

**Before Independent Hearings Commissioners  
Appointed by the Northland Regional Council**

**UNDER** the Resource Management Act 1991 (**RMA**)

**IN THE MATTER** of an application by Meridian Energy Ltd – regional land use consent including removal of wetlands – SH15, McCathie Road / Marsden Point Road / Rama Road, Ruakākā [APP.045356.01.01].

**IN THE MATTER** of a submission by the  
**NORTHLAND FISH & GAME COUNCIL**

---

**WRITTEN STATEMENT ON BEHALF OF NORTHLAND FISH AND GAME COUNCIL**

**30 JULY 2024**

---

## WRITTEN STATEMENT ON BEHALF OF NORTHLAND FISH AND GAME COUNCIL

### Introduction

- 1 My full name is **Mischa Jacobine Davis**
- 2 I am employed as Resource Management Officer for the Northland Fish and Game Council ("NFGC").
- 3 I have been in this role since October 2016 during which time I have been responsible for preparing and lodging submissions on resource consent applications, local government planning documents, draft legislation or other central government policy matters, then presenting those submissions and other evidence at hearings. I have further been involved in responding to queries on resource management issues, investigating non-compliance with resource consents, policies and plans, and assisting with planning and policy development.
- 4 I hold the qualifications of Bachelor of Laws, and Bachelor of Arts with a major in environmental management, both from the University of Auckland.
- 5 The purpose of this written statement is to support the position of NFGC outlined in its submission regarding the resource consent application made by Meridian Energy Ltd.

### Summary Statement

- 6 The principal focus of NFGC is on game bird habitats and the retention and enhancement of wetlands or the development of suitable land for creating wetlands and ponds.
- 7 The wetlands present in the area concerning the consent application provide important breeding and foraging habitat for a number of game bird species which include some native wildlife species. We consider the value of this habitat needs to be considered in the context of the wider Marsden Point environment, rather than a site by site perspective.
- 8 In its submission the NFGC opposed the application on the grounds that the adverse effects of removing 17 hectares of wetland cannot be off set elsewhere on a like for like basis.
- 9 NFGC also raised concerns about the risk that the solar farm itself poses considering its location being adjacent to wetlands which provide important habitat to indigenous and introduced waterfowl.

### Background

- 10 The NFGC region is one of 12 Fish and Game Council regions across New Zealand (excluding the Taupo catchment). Fish and Game Councils were created in 1990 by the Conservation Law Reform Act 1987. The former Acclimatisation Societies were replaced by 12 regional Fish and Game Councils and one national New Zealand Fish and Game Council. Each Fish and Game Council has specific functions, responsibilities, and powers to manage sports fish and game birds, as specified in sections 26Q, 26R, and 26S of the Conservation Act 1987. The main purpose of the Fish and Game Councils, as set out in 26Q (1) of the Act, is to: "*Manage, maintain and enhance the sports fish and game resource in the recreational interests of anglers and hunters.*" Fish and Game Councils are solely funded through income that is generated through licences purchased by game bird hunters and freshwater anglers.

## Context of the wider environment

- 11 The Marsden Point area is unique because of its industrial character, with a relatively low proportion of natural/non-built environments. The wider area includes a mosaic of wetland, pond and lake ecosystems which provide important ecological functions in the context of an expansive modified environment predominantly used for industrial activities. Cumulatively these ecosystems are significant for the habitat they support.
- 12 Game bird productivity is driven by land use and habitat availability for breeding/feeding/resting. The wetlands, ponds and lakes within the wider Marsden Point area provide important breeding/moulting/feeding habitat for many game bird species. Game birds present include mallard duck, grey duck, shoveler duck, paradise shelduck, black swan and pukeko. Protection, maintenance and enhancement of these waterbodies is therefore critical for the maintenance of regional game bird populations, particularly given the projected increasing footprint of settlement and industry in the area.
- 13 The presence of game birds, and the importance of the habitat for gamebirds, however, is something that we consider has been overlooked within the application, with not a single mention within any of the application documents.
- 14 The Spring Avifauna Surveys conducted by Boffa Miskell note the importance of these habitats in the wider Marsden Point area:

*“Most of the avifauna recorded in the surveys will move across the wider landscape, either regularly as part of their foraging or as part of seasonal patterns of breeding and dispersal. They will use habitats within the Sites as stepping stones or destinations for these movements. The repeated observations of matuku-hūrepo (Threatened - Nationally Critical), weweia (Threatened - Nationally increasing), and other Threatened and At Risk avifauna within the Sites and surroundings (eg, stormwater ponds), emphasise the importance of the habitats provided.”<sup>1</sup>*

- 15 The Ecological Peer Review memo identifies the project site as being situated within a “chronically threatened land environment”.<sup>2</sup>
- 16 Attached as an appendix to this written statement is a piece of writing prepared by Craig Deal, Regional Manager for NFGC, that highlights the importance of looking at the habitat present in the area concerning the application, from a landscape perspective rather than a site by site basis. Mr. Deal states:

*“The Marsden Point area has long been home to a game bird species and other indigenous waterfowl. It has a good balance of the type of habitats that game birds and waterfowl species need to thrive...”*

*Game birds and other wetland birds are very mobile, and move between habitats frequently, seeking favourable habitats as the conditions dictate...”*

---

<sup>1</sup> Page 10 Spring Avifauna Surveys, Boffa Miskell.

<sup>2</sup> Page 2, s92 - Ecological Peer Review memo, Rural Design.

*Whilst the wetland areas in Site 1 of the application may not have registered high numbers of wildlife at the time of the monitoring visits, they are an important part of the network that makes Marsden Point desirable to these bird species.”*

### Value of the wetlands

- 17 Since European settlement in the mid-1800s, the vast majority of New Zealand’s wetlands have been drained or irretrievably modified for coastal land reclamation, farmland, flood control, and the creation of hydro-electricity reservoirs. As a result, wetlands have become a threatened ecosystem type with less than 10% of their original extent remaining.<sup>3</sup> Freshwater wetlands are now estimated to cover only 1% of the New Zealand land mass<sup>4</sup> and the rate and extent of wetland loss have been recognised as among the highest in the world.<sup>5</sup>
- 18 The amount of wetland loss is very significant in the Northland Region. Northland is one of six regions where wetland loss has been greatest, with only 5.5% of the original extent of wetlands left. Significant loss of wetlands occurred in Northland between 1978 and 1983 with 14% loss in extent.<sup>6</sup> The pre-human extent of wetlands once covered 32% of Northland, and now only 1% of the land cover of Northland is wetland. For example, Sites 2 and 3 of the application are located in what would have once been extensive peat wetland.<sup>7</sup>
- 19 Unfortunately, wetland loss still continues to this day, placing a lot of extra pressure on fish and wildlife species seeking a place to call home, as breeding and rearing territories continue to reduce.
- 20 Wetlands are important habitats for a range of reasons. Wetlands are biodiversity hot spots for indigenous flora and fauna, indigenous and introduced waterfowl, wading birds and threatened species, as well as various native fish species. Wetlands also play a crucial role in environmental regulation including flood, water quality, erosion and sediment protection; groundwater recharge; and climate regulation.
- 21 Mr. Deal highlights in the attached appendix the importance of the area in Site 1 as foraging habitat for waterfowl and that whilst the area may not have registered high numbers of wildlife at the time of the monitoring visits, it plays an important part of the network that makes Marsden Point desirable to waterfowl.
- 22 As stated in our submission NFGC oppose the application to permanently remove more than 17 hectares of wetland to facilitate the proposed solar farm. We consider that the adverse effects are such that they cannot be off set elsewhere on a like for like basis.

---

<sup>3</sup> Ausseil, A, Chadderton, W.L., Gerbeaux, P., Stephens, R.T.T., Leathwick, J.R., 2011. Applying systematic conservation planning principles to palustrine and inland saline wetlands of New Zealand. *Freshwater Biol.* 56, 142–161;

<sup>4</sup> Ausseil, A, Gerbeaux, P., Chadderton, W.L., Stephens, T., Brown, D., Leathwick, J., 2008. Wetland ecosystems of national importance for biodiversity. Landcare Research Contract Report LC0708/158. Prepared for Department of Conservation, Wellington, NZ.

<sup>5</sup> Mitsch, W.J., Gosselink, J.G., 2000. *Wetlands*, 4th ed. John Wiley & Sons, New York. Myers et al. 2013.

<sup>6</sup> Anderson et al. 1984; Myers S.C., B.R. Clarkson, P.N. Reeves, B.D. Clarkson 2013. Wetland management in New Zealand: Are current approaches and policies sustaining wetland ecosystems in agricultural landscapes? *Ecological Engineering* 56 (2013) 107–120.

<sup>7</sup> Paragraph 40, Expert evidence of Sarah Flynn – Ecology.

- 23 While large scale renewable energy (“REG”) generation activities can play a critical role in meeting energy demands and combating climate change, the adverse effects of this application are such that we do not support the proposed offset and mitigation measures and consider that these are insufficient to account for the permanent loss of these wetland ecosystems.

### Impacts of solar farms on birds

- 24 We are concerned about the risk that the solar farm poses to birds via collision with solar panels as they move between waterbodies on and off-site in the wider area. We consider that this issue has not been sufficiently addressed in the application.
- 25 As highlighted in our submission overseas studies have found some birds might collide with solar panels because the bird perceives many closely spaced PV panels as a waterbody attracting them to land and injuring, killing, or stranding them in the process.<sup>8</sup>
- 26 This risk is noted in the Ecological Peer Review by Rural Design stating that:

*“Evidence indicate that waterbirds may be particularly susceptible to collisions with solar arrays due to the so-called lake effect, caused by the reflection of the sun of the smooth surface of solar panels.”<sup>9</sup>*

- 27 Compared to other groups of species, migratory birds, such as those that live near the coast, appear to suffer disproportionately higher mortality from solar facilities, particularly those located on migration routes and/or near breeding and wintering grounds.<sup>10</sup> The site holds critical breeding habitat for Australasian bittern a migratory breeding resident.
- 28 Craig Deal highlights in the attached appendix how the gamebirds and wetland birds present in the wider Marsden Point area are very mobile and move between habitats frequently, seeking favourable habitats as the conditions dictate. He notes how Bittern in particular require a network of wetland habitat across their locality in order to thrive. This species could be most at risk of collusion with structures as they are migrate between wetlands on and off site.
- 29 Risk of collusion mortality is also likely to be higher for birds with high wing loads and those flying in low light/fog or birds distracted while engaged in hunting. Polarized light from PV panels can also attract insects leading to mortality of insectivorous birds.<sup>11</sup>
- 30 The Ecological Effects Assessment (“EEA”) provided by the applicant states that to minimise the potential of the “lake effect” the solar panels will be coated with anti-reflective coating – but then also states there is no empirical evidence that suggests an anti-reflecting coating reduces avifauna panel collision.<sup>12</sup>

<sup>8</sup> Kagan et al. 2014. Avian mortality at solar energy facilities in Southern California: a preliminary analysis. National Fish and Wildlife Forensics Laboratory, Ashland, Oregon USA.

<sup>9</sup> Page 10, Ecological Peer Review, Jack Warden, Rural Design

<sup>10</sup> Walston, L. J., Jr., Rollins, K. E., LaGory, K. E., Smith, K. P., & Meyers, S. A. (2016). A preliminary assessment of avian mortality at utility-scale solar energy facilities in the United States. *Renewable Energy*, 92, 405–414.

<sup>11</sup> Horváth, G., Blahó, M., Egri, Á., Kriska, G., Seres, I. and Robertson, B. 2010. ‘Reducing the Maladaptive Attractiveness of Solar Panels to Polarotactic Insects’. *Conservation Biology* 24(6): 1644–1653.

<sup>12</sup> Page 63, Ecological Effects Assessment, Boffa Miskell 2023.

- 31 The consent conditions provide that only in the event that monitoring indicates that the operation of the solar farm has given rise to more than minor adverse effects on native avifauna species due to collisions with solar panels, will an Avifauna Collision Management Plan (“ACMP”) be prepared to detail management measures.<sup>13</sup>
- 32 The conditions do not provide a measure for “more than minor” adverse effects, i.e. how many bird strikes or bird mortalities, leaving it up to the discretion of the consent holder to determine this before any action is taken. Details of what “management measures” are to be undertaken are also not provided leaving further discretion and uncertainty as to how avian collisions will actually be dealt with by the consent holder.
- 33 We consider that this “wait and see” approach does not go far enough to mitigate the potential risk to bird life posed by the solar farm, especially to species as rare and threatened as bittern. We also note the condition regarding the ACMP only applies to native avifauna with no consideration for valued introduced species such as game birds.
- 34 The EEA admits there is a lack of research but sites a review in 2017 carried out by Natural England, which concluded that bird collision risk from solar panels is low, and little evidence exists that shows this phenomenon is the cause of bird deaths near solar facilities.
- 35 We would like to point out that context is important here as the location of solar farms relative to bird habitats, such as migration flyways, wetlands, and riparian vegetation, would influence bird collision risk. Did the above sited review consider solar facilities directly adjacent to waterfowl habitats such as the one proposed?
- 36 In any event, solar farms should be located away, or at least set-back from bird habitats such as ponds and wetlands – in the case of this application however the solar farm is proposed to be directly adjacent to the wetlands and stormwater ponds with not even a buffer proposed.
- 37 The footprint size of the solar farm is also an important consideration for bird collision – as it provides a direct measure of the amount of surface disturbance and human activity. Projects with larger footprints, therefore, may result in more bird collisions than projects with smaller footprints. The solar panels in this application will be established across an area of approximately 172ha across the three sites which have a combined area of approximately 200ha. This is without doubt a large-scale solar farm.

## Conclusion

- 38 While large scale REG activities can play a critical role in meeting energy demands and combating climate change, the adverse effects of this particular application are such that we do not support the proposed offset and mitigation measures and consider that these are insufficient to account for the permanent loss of important wetland ecosystem and the risks the application will pose to bird life in the area.

---

<sup>13</sup> Condition 18, Proposed Conditions of Consent, Meridian Energy Ltd.

## Appendix 1 – Marsden Point Area: Habitat suitability for game birds and indigenous species

The Marsden Point area has long been home to game bird species and other indigenous waterfowl. It has a good balance of the type of habitats that game birds and waterfowl species need to thrive. There are ponds and waterbodies that wetland birds need for roosting and water, and areas of pasture and cropping that support waterfowl foraging at different times of the year.

The application by Meridian Energy has not included an assessment of the populations of game birds in the area, and it has not assessed the impact of the changes to the habitat on game birds.

The value of the area as game and waterfowl habitat needs to be looked at through a wider lens rather than a site by site perspective. Game birds and other wetland birds are very mobile, and move between locations frequently, seeking favourable habitat as the conditions dictate.

Most waterfowl game birds occupy two different habitats during a 24 hour cycle. During daylight hours they will be found at a roosting/loafing site. This is likely to be a pond that has areas where the birds can get out of the water to roost such as grassy banks, logs and rocks. In the evening the birds will fly to a foraging area. These foraging areas will change as the conditions dictate but could be areas such as recent surface flooding where there will be worms and grubs exposed, wetlands with seed sources (willow weed) or recently harvested grain paddocks where there is left over grain. They will feed through the night and return to the roosting location at daybreak.

This is why an area that is important to waterfowl may look like there are none inhabiting it – they arrive in the last half hour of daylight (or in the dark if there is moon) and depart again before sunrise. This is the case with the area in Site 1 of the application. Aside from paradise shelduck that live in the pasture, it is primarily **foraging** habitat for waterfowl with a series of wetlands that support willow weed and other food sources (invertebrates) for ducks.

In order for a locality to support a population of game birds it must have a mix of both types of habitat – foraging and loafing areas. This is what currently exists at Marsden Point. Two factors are likely to have led to an increase in the availability of suitable habitat for game birds in the area – an increase in either the groundwater level or seasonal rainfall (or both) which has led to a proliferation of dune wetlands (and associated plants such as willow weed) where pasture used to exist, and, recent residential and industrial development with associated pond construction has created a network of roosting and loafing habitat. This has had a multiplier effect on the suitability of the area to game birds and wetland species.

Personal observation indicates that the numbers and diversity of waterfowl in the Marsden Point area are increasing as a result of the current habitat available. 20 years ago one would have noted low numbers of mallard and grey ducks and a moderate population of paradise duck in the areas of pasture, recent observations have shown an increased number of mallard and grey ducks and a strong population of paradise ducks. Black swan and grey teal are now a regular sighting where there used to be none. Shoveler are becoming established where there were once none. Dabchicks can be seen diving in pond areas that used to be grassed over. Brown teal have even been sighted in the area. They are likely to have travelled across the Whangarei Harbour from coastal areas northeast of Whangarei such as Pataua.

Bittern are also established in the area and share similar requirements to other waterfowl. It is well known that they require a network of wetland habitat across their locality in order to thrive. Radio tracking shows that they utilize a variety of wetlands and foraging areas within a 15km radius. That means a bittern that lives Marsden Point would be likely to venture as far as the Waipu estuary during its routine travels.

This highlights the importance of looking at the habitat from a landscape perspective rather than a site by site basis. Whilst the wetland areas in Site 1 of the application may not have registered high numbers of wildlife at the time of the monitoring visits, they are an important part of the network that

makes Marsden Point desirable to these bird species. At the time of year when willow weed is seeding in the area in Site 1 the evening sky will be teeming with all manner of waterfowl coming in to feed.

The ponds that have been created through development in the Marsden Point area are likely to stay however it is the dune land pasture, with its recently formed network of wetlands that is under threat. These are some of the primary foraging areas for game birds in the vicinity, and to bulldoze and develop these areas will render the area unable to support the biodiversity that it currently has.

**Image 1:** Identified habitats for game birds and indigenous species within the Marsden Point Area

