

20 February 2024

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Tēnā koe [REDACTED]

Thank you for your request to the Department of Conservation, received on 23 January 2024, in which you asked for:

1. *How many kea nationwide have died in the past decade (recorded deaths)? (Car, shot, 1080 etc)*
2. *How many on the West Coast?*
3. *Can I see a break down of where, and cause of death please?*
4. *What is the current nationwide population estimate?*
5. *What was it a decade ago?*

We have considered your request under the Official Information Act 1982. Your questions and our responses are listed below:

1. *How many kea nationwide have died in the past decade (recorded deaths)? (Car, shot, 1080 etc)*

A record of all dead kea submitted for necropsy to the wildlife postmortem service at Massey University shows a total of 149 dead kea between 1 January 2014 and 25 January 2024. See Table 1 below. It is important to note that many kea die far from human view and their deaths are not known or recorded. Further, not every dead kea recovered is able to be submitted for necropsy, the reason being, sometimes the carcasses are too decomposed to be examined for a cause of death. Where kea die with radio transmitters attached, the dead kea is almost certain to be located and the cause of death identified more likely to be able to be established. The primary reason that the Department of Conservation has monitored kea using radio transmitters during the past 10 years is to monitor their fate during 1080 operations. Taking these factors into consideration, the necropsy records are likely to be heavily biased towards kea that die either close to human occupation (usually due to a human-related cause), or, as the result of a 1080 operation where radio-monitoring was carried out at the time of the 1080 operation.

Radio transmitter studies show that the annual survival rates of kea are higher in areas where there is predator control using aerial 1080 compared with areas where predators are not controlled.

A longer-term radio-monitoring study carried out between 2019 and 2021, in the absence of predator control, recorded the deaths of 18 kea. The fate of those kea is as follows: Feral Cat = 6, Feral Cat or Stoat = 5, Stoat = 5, Undiagnosed/unresolved = 2. Five of these were sent to Massey for necropsy and are included in Table 1 below, the remaining individuals were sent straight to Ecogene in Auckland for DNA analysis to ID the species of predator.

2. *How many on the West Coast?*

Table 1 below shows that of the 149 kea deaths recorded between 1 January 2014 and 25 January 2024, 56 of these deaths occurred within the West Coast region of the South Island (WSI).

3. *Can I see a break down of where, and cause of death please?*

Please see Table 1 below.

Table 1. Primary diagnosis (cause of death) of 149 kea submitted for necropsy to Massey University between 1 January 2014 and 25 January 2024. Geographic Regions are Department of Conservation regions: ESI – Eastern South Island, NSI – Northern South Island, SSI – Southern South Island and WSI – Western South Island.

Cause of Death	GEOGRAPHIC REGION					Total
	ESI	NSI	SSI	WSI	Unknown	
Predator	6	1	1	1		9
Trap			1	2		3
Vehicle	12	1	3	11		27
Drowning	2			1		3
Foreign body ingestion			1			1
Infection		2		4	1	7
Starvation	1	2		3		6
1080 toxicity	6	3	11	13		33
Chocolate toxicity				1		1
Lead toxicity	16	1	1	6	1	25
Shooting	1	2		4		7
Band injury			1			1
Window strike			1			1
Trauma - unknown cause	4			2		6
Unknown	8	2	1	8		19
Total	56	14	21	56	2	149

4. *What is the current nationwide population estimate?*

Estimating kea population size is difficult due to their sparse distribution over a range of habitats across the South Island, their high mobility, complex social structure, and variable conspicuousness. As a consequence, population estimates for kea numbers are wide ranging, from the commonly cited 1,000–5,000 individuals, to as high as 15,000 individuals.

One of the priorities for the current Kea Recovery Programme is to improve understanding of the current state of the kea population.

The most recent attempt at measuring population trends of kea across their entire range is a web-based citizen-science approach, the Kea Survey Tool, which was established in 2019 (<https://survey.keadatabase.nz/>). Preliminary analyses indicate strong spatial patterns, with higher kea encounter rates and larger flock sizes in the South Westland and fewer kea in the east of the species' range.

5. *What was it a decade ago?*

In 2013, the New Zealand threat status of kea was changed from At Risk (Naturally Uncommon) to Threatened (Nationally Endangered) based on an estimated population size of 1,000–5,000 mature individuals, observed declines in local populations particularly in eastern areas of the keas' range, and a predicted population decline of 50–70% over three generations (i.e. 24 years).

Please note that this letter (with your personal details removed) may be published on the Department's website.

Nāku noa, nā



Hilary Aikman
Director Terrestrial Biodiversity
Department of Conservation
Te Papa Atawhai