Ecology New Zealand Limited
9F Beatrice Tinsley Crescent
Albany
Auckland
Email: info@ecologynz.nz

MEMORANDUM

Attention: Glenn Starr, Taumatatotara Wind Farm Limited

Date: 10 April 2021

From: Simon Chapman, Principal Ecologist

Subject: Taumatatotara (T4) Wind Farm – Further s92 response – Bats

Introduction

This memorandum provides further responses to the s92 requests for further information in relation to a revised application to vary your existing consent for the above project. Specifically, it reports the findings of on-site ecological assessment work carried out following discussions with the council's specialist ecology reviewer.

Background

Consent has already been granted for a 22-turbine wind farm. This application seeks to vary the existing consent to:

- Reduce the number of turbines from 22 to 11.
- Increase turbine size (maximum tip height and blade length).

Ecology NZ's previous memo dated 1 December 2020 addressed the bat-related questions included in the council's s92 request. The key points of that memo were:

- A 22-turbine windfarm has already been consented for construction at the site.
- The proposed 50% reduction in the number of turbines is likely to benefit bats.
- The proposed increase in turbine size will allow for a 20% increase in the maximum cumulative total rotor sweep area (RSA).

Following a meeting with the applicant, Council's ecology specialist, and Ecology NZ held on 11 February 2021, it was agreed that bat and bird surveys would be carried out on-site to obtain the information requested. The methodologies and findings of those surveys are presented below.

Methodologies

Bats

A total of 17 AR-4 automated acoustic bat detectors (ABMs) were deployed at the consented turbine locations on 23 February 2021 (Appendix 1). ABMs could not be installed at five of the turbine sites due to a lack of suitable features (trees, fence posts, etc.) to install them in. The ABMs were retrieved on 15 March 2021 giving a total of up to 19 nights of recording.

Weather data obtained from the nearby Aotea Harbour weather station indicated that substantial precipitation occurred on no more than five of the 19 nights, and minimum overnight temperatures never dropped below 12°C (bat activity tends to drop off below approximately 10°C).

The ABM datasets were analysed with BatSearch software (version 3.11). For each ABM, the total number bat passes were divided by the number of survey nights to calculate average bat passes per night as an index of activity. Bats were still active on nights with precipitation therefore data from those nights were not excluded from analyses.

Two of the ABMs failed to operate correctly and did not record any data.

Avifauna

Two rounds of 5-minute bird counts (5MBC) were carried out at all 22 consented turbine sites. The first round of counts was carried out on 23 February 2021 and the second round was carried out on 15 March 2021. Weather conditions were suitable for bird counts during both rounds. All birds seen and/or heard during the timed 5-minute period were identified and counted. As the 5MBC sampling methodology cannot be used for calculating or comparing abundance, the results were used to compile a list of bird species utilising and/or traversing the site at/near the consented turbine locations. Any additional species observed while on site were also noted, with a focus on watching for any indication of presence NZ falcon for the entire duration of all on-site fieldwork.

Results

Bats

Bat activity was recorded at 12 of the 15 sites (Appendix 1) where functioning ABMs were installed (Table 1). For the sites where bat activity was recorded, activity levels ranged from 0.1 to 12.7 bat passes per night. Ten sites had less than one pass per night. Only one ABM (site 10) recorded more than 10 passes per night (12.7).

Table 1: Summary of bat activity.

Site #	Date deployed	No. of nights recording	No. of bat passes	Average bat passes per night
1	23/02/2021	8	70	8.8
2	23/02/2021	14	13	0.9
3	23/02/2021	11	8	0.7
4	23/02/2021	0 (failed)		
5	23/02/2021	16	15	0.9
6	23/02/2021	15	6	0.4
7	23/02/2021	15.5	0	0.0

Site #	Date deployed	No. of nights recording	No. of bat passes	Average bat passes per night
8	23/02/2021	13	7	0.5
9	23/02/2021	20	123	6.2
10	23/02/2021	20	253	12.7
11	23/02/2021	12	34	2.8
12	23/02/2021	20.5	0	0.0
13	23/02/2021	15	0	0.0
14	23/02/2021	0 (failed)		
15	23/02/2021	20.5	12	0.6
16	23/02/2021	15	17	1.1
17	23/02/2021	15.5	2	0.1

Avifauna

Of the 10 avifauna species observed on-site, five were endemic, one was native, and the remaining four were introduced and naturalised (Table 2). No 'At Risk' or 'Threatened' bird species were observed on -site. By far the most conspicuous avian species was the introduced Australian magpie, which was seen and/or heard at up to 15 of the consented turbine sites. The least conspicuous bird species of those observed on-site included the endemic species kereru, tui, and paradise shelduck. Those species were observed at no more than one site during each round of 5MBC+s. No additional species were observed outside of the timed 5MBCs while on-site.

Table 2: Avifauna seen/heard on-site.

Common Name	Latin Name	Threat status	No. of sites where detected	
			Survey 1	Survey 2
Australian magpie	*Gymnorhina tibicen*	Introduced & Naturalised	10	15
Canada goose	*Branta canadensis*	Introduced & Naturalised	1	1
Chaffinch	*Fringilla coelebs*	Introduced & Naturalised	2	1
European goldfinch	*Carduelis carduelis*	Introduced & Naturalised	3	5
Grey warbler	*Gerygone igata*	Endemic & Not Threatened	4	3
Kereru	*Hemiphaga novaeseelandiae*	Endemic & Not Threatened	1	0
New Zealand fantail	*Rhipidura fuliginosa*	Endemic & Not Threatened	1	3
Paradise shelduck	*Tadorna variegata*	Endemic & Not Threatened	1	1
Tūī	*Prosthemadera novaeseelandiae*	Endemic & Not Threatened	1	1
Welcome swallow	*Hirundo neoxena*	Native & Not Threatened	7	9

Discussion

Low levels of long-tailed bat activity were recorded at a number of the consented turbine sites. None of the bat activity recorded was indicative of feeding or roosting. Rather than indicating any further assessment or design work is required, the findings in relation to bats support the package of mitigation (i.e., use of bat deterrent technology at turbine sites),

monitoring (of the local bat population), and compensation (i.e., predator control in adjacent bush blocks; Appendix 2) measures put forward by the applicant. The requirement for such a package of ecological monitoring and management measures would be well suited to conditions of consent.

No NZ falcon were seen or heard on-site despite specifically looking and listening for them across the entire wind farm site during two day-long site visits during suitable conditions. While several endemic bird species were observed onsite, no At Risk or Threatened species were observed. Overall, it seems unlikely that the already-consented wind farm, or the amended proposal, will have significant adverse impacts on native avifauna.

Of critical importance in understanding this assessment is that it is **not** the impacts of the wind farm itself that is being assessed. Instead, it is the ecological effects of the proposal to change the design from the 22-turbine wind farm to an 11-turbine wind farm with larger turbines that needs to be assessed. The construction of the 22-turbine wind farm should essentially be treated in the same way as a "permitted baseline". That means that it is only the **difference** in the impacts between the consented and proposed designs that should be considered. It is not appropriate to treat the application to vary the existing consent as an opportunity to revisit the ecological effects of the existing consent to construct a 22-turbine wind farm.

Conclusion and Recommendations

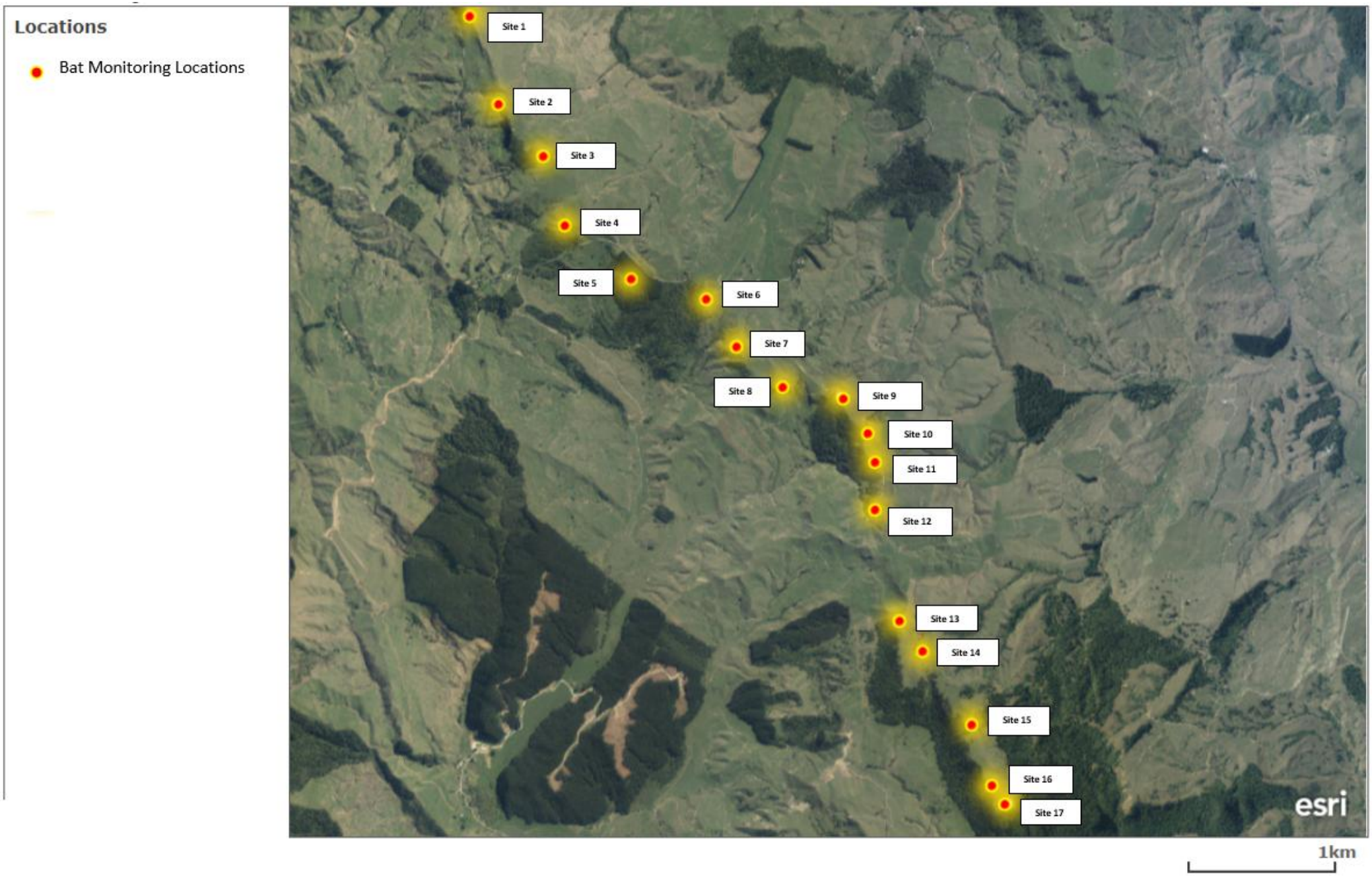
Overall, the field-based investigations support a conclusion that the proposal to vary the existing consent to allow for fewer larger turbines is not expected to significantly change impacts on native bats and avifauna. Any adverse ecological impacts arising from the amended proposal would also occur when the existing consent is implemented. The applicant has offered up a package of ecological mitigation, monitoring and management that will be implemented if the application to vary the existing is granted.

It is strongly recommended that the offered ecological package is accepted, and the application to vary the existing consent is granted. The appropriate mechanism to formalise the recommended ecological package is through consent conditions that require an Ecological Management Plan be prepared and implemented.

Should you require any further information please do not hesitate to contact me on 021436841 or at simon.chapman@ecologynz.nz.

Simon Chapman
Principal Ecologist

Appendix 1: ABM locations.



Appendix 2: Map showing suggested pest control programme areas (red circles).