



# LUCAS Chatham Islands Land Use Map 1990 2008 2012 2016 v002

## Metadata

### File Identifier

cfbdaf5b-08cc-f424-3764-cf27c72211b9

### Language

eng

### Character Set

#### Character Set Code

utf8

### Hierarchy Level

#### Scope Code

dataset

### Hierarchy Level Name

dataset

## Contact

### Responsible Party

#### Individual Name

Michael Cooper

#### Organisation Name

LUCAS, Ministry for the Environment

#### Position Name

GIS Analyst

### Contact Info

#### Contact

##### Address

##### Address

##### Delivery Point

23 Kate Sheppard Place, PO Box 10362

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Wellington 6143

##### Country

New Zealand

##### Electronic Mail Address

lucas@mfe.govt.nz

### Role

#### Role Code

distributor

**Date Stamp**

## Date

2019-04-15

**Metadata Standard Name**

ANZLIC Metadata Profile: An Australian/New Zealand Profile of AS/NZS ISO 19115:2005, Geographic information - Metadata

**Metadata Standard Version**

1.1

**Reference System Info**

## Reference System

## Reference System Identifier

## Identifier

## Code

3793

**Identification Info**

## Data Identification

## Citation

## Citation

## Title

ANZLIC LUM 1990 2008 2012 2016 v002 Chatham Islands

## Date

## Date

## Date

**Abstract**

The Chatham Islands Land Use Map is composed of 12 land use classifications nominally at 1 January 1990, 1 January 2008, 31 December 2012 and 31 December 2016 (known as "1990", "2008", "2012" and "2016") and was created using broadly the same methodology as was used for mainland LUCAS NZ LUM 2016. These date boundaries were dictated by the First and Second Commitment Periods of the Kyoto Protocol. The layer can therefore be used to create either a 1990, 2008, 2012 or 2016 land use map depending on what field is symbolised.

**Purpose**

LUM tracks and quantifies changes in New Zealand land use so that Land Use, Land Use Change and Forestry (LULUCF) sector carbon accounting can be calculated for national Net Position, Kyoto Protocol and United Nations Framework Convention on Climate Change (UNFCCC) reporting.

**Credit**

Manaaki Whenua - Landcare Research

**Status**

## Progress Code

completed

**Resource Maintenance**

## Maintenance Information

## Maintenance And Update Frequency

## Maintenance Frequency Code

irregular

**Resource Format**

## Format

## Name

\*.xml

Version

Unknown

Descriptive Keywords

Keywords

Keyword

New Zealand

Type

Keyword Type Code

theme

Thesaurus Name

Citation

Title

ANZLIC Jurisdictions

Date

Edition

Version 2.1

Edition Date

Date

2008-10-29

Identifier

Identifier

Code

<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-jurisdic.xml#anzlic-jurisdic>

Cited Responsible Party

Responsible Party

Organisation Name

ANZLIC the Spatial Information Council

Role

Role Code

custodian

Descriptive Keywords

Keywords

Keyword

LAND-Use

Keyword

FORESTS-Natural

Keyword

FORESTS-Plantation

Type

Keyword Type Code

theme

Thesaurus Name

Citation

Title

ANZLIC Search Words

Date

Edition

Version 2.1

Edition Date

Date

2008-05-16

Identifier

Identifier

Code

<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-theme.xml#anzlic-theme>

Cited Responsible Party

Responsible Party

Organisation Name

ANZLIC the Spatial Information Council

Role

Role Code

custodian

Resource Constraints

Legal Constraints

Use Limitation

Creative Commons Attribution 4.0 International by Ministry for the Environment

Access Constraints

Restriction Code

license

Resource Constraints

Legal Constraints

Use Limitation

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Use Constraints

Restriction Code

license

Spatial Representation Type Code

vector

Language

eng

Character Set

Character Set Code

utf8

Topic Category Code

environment

Extent

EX \_ Extent

Geographic Element

EX \_ Geographic Description

Identifier

Authority

Citation

Title

ANZMet Lite Country codelist

Date

Edition

Version 1.0

Edition Date

Date

2009-03-31

Identifier

Identifier

Code

<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-country.xml#Country>

Cited Responsible Party

Responsible Party

Organisation Name

ANZLIC the Spatial Information Council

Role

Role Code

custodian

Code

nzl

Extent

EX \_ Extent

Geographic Element

EX \_ Geographic Bounding Box

-176.89383927-176.154113584-44.43516334-43.5625917151

Distribution Info

Distribution

Distributor

Distributor

Distributor Contact

Responsible Party

Individual Name

Michael Cooper

Organisation Name

LUCAS, Ministry for the Environment

Position Name

GIS Analyst

Contact Info

Contact

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23 Kate Sheppard Place, PO Box 10362

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lucas@mfe.govt.nz

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Transfer Options

Digital Transfer Options

On Line

Online Resource

Linkage

URL

<https://data.mfe.govt.nz/layer/99857-lucas-chatham-islands-land-use-map-1990-2008-2012-2016-v002/>

Data Quality Info

DQ \_ Data Quality

Scope

DQ \_ Scope

Level

Scope Code

dataset

Level Description

Scope Description

Other

dataset

Lineage

LI \_ Lineage

Statement

\*1990 land use mapping\* The 1990 land-use map was derived from 15 m spatial resolution SPOT 1 satellite imagery taken between March and August 1989. In addition to orthorectification and atmospheric correction, the satellite images were standardised for spectral reflectance using the Ecosat algorithms documented in Dymond et al, (2001), Shepherd and Dymond (2003) and Dymond and Shepherd (2004). These standardised images were used for the automated mapping of woody biomass and the classification of woody land use classes. These land-use classes at 1990 included natural forest, pre-1990 planted forest and grassland with woody biomass. This classification process was validated using 30 m resolution Landsat 7 ETM+ imagery acquired mid-2000. To determine the spatial location of the other land-use classes as at 1990, 2008 and 2012, information from three land cover databases, LCDB1 (1996), LCDB2 (2001) (Thompson et al, 2004) and LCDB3 (2008), the New Zealand Land Resource Inventory (Eyles, 1977) and hydrological data from Land Information New Zealand were used (Shepherd and Newsome, 2009a,b). The NZLRI database was used to better define the area of high and Low-producing grassland. Areas tagged as 'improved pasture' in the NZLRI vegetation records were classified as Grassland - high producing in the land-use maps. All other areas were classified as Grassland - low producing. An interpretation guide for automated and visual interpretation was prepared and used so that all mapping processes were undertaken on a consistent basis (Ministry for the Environment, 2012). Independent quality control was undertaken for all mapping. This

involved an independent agency looking at randomly-selected points across mainland New Zealand and using the same data as the original operator to decide what land use the point fell within. The two operators were in agreement at least ninety-five percent of the time.

**\*2008 land-use mapping\*** The 2008 land-use map (land-use as at 1 January 2008) was derived from 10 m spatial resolution SPOT 5 satellite imagery which was processed into standardised reflectance images, using the same approach as for the 1990 imagery. The SPOT 5 imagery was taken September and October 2008. An earlier Landsat 7 scene taken January 2008 was used to supplement the SPOT 5 evidence.

**\*2012 land-use mapping\*** SPOT 5 satellite imagery was again used in 2013 to create the 2012 land use map. This map was based on imagery acquired January 2012. All imagery was pre-processed as for the 2008 map; however, in this instance, the 2008 and 2012 standardised imagery was then combined into an image stack in order to detect areas of change.

**\*2016 land-use mapping\*** Sentinel 2 satellite imagery was used in 2018 to create the 2016 land use map. This map was based on imagery acquired December 2016 and February 2017. All imagery was pre-processed and the 2012 (SPOT 5) and 2016 (Sentinel 2) standardised imagery was analysed in a stack to detect areas of change. Note that improvements made to the mapping of high and low-producing grassland in the mainland NZ LUCAS LUM using data fusion techniques developed by Manaaki Whenua - Landcare Research as part of the Innovative Data Analysis project (Manderson et al., 2018) could not be applied to the Chatham Islands mapping due to a lack of input evidence.

## Metadata Constraints

### Legal Constraints

#### Use Limitation

Attribution 4.0 International

#### Use Limitation

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#### Use Constraints

##### Restriction Code

license