|  |
| --- |
| m_cmyk.eps |
| |  | | --- | | Land Use Rural Panel of New Zealand - Revised | | Motu Economic and Public Policy Research | | Data Documentation  Motu Economic and Public Policy Research | |
|  |
| **Date accessed/created: October 2011** |
| **Motu Ref ID:** U10026 |
| **Suggested Citation:** Motu Economic and Public Policy Research. 2012. “Land Use Rural Panel of New Zealand – Revised,” dataset derived by Motu in October 2011. Unrestricted dataset, information available online at www.motu.org.nz/building-capacity/dataset/land\_use\_rural\_panel\_of\_new\_zealand\_-\_revised  (To include in citation: Data source, publishing/access date. “Data name,” obtained by Motu research in date. Restricted dataset, information available online at www.motu.org.nz.)  **Raw or derived data: Derived dataset** |
| **Restrictions:** Unrestricted  Can Motu put this data on our website? Yes  Can Motu put this dataset documentation on our website? Yes |
| **Contact Details**  Motu Economic and Public Policy Research Level 1, 97 Cuba St, Te Aro, PO Box 24390 Wellington New Zealand  Email [info@motu.org.nz](mailto:info@motu.org.nz) Telephone +64 4 9394250 Website www.motu.org.nz |
| **User Responsibilities**: Normal principles for the attribution of sources of information are expected to apply in any resulting publications. However, Motu cannot be held responsible for results obtained from applications of this data, or derivative versions of this data, by outside individuals. The results of any analysis based on this data by outside parties are not endorsed by Motu. It would therefore be inappropriate for outside users to suggest or infer that these results or interpretations attached to these results can in any way be attributed to Motu or its researchers. © 2010 Motu Economic and Public Policy Research |

# Data Documentation

Please note that this is informal documentation intended to help users.   
It is not a polished document. Additions/corrections are welcomed at [info@motu.org.nz](mailto:info@motu.org.nz).

# Main Motu contact for this data:

# Simon Anastasiadis, email: simon.anastasiadis@motu.org.nz

# Other contacts for this data:

# Original dataset by Yun Liang and Joanna Hendy

# Data keywords:

# Land use, dairy, sheep & beef, area territorial authority, TA

# 

# Dataset abstract:

# Constructed from the Rural Economies database (DDLU10025), the Land Use Rural Panel (LURP) database separates pasture land into dairy and sheep & beef land according to stock numbers. The original dataset determined stocking rates using an optimization procedure by Liang and Hendy. This revised dataset uses Livestock Improvement Corporation (LIC) stocking rates.

# Motu Working Papers using this data set.

# Example: Grimes, Arthur; Cleo Ren and Philip Stevens. 2009. "The Need for Speed: Impacts of Internet Connectivity on Firm Productivity," Motu Working Paper 09-15.

# Variables:

# TA, year (1981-1996, 2002-2004), area in urban, horticulture, plantation forestry, dairy, sheep & beef (meat), doc, and scrub land. Total area.

# Additional notes.

# LIC stocking rates have been drawn from the LIC reports. These only give dairy stocking rates from 1998 to 2008. We use the logarithmic model specified by Anastasiadis and Kerr (2011) to extrapolate this trend.

Anastasiadis, Simon and Suzi Kerr. 2011. Final report: National Water Quality. Project with NIWA for The Parliamentary Commissioner for the Environment. Motu Economic and Public Policy Research.

Extracted from: "Producing a Map of 1996 Land Use.docx (Data for making 1996 map)

1.3. Rural Land Use Type Panel Dataset (LURP)

This dataset was constructed as part of a previous Motu project during the development of LURNZ. The dataset was initially named: “RuralLUType4Sept07.xls”, and was found in the folder: “D:\Environment\LURNZ\Data\Projects\Land use dataset\Version 2\Final datasets”.

Motu collected Statistics New Zealand (SNZ) data on land-use by TA for the entire country. This data includes all years between 1990 and 2004 for which an agricultural survey was conducted (an agricultural survey was not conducted in 1997 – 2001 inclusive).

The SNZ data recorded land used for pasture, forestry and scrub lands by Territorial Authority (TA). It also gave stock numbers by TA. Work at Motu was done by Kelly Locke, Joanna Hendy, Jason Funk and Yun Liang to clean the data and to separate pasture land into dairy and sheep & beef. This was done according to stocking rates as detailed in Lock et al. (2008), an extract from which is given in the appendix.

1.3.1. Data documentation

During the development of this dataset it was necessary for the authors to merge some TAs together. This process is documented in Liang and Hendy (2006). Which can be found at “D:\g\Research\Data\_Library\Motu\_Data \Free\_Data\Rural\_Economie\_Database\Area by land use (calibrated to LCDB1, TA)”, titled “Generating TA Level Land Use Data\_v2.doc”.

The document by Lock et al. (2008) can be found at “D:\Environment\ LURNZ\ Data\ Projects\ Land use dataset\ Version 2”, titled “Towards Predicting Rural Land Use In NZ\_Yun.doc”

1.3.2. Earlier data versions

The following datasets are part of the research process to producing RLUT. “All - 0305 SNZ (ES) - Livestock and Land use TLA 1980-2003.xls” located in “D:\g\Research\ Data\_Library\ Motu\_Data\ Free\_Data\Enviromental\_Raw\_Data\Area by land use and animal numbers (TLA, County)” is believed to contain the raw SNZ data before any processing took place.

“LURNZv2\_LandUse\_TA8104.xls” located in “D:\g\Research\Data\_Library\ Motu\_Data\ Free\_Data\Rural\_Economie\_Database\Area by land use (calibrated to LCDB1, TA)” is believed to be part way through the process of separating pasture land. Yun Liang believes this file was produced by Joanna Hendy.

**Regression Model Coefficients**

Regression coefficients by TA are given in the following table.

The model is: Stocking rate = *a* log( year – *b* )

Where *a* is a scaling constant and *b* is the base year.

If we observe *b* = 500, this means that the linear trend in the data is downwards sloping and hence the logarithmic model is a poor choice as it requires non-negative slopes (by nature of its specification).

In these cases we assume stocking rates are constant at the mean stocking rate between 1999 and 2008. Stocking rates in 1998 are excluded from the regression. See Anastasiadis and Kerr (2011) for a justification of this methodology.

Due to our confidence combining data from two different data sources we do not update the dairy and sheep & beef land area estimates for Auckland City, Hutt District, Queenstown-Lakes District and Waitakere City.

Due to our confidence extrapolation the trend in LIC data back beyond 1999 we limit the separation of pasture to dairy land and sheep & beef land to 1994-1996 (from extrapolation) and 2002-2004 (actual observed data).

|  |  |  |
| --- | --- | --- |
| TA | A coef. | B coef. |
| Ashburton | 1.0435 | 1981.9 |
| Banks Peninsula | 0.5598 | 1973.2 |
| Buller | 0.6277 | 1962.6 |
| Carterton | 0.3688 | 500 |
| Central Hawkes Bay | 0.7796 | 1966.4 |
| Christchurch City | 1.0839 | 1985.2 |
| Clutha | 0.5785 | 1890 |
| Dunedin City | 0.5956 | 1924.9 |
| Far North | 0.4742 | 1918.9 |
| Franklin | 0.6058 | 1945.3 |
| Gisborne | 0.3714 | 500 |
| Gore | 0.3724 | 500 |
| Grey | 0.7852 | 1987.5 |
| Hamilton City | 1.0254 | 1986.1 |
| Hauraki | 0.709 | 1956.8 |
| Horowhenua | 0.6399 | 1936.2 |
| Hurunui | 0.8776 | 1974.3 |
| Invercargill | 0.7246 | 1968.3 |
| Kaikoura | 0.7723 | 1971.1 |
| Kaipara | 0.5434 | 1949 |
| Kapiti Coast | 0.3453 | 500 |
| Kawerau/Whakatane | 0.723 | 1955.6 |
| Manawatu | 0.6665 | 1945.9 |
| Manukau City | 0.7487 | 1968.6 |
| Marlborough | 0.7886 | 1974.3 |
| Masterton | 0.8214 | 1970.7 |
| Matamata-Piako | 0.9036 | 1972.6 |
| Napier/Hastings | 0.8149 | 1978 |
| Nelson City | 0.7208 | 1963 |
| New Plymouth | 0.6677 | 1950.5 |
| New Zealand | 0.752 | 1964.9 |
| North Island | 0.7396 | 1962.2 |
| Opotiki | 0.6556 | 1937.7 |
| Otorohanga | 0.7881 | 1964.3 |
| Palmerston North City | 0.3756 | 500 |
| Papakura | 0.3341 | 500 |
| Rangitikei | 0.8016 | 1970.9 |
| Rodney | 0.6358 | 1969.6 |
| Rotorua | 0.7406 | 1965.4 |
| Ruapehu | 0.7005 | 1970.3 |
| Selwyn | 1.0612 | 1985.7 |
| South Island | 0.8173 | 1975.7 |
| South Taranaki | 0.7053 | 1938.9 |
| South Waikato | 0.8425 | 1971.7 |
| South Wairarapa | 0.7367 | 1962.6 |
| Southland | 0.6861 | 1954.5 |
| Stratford | 0.4444 | 1636 |
| Tararua | 0.6024 | 1914.3 |
| Tasman | 0.7922 | 1974.2 |
| Taupo | 0.8651 | 1982.8 |
| Tauranga | 0.7705 | 1967.8 |
| Thames-Coromandel | 0.6616 | 1955.2 |
| Timaru/MacKenzie | 0.9291 | 1974.9 |
| Upper Hutt City | 0.2786 | 500 |
| Waikato | 0.8617 | 1976.9 |
| Waimakariri | 0.9928 | 1987.2 |
| Waimate | 1.0218 | 1984.2 |
| Waipa | 0.9244 | 1977.5 |
| Wairoa | 0.3601 | 500 |
| Waitaki/Central Otago | 0.8803 | 1974.4 |
| Waitomo | 0.7717 | 1972.8 |
| Wanganui | 0.7638 | 1972.8 |
| Western Bay of Plenty | 0.846 | 1971.9 |
| Westland | 0.6653 | 1984 |
| Whangarei | 0.6809 | 1976 |