

Oral evidence for the Kaipara District Council hearing on Proposed Plan Change 85.

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Introduction

There are three areas related to Proposed Plan Change 85 that I would like to discuss:

1. The habitat of bitterns
2. Appropriate setback distances to retain habitat for bitterns
3. The impacts of disturbance on fairy terns.

Other matters of concern raised in my evidence in chief remain matters of concern and I will answer questions on them if asked. I support any measures of control that can be exerted over domestic pets, including bans, as they would have material conservation benefits but I have nothing useful to add to the arguments.

Bittern habitat

1. The applicant's ecological expert considers that "Australasian bittern's (Threatened – nationally critical) typical habitat is *tall, dense beds of raupo and reeds in freshwater wetlands, wet habitats with a mixture of water purslane and willow weed, and damp pasture infested with large clumps of rush or introduced tall fescue*". The eBird records for bittern indicate that in the Mangawhai area it has mainly been found outside of the CMA, with only one record within the harbour, compared to over 30 records in the wider Mangawhai area. Bittern are considered to be of Very High ecological value in the EclAG framework." (Delany EIC 92).
2. He further considers that "The main areas of potential bittern habitat in the PC85 Site (i.e. the proposed SNA wetland areas) are proposed to be protected and enhanced as part of PC85. The proposed coastal path goes along the edges of the large SNA quality wetlands on the PC85 Site, which provide potential breeding and foraging habitat for bittern." (Delany EIC 93).
3. While any wetland with food could be used by bitterns there are no available records of them from these proposed SNA wetlands. The drains and wet pasture where bitterns have actually been recorded are not rated as important – "Such drains are routinely maintained to preserve drainage function, typically have low aquatic habitat diversity, limited riparian vegetation, and consequently low value

as fish habitat and bittern feeding habitat. In contrast, the main areas of potential bittern habitat within the PC85 site, namely the proposed SNA wetland areas, are to be protected and enhanced” (Delany Rebuttal evidence 10).

4. Although damp pasture is listed as “typical bittern habitat” (3, above) the damp pasture on site is not considered such even though there are records of bitterns on site using this habitat.
5. Ebird checklists usually record the GPS position of the observer, not the position of the birds. Bittern calls carry for up to a kilometre or more, so you can record them in the harbour without getting wet or muddy. Some of those records are mine and I know how they were gathered. The habitats of the booming bitterns recorded in the Mangawhai area on call surveys were in saltmarsh/mangrove mosaics ten times and in freshwater wetlands four times. Dr Beauchamp (EIC 28) records seeing a bittern in mangroves very near the PPC 85 site. Mangroves and saltmarsh are extremely important bittern habitats in Northland so Mr Delany is mistaken when he asserts that the harbour does not provide ideal habitat for bittern so the effects on them from disturbance there are expected to be low (Delany EIC 94).
6. Bitterns do not need to have a diverse range of prey species. A good supply of eels alone would sustain them well. The fact that these drains are periodically cleaned out may not have a critical impact on the bitterns if they are not all cleared at once and, also if they are not cleared in winter or spring as the breeding season starts. That the usually highly secretive bitterns leave cover to feed there suggests that the food in this modified habitat may be particularly important to them when they are breeding. That many of the sightings of bitterns have been in or beside drains does not confirm Mr Delany’s statement that they have low value as bittern habitat (above, 5).
7. Artificial drainage channels may be excluded from relevant stream protection rules but they have also now been identified as the habitat of a Threatened-nationally critical species. Only three booming bitterns were detected in a recent survey of the remainder of the Rodney District, in the Auckland Region (Stewart 2020) so they are definitely rare in the rest of their ecological district. I wonder, then, if these drains and paddocks could reasonably be assessed as another SNA?
8. My evidence in chief (64) outlines the difficulties bitterns now have finding enough food with starvation contributing directly, or indirectly to many deaths. The loss of the food in these habitats, if developed, should be considered important.

Setback distances from wetland bird habitats for paths

9. The proposed setbacks around sensitive habitats on PPC 85 seem very small given the wariness of bitterns - 15 m setbacks from wetlands and streams, and 20 m from streams > 3 m in width (Delaney EIC 58). Dr Beauchamp (EIC 49) further considers that setbacks of these distances for paths beside SNAs would be inadequate to retain populations of fernbirds or banded rails, which are both secretive wetland birds and I agree with this.
10. Bitterns are my primary concern here but there is no acknowledged setback distance for bitterns in New Zealand, or anywhere else for that matter (Williams 2024). Estimating it is complicated because they may avoid threats by freezing rather than fleeing so it is difficult to estimate of "flight initiation distance", the onset of avoidance behaviour. In spite of this I have naively tried to work out what an appropriate buffer around bittern habitat might look like. Three bitterns recently approached by me, slowly and quietly on foot, took cover at 40, 48 and 80 m with an average distance of 56m. The maths was beyond me so I took a comparative approach.
11. A similarly cryptic wetland bird species, Latham's Snipe in Australia, was found to have flight initiation distances of 22m in urban sites and 26m in rural sites and the calculated setback distances were 80.6m with 80% confidence and 94.9m with 95% confidence of allowing birds to avoid disturbance (Hansen et al 2024). Bitterns have a much greater flight initiation distance than Latham's Snipe so the buffer would need to be larger, say one or two hundred metres. The birds I approached were in cover but if they were exposed on pasture or, if I was walking a dog, they might not feel so safe and show even larger flight initiation distances.
12. I am well aware how shaky these numbers are but I think it fair to say that while some size of buffer may be able to protect bittern habitat but the kinds of widths proposed in this evidence are unrealistically small, perhaps by an order of magnitude. Appropriate setback distances should have a sounder evidence base than this to be confident that they are fit for purpose rather than just pretending to mitigate adverse effects.

Disturbance of fairy terns

13. Mr Delany (EIC 89) gives a fair summary of most of the potential issues faced by fairy terns. My own biggest concern, however, is disturbance directly, or indirectly by people, at a level that prevents fairy terns from accessing food in the harbour.

14. Mr Delany (EIC 90) acknowledges that “there will be some increase in people, and dogs, walking along the foreshore and along the mudflats.” Given the high numbers of people already walking there during the tara iti breeding season, he considers that the potential change in the existing magnitude of impact before mitigation should be considered low to moderate.
15. In fact, any increase in the magnitude of impact is exactly the point of risk here. Fairy terns have some coping mechanisms for disturbance (Southey EIC 34, 43). Fairy terns have become very tolerant of people (Southey EIC 41) but are still choosing times and places where they can avoid people. On weekends, when numbers of people using the harbour are higher, it takes longer for a nesting fairy tern to complete a foraging trip (Southey EIC 42) and this could leave the chicks poorly fed on some days. It is possible that these coping mechanisms are already becoming overwhelmed and further stress could complete the process.
16. It is possible that disturbance is already influencing fairy tern productivity as the gains in hatching success from effective conservation management have been cancelled out by higher chick mortality. Alternative possible explanations involving general food shortage or nest predation should negatively impact both eggs and chicks but they don't. The main period of disturbance is from the third week of December (Southey EIC 37), when most chicks are being reared and food demand is high, so this best fits the increased mortality of chicks alone. Until this is tested there will be a degree of uncertainty about why more chicks are dying but the possibility that disturbance is already impacting fairy tern productivity is at least plausible. If so, increasing disturbance would exacerbate the problem and further reduce fairy tern productivity. The consequences of making a mistake here are extremely serious and I doubt that they can be wound back once they occur.
17. In my view the disturbance question has become over-focussed on dogs when it is primarily about people. They do bring the more potent agents of disturbance, such as dogs, onto the harbour but they are quite able to cause the same problems without help.
18. Considering the impact of people alone, in my experience a fairy tern will fish up to about 10m away from a single person standing still close to the water's edge, like a fisherman or a bird watcher. Closer than this and it stops looking for fish and diverts around that person before continuing to fish 10m or so further on.

19. This means that five evenly spaced people along the water's edge, doing the least threatening activity, could lock up 100m of the shoreline and prevent birds from fishing there. Actually, fewer may be required as small patches of water at some distance from each other are probably not worth fishing. If people are moving or entering the water the approach distance will likely increase and fewer people would achieve the same result. Add dogs to the mix and, even when not chasing birds, their ability to clear birds off the harbour increases further, limited observations suggest a 38m radius for fairy terns (Southey EIC 40). The impact will be more than 3.8 times that of stationary people as dogs can move far and fast sometimes deliberately chasing birds.

20. Requesting controls for dogs on the subdivision is not unreasonable. Recent research on the disturbance impacts of dogs on wildlife that I saw when researching this evidence is genuinely frightening but it is not enough to control dogs on the subdivision. Access is still available for dogs not controlled by rules tied to the subdivision and is likely to increase, especially if the access road becomes sealed and the pathways to, and around the harbour are mown or otherwise improved.

21. The other issue is the total lack of enforcement of dog bylaws on the harbour at present. In his rebuttal evidence (33) Mr Delany considers there to be a "current absence of dog control rules in the harbour" which is incorrect as the area adjacent to the subdivision should be a dogs on leads area. It is, however, a reasonable mistake given the local attitude to the bylaws from both the community and the council. Observations of harbour users showed just 4% compliance in the upper harbour where the subdivision is (Ball 2023), even with signage in place and this is consistent with my own experience. Signs and rules have changed nothing and I would like to see a solution proposed that might actually work.

Summary

22. Mangawhai Harbour is an extraordinary site with an exceptional diversity of breeding coastal and estuarine birds, possibly the richest site in the country. The presence of two Threatened – nationally critical bird species is also exceptional and both are at risk from a subdivision on the PPC 85 site. Any development proposal here is going to come under close scrutiny from the community as well as government agencies.

23. The application for PPC 85 strikes an environmentally friendly tone for the site and surrounding area which is both welcome and necessary for this particular

site. The applicants state that “The purpose of this phase is to identify whether the ecological values are understood at an appropriate level of detail and whether any reasonably foreseeable risks can be managed through subsequent consenting processes.” (Delany EIC 48) and this is what I have tried to assess.

24. The situation with fairy terns is so dire that the exact magnitude of the risk is not important, any plausible potential risk needs to be prevented and any existing threat needs to be reduced or eliminated. Additional impacts on fairy terns could contribute their extinction and would certainly impede their recovery and I doubt this is desired by any party involved with this proposal.

25. There is poor understanding of bittern habitat in this proposal and of the potential impacts of people on this wary bird. Most bitterns have probably been seen from vehicles travelling along Black Swamp Road, or by residents because that is how most bitterns are seen. With better coverage of the site it seems likely that they would use any wet pasture or wetland from the vicinity of Black Swamp Road to the harbour, including the mangroves. While suitable setback distances to preserve the habitat of any kind of bittern appear never to have been worked out, it is clear that it will be so large that it will require more than a tweak of an indicative plan to allow for it.

26. I do not think the applicants have a good understanding of the Threatened Species on the site and nearby, nor the risks associated with them. In particular, there is not enough information available to understand or manage the threat to bitterns from the plan change but it needs to be done and may take more space than expected. I would prefer the zoning to remain unchanged so that these and other problems are avoided completely.

References

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