

Metadata: Number and Density of Livestock

Information topic	Details
Indicator name	Number and density of livestock
Domain and topic	Recreational Water: Agriculture and Livestock
Indicator definition and units	<p>Number and density (in number per square kilometre) of livestock (by type: sheep, dairy, cattle, beef cattle and deer), by Territorial Authority and regional council.</p> <p>Note: Pigs and horses have not been included in the total counts as their environmental impact and population size is significantly less than other types of livestock. These animals are contained in their enclosures and cannot roam freely through a vast area of farmland, thus are unlikely to contaminate water sources.</p>
Data source	<p>- Statistics New Zealand. Agricultural Production Statistics. Available from https://www.stats.govt.nz/topics/agriculture</p> <p>- Statistics New Zealand. Geographic boundary files. Available from http://stats.govt.nz/browse_for_stats/Maps_and_geography/Geographic-areas/digital-boundary-files.aspx</p>
Numerator	(for livestock density) Number of livestock, by type, by regional council, and by TA
Denominator	(for livestock density) Area (in square kilometres), by regional council and by TA
Methodology	Information on area (in square kilometres) of regional councils and TAs is taken from annual boundary files (i.e. ESRI geodatabase from Statistics New Zealand)
Time period and time scale	<p>- Annual Agricultural Production Survey: year to 30 June; from 2002 onwards</p> <p>- Agricultural Census: 5-yearly; from 2002 onwards</p>
Population coverage	N/A
Spatial Coverage	National.
Measures of frequency	<p>- Number of livestock by type (sheep, dairy cattle, beef cattle, deer and total of these)</p> <p>- Livestock density by type, national average</p> <p>- Livestock density by type and by regional council</p> <p>- Livestock density by territorial authority</p>
Confidence interval methodology	95% confidence intervals were calculated based on the methodology outlined in APHO (2008). For consistency with EHI

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	standards, new confidence intervals were calculated for the ‘SUDI rate by DHB’ graph as this data was originally provided with 99% confidence intervals. Confidence intervals are presented as error bars on graphs.
Limitations of indicator	Livestock data for density calculations at TA level is available every 5 years with the Agricultural Census. The Annual Agricultural Production Survey allows livestock density calculations only to regional council level.
Limitations of data source	<ul style="list-style-type: none"> - Data based on the agricultural production survey can be subject to sample bias and sample error. - Deer figures for 2004 onwards are not directly comparable with 2002 and 2003 figures as improvements have been made to the survey questions about deer in 2004 and 2005. - Population for the 2002 Agricultural Production Census and subsequent surveys differs from that of previous agricultural censuses and surveys. Figures from 2002 onwards may not be directly comparable with previous years.
Created by	Statistics New Zealand
Related indicators	Waterborne Diseases: Notifications of campylobacteriosis, cryptosporidiosis and giardiasis with recreational water as a risk factor
For more information	Statistics New Zealand, Agriculture https://www.stats.govt.nz/topics/agriculture
References	Nil