Statistics New Zealand ANZLIC Metadata Template

Identification

Title	Area Units 2013
Date	30 November 2012 (publication)
Language	eng
Character Set	Uft8
Abstract	This dataset is the definitive set of area unit boundaries for 2013 as defined by Statistics New Zealand. Area units are aggregations of adjacent meshblocks with coterminous boundaries to form a single unbroken surface area (land and/or water). Exceptions to this rule are some area units comprising collections of geographically related inlets and marinas. Area units are non-administrative areas intermediate in size between meshblocks and territorial authorities. In an urban location, an area unit is often a collection of city blocks while in rural situations area units may be equated to localities or communities. Area Units must either define or aggregate to define urban areas, rural centres, statistical areas, territorial authorities and regional councils. Each area unit must be a single geographic entity with a unique name. The area unit pattern is revised once every five years in the year immediately prior to the taking of a Census of Population and Dwellings. There may also be changes in other years, in conjunction with local body boundary changes. Statistics New Zealand maintains a concordance file to ensure that boundaries relating to earlier area unit patterns can also be generated.

Year	Area Unit Totals
1991	1717
1992	1717
1993	1721
1994	1722
1995	1722
1996	1775
1997	1775
1998	1775
1999	1776
2000	1786

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Core metadata elements for a geographic dataset
1 | P a g e

2001	1860
2002	1860
2003	1860
2004	1860
2005	1860
2006	1927
2007	1927
2008	1927
2009	1927
2010	1927
2011	2013
2012	2013
2013	2020

As at 1st July 2007, Digital Boundary data became freely available.

Topic category	boundaries
Spatial representation type	vector

Extent

Description	Twelve mile New Zealand territorial limit

Geographic Box

West bound longitude	165.905646
East bound longitude	179.855610
North bound latitude	-33.826584
South bound latitude	-47.841491

Extent

TEMPORAL	
Description	Data represents area unit polygons dissolved from meshblocks since 1991
Begin date	1991-01-01
End date	Now (Year of 2013)

Access Constraints	None. Data is freely downloadable from the Statistics NZ website.
Use constraints	These conditions of supply apply to all users of Statistics New Zealand digital boundaries effective 1 July 2007. **Permitted uses** Statistics New Zealand must be acknowledged as the source of the boundaries. **Uses not permitted** Users are not permitted to change the accuracy of the boundaries and supply them to another party. **Liability** While care has been taken to compile these boundary coordinates, Statistics New Zealand gives no warranty that the data supplied is free from error. Statistics New Zealand shall not be liable for any loss suffered through the use, directly or indirectly, of any information, product or service.
Use limitation	
Maintenance and update frequency	The meshblock pattern and associated hierarchies are maintained on a regular basis. An annual pattern is made available for each year up to 2013.
Date of next update	December 2013
Update scope	Dataset

Point of Contact

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Linkage	http://www.stats.govt.nz/browse_for_stats/people_and_communities/Geographic-areas/digital-boundary-files.aspx

Distribution Info

Distribution format	ESRI Geodatabase

	ESRI Shape
	MapInfo Tab
Distribution version	1.0
Online resource linkage	http://www.stats.govt.nz/browse_for_stats/people_and_communities/Geographic-areas/digital-boundary-files.aspx
Online resource description	Web page for downloading the digital boundaries which area units is part of the bundle of boundaries/geographies StatsNZ makes available

Reference system info

Title	New Zealand Transverse Mercator 2000 (NZTM2000)
Date	1 July 2001
Edition	
Code	19971

Data quality info scope

Hierarchy level	Dataset
Description	New Zealand Area Unit Boundaries

Lineage

| **Statement** (general explanation of the data producer's knowledge about the lineage of a dataset) | Area units are based on the meshblock pattern.

Non-alignment of meshblock and cadastral boundaries are one of a number of reasons for meshblock boundary adjustments. Other reasons include requests from local authorities, Local Government Commission, Electoral Representation Commission and to make Census of Population and Dwellings enumeration processes easier.

From the meshblock pattern, higher geographies, including the 2014 area unit pattern, were dissolved using the dissolve tool in the Arc GIS suite.

To derive the area unit boundaries clipped to the coastline, meshblock polygons were dissolved to exclude meshblocks with a land/water attribute of Inlet or Oceanic. |
| --- | --- |

Description (detailed description of the level of the source data)	The original vertices delineating the meshblock boundary pattern were digitised in 1991 from 1:5,000 scale urban maps and 1:50,000 scale rural maps. The magnitude of error of the original digital points would have been in the range of +/- 10 metres in urban areas and +/- 25 metres in rural areas. Where meshblock boundaries coincide with cadastral boundaries the magnitude of error will be within the range of 1–5 metres in urban areas and 5 - 20 metres in rural areas. This being the estimated magnitude of error of Landonline. The creation of high definition and generalised meshblock boundaries for the 2013 digital pattern and the dissolving of these meshblocks into other geographies/boundaries were completed within Statistics New Zealand using ESRI's ArcGIS desktop suite and the Data Interoperability extension with the following process: 1. Import data and all attribute fields into an ESRI File Geodatabase from LINZ as a shapefile 2. Run geometry checks and repairs. 3. Run Topology Checks on all data (Must Not Have Gaps, Must Not Overlap), detailed below. 4. Generalise the meshblock layers to a 1m tolerance to create generalised dataset. 5. Clip the high definition and generalised meshblock layers to the coastline using land water codes. 6. Dissolve all four meshblock datasets (clipped and unclipped, for both generalised and high definition versions) to higher geographies to create the following output data layers: Area Unit, Territorial Authorities, Regional Council, Urban Areas, Community Boards, Territorial Authority Subdivisions, Wards, Constituencies and Maori Constituencies for the four datasets. 7. Complete a frequency analysis to determine that each code only has a single record. 8. Re-run topology checks for overlaps and gaps. 9. Export all created datasets into MapInfo and Shapefile format using the Data Interoperability extension to create 4 output formats for each file. 10. Quality Assurance and rechecking of delivery files. The High Definition version is similar to how the layer exists in Landonline with a couple of changes to fix topology errors identified in

topology checking.

The following quality checks and steps were applied to the meshblock pattern:

Translation of ESRI Shapefiles to ESRI geodatabase dataset
The meshblock dataset was imported into the ESRI File Geodatabase format, required to run the ESRI topology checks. Topology rules were set for each of the layers.

Topology Checks
A tolerance of 0.1 cm was applied to the data, which meant that the topology engine validating the data saw any vertex closer than this distance as the same location.   A default topology rule of "Must Be Larger than Cluster Tolerance" is applied to all data – this would highlight where any features with a width less than 0.1cm exist. No errors were found for this rule.
Three additional topology rules were applied specifically within each of the layers in the ESRI geodatabase – namely "Must Not Overlap", "Must Not Have Gaps" and ""Area Boundary Must Be Covered By Boundary Of (Meshblock)". These check that a layer forms a continuous coverage over a surface, that any given point on that surface is only assigned to a single category, and that the dissolved boundaries are identical to the parent meshblock boundaries.

Topology Checks Results:
There were no errors in either the gap or overlap checks.

Generalising
To create the generalised Meshblock layer the "Simplify Polygon" geoprocessing tool was used in ArcGIS, with the following parameters:
  Simplification Algorithm: POINT_REMOVE
  Maximum Allowable Offset: 1 metre
  Minimum Area: 1 square metre
  Handling Topological Errors: RESOLVE_ERRORS

Clipping of Layers to Coastline
The processed feature class was then clipped to the coastline. The coastline was defined as features within the supplied Land2013 with codes and descriptions as follows:
  11- Island – *Included*
  12- Mainland – *Included*
  21- Inland Water – *Included*
  22- Inlet – *Excluded*
  23- Oceanic – *Excluded*
  31- Other – *Included.*

Features were clipped using the Data Interoperability extension,

attribute filter tool. The attribute filter was used on both the generalised and high definition meshblock datasets creating four meshblock layers. Each meshblock dataset also contained all higher geographies and land-water data as attributes.
Note: Meshblock 0017001 which is classified as island, was excluded from the clipped meshblock layers, as most of this meshblock is oceanic.

Dissolve meshblocks to higher geographies
Statistics New Zealand then dissolved the ESRI meshblock feature classes to the higher geographies, for both the full and clipped dataset, generalised and high definition datasets. To dissolve the higher geographies, a model was built using the dissolver, aggregator and sorter tools, with each output set to include geography code and names within the Data Interoperability extension.

Export to MapInfo Format and Shapefiles
The data was exported to MapInfo and Shapefile format using ESRI's Data Interoperability extension Translation tool.

Quality Assurance and rechecking of delivery files
The feature counts of all files were checked to ensure all layers had the correct number of features. This included checking that all multipart features had translated correctly in the new file.

Metadata

File identifier	
Language	eng
Character set	Utf8
Hierarchy level	dataset
Hierarchy level name	Dataset – Area Units -2013
Date stamp	2013-01-01
Metadata standard name	ANZLIC Metadata Profile
Metadata standard version	1.1

Metadata author

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Linkage	http://www.stats.govt.nz/browse_for_stats/people_and_communities/Geographic-areas/digital-boundary-files.aspx