
Statistics New Zealand ANZLIC Metadata Template

Identification

Title	Meshblocks 2012 Annual Pattern
Date	1 November 2010 (publication)
Language	eng
Character Set	Uft8
Abstract	<p>This dataset is the definitive set of meshblock boundaries for 2012 as defined by Statistics New Zealand.</p> <p>Statistics New Zealand maintains an annual meshblock pattern for the collection and production of statistical data, allowing data to be compared over time. A meshblock is the smallest geographic unit used by Statistics New Zealand for which statistical data is collected and processed by statistics New Zealand. A meshblock is defined by a geographic area, varying in size from a part of a city block to large areas of rural area. Each meshblock abuts against another to form a network covering all of New Zealand, including coasts and inlets and extending out to the 200 mile economic zone. Meshblocks are added together to build up larger geographic areas such as area units and urban areas. They are also the principal unit to draw and define electoral districts, territorial authorities and regional councils.</p> <p>Meshblocks are allocated a unique seven-digit number. The first 5 digits are unique, and refer to the original 1976 meshblock code. The two end numbers refer to sequential meshblock splits to the original meshblock. When a meshblock is split the final two digits of the original meshblock number are changed. Exceptions to this rule are a small number of meshblocks where there are no more numbers in the sequence are available. There are therefore some meshblocks in Auckland and Tauranga City starting with 32xxxxx. Statistics New Zealand maintains a concordance file to ensure that boundaries relating to earlier meshblock patterns can also be generated.</p> <p>There are two ways of amending meshblock boundaries.</p> <ol style="list-style-type: none">1. Splitting is the subdivision of a meshblock into two or more meshblocks.2. Nudging is the shifting of a boundary to a more appropriate position. <p>The reasons for splits and nudges include:</p>

- to accommodate changes to local government boundaries, which are required by the Local Government Act 2002 to follow meshblocks for electoral purposes.
- to accommodate changes to parliamentary electoral boundaries, following each Electoral Representation Commission review after each five yearly Census of Population and Dwellings
- to make changes to statistical boundaries such as area units and urban areas
- to enable changes to census collection districts
- to improve the size balance of meshblocks in areas where there has been population growth
- to separate land and water eg mainland, islands, inlets, oceanic are defined separately
- to accommodate requests from other users of the meshblock pattern eg Police for their station, area and district boundaries

The dataset is intended for use in the display and presentation of statistical and other data to show areas of high or low density and distributions for comparative purposes over time. The digital boundaries are defined by Statistics New Zealand. They are maintained on behalf of Statistics New Zealand by Land Information New Zealand in Landonline using ArcInfo.

Meshblocks cover the land area of New Zealand, the water area to the 12 mile limit, Chatham Islands, the Kermadec Islands, off-shore oil rigs, Ross Dependency and extend to the 200 mile economic zone. The meshblocks for the last four mentioned areas have not been digitised. The 12 mile limit is digitised.

Meshblock boundaries generally follow street centre-lines, cadastral property boundaries or topographical features (eg rivers). Expanses of water in the form of lakes and inlets are defined separately from land.

The annual pattern of digital boundaries is used for the full calendar year from 1 January and applies to the timing of the survey – not necessarily when the data is processed.

The following table depicts the total numbers if meshblocks since 1990 when meshblocks were digitalised.

Year	Meshblock Totals of NZ	Digitised Meshblock Totals
1990	34882	34876
1991	35152 (Census)	35146
1992	35163	35157
1993	35370	35364
1994	35584	35578
1995	36235	36228
1996	36808 (Census)	36801
1997	36808	36801

	1998	36829	36822
	1999	37154	37147
	2000	37383	37367
	2001	38366 (Census)	38350
	2002	38378	38362
	2003	38685	38669
	2004	39313	39297
	2005	39819	39803
	2006	41392 (Census)	41376
	2007	41512	41496
	2008	42982	42966
	2009	43940	43924
	2010	46252	46236
	2011	46627	46611
	2012	46632	46616
As at 1 st July 2007, Digital Boundary data became freely available.			
Topic category	boundaries		
Spatial representation type	vector		

Extent

Description	Twelve mile New Zealand territorial limit
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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 meshblock polygons mapped/digitised since 1991
Begin date	1991-01-01
End date	2012-01-01
Access Constraints	None. Data is freely downloadable from the Statistics NZ website.

Use constraints	<p>These conditions of supply apply to all users of Statistics New Zealand digital boundaries effective 1 July 2007.</p> <p>Permitted uses Statistics New Zealand must be acknowledged as the source of the boundaries.</p> <p>Uses not permitted Users are not permitted to change the accuracy of the boundaries and supply them to another party.</p> <p>Liability While care has been used in compiling 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.</p>
Use limitation	
Maintenance and update frequency	<p>The meshblock pattern is maintained on a regular basis.</p> <p>An annual meshblock pattern is made available for each year up to 2012.</p>
Date of next update	December 2012
Update scope	Dataset

Point of Contact

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Linkage	http://www.stats.govt.nz/browse_for_stats/people_and_communities/geographic-areas/download-digital-boundaries.aspx

Distribution Info

Distribution format	ESRI Shape MapInfo Tab
Distribution version	1.0
Online resource linkage	http://www.stats.govt.nz/browse_for_stats/people_and_communities/geographic-areas/download-digital-boundaries.aspx
Online resource description	Web page for downloading the digital boundaries which the meshblock 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 (page 128 of Guidelines)	19971

Data quality info scope

Hierarchy level	Dataset
Description	New Zealand Meshblock Boundaries

Lineage

Statement (general explanation of the data producer's knowledge about the lineage of a dataset)	<p>The digital meshblock boundaries are stored and maintained by Land Information New Zealand within their landonline database, and ArcInfo Suite.</p> <p>Statistics New Zealand maintains the meshblock pattern by checking the cadastral pattern against the meshblock pattern via LINZ's Landonline and Terralink International Limits licensed software, Terraview platinum. 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.</p>
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	<p>Once all changes are prepared, Statistics NZ then passes the requests for changes to the meshblock pattern onto LINZ for the electronic changes to take place.</p> <p>To Derive the area unit boundaries clipped to the coastline, meshblock polygons were dissolved to include or exclude land/water attributes attached to each meshblock.</p> <p>From the generalised meshblock pattern, higher geographies, were dissolved using the dissolve tool in the Arc GIS suite to create multiple output datasets.</p>
<p>Description (detailed description of the level of the source data)</p>	<p>The original points representing 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.</p> <p>The creation of level 1 meshblock boundaries for 2012 digital pattern and the dissolving into other geographies/boundaries were outsourced to Sinclair Knight Merz (SKM) and were created by the following processes using ESRI software.</p> <ol style="list-style-type: none"> 1. Import data from the supply format of ESRI Shapefiles to an ESRI Geodatabase. 2. Clip layers for the Area Unit, Territorial Authorities, Regional Council, Urban Areas, Wards and meshblock regions, creating two output datasets (“High definition boundaries”, and “High definition boundaries –clipped to the coastline”) 3. Run Topology Checks on all data 4. Run attribute checks 5. Export supplied and created data to MapInfo format 6. Quality Assurance of delivery files 7. Dissolve the meshblocks layer into layers for area unit, territorial authority, regional council, urban area, ward and community board. <p>Level 1 is exactly as exists in Landonline i.e. no points are removed and co-ordinates are retained at 1mm accuracy.</p> <p>The following quality checks were applied to the meshblock pattern:</p> <p>Translation of ESRI Shapefiles to ESRI geodatabase dataset The meshblock dataset was imported into the ESRI Geodatabase structure that is required to run the ESRI topology checks. Topology rules were set for each of the layers.</p> <p>Clipping of Layers to Coastline</p>

	<p>The supplied shapefiles were then clipped to the coastline. The coastline was defined as features within the supplied land_water12_region with codes and descriptions as follows:</p> <ul style="list-style-type: none"> 11- Island – <i>Included</i> 12-Mainland – <i>Included</i> 21- Inland Water – <i>Included</i> 22- Inlet – <i>Excluded</i> 23- Oceanic – <i>Excluded</i> 31- Other – <i>Included</i>. <p>The clip was completed using ArcGIS 10 and FME.</p> <p><i>Note- for the Chatham Islands, 22-Inlet was included as this gives a full clip of the data for the main island. An inlet feature covers much of the main island in the group.</i></p> <p>Topology Checks</p> <p>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. This is the smallest tolerance possible in this software and for this projection. A default topology rule of “Must Be Larger than Cluster Tolerance” is applied to all data – this would highlight where any tiny features with a width less than 0.1cm exist. No errors were found for this rule.</p> <p>Two topology rules were applied specifically within each of the layers in the ESRI geodatabase – namely “Must Not Overlap”, “Must Not Have Gaps”. These both check a layer upon itself.</p> <p>Must Not Overlap</p> <p>This process checks for any areas that overlap another feature from the same layer and produces an error where an overlap is found.</p> <p>Must Not have Gaps</p> <p>This process checks for any voids between or within features in the same layer and produces an error if found.</p> <p>Topology Checks Results:</p> <p>There were no real errors in either the gap or overlap checks for the mb11_region layer supplied, and none for any of the created datasets. For the gaps test, the most outer polygons are always reported as an error, and this was the only error reported for all cases.</p> <p>Scripted Process - Spatial overlay correct</p> <p>A script was created going through the following process: each of the dissolved layers was cycled through, taking each polygon feature and checking that the meshblock features with the same code have the exact same overall spatial boundary. No errors were found.</p> <p>Export to MapInfo Format</p> <p>The data was supplied to SKM in ESRI Shapefile – these were exported to MapInfo format using FME for delivery to Stats NZ. The original data was supplied in NZTM coordinates, and so no projection of data was required.</p> <p>QA of Delivery Files</p> <p>The ESRI delivery files were viewed in both delivery formats (ESRI and MapInfo) and had spot checks on data consistency and attributes performed. All data was then written to DVD and checked for readability.</p>
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	<p>Statistics NZ is progressively realigning meshblock boundaries to cadastral boundaries and therefore the quality of the meshblock pattern has improved since 1991 when originally digitised. However, the accuracy of the digital meshblock pattern is dependent on the quality of the underlying survey information.</p> <p>Dissolve meshblocks to higher levels</p> <p>Statistics New Zealand then dissolved the ESRI meshblock shapefile to the higher levels, for both the full and clipped dataset. The dissolve tool was used to generate these datasets from the full meshblock dataset and the clipped to the coastline meshblock dataset.</p>
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Metadata

File identifier	
Language	eng
Character set	Utf8
Hierarchy level	dataset
Hierarchy level name	Dataset – meshblocks -2012
Date stamp	2012-01-01
Metadata standard name	ANZLIC Metadata Profile
Metadata standard version	1.1

Metadata author

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