



Te Kāwanatanga o Aotearoa
New Zealand Government

Your Comment on the Foxton Solar Farm application

Please include all the contact details listed below with your comments and indicate whether you can receive further communications from us by email at substantive@fastrack.govt.nz

1. Contact Details			
Please ensure that you have authority to comment on the application on behalf of those named on this form.			
Organisation name	Department of Conservation		
First name	Murray		
Last name	Brass		
Postal address	PO Box 10420, Wellington 6140		
Mobile phone		Work phone	
Email	fast-track@doc.govt.nz and		

2. We will email you draft conditions of consent for your comment			
X	I can receive emails and my email address is correct	☐	I cannot receive emails and my postal address is correct

3. Please provide your comments on this application
Please find comments attached

Jenni Fitzgerald
Fast-Track Applications Manager

Acting pursuant to delegated authority on behalf of the Director-General of Conservation.

Date: 16 June 2026

Note: A copy of the Instrument of Delegation may be inspected at the Director-General's office at Conservation House Whare Kaupapa Atawhai, 18/32 Manners Street, Wellington 6011

Comments on a fast-track consenting application

Fast-track Approvals Act 2024 section 53

To: The Expert Panel

From: Department of Conservation

Regarding fast-track project: Foxton Solar Farm

Fast track Reference: FTAA-2510-1121

1 Overview

- 1.1 Genesis Energy Limited (the applicant) is proposing to build and operate an approximately 220 MWp solar facility that will generate approximately 345 GWh per year of renewable electricity. The project site (the site) is located north of Foxton, between Wall Road and Motuiti Road, to the east of State Highway 1. The proposed site is 488 ha and the proposed project area is 436 ha with 335 ha solar development area. 26 ha of planting is proposed.
- 1.2 In accordance with sections 53(2)(k) and 53(2)(m)(i) of the Act, the Director-General of Conservation (D-G) has been invited to comment on the substantive application. Statutory delegations are in place for the Department of Conservation (DOC / the Department) to provide commentary on behalf of the D-G.
- 1.3 DOC's interest in the proposal relates to conservation values which could be affected.
- 1.4 The proposed site is modified pastoral land. There is no public conservation land adjacent to the site or in close proximity.
- 1.5 There are 99 areas that meet the definition of "natural inland wetland" under the National Policy Statement – Freshwater 2020 (NES-F) scattered throughout the site. The wetlands are located primarily in low areas and near the drains on the site and have been assessed in the Ecological Impact Assessment as being of low quality. The applicant's ecological surveys did not identify any Threatened or At-Risk species present at the site.
- 1.6 A key conservation risk with solar farms is the risk of bird collisions, particularly for migratory and mobile water birds. The site is located within 7 km of an internationally important coastal wetland area / estuary which hosts a high diversity of wading birds, particularly during the summer migratory season. At least 34 Threatened or At-Risk (TAR) bird species have been recorded in the vicinity of the site, including three Nationally Critical species.

- 1.7 An Ecological Impact Assessment for the proposal was undertaken by SLR (EIA)¹, although not all of its recommendations have been adopted into the application. A separate ecological report was also undertaken for Horizons Regional Council.²

2 Department of Conservation advice

- 2.1 This advice provides comments on the application relating to the actual and potential ecological effects of the Project.
- 2.2 The site that will be occupied by the footprint of the solar farm has low terrestrial ecological values, but the site is likely to be used, and flown over, by a range of indigenous birds, including three Threatened - Nationally Critical species (matuku-hūrepo / Australasian bittern, tara iti / fairy tern and kōtuku / white heron).
- 2.3 The applicant has proposed that no active monitoring be undertaken for collisions, but that any incidental discoveries of dead or injured birds be recorded, and that monthly walk-over checks for carcasses be undertaken for the first year of operation. They also propose that reports on avifauna impacts be provided three years after commissioning of the site, and every five years after that. Given the lack of monitoring, it is unclear what the information basis for preparing such reports would be, and there is no requirement to implement any recommendations that could come out of the reports.
- 2.4 DOC considers that this approach is inadequate and is inconsistent with the applicant's own ecological advice and that of Horizon Regional Council's and DOC's ecological experts.
- 2.5 Given the likelihood that the site will be used and flown over by TAR species of birds, DOC considers that a formal monitoring programme is required to ensure that collisions can be detected; and that there needs to be set thresholds and responses that apply if collisions do occur.
- 2.6 DOC also considers that potential impacts on wetlands need to be monitored and responded to if adverse effects do arise.
- 2.7 The application records that the site has some potential lizard habitat, but that no lizards were found during the ecological surveys. On that basis, no approval has been sought under the Wildlife Act 1953. DOC notes that if lizards were later found to be present, then the applicant would need to apply for a Wildlife Act authority separately through standard processes.

3 Assessment

¹ Appendix I Ecological Impact Assessment, SLR Consulting New Zealand, SLR Project No.: 810.V14848.00001
13 February 2026

² Lambie Ecology Memorandum, Review of Foxton Solar Application for effects on wetlands and terrestrial ecology, 20 May 2026.

- 3.1 DOC's assessment has been confined to actual and potential ecological effects of the proposal and the proposed consent conditions that will manage ecology effects and minimise harm to fauna. Accordingly, DOC has not commented on other issues, or on the application's consistency with the wider statutory framework.

Avifauna

Avifauna values

- 3.2 Based on the applicant's review of eBird and iNaturalist databases, at least 34 TAR species have been recorded within 10 km of the site. These include three Nationally Critical species (the highest threat ranking before extinction) – matuku-hūrepo / Australasian bittern, tara iti / fairy tern and kōtuku / white heron.
- 3.3 While any of those species could potentially overfly the site, based on current records and known habitat use, the species which are most likely to use or overfly the site include:

Scientific name	Common name	Primary habitat type	Threat category
<i>Ardea modesta</i>	Kōtuku/white heron	Lake/Wetland/Riverine	Nationally Critical
<i>Botaurus poiciloptilus</i>	Matuku-hūrepo/Australasian bittern	Wetland/Riverine	Nationally Critical
<i>Anas superciliosa</i>	Pārera/grey duck	Lake/Wetland/Riverine	Nationally Vulnerable
<i>Poliiocephalus rufopectus</i>	Weweia/dabchick	Lake/Wetland/Riverine	Nationally Increasing
<i>Anarhynchus frontalis</i>	Ngutu parore/wrybill	Riverine	Nationally Increasing
<i>Anthus novaeseelandiae novaeseelandiae</i>	Pīhoihoi/NZ pipit	Dryland	Declining
<i>Charadrius bicinctus bicinctus</i>	Tūturiwhatu/banded dotterel	Riverine/Dryland	Declining
<i>Haematopus finschi</i>	Tōrea/South Island pied oystercatcher	Riverine/Dryland	Declining
<i>Larus bulleri</i>	Tarāpuka/black-billed gull	Lake/Wetland/Riverine/Dryland	Declining
<i>Chroicocephalus scopulinus</i>	Tarāpunga/red-billed gull	Lake/Wetland/Riverine/Dryland	Declining
<i>Porzana pusilla affinis</i>	Koitereke/marsh crane	Wetland/Riverine	Declining
<i>Porzana tabuensis</i>	Pūweto/spotless crane	Wetland/Riverine	Declining
<i>Phalacrocorax varius</i>	Kāruhiruhi/Pied shag	Riverine/Dryland	Relict
<i>Phalacrocorax carbo</i>	Māpunga/black shag	Lake/Wetland/Riverine	Relict
<i>Microcarbo melanoleucos</i>	Kawaupaka/little shag	Lake/Wetland/Riverine	Relict
<i>Phalacrocorax sulcirostris</i>	Kawau tūi/little black shag	Lake/Wetland/Riverine	Naturally uncommon
<i>Platalea regia</i>	Kōtuku ngutupapa/royal spoonbill	Lake/Wetland/Riverine	Naturally uncommon
<i>Fulica atra</i>	Australian coot	Lake/Wetland/Riverine	Naturally uncommon

Table 1. Threatened and At-Risk bird species recorded in the vicinity of the proposed 'Foxton' solar farm. Presence of these species has been confirmed through the applicant's ecological assessment, examination of eBird records (New Zealand - eBird), Robertson et al. (2007) and DOC unpublished databases.

- 3.4 In particular, Australasian bittern have been recorded in a variety of locations around the site. They are highly mobile among networks of wetlands, and must travel between the recorded locations, so are likely to overfly the site. As wetland birds, they could also make

use of the wetlands on site and in the near vicinity. Overseas research has shown other bittern species, similar to the Australian bittern, have collided with solar farms.³

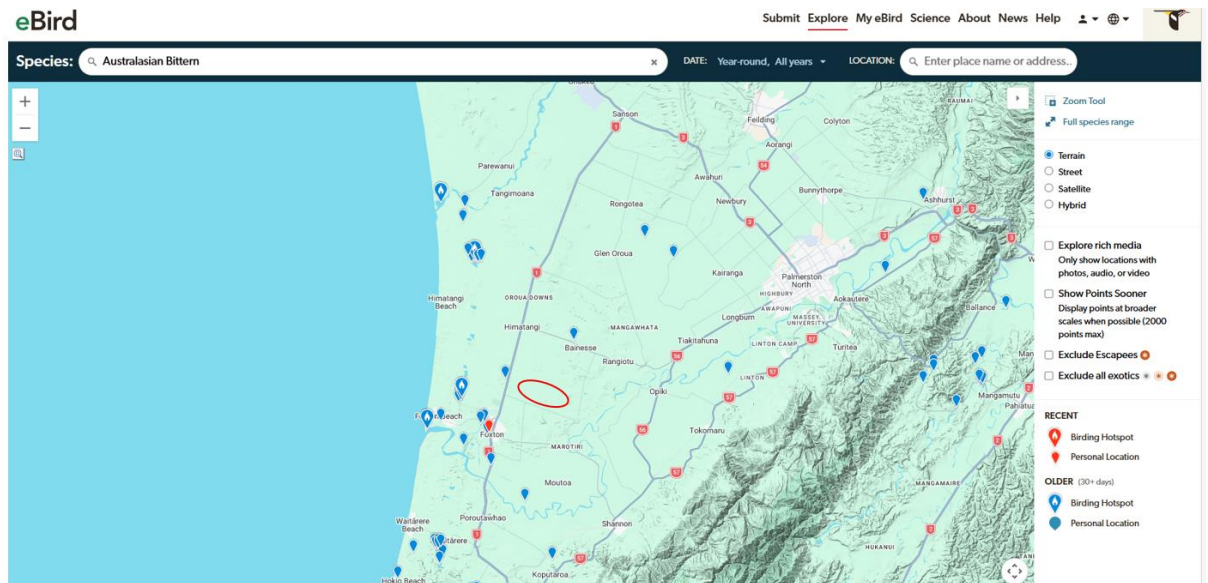


Figure 1: Australasian bittern eBird records (blue markers) in the vicinity of the proposed solar farm (red ellipse). Accessed 29 May 2026.

Potential adverse effects

- 3.5 The key potential adverse effects on avifauna through construction and operation of the proposed solar farm would be:
 - a) Deaths and injury of birds during the construction phase;
 - b) Degradation and loss of local feeding and breeding habitats following construction and land use change;
 - c) Long-term, ongoing, deaths and injury of bird through collisions with solar farm infrastructure (fences and/or cables and/or solar panels).
- 3.6 The EIA concluded that the site is unlikely to be significant habitat for any TAR species of birds. However, the EIA has relied on SLR's own on-site surveys which were undertaken over only four days in March and included direct observations from those days only.
- 3.7 That survey approach would be highly unlikely to have detected Australasian bittern even if they were present or flying over the site in that period. Australasian bitterns are a cryptic species (their plumage, behaviour and habitat use make them hard to detect even under ideal conditions), they are largely silent except for males calling from dusk during the breeding season, and most of their feeding and movement activities occur at night. DOC's experience is that Australasian bittern are hard to detect even for highly experienced

³ Smallwood KS 2022. Utility-scale solar impacts to volant wildlife. The Journal of Wildlife Management 86: e22216.

observers undertaking targeted surveys – relying on incidental observations during daytime visits effectively tells us nothing about whether Australasian bittern use or overfly the site.

- 3.8 This means that the EIA cannot inform whether Australasian bittern use the site for foraging – noting the wetlands on site contain food for bittern - and has likely underestimated the risk of collision for avifauna, and Australasian bittern in particular as they are recorded as being in the area. The Horizons Regional Council ecological report (HRC Report) does not appear to have specifically considered Australasian bittern.
- 3.9 The evidence from the overseas scientific literature is that avifauna collision is a real and significant risk with macro-solar.⁴ It is not yet clear why birds collide with solar panels and various hypotheses have been suggested, including the 'Lake-effect' hypothesis (i.e. birds mistake large arrays of solar panels for water and crash into them), and the possibility of disorientation caused by strong polarisation from light reflected off the panels. Of note, many of the TAR avifauna species that occur around the site are highly mobile, especially at dawn and dusk when the risk of disorientation and collision from polarised light reflected off the panels may be at its highest.
- 3.10 Given that the total national population of Australasian bittern is fewer than 250 breeding females, any loss of birds due to collisions would be significant. DOC therefore considers that a more effective approach to effects management is required, to ensure that if collisions do occur, they are detected and responded to.

Approach to monitoring

- 3.11 As noted above, the applicant proposed that no active monitoring be undertaken for collisions, but that any incidental discoveries of dead or injured birds be recorded, and that monthly walk-over checks for carcasses be undertaken for the first year of operation.
- 3.12 DOC considers that such an approach is highly inadequate for a situation where there is a collision risk to Nationally Critical species. If collisions were occurring, they are unlikely to be incidentally discovered given the large footprint of the solar farm (335 hectares), and carcasses are likely to have decayed or been predated before they would be detected by the monthly walk-overs. After the first year of operation, there would be no active checks for collisions.
- 3.13 There is currently limited experience with avifauna collision monitoring at solar farms in New Zealand, as large-scale solar farms are relatively new technology, and the earlier farms developed generally do not have monitoring programmes in place. Nevertheless, there is an increasing awareness of the potential for collision risk in the New Zealand context, and that

⁴ See Appendix 2 for a Bibliography.

collisions occurring at scale could have population-level effects on TAR species.⁵ As a result, common approaches to collision monitoring are starting to develop.⁶

- 3.14 Accordingly, DOC recommends that additional formal bird monitoring is undertaken in the first three years of the solar farm's commencement. This recommendation is addressed in more detail when discussing conditions below.

Potential mitigation measures to prevent collision

- 3.15 Design and operational measures to prevent avifauna collisions are currently unproven and therefore experimental. However, there are a number of practical measures that macro-solar operators are currently trialling to help prevent avifauna collision with solar farms. It is recommended that the Panel consider incorporating appropriate mitigation measures into conditions. Potential measures include:
- a. Bird-friendly-designed site layout and panel arrangement (e.g., greater and/or irregular spacing between panel sets to break up the visual profile of the solar farm from above).
 - b. Angling individual panel sets to different angles to break the polarised light visual cue from above, especially at dawn and dusk.
 - c. Positioning the panels at night in directions away from sources of polarised moonlight.
 - d. The design and application of bird-sensitive anti-reflective coatings to minimise polarisation and ultraviolet reflectance in the wavelengths birds might find attractive.
 - e. Investigating and testing a range of bird deterrents.
- 3.16 Australasian bittern are particularly susceptible to collision with electricity pylons and wires and the preference from DOC is for all connection infrastructure to be underground.⁷ Failing that, dynamic flappers of a type that are visible in low light and at night should be attached to wires to mitigate the prospect of collision.

Response to collisions

- 3.17 If collisions are detected, both the EIA and the HRC report proposed that trigger thresholds be set for avifauna collisions, with the thresholds reflecting the species' threat classification for any carcasses found. The EIA proposed that if thresholds were met then adaptive

⁵ See for example, ecological reports, panel RFI's, panel appointed experts' reports, proposed conditions etc filed in Haldon Solar Farm application under the FTAA (available at [Haldon Solar](#)) and The Point Solar Farm application under the FTAA (available at [The Point Solar Farm](#)). Further, see conditions providing for monitoring and avifauna collision trigger thresholds in the Decision on resource consent applications for a solar farm made by Helios OTA to Central Otago District Council (available at [240065 Decision.pdf](#))

⁶ See *ibid*.

⁷ Williams EM 2024. Conservation management of the critically endangered matuku-hūrepo/Australasian bittern. A review of threats and preliminary management techniques. Science for Conservation 341. Department of Conservation, Wellington. 64 pp.

management measures would be triggered, whereas the HRC report proposed requiring development of an Avifauna Management Plan.

- 3.18 However, the application and draft conditions do not include any of these measures. Instead, they would require that reports on avifauna impacts be provided three years after commissioning of the site, and every five years after that. This approach would be incapable of managing effects – no meaningful monitoring is proposed to inform the reports, there could be years of delay between collisions and reports, and there is no process to address any findings or implement any recommendations that come out of the reports.
- 3.19 In order to be able to effectively manage effects if collisions are detected, DOC considers there need to be defined thresholds to trigger a response. The EIA and HRC report proposed essentially the same trigger levels. DOC considers that this ‘threshold-time period’ approach is appropriate, while clarifying that the time periods are ‘a rolling 12-month period’, albeit DOC proposes that similar thresholds to those accepted in the Naseby solar farm decision⁸ would be appropriate (see Appendix 1 below). We also note that holding carcasses of protected bird species would require separate approval under the Wildlife Act 1953, which the applicant has not yet applied for.
- 3.20 The EIA and HRC report describe the response actions required, albeit approaching this slightly differently (‘adaptive management’ vs development of an avifauna management plan), but both agree that if a threshold is triggered a process is then undertaken to determine and implement additional measures to effectively address collision effects. DOC notes that measures could be preventative (i.e. designed to reduce the chances of further collisions, such as panel coatings or bird scarers), or responsive (i.e. measures to address population impacts on the affected species, such as habitat enhancement or, where appropriate, contributions to support breeding programmes to replace losses).
- 3.21 Given the need for structure and certainty around the development and implementation of these measures, and the need for timely action if collisions occur, DOC considers that a certified Avifauna Management Plan (AMP) should be developed as part of the suite of management plans in the resource consent conditions. The understanding of the effects of solar farms on avifauna, effective monitoring and measures to prevent collision is a rapidly expanding field and therefore the most up-to-date information included in a literature review will help better inform any management plans needed to manage the adverse effects on avifauna. This recommendation is discussed further in part 4 below.

Freshwater

- 3.22 As outlined in the application and EIA, the site contains a large number of natural inland wetlands, with 99 individual wetlands considered to meet the Ministry for the Environment’s wetland delineation protocols, and a number of other areas of wetland which were excluded

⁸ [240065 Decision.pdf](#) See Condition at Appendix B, Condition 39.

based on having greater than 50% pasture cover. There are also a number of farm drains, which likely represent original wetlands which have been modified by drainage.

- 3.23 Although the EIA consider that these areas have low ecological value, DOC notes that they do still have value, particularly in the context that most wetlands in the vicinity have already been lost or highly modified. As noted above, wetlands provide important foraging habitat for avifauna species, particularly Australian bittern, and the ecology reports confirm that the waterways on site contain fish and other animal species that would provide food for bittern.
- 3.24 The applicant has proposed largely avoiding direct physical impacts on the wetlands and drains, but there will potentially be changes in the water regime due to the impervious nature of the panels redirecting water flows, and the cessation of irrigation. For wetlands, DOC considers that while there may only be limited direct changes in their extent, there could be long-term changes in their values due to changes to the water regime supporting the wetlands.
- 3.25 The effects management approach proposed by the applicant focuses on the direct effects during construction, through managing disturbance and sediment discharge. While this is appropriate, it does not address potential long-term effects.
- 3.26 DOC therefore considers that it would be helpful to review the number and extent of wetlands sometime after construction, to understand whether there have been impacts on wetland extent and/or values. If this is the case, an adaptive management programme to restore or address any loss of values should be provided for.

4 Comments on conditions

- 4.1 Should the Panel decide to grant consent, DOC considers that effective and enforceable conditions will be required in order to adequately manage adverse effects. However, the avifauna conditions as currently proposed by the applicant will not effectively manage risk to birds from the ongoing operation of the solar farm. The approach to monitoring and reporting would be inadequate to detect actual effects, and even if effects were discovered incidentally there is no mechanism to respond to or address those effects.
- 4.2 DOC considers that conditions should include:
- Requirements for a robust monitoring programme to ensure that collisions can be effectively detected (and conversely, that if collisions are not detected, there can be confidence that they are not actually occurring);
 - Defined response thresholds to trigger interventions if carcasses are discovered;
 - A specified response to be implemented if thresholds are triggered. In this case, DOC considers that implementing management mechanisms contained in an Avifauna Management Plan within a defined period would be an appropriate approach.

- Further, review conditions should explicitly provide for review to be triggered if adverse ecological effects arise (e.g. if there are multiple breaches of thresholds for avifauna collisions, or if response measures fail to effectively address collisions).
- 4.3 DOC has provided recommended conditions at Appendix 1 that would help meet the requirements above. Similar conditions have been previously accepted at the Naseby solar farm where there was a similar level of risk to avifauna.⁹ DOC notes that the approach recommended provides more flexibility around the approach to monitoring than is proposed for other solar farms in higher-risk locations such as the Mackenzie Basin,¹⁰ which accords with the Act's requirement that conditions be no more onerous than necessary.
- 4.4 The recommended conditions require monitoring that will provide a robust foundation for detecting any avifauna impacts from the change in use of the site. Monitoring is required over the first three years from the commencement of the installation of solar panels and will cease if no thresholds are breached in the table provided in the conditions.
- 4.5 DOC also considers that a monitoring requirement to assess effects on wetland extent and values after three years would be appropriate. Given the general loss and now rarity of wetlands in the area, an adaptive management approach should be employed to restore wetlands and/or offset or compensate for any loss of values. Review conditions should explicitly provide for review to be triggered if adverse effects on wetlands arise and are not adequately addressed through adaptive management.
- 4.6 DOC welcomes the opportunity to comment on a subsequent draft condition set as set out in section 70 of the Act.

5 Conclusions

- 5.1 DOC considers that this proposal will have potential effects on avifauna and wetlands which are not yet adequately addressed. If they remain unaddressed, long-term effects could include loss of threatened avifauna and loss of wetland values.
- 5.2 The site is likely to be used or flown over by Australasian bittern, which have a Nationally Critical threat classification. The applicant's ecological assessment was not capable of determining if, or to what extent, Australasian bittern use or overfly the site. Other threatened avifauna are also known to be in the vicinity and potentially use or overfly the site. There is an established risk of birds colliding with solar panels and associated infrastructure.
- 5.3 DOC considers that these potential effects can be addressed through consent conditions which provide:
- a. Adequate monitoring for avifauna collisions;
 - b. Consideration of mitigation measures should collisions occur;

⁹ [Decision Notification: RC 240065 – Helios OTA Op LP – 48 Ranfurly-Naseby](#) at conditions 35 - 43.

¹⁰ For example [Haldon Solar](#) and [The Point Solar Farm](#), where the applicants now propose conditions which set a biostatistical criteria for detection methodology, prior studies of search efficiency and carcass persistence, etc.

- c. A response mechanism to implement mitigation measures if collisions occur;
- d. A post-development assessment of effects on wetlands, with adaptive management implemented if adverse effects are found.

5.4 Thank you for the opportunity to comment

Appendix 1 - Suggested Resource Consent conditions¹¹

Avifauna Literature Review

- a Prior to commencement of construction of the solar farm (excluding any enabling works such as piling tests, site surveys or testing), the consent holder must engage a suitably qualified and experienced ornithologist / ecologist to prepare a Literature Review Report. This report must summarise the current state of knowledge on bird collision with ground-mounted, photovoltaic solar arrays.

The purpose of the Literature Review Report is to:

- i. Provide an up-to-date evaluation of bird collision risk with equivalent technology projects both internationally and within New Zealand.
- ii. Recommend appropriate timing, methods (including methods for carcass detection / persistence trials), frequency, and duration for bird collision monitoring that would enable effective detection and response to collision events in accordance with best practice.
- iii. Recommend best-practice operational mechanisms to prevent avifauna collision.

The Literature Review Report must generally inform the development of, and must be appended to, the Avifauna Management Plan required under Condition b.

Advice Note: Carcass detection / persistence trials refer to methods developed to account for bird carcass detection and loss (via scavenging, decomposition) probability when estimating rates of bird mortality.

Avifauna Management Plan

- b Prior to commencement of construction of the solar farm, an Avifauna Management Plan (AMP) must be prepared by a suitably qualified and experienced ornithologist / ecologist and with input from a biostatistician, in consultation with the Department of Conservation.
- c The objectives of the AMP are to:
 - i. Enable detection of bird collision with the solar arrays and ancillary infrastructure within the Site;
 - ii. Guide an appropriate management response in the event of collisions of indigenous bird species with the solar arrays and ancillary infrastructure within the Site, particularly those classified as nationally Threatened or At Risk, to reduce the ongoing risk of reaching the thresholds of unacceptable adverse effect in table 1;

¹¹ The conditions are based on conditions from the Naseby Solar Farm decision. In the Naseby Solar Farm conditions, the applicant must request feedback from, consult, and allow Kā Rūnaka to comment on aspects of the draft Avifauna Literature Review, the Bird Monitoring Plan, and the Bird Collision Management Plan. Mana whenua may wish to be included in a similar way for the Foxton Solar Farm conditions.

- iii. Ensure any effects on indigenous birds arising from the operation of the solar farm do not reach the thresholds of unacceptable adverse effect in Table 1.
- d The AMP must incorporate best practice as determined through Condition a.
- e The AMP must include, but not be limited to, the following:
 - i. Monitoring Design:
 - 1. Frequency, duration (including a minimum of 36 months from commencement of installation of solar panels and ancillary infrastructure within the Site), timing, and site coverage of bird collision monitoring surveys that is adequate to ensure carcasses are detected.
 - ii. Methodology:
 - 1. Statistically robust methods for bird collision surveys.
 - 2. Methods for carcass detection and removal trials (to be informed by the Literature Review Report if addressed in the literature, otherwise that is of an adequate standard to ensure carcasses are detected).
 - 3. Methods for record keeping and data analysis, including statistical methods to derive annual mortality estimates.
 - iii. Mortality Thresholds and Management Response:
 - 1. Thresholds in Table 1 for indigenous bird species that trigger a management response in accordance with Condition e iii 2.

Table 1. Indigenous bird mortality thresholds that trigger a management response. The thresholds are for individual species (i.e. are not collective for each threat classification).

National Threat Classification	Threshold to Trigger a Management Response
<i>Threatened – Nationally Critical Species</i>	One carcass detected at any time during the monitoring period
<i>Threatened – Nationally Endangered Species</i>	
<i>Threatened – Nationally Vulnerable Species</i>	Two carcasses detected within any one survey; or three carcasses detected cumulatively in any consecutive 12-month period.
<i>Threatened – Nationally Increasing Species</i>	

<i>At-Risk</i> species	Three carcasses detected within any one survey; or five carcasses detected cumulatively in any consecutive 12-month period.
Not Threatened indigenous species	Five carcasses detected within any one survey; or 15 carcasses detected cumulatively in any consecutive 12-month period.

2. In the event a threshold being met the consent holder must:

- i. Take additional management measures to ensure that mortality of avifauna does not continue to reach the thresholds in Table 1 in condition e.
- ii. Within 5 working days of reaching a threshold in Table 1 (condition e) at any time prior to the conclusion of the monitoring period, an independent suitably qualified and experienced ecologist/ornithologist is to advise Horowhenua District Council setting out:
 - a. the details of the mortality threshold breach; and
 - b. details of ongoing monitoring to be undertake, including any monitoring extending beyond the initial 36-month monitoring period; and
 - c. details of collision prevention/deterrent measures that are to be developed in consultation with the Department of Conservation and that must be implemented as soon as practicably possible at the Site, and no later than three months after the discovery of the carcass, such measures may include (as relevant to the nature of the impacts identified by the monitoring provided for under Conditions b - e) but are not limited to:
 - i. Bird-sensitive anti-reflective coatings and/or applications to the panels;
 - ii. Use of bird deterrent practices, devices, or visual warning devices/markings (for example, flags, streamers, or visually distinctive markings on panels) to deter attempted landing on panels;
 - iii. Limitations on angle or orientation of solar panels over defined spatial, temporal scales, or environmental conditions if collisions were able to be

- attributed to certain spatial temporal or environmental patterns; and
 - iv. Further monitoring, at an appropriate time scale, to test the effectiveness of proposed mitigation responses.
- f Twenty working days after the 1, 2 and 3 year anniversary of the monitoring required by Conditions b - e, an independent suitably qualified and experienced ecologist/ornithologist is to submit a report to Horowhenua District Council and DOC setting out the results of the monitoring.

Advice Note: The meaning of 'Threatened and At Risk' and national threat classifications for indigenous bird species are based on the most recent available assessment under the New Zealand Threat Classification System administered by DOC (Rolfe et al. 2022; available at <https://nztc.org.nz/>).

Compliance with Avifauna Management Plan

- g The consent holder must comply with the certified Avifauna Management Plan at all times including by undertaking bird collision monitoring, management and reporting in accordance with the methodologies within the certified AMP.

Wetlands

- h Three years after the solar farm commences operation, the consent holder shall undertake an assessment of impacts on wetlands, comparing wetland extent and values within the site with the extent and values as recorded in 'Appendix I Ecological Impact Assessment, Fast Track Approvals Act Application, Foxton Solar Farm, SLR Project No.: 810.V14848.00001 dated 13 February 2026' included in the consent application.
- i A report detailing the outcome of the assessment under Condition [h] must be provided to the Horizons Regional Council within three months after the three-year anniversary of the solar farm commencing operation.
- j If the report in condition [i] concludes that there is a net loss of extent and values recorded in 'Appendix I Ecological Impact Assessment, Fast Track Approvals Act Application, Foxton Solar Farm, SLR Project No.: 810.V14848.00001 dated 13 February 2026', then the consent holder must prepare and implement a Wetland Restoration Plan.
 - i. The Wetland Restoration Plan must be prepared by a suitably qualified an experienced person with the purpose of restoring the extent and values of the wetlands to the wetlands pre-construction extent and values.

Appendix 2 – Bibliography of scientific literature on avifauna collisions and macro-solar

Anderson CM, Hopkins AP, Anderson JT 2025. Assessing the impact of solar farms on waterbirds: A literature review of ecological interactions and habitat alterations. *Conservation* 5: 4;

Bennun L, van Bochove J, Ng C, Fletcher C, Wilson D, Phair N, Carbone G 2021. Mitigating biodiversity impacts associated with solar and wind energy development. Guidelines for project developers. Gland, Switzerland: IUCN and Cambridge, UK: The Biodiversity Consultancy;

Chock RY, Clucas B, Peterson EK, Blackwell BF, Blumstein DT, Church K, Fernández-Juricic E, Francescoli G, Greggor AL, Kemp P, Pinho GM 2021. Evaluating potential effects of solar power facilities on wildlife from an animal behavior perspective. *Conservation Science and Practice*. 3: e319;

Conkling TJ, Fesnock AL, Katzner TE 2023. Numbers of wildlife fatalities at renewable energy facilities in a targeted development region. *PloS one*. 18: e0295552;

Diehl R, Robertson B, Kosciuch K 2021. Investigating the “Lake Effect”. Influence on avian behavior From California’s utility-scale photovoltaic solar facilities. California Energy Commission. Publication Number: CEC-500-2024-055;

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