

Wintering Birds Data Analysis

February 2024

Larkins Farm
Gellings Lane
Knowsley
L34 9EN

National Grid Ref: SJ414962



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1.0 Introduction & Background

Scope

- 1.1 Tyrer Ecological Consultants Ltd were commissioned by Mr. Mike Carr to analyse the results of overwintering bird data from the county bird recorder for Lancashire and North Merseyside, Mr. Steve White. This analysis will provide further ecological information to Merseyside Environmental Advisory Service (MEAS) to assist them to provide robust development management advice and inform a Habitat Regulations Assessment (HRA) as part of a planning proposal at Larkins Farm off Gellings Lane in Knowsley, Merseyside.

Background

- 1.2 As part of a planning application with Knowsley Council (Planning reference: 23/02676/FUL) regarding the installation of a solar farm, Tyrer Ecological Consultants Ltd carried out a Preliminary Ecological Appraisal (see **Appendix I**). The report included desktop and field study results and made recommendations for further protected species surveys and measures to protect biodiversity.
- 1.3 As part of the planning process, since the PEA was issued, Merseyside Environmental Advisory Service (MEAS) have been consulted for Development Management Advice (see **Appendix II**) and whilst they largely agree with the overall findings of the report and subsequent supporting reports to date, MEAS require further information in relation to overwintering birds before their consultation to Knowsley Council can be finalised.
- 1.4 Following a telephone discussion between Sophie Leadsom MCIEEM (Principal Ecologist at MEAS) and Mr. M. Pritchard ACIEEM (Senior Ecologist at Tyrer Ecological Consultants Ltd), prior apprehensions regarding visual disturbance have been retracted due to the agreement that the site surrounding habitats breaks the line of site and removes visual impact issues as a constraint. The issues are centred around potential records of wintering birds occurring on site and potential for noise impacts if wintering birds use the surrounding fields.
- 1.5 Email received (Leadsome, S. 2024. Email to M. Pritchard. Jan 17th 2024) was as follows:

Hi Mark

Thank you for your time on the phone earlier, I always find it useful to be able to talk about issues rather than formal memos going backwards and forwards.

As discussed:

- In light of your professional role, I am happy to accept your personal knowledge of this site in terms of Pink footed goose, particularly as a similar absence of sightings has been mentioned by my colleague in MEAS who also knows the site well;
- I accept your description of the site in terms of the distance from the fields to the south where geese have been recorded and that the site is well screened (even in winter) by the developing wet woodland to the south and the trees to the west; and
- Having discussed the issues with you I am inclined to accept that the disturbance on the site caused by falconry and fly tipping is likely to further reduce the sites suitability for feeding geese.

In light of the above, if you could request non-breeding bird records from the County Recorder and submit an analysis of these records to me, provided these records do not include

any for Pink footed goose on the application site, I am confident that further non-breeding bird surveys would not be necessary.

I do feel that some evidence as to why the *construction* of the solar farm would not disturb any geese 150 metres to the south by *noise* would be useful (I accept there would not be any visual disturbance). Is there any knowledge of the loudest machine (e.g. a tracked excavator) that would be required for installation and the noise level of that machine? This could then be used to calculate the anticipated noise level within the field known to support geese?

Kind Regards

Sophie

Sophie Leadsom
Principal Ecologist
MCIEEM
Merseyside EAS

Aims

- 1.6 This short report aims to provide the necessary additional information requested from MEAS in their email dated 17/01/2024.
- 1.7 To summarise the below items will be addressed in this report:
1. Analysis of raw non-breeding bird data provided by the county bird recorder in February 2024 to enable MEAS to carry out their duties in relation to Development Management Advice and Habitat Regulations Assessment (HRA).
 2. Provide further information on the machine types likely to be used during the construction phase, particularly those generating the loudest noises, to enable MEAS to carry out their duties in relation to Development Management Advice and Habitat Regulations Assessment (HRA).

Information

- 1.8 For **1** (above), to analyse the raw data in this case, given there are only 4 records, each record has simply been examined and discussed in section 2.0; conclusions are then arrived at in section 3.0. The raw data is provided as an Excel spreadsheet externally referenced as **Appendix III**.
- 1.9 For **2** (above), the results of an email exchange are provided in in section 2.0 of this report and discussed in section 3.0 alongside with recommendations to supplement those for wider material biodiversity matters provided within the PEA report (**Appendix I**).

2.0 Results

Analysis of non-breeding bird records

2.1 BTO county recorder for Lancs & NM, Mr. Steve White¹ provided the following wintering bird records in Microsoft Excel format on 02/02/2024 which are within the National Grid References: SJ49C and SJ49D respectively (White, S. 2024. Email to M. Pritchard. Feb 2nd 2024). See **Figure 2.1** for visual aid.

	A	B	C	D	E	F	G	H	I	J	K
1	Species	Date	Year	Site	Count		Tetrad	Monad	Grid	Behaviour	
2	Pink-footed Goose	09/02/2018	2018	Near Croxteth Park	600		SJ49C	SJ4095/4195/4196		Feeding	
3	Pink-footed Goose	20/12/2018	2018	Randle's Bridge Farm, Croxteth Park	3200+		SJ49C			Feeding	
4	Pink-footed Goose	15/11/2022	2022	Randles Bridge Farm	3400		SJ49D		SJ416961	Feeding during month	Paul Slater
5	Pink-footed Goose	2007/08-2010/11	2011	Atlas tetrad	12000		SJ49D			Active use	

Figure 2.1 – Rows 2-5 display the four records supplied in Tetrads SJ49C and SJ49D

2.2 To summarise the results:

- Four records were provided in total – these are described below by their respective 'rows' which are Rows 2, 3, 4 and 5
- The only species recorded are pink-footed goose (*Anser brachyrhynchus*) (PFG)
- The records cover the date range 2011-2022 and the months November-January highlight this is as a critical window for presence
- No records occur on site; PFG are grounded in surrounding fields in three of the four records 'feeding' in good numbers, one record is an 'Atlas' tetrad where PFG are interpreted as a skein commuting high overhead.

2.3 More meticulous analysis of each of the four records within their respective rows 2, 3, 4 and 5 shows the birds were never once observed using Larkins Farm but were observed in the surrounding fields:

- Row 2 – shows PFG feeding in the arable land south of Larkins Farm, west of Craven Wood close to Croxteth Park, in February 2018; a count of 600 (evidenced by the use of column 'Site' and the Monads provided under column 'Monad')
- Row 3 – shows PFG feeding in the arable land south of Larkins Farm, west of Craven Wood close to Croxteth Park, in December 2018; a count of 3200+ (evidenced by the use of column 'Tetrad')
- Row 4 – shows PFG feeding in the arable land east of Larkins Farm, in November 2022; a count of 3400+ (evidenced by the use of columns 'Tetrad' and 'Grid')
- Row 5 – suggests 12,000 birds between the date range of 2007 and 2011 with no explicit months however PFG are interpreted as likely to be overwintering. The record is more imprecise than the aforementioned, however by the column "Behaviour" stating 'Active use' this is taken to suggest PFG were observed within the 'Tetrad - SJ49D' and the numbers stated at 12,000 would suggest commuting activity counts as opposed to grounded birds. The record is between 10-15 years old but considered contextually useful for the purposes of this analysis.

2.4 See **Figure 2.2** overleaf for visual aid highlighting where the records described above occur in relation to the site boundary.

¹ [County bird recorders | BTO - British Trust for Ornithology](#)



Figure 2.2 – The image above shows where the 4 records of PFG described in paragraph 2.3 occur in relation to the site boundary as interpreted from the data

Further information on machine types used during the construction phase

- 2.5 On the issue of potential noise impacts during construction of a solar farm, an email exchange with SolarCrown Commercial (Scully, S. 2024. Email to M. Pritchard. Feb 18th 2024) who are commissioned for the work stated the following:

Hi Mark

I would suggest that the loudest plant would be a pile driver for the mounting structure, and a bobcat for moving materials around the site. I have dropped some links below with examples.

https://www.piledriveruk.com/?gclid=Cj0KCQiAtaOtBhCwARIsAN_x-3InJ9MJZNkn2SKcSwHMoxf9q09dXJ4YZ-jIqccUHeCfUJNnNfDTuuoaAgfoEALw_wcB

<https://www.skidsteerhiresolutions.co.uk/solar-farm-track-loaders/>

Hope this helps

Thanks
Stephen

- 2.6 Piling is a type of foundations, used to support solar panels on piles. This foundation type is green, economical, and efficient. Vertical columns of steel are driven deep into the ground to give more support to the solar panels that sit on top². By ensuring that the piles are securely and accurately installed, the pile driver helps to provide a stable foundation for the solar panels. This, in turn, helps to ensure the long-term performance and efficiency of the system.
- 2.7 Piling is one of the noisiest construction activities, reaching almost 120 dB from 10 feet away³.
- 2.8 It can be reasonably ascertained PFG could be disturbed if present during piling activities.
- 2.9 Controlling the noise as close to the source as possible is the best way to ensure that the impact of the hammer doesn't ring out so loudly. Echo Barriers are highly portable acoustic barriers with tested and certified durable appropriate for use on construction sites. These barriers can be installed around the pile lead itself, resulting in as much as a 30 dB reduction in noise level⁴. Other methods of controlling noise include acoustic barrier fencing and suppression.
- 2.10 An example of the machine specifications likely to be used on site for piling can be found here - [Pile Driver UK | MGI Tonker 830 Piling Rig | Solar PV Ground Mounting](#).
- 2.11 Overall, it is considered a plausible risk that subject to presence in surrounding fields during any piling activities, that PFG, which are qualifying features of the Ribble and Alt Estuaries SPA & Ramsar site, and the Martin Mere SPA and Ramsar site, could be disturbed by piling activity particularly during the construction phase. This assessment is made despite considering the distance of the adjacent land from the construction zone (over 100 metres away at nearest points) and despite the presence of semi-natural buffers such as treelines, scrub and woodland.
- 2.12 In respect of other noise impacts, lighter machines used for moving materials around the site such as bobcats' light goods vehicles are highly unlikely to generate significant noise issues given the modern quiet engine noises, distances from any grounded birds and the presence of existing semi-natural buffers such as treelines, scrub and woodland suppressing comparatively low volume noise at such a distance.

² [Practical Guide for Piling Works in Solar Farms ~ Solar System Zone](#)

³ [How Loud Are Pile Drivers? \(echobarrier.com\)](#)

⁴ [How Loud Are Pile Drivers? \(echobarrier.com\)](#)

3.0 Conclusions & Recommendations

- 3.1 The results demonstrate that PFG do not use the application site for foraging or rest, as such do not stand to be impacted by loss of foraging habitat.
- 3.2 The records confirm that PFG use the larger arable lands to the south and east for foraging and rest in good numbers; however, these arable lands are sufficiently distanced and buffered from visual disturbance and from low-medium residual noise impacts (<60db) given the presence of natural environs in the form of treelines, scrub and woodland suppressing comparatively low volume noise at such a distance.
- 3.3 Overall, it is considered a plausible risk that subject to presence in surrounding fields during any piling, that PFG, which are qualifying features of the Ribble and Alt Estuaries SPA & Ramsar site, and the Martin Mere SPA and Ramsar site, and susceptible to disturbance impacts, could be disturbed during the construction phase as piling can reach noise levels in excess of 120db. This assessment is made despite considering the distance of the adjacent land from the construction zone (over 100 metres away at nearest points) and despite the presence of semi-natural buffers such as treelines, scrub and woodland.
- 3.4 As was initially recommended in the PEA report, a Construction Method Statement (CMS) should be conditioned subject to any planning consent to mitigate potential impacts; part of its contents should include measures to protect overwintering birds that could use the adjacent lands particularly during the autumn and winter months and more particularly during November to January. It is recommended any CMS should include measures to control noise impacts through installation of suppression devices and/or erection of audio barrier fencing and/or avoid operations such as piling during November to January when PFG are most likely to be present and can therefore be disturbed.
- 3.6 Any implementations for mitigating impacts on PFG should run in tandem with the wider recommendations covered in the PEA report (see **Appendix I**).

Appendix I:

Preliminary Ecological Appraisal
(Tyrer Ecological Consultants Ltd, April 2023)

Appendix II:

Development Management Advice KN23-039

(Merseyside Environmental Advisory Service, December 2023)

Appendix III:

Raw non-breeding bird data

(Steve White County Bird Record for Lancs & N. Merseyside, January 2024)

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