

Summary of necropsy results of kea from Matukituki following Tiakina Nga Manu Operation February 2020

s 9(2)(a), 9(2)(g)(ii), DOC Veterinarian

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Purpose

The purpose of the testing was to determine the cause of death and test for the presence of 1080 toxin in body tissues.

History

Twelve kea were wearing radio-transmitters which had been attached by and were monitored by the Kea Conservation Trust (KCT) at the time of the 1080 operation. The aerial bait operation occurred on 10-11th February 2020. Subsequent radio-transmitter monitoring from 13th -20th February detected 6 dead kea.

Weather conditions hampered the initial retrieval process. A team from KCT were sent via helicopter to track the transmitters and they recovered the bodies of 6 dead kea on 20th February.

The 6 kea bodies were frozen from 20-25 February to prevent further degradation over the weekend and then sent intact to Massey University on 25th February for a full necropsy examination to determine indications of cause of death e.g. trauma, toxin, disease. Birds arrived on 28th February and were necropsied and tissue samples (muscle) taken on that day. Tissue samples from all 6 birds were frozen and sent on the following Monday 2nd March to Manaaki Whenua Landcare Research for 1080 testing.

Necropsy results

There were 3 adult males, 1 female, 1 subadult male and 1 subadult female kea. Two adult males were reported to be in good body condition, and the remaining 4 birds were in moderate to good body condition. There was no evidence of trauma however infectious disease could not be ruled out due to the moderate decomposition of the bodies. All 6 birds had empty crops and their stomachs (proventriculus/ventriculus) contained varying amounts (3.3 – 7.8g, mean 5.63g) of “green/blue-tinged pasty material”.

1080 results

All results of 1080 testing on muscle samples showed that all 6 kea had detectable levels of 1080 in the muscle tissue sampled (results in summary table below) Manaaki Whenua Landcare Research report number T7416.

Diagnosis

All 6 kea were diagnosed to have died of 1080 toxicosis, with the following comments by the pathologist to summarise why this diagnosis was made.

“The dyed pasty material in the stomach is highly suggestive of 1080 ingestion. Skeletal muscle was sent for 1080 testing and the result indicates [these birds have] ingested 1080. Given this result and lack of any other obvious gross post mortem findings 1080 is the most likely cause of death.”

Time to testing

The kea mortality signals were detected 2 days after the 1080 aerial operation. KCT responded within 2 days of this detection, however bad weather hampered retrieval efforts, causing a delay of a further 5 days. Working in the remote area required a specialised team which was assembled as quickly as possible and helicoptered into the site.

Kea bodies were recovered too close to the weekend for normal courier services, so they were frozen to reduce decomposition and sent on the following Tuesday directly to Massey University. Massey undertook necropsies on the day of arrival, Friday 28th February, and sent muscle tissue samples to Manaaki Whenua Landcare Research for 1080 testing the following Monday 2nd March.

Bodies were described by the Massey pathologist as fairly well preserved but not suitable for histopathology, indicating that there had been some degradation of the quality of the tissues which is also affected by freezing, but that muscle tissue would still be suitable for testing for toxin presence.

Summary table

Massey ID	ID	Sex	Age	Weight	Condition	Stomach contents	Tissue 1080
58449	V-1287	Male	Adult	911 g	Moderate/good	4.6 g	0.63 ug/g
58448	V-0622	Male	Subadult	845 g	Moderate/good	7.2 g	1.57 ug/g
58447	V-1580	Female	Subadult	743 g	Moderate/good	3.3 g	2.28 ug/g
58446	V-3059	Male	Adult	958 g	Good	7.8 g	2.30 ug/g
58445	V-3127	Male	Adult	1020 g	Good	7.4 g	7.50 ug/g
58444	V-0650	Female	Adult	779 g	Moderate/good	3.5 g	0.77 ug/g