

**IN THE MATTER**

of the Resource Management Act 1991

**AND**

**IN THE MATTER**

of the Proposed Waikato District Plan (Stage  
1) – 21B - Landscapes

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**SUMMARY OF STATEMENT OF EVIDENCE OF GRAEME DENNIS LA COCK  
FOR THE DIRECTOR-GENERAL OF CONSERVATION  
IN RELATION TO HEARING 21B - LANDSCAPES**

**15 SEPTEMBER 2020**

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**Department of Conservation**

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1. My full name is Graeme Dennis La Cock. My qualifications and experience are set out in my evidence.
2. I have drawn on a review of coastal erosion in the Waikato Region to demonstrate that beaches and their associated dune systems in the Waikato District unstable over periods of decades to centuries.
3. Beaches and dunes away from the influence of river mouths and estuaries may move by up to 50 metres over a period of several years to decades.
4. Rates of change are far higher at river mouths. The mouth of the Mokau River shifted 200 m in 40 years; the mouth of the Waikato shifted 1.5 km over 100 years.
5. These sand spits may be destroyed and rebuilt over periods of centuries.
6. I used these examples to demonstrate the long-term instability of beaches and dune systems on the Waikato West Coast.
7. These long-term changes are natural, and typical of soft shores around the world. I believe it is appropriate to manage for this functional instability in these ecosystems, rather than try to manage them in a stable state.
8. I drew on my experiences at Mangawhai Spit to demonstrate the short-term implications of stabilising a dune system by restricting natural sand movement.
9. Native sand binders such as pingao are adapted to living in an environment that has a constant supply of fresh sea sand.
10. I was asked for advice on whether to top-dress a patch of pingao that was dying.
11. It turned out a sand fence had been erected to trap sand being blown onto the spit. When this first fence was overtopped by sand, they built another one on top of it. The fence we could see was the third one on the site, with two buried beneath it.
12. The pingao was dying because it was starved of fresh sand.
13. Nearby pingao that was receiving fresh sand was flourishing.

14. I've used this example to demonstrate that in the short-term dune systems do not operate in a stable state. they are dynamic systems that rely on the movement of sand. They function in an unstable state, and I believe their management needs to reflect this instability.
15. Overall, I believe I have demonstrated that beach and dune ecosystems in the Waikato District function in an unstable state, and that changes take place over periods of decades to centuries.
16. I further believe that their management needs to take this dynamic functional state into account.

A handwritten signature in black ink, appearing to read 'Graeme La Cock', written in a cursive style.

Graeme La Cock