Pastoral productivity index map

Troy Baisden

Data Documentation
Motu Economic and Public Policy Research

Date accessed/created: June 2003

Motu Ref ID: DDLR7

Suggested Citation: Baisden, Troy, "Pastoral Productivity Index Map 2002," obtained by Motu Research in 2003. Restricted dataset 7, information available online at http://www.motu.org.nz/building-capacity/datasets.

Raw or derived data: Raw dataset

Restrictions: Restricted

Can Motu put this data on our website? No

Can Motu put this document 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
Telephone +64 4 9394250
Website www.motu.org.nz

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.)

1. Main Motu contact for this data:
   Wei Zhang, wei.zhang@motu.org.nz (Research analyst, Motu environment team). Motu senior fellow contact: Suzi Kerr.

2. Other contacts for this data:

GNS Science contact: Troy Baisden +64 4 570 4653 t.baisden@gns.cri.nz.

3. Data keywords:

   Pastoral productivity, agriculture, rural land use

4. Dataset abstract:

   Baisden (2006) developed indices designed to estimate the biological productivity of land when used for pastoral and forestry production. He used a 'Storie Index' approach, where indices of co-limiting soil and climate factors are multiplied together to give a productivity index. The Storie Index approach has been actively in use in California for over 60 years and has been a useful tool for determining rural land values. Indices that help describe spatial variation in biological productivity already exist in the Land Environments in New Zealand (LENZ) GIS database; an example is the LUC map. However, the average size of a polygon in the LENZ database is approximately equal to 300 hectares and thus the maps of these indices are not detailed enough to describe spatial variation within farms. Baisden's aim was to create indices that give greater spatial detail. He reinterpreted data layers from LENZ, to design productivity indices that give sensible results at 1 ha. To create the indices, Baisden correlated soil and climate indices with recently updated Storie Index rating tables reported for parts of northern California, using areas that are suitably similar to New Zealand. Each of the underlying indices was measured as a percentage where 100% corresponds to no limitations. The indices were recalibrated against a map of average biological Net Primary Production (NPP) in New Zealand, derived from data from the NASA MODIS sensor averaged over the years 2000 to 2003. The process is described in detail in Baisden (2006).

   (Short web version) This dataset is a useful tool for determining rural land values. Baisden (2006) developed indices designed to estimate the biological productivity of land when used for pastoral and forestry production. He used a 'Storie Index' approach, where indices of co-limiting soil and climate factors are multiplied together to give a productivity index. The Storie Index approach has been actively in use in California for over 60 years. For more information download the dataset documentation (.pdf 133KB).

5. Motu Working Papers using this data set.

Todd, Maribeth and Suzi Kerr. 2009. " How Does Changing Land Cover and Land Use in New Zealand relate to Land Use Capability and Slope?" Motu Working Paper 09-17.

6. Additional notes.

Information on data agreement available to Motu employees in the DDL folder for this dataset (search in Reference Manager for the dataset, which will lead you to the correct folder).

7. Variables:

In data file.

8. References

Baisden, W. T. 2006. "Agricultural and Forest Productivity for Modelling Policy Scenarios: Evaluating Approaches for New Zealand Greenhouse Gas Mitigation", *Journal of the Royal Society of New Zealand,* 36:1, pp. 1-15. Available online at http://www.royalsociety.org.nz/includes/download.aspx?ID=85496.