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Number and density of livestock in New Zealand

This factsheet presents indicators of the number and density of livestock (sheep, dairy cattle, beef cattle and deer) in New Zealand. Livestock plays an important role in New Zealand's economy, though poorly managed livestock production can significantly impact water quality/recreational water quality.

Overall, livestock numbers declined by more than a quarter between 2002 and 2022.

Dairy cattle were the only livestock type whose numbers increased between 2002 and 2022, although they appear to be declining in recent years.

Though sheep numbers decreased by one-third between 2002–2022, sheep still outnumbered all other livestock types combined by a factor of just over two to one as of 2022.

The Manawatū-Whanganui region had the greatest density of livestock, with 424.4 animals per km^2 of farmland in 2022.

Agricultural activity has a major effect on recreational water

Agricultural use of land can cause bodies of water that are used by people for recreational activities (such as swimming, boating, and fishing) to become contaminated in several ways (Ministry for the Environment & Statistics New Zealand 2023):
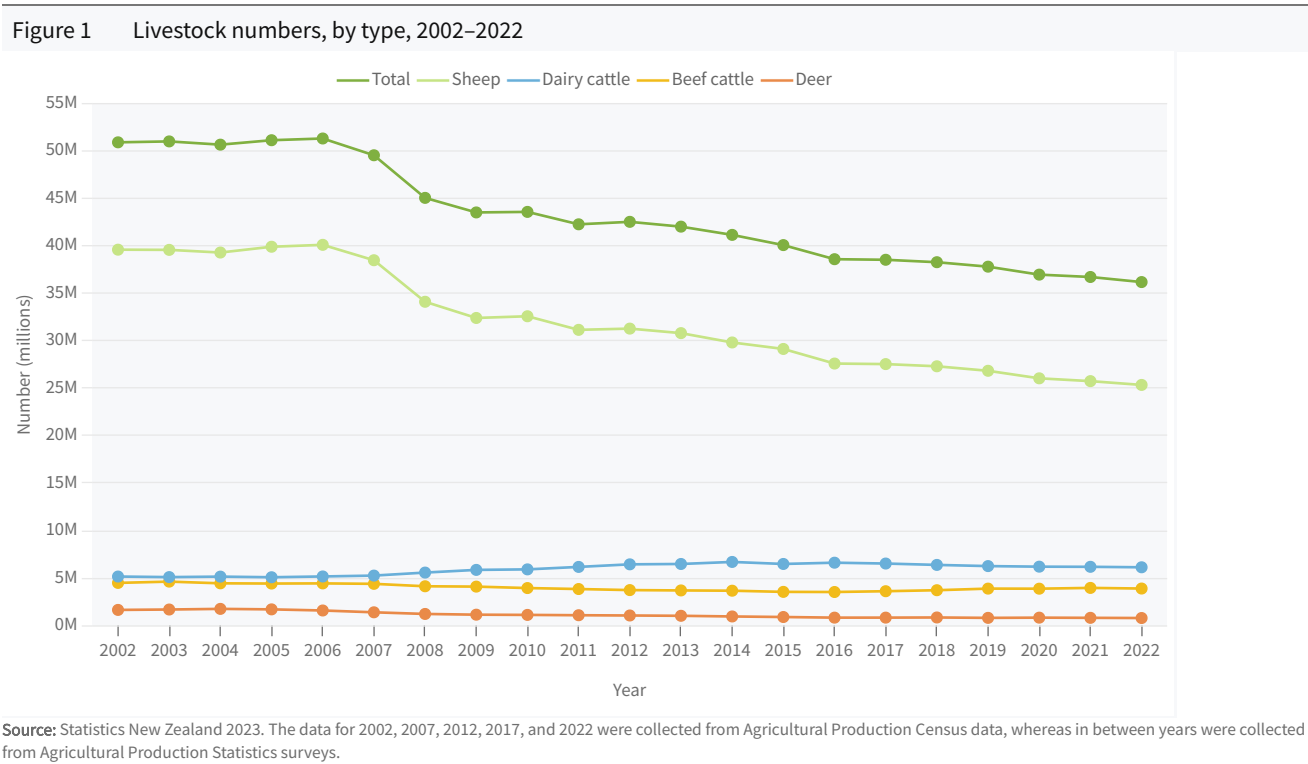
- Storm run-off of livestock waste from farms into water sources can affect water quality by introducing pathogens such as *Campylobacter*, *Cryptosporidium*, *E.coli*, and *Giardia* contained in sheep and cow dung. These pathogens can cause gastrointestinal or respiratory diseases, especially in immunocompromised people (Devane et al 2018).
- Biological contaminants such as pesticides and pharmaceuticals used to treat livestock have been detected in waterways internationally and are shown to potentially increase development and spread of antimicrobial resistance (Alderton et al 2021).
- Excess nutrients, such as nitrogen from fertiliser or livestock urine, can be washed into waterways by rain and reduce water quality by promoting the growth of potentially toxic algae.
- Irrigation for intensive farming of livestock is one of the largest uses of freshwater in New Zealand, which may lower the water levels in rivers. Lowered water levels can interrupt river flow and prevent harmful contaminants from being 'flushed' out of a waterway.

Additionally, agriculture is a notable contributor to greenhouse gas emissions. The methane (CH_4) emissions make up over two thirds of New Zealand's agricultural emissions, making it one of the largest sources of emissions in the country (Agricultural Greenhouse Gas Research Centre 2023).

Total livestock numbers continue to decrease

There were 36.2 million stock animals in New Zealand in 2022. Between 2002 and 2022, the number of stock animals in New Zealand decreased by about a third, from 50.9 million to 36.2 million (Figure 1, Table 1). The bulk of the decline relates to decreasing sheep numbers, which reduced by just over a third (36.0%) during this period. Despite the reduction in numbers, sheep still outnumbered all other livestock types combined by a factor of just over two to one as of 2022.

The number of beef cattle decreased by 13.2% over the 20-year period between 2002 and 2022, but has been gradually increasing again since 2015. Dairy cattle numbers increased by 18.9% overall, but the numbers peaked in 2014 and have been slowly decreasing. The majority of the increase occurred in the South Island, where the number of dairy cattle almost doubled. Deer numbers declined markedly, with a 51.8% decrease between 2002 and 2022.

Figure 1   Livestock numbers, by type, 2002–2022

Source: Statistics New Zealand 2023. The data for 2002, 2007, 2012, 2017, and 2022 were collected from Agricultural Production Census data, whereas in between years were collected from Agricultural Production Statistics surveys.

Table 1   Comparison of livestock numbers, by type, 2002–2022

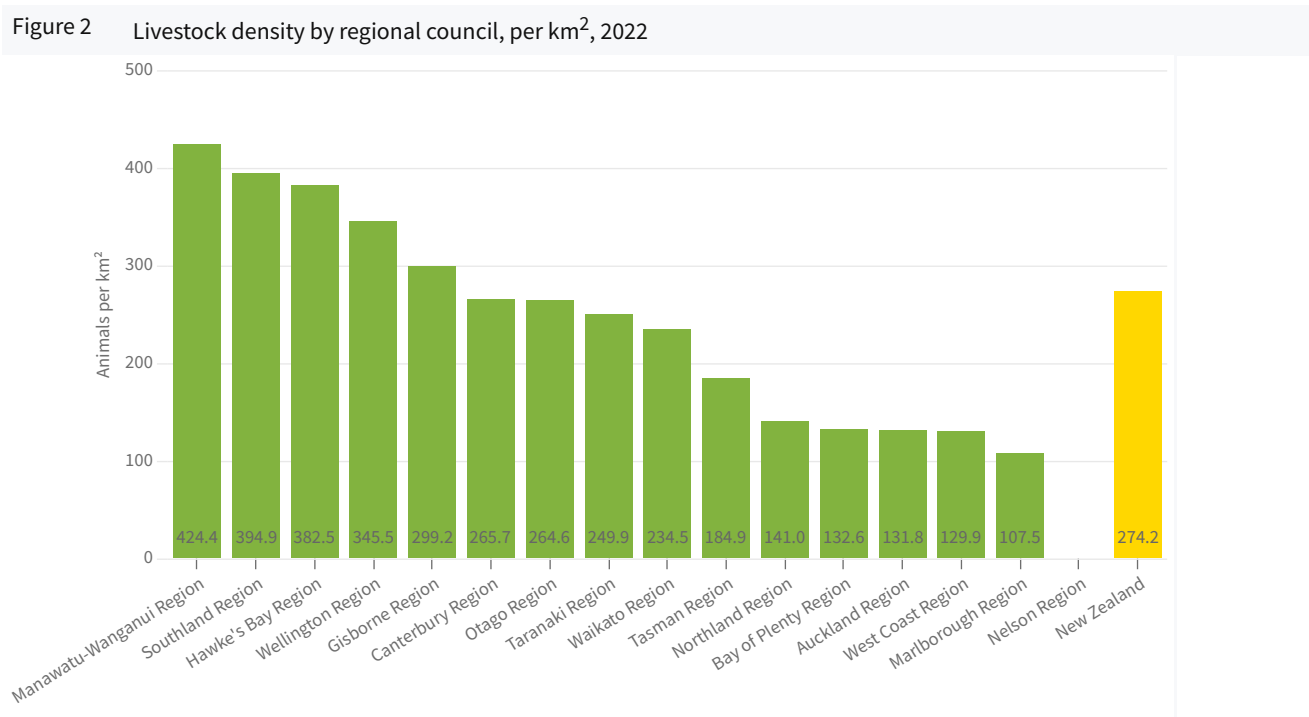| Livestock type	2002 (millions)	2021 (millions)	2022 (millions)	Percent change (2002–2022)	Percent change (2021–2022)
Sheep	39.57	25.73	25.33	-36.0%	-1.6%
Dairy	5.16	6.19	6.14	+18.9%	-0.8%
Beef	4.49	3.97	3.90	-13.2%	-1.7%
Deer	1.65	0.82	0.79	-51.8%	-2.5%
Total	**50.87**	**36.70**	**36.16**	**-28.9%**	**-1.5%**

Source: Statistics New Zealand 2023

Total livestock density

The overall livestock density in New Zealand in 2022 was 274.2 animals per km^2 of farmland. However, livestock density varies by region. The density of livestock types also varied between regions, reflective of variations in farming practices between regions.
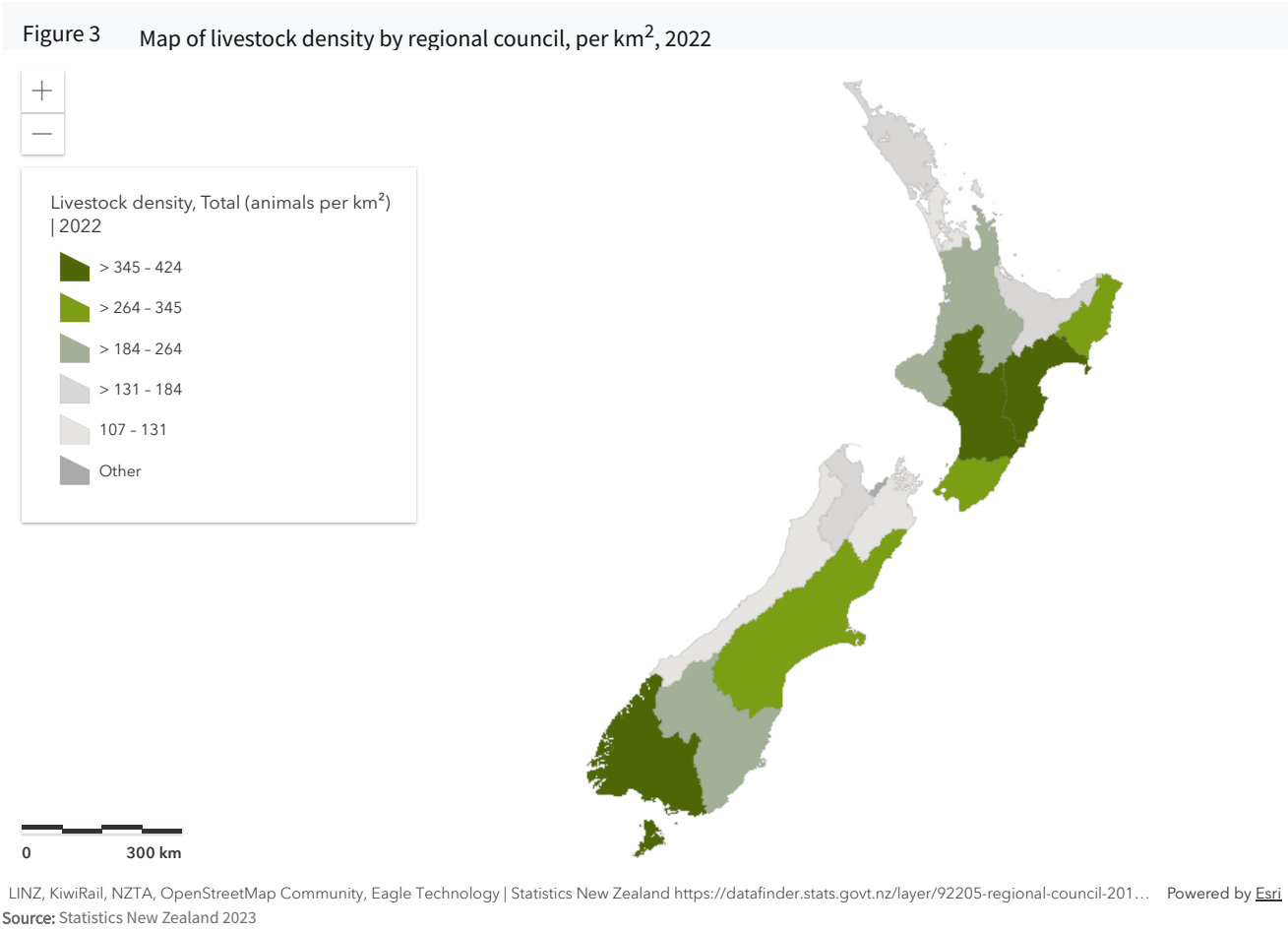
The Manawatū-Whanganui region had the highest density of livestock

In 2022, the Manawatū-Whanganui region had the highest density of livestock (424.4 animals per km^2) (Figure 2), closely followed by Southland (394.9) and Hawke's Bay (382.5) (Figure 2 and Figure 3).

Figure 2   Livestock density by regional council, per km^2, 2022

Note: Density is calculated based on the total area of farmland in a region, as listed in the 2022 Agricultural Census, not the area of farmland used explicitly for stock grazing. Data for the Nelson region was suppressed at the data source due to low response rate or high data errors.

Source: Statistics New Zealand 2023

Figure 3   Map of livestock density by regional council, per km^2, 2022

LINZ, KiwiRail, NZTA, OpenStreetMap Community, Eagle Technology | Statistics New Zealand https://datafinder.stats.govt.nz/layer/92205-regional-council-201...   Powered by Esri

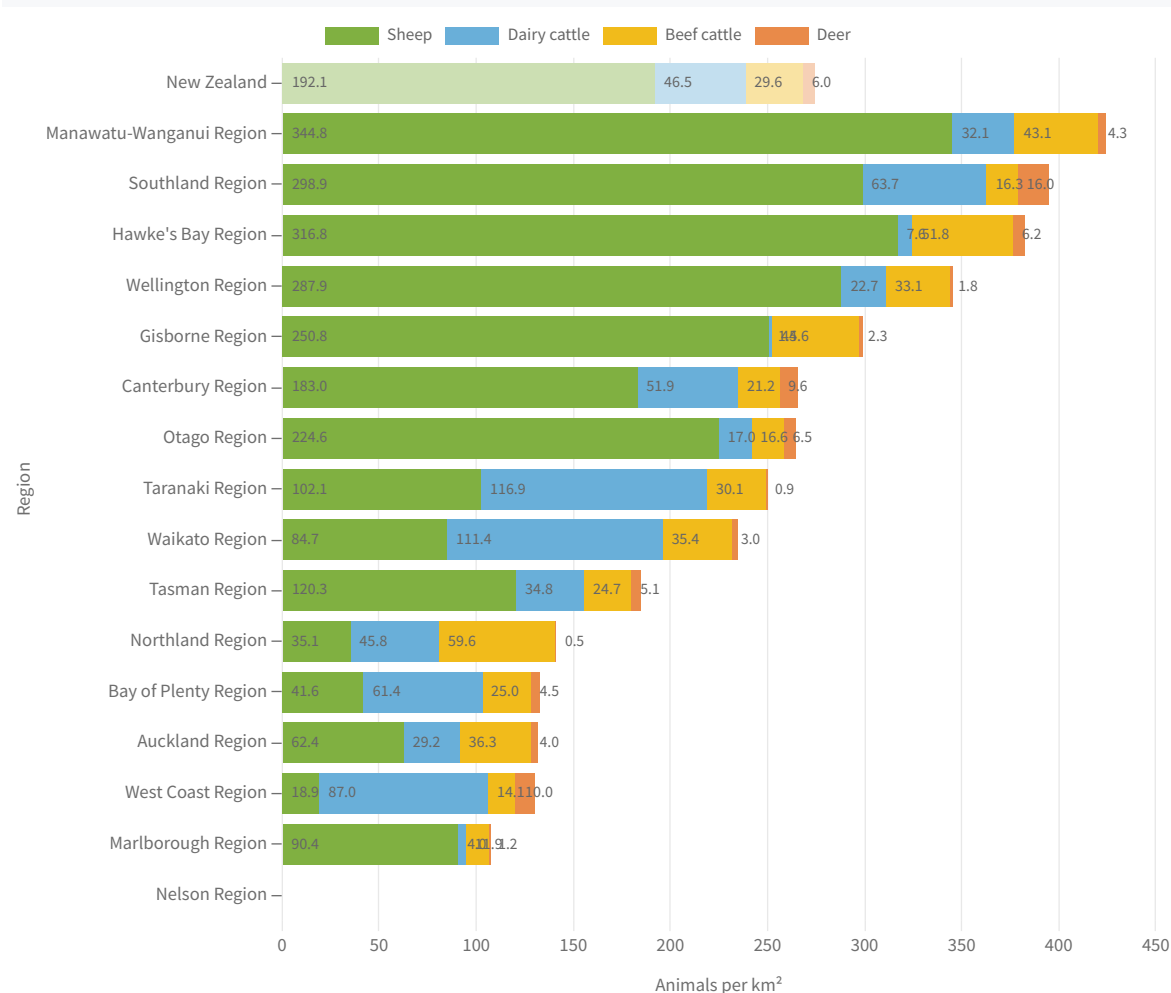**Source:** Statistics New Zealand 2023

Density of livestock types varied between regions

As well as having the greatest density of livestock overall, the Manawatū-Whanganui region also had the highest density of sheep: 344.8 animals per km^2 of farmland.

As for other types of livestock (Figure 4):

- the greatest concentration of dairy cattle was in Taranaki (116.9 per km^2)
- beef cattle were most densely farmed in the Northland region (59.6 per km^2)
- deer were densest in the Southland region (16.0 per km^2)

Figure 4   Livestock density, by regional council and livestock type, per km^2, 2022

Note: Density is calculated based on the total area of farmland in a region, as listed in the 2022 Agricultural Census, not the area of farmland used explicitly for stock grazing. Data for the Nelson region was suppressed at the data source due to low response rate or high data errors.

Source: Statistics New Zealand 2023

Dashboard - Water

Data for this indicator

Data comes from Statistics New Zealand's Agricultural Production Statistics, which contain the results of the Agricultural Production Censuses and Agricultural Production Surveys conducted from the year 2002 onwards.

For descriptive information about the data, see the Metadata Sheet.

References

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Previous factsheet:
2021

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