change from 2005 to 2008. The biggest change in this period was a loss of Inland wetland (-0.17%)

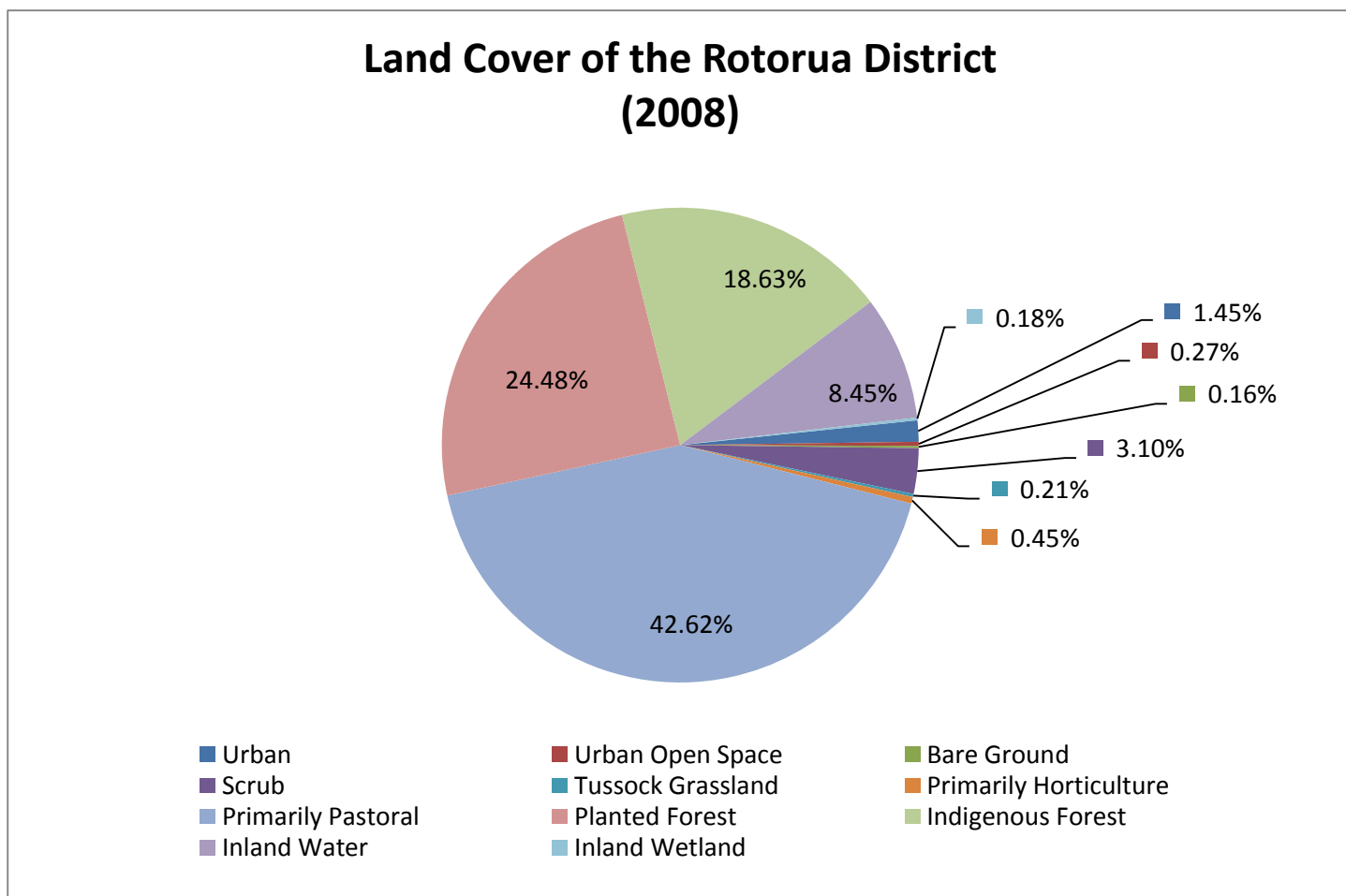


Figure 1.

Figure 1 shows the composition of land cover in the Rotorua district in 2008. Primarily Pastoral land is the most common land cover with 42.62%, followed by Planted Forest (24.48%) and Indigenous Forest (18.63%). Most of this land cover is in the rural area which is expected. Inland water makes up over 8% of the district reflecting the nature and number of lakes in our district. The rest of the district's land cover is made up of smaller percentages including Scrub (3.1%), Urban (1.45%), Primarily Horticulture (0.45%), Urban Open Space (0.27%), Tussock Grassland (0.21%) Inland Wetland (0.18%), and Bare ground (0.16%).

## Land Cover of the Rotorua District 2008 (grouped)

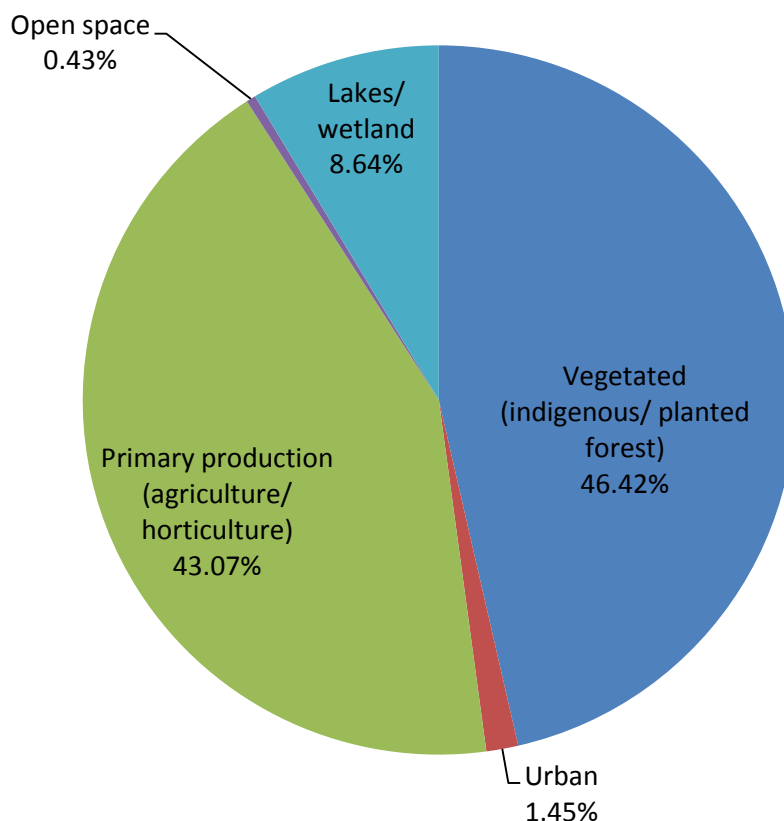


Figure 2.

Figure 2 shows land cover categories grouped into general types to give a simpler, overall representation of the district. This shows that most of the district is vegetated, that is, over 46% is in either indigenous forest or planted forest. About 43% of land is in primary production and nearly 9% is in lakes and wetlands. The urban area accounts for only 1.45% of the Rotorua district and includes all of the built environment, not just residential areas.

As expected the urban area has increased. From 2001 to 2005 there was an increase of 318.4ha, and from 2005 to 2008 an increase of 177.5ha. In total the urban area increased by 495.8ha. This is mainly due to changes made to the categories between LCDB1 (2001) and LCDB2 (2005), inclusion of residential areas of Reporoa and Kaingaroa where they previously were excluded, and also new subdivisions, for example some of the larger ones include Eastgate Business Park, Iles Road, Parklands Estate, Moana Views, Brunswick Estate, North Riding Estate, Still Water Estate, Oaklands Estate and Eastlake Estate.

Urban land cover is expected to continue to increase as new areas for green fill development have been identified in the Rotorua Proposed District Plan. A change is expected through the Proposed District Plan as it includes provisions to maintain, enhance and increase indigenous vegetation and habitats. This includes additional development rights for proposals that can demonstrate a significant reduction in nutrients for lake water quality benefits and protection of significant natural areas. This incentive is part of a wider lakes water quality programme lead by the Rotorua Lakes Strategy Group.

A change may also be seen in future 'Planted Forest' land cover due to Central North Island Treaty Settlements. A large area of land returned to iwi is forested, however iwi may choose to change from the current land use and consequently land cover.

The Emissions Trading Scheme (ETS) encourages retention of forests. In simple terms carbon credits can be claimed and sold for forests, but if a forest is permanently cleared carbon units must be paid. Forestry that is replanted is considered neutral (there is no carbon unit cost). For production forests the market demand and price of wood usually affects harvesting rates.

The Permanent Forest Sink Initiative also encourages retention of vegetation. This is for forests that are not planned for harvesting or clearing, some of which usually have indigenous vegetation. For more information about the ETS and PFSI see the Climate Change and Ministry for Primary Industries websites.

### In Summary

- The largest increase in types of land cover was from 2001 to 2005 in Primarily Horticulture (302.88%), however this only made up 0.45% of the district in 2008
- In 2008 Primarily Pastoral land was the most common land cover with 42.62%, followed by Planted Forest (24.48%) and Indigenous Forest (18.63%). Most of this is in the rural area.
- Over 46% of the district is vegetated in either indigenous forest or planted forest.
- About 43% of the district's land cover is for primary production (agriculture/ horticulture).
- The Proposed Rotorua District Plan encourages retention of indigenous vegetation and provides for growth of the urban area and incentives for land use change for water quality benefits.

### Further Information Sources

To view Land Cover Data Base 3

[www.lris.scinfo.org.nz](http://www.lris.scinfo.org.nz)

To view Lakes A indigenous vegetation and land use report

[Lakes A indigenous vegetation and land use report](#)

For information on The Emissions Trading Scheme

[www.climatechange.govt.nz](http://www.climatechange.govt.nz)

For information on the Emissions Trading Scheme and Forestry

[www.mpi.govt.nz](http://www.mpi.govt.nz)

To view the Rotorua Proposed District Plan

[Rotorua Proposed District Plan](#)