

**Oral submission to Kaipara District Council regarding resource consent application  
APP.040213.01.01. Application to build a wharf at Mangawhai**

**Ian Southey – expert witness for the New Zealand Fairy Tern Charitable Trust.**

**Introduction**

1. New Zealand Fairy Tern Trust members, including myself, carried out fieldwork to look at patterns of territory use by the pair of fairy terns using the proposed wharf site.
2. Feeding territories have several functions for breeding fairy terns, particularly courtship, mating and feeding.

**Activity patterns**

3. We recorded timing for a few basic behaviours and showed that they changed markedly through the breeding season.
4. Initially there seemed to be more feeding on falling and rising tides than low tide but after the chicks hatched this pattern disappeared and the birds fished throughout the low tide period, the birds were present a little less often but fished more intensively.

**Feeding**

5. We found that fishing effort varied in different parts of the feeding territory according to bottom topography, tide, wind direction and strength.
6. Shelter from the shore during some wind directions and strengths provided viable feeding options in some parts of the territory but reduced the ability to feed in others.
7. The complexity of the feeding territory seems likely to provide better fishing options and greater food security for chicks over a range of weather conditions, especially adverse weather conditions. This may contribute to the high productivity of this particular pair.

**Human disturbance**

8. We monitored people using the feeding territory and observed some disturbance events where fairy terns changed their behaviour in response to people. People with dogs, kayaks and aircraft were responsible.
9. Response to human disturbance may not only be a fear response but, when in the water, people or their pets may scare fish and reduce the ability of fairy terns to forage successfully.
10. On the scale that we were able to analyse, there seemed to be no negative interaction between fairy terns and people suggesting that they can coexist at current levels and this fits with observations of birds usually shifting within their territory rather than leaving.
11. One particular set of observations, however, suggests that during a two hour period of heavy human use the ability of the fairy terns to adjust to disturbance was exceeded. Compared to the time periods immediately before and after this event their time spent fishing halved and they were no longer able to roost in their territory at all.
12. If there is increased use of the harbour by people it is plausible that this kind of event would occur more often and, at some level, could significantly limit their ability to produce eggs or feed chicks.
13. It is possible to model human disturbance impacts and predict when this might occur but it has not been done.

### **Cumulative effects**

14. Since 2015 the average productivity of fairy terns has declined so that population growth has changed from positive to negative. I have discussed this as a likely consequence of mangrove removal and suggested that against this background any adverse impact that arises from building the wharf should be regarded as a cumulative effect.
15. From a conservation management perspective, this consistent negative population growth means that, if nothing changes, after some period of time (which I am not competent to calculate) fairy terns will become extinct in New Zealand.
16. The actual decline will fluctuate but if there are further sustained negative impacts on the productivity of this pair, even if small, the average time to extinction for the species in New Zealand will shorten.
17. During this time period we need to find a management response to counteract this negative population growth because we do not have one yet. Given the current rate of progress I would say we need all the time we can get.

### **Risk**

18. When birds become as rare as fairy terns the consequences of lost productivity or death of individuals become more important. There is very little opportunity for success in the remainder of the population to compensate and any net gain in productivity or survival is vital.
19. In my opinion even small chances of increased negative impacts become less acceptable because the consequences are so much greater.
20. I am also averse to the risk of completely unexpected consequences, as occurred following mangrove removal. Increased boat traffic through the harbour could do this but they could arise anywhere.

### **The Applicants**

21. A fundamental difference in perspective between Dr Craig and myself is that Dr Craig appears to be considering the wharf alone with no impact to the wider harbour from boating or people on the sandflats and channels nearby.
22. Attention should not be restricted to the wharf itself because the stated intention in the application is to direct people to the wharf and for it to be functional. I would consider that increased human activity in the area around the wharf is likely, especially boating, and also an increased impact from boating that extends as far as the main boat ramp in the lower harbour. This is an extent much greater than the area where we made our observations and would involve another five fairy tern feeding territories.
23. The applicants have ignored the recommendations from their fieldworkers (Biosearches) that on site human disturbance and boating impacts should be studied and understood. Instead they have taken a cavalier approach with the unfounded assurance that there will be no adverse effects.
24. Our work shows that adverse effects are at least plausible, perhaps likely and need to be addressed.
25. It is possible to do better and I think that the applicants should do better.