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8923: KETTERING ENERGY PARK

BRIEFING NOTE: ECOLOGICAL SURVEYS (2022)

Introduction

1. Ecology Solutions was commissioned by Michael Sparks Associates on behalf of First Renewables in September 2020 to undertake ecological survey and assessment work at the Kettering Energy Park site (hereafter referred to as the site).

2. A habitat survey, in addition to specific surveys for bats, Badgers, Great Crested Newts, reptiles and wintering birds were undertaken in 2020, with updated survey work in regards to bats and Great Crested Newts were undertaken in 2021. The findings of these surveys are outlined within a previous briefing notes.

3. This Note outlines the methodology and results of additional survey work in respect of bats, breeding birds and Great Crested Newts completed at the site in 2022 and provides initial guidance in relation to ecological constraints to development at the site.

Survey Methodology

Protected and Notable Species

Bats - Roosting

4. As outlined previously, all trees and buildings present within and immediately adjacent to the site were assessed for their potential to support roosting bats during the habitat survey in September 2020.

5. Two existing residential dwellings on site were identified as having the potential to support roosting bats. As such, specific dusk emergence and dawn re-entry survey work was undertaken in September 2022 to ascertain the presence or absence of roosting bats within these buildings.

6. In line with the guidelines, dusk emergence surveys commenced 20 minutes prior to sunset and continued for 2 hours after sunset. The dawn re-entry surveys commenced 2 hours prior to sunrise and continued until 15 minutes after sunrise.

Bats – Foraging and Commuting

7. Bat activity surveys have previously been undertaken in September and October 2020 and May and July 2021, in conjunction with the deployment of static detectors. Further seasonal dusk activity surveys were completed in April, June and August 2022, in conjunction with the deployment of static detectors in strategic locations within the site.

8. For the walked transects, routes were identified to ensure comprehensive coverage of all habitats present within the site. Surveyors utilised Echo Meter 2 (EMT2) bat detectors to aid identification of bats and record data, which was subsequently analysed using specialist software. Activity bat surveys were conducted from 15 minutes before sunset to approximately 2 hours after sunset. As with the emergence / re-entry survey, walked transect survey work was completed during optimal conditions for bat surveys.

9. For static detector surveys, SM4 bat detectors were deployed each month for a minimum of five consecutive nights in strategic locations within the site. All data recorded was subsequently analysed using bat sound analysis software, providing long-term data regarding the use of the application site by foraging and commuting bats. Detectors were set to record each night from 20 minutes prior to sunset until 20 minutes after sunrise.

10. All data recorded during the walked transects and static detector surveys were subsequently analysed using Kaleidoscope bat sound analysis software.

Amphibians

11. As outlined previously, all waterbodies located within and in close proximity to the site boundary were subject to Habitat Suitability Index (HSI) assessment work and environmental DNA (eDNA) survey work. Subsequently, the presence of Great Crested Newts was confirmed for an offsite waterbody to the west of the site (Pond P2).

12. Further specific aquatic surveys of the waterbodies were undertaken in 2022 to further confirm the presence or absence of this species and confirm the population size present.

13. Surveys were undertaken during suitable weather conditions with regard to the guidelines[1] issued by Natural England and utilised three methods per visit (torch survey, bottle-trapping and egg searches), where possible.

14. Suitable survey weather conditions are deemed to be those nights when the night-time air temperature is more than 5°C, with little or no wind, and no rain, and all surveys were conducted during such conditions.

15. Torch counting involved the use of high-powered torches to find and, if possible, count the number of adults of each amphibian species. As recommended by Natural England the entire margin of the waterbodies was walked once, slowly checking for Great Crested Newts.

16. Bottle-trapping involved setting traps made from two litre plastic bottles around the margin of each waterbody, and leaving the traps set overnight before checking

[1] English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

them the following morning. A density of one trap per two metres of shoreline was utilised, where possible, as recommended by Natural England.

17. In addition, an egg search was undertaken of any aquatic vegetation to search for any evidence of breeding Great Crested Newts was undertaken.

18. The presence of any other amphibian species within the vicinity of the waterbodies was also noted.

Breeding Birds

19. Breeding bird surveys were undertaken at the site in May and June 2022 to identify the current breeding bird assemblage present at the site.

20. The survey methodology utilised across the application site comprises of walked transects. Transect surveys are focussed on general breeding bird interest associated within a site. Transects were selected to incorporate all habitat types (e.g., woodland, wetland and farmland) present within or adjacent to the application site. Transects were walked by experienced ornithologists, with all bird activity recorded.

21. Survey visits were carried out in early morning on two dates in May 2022. Surveys were undertaken over a three-to-four-hour period, with continual observations being taken for the duration of the survey.

22. To ascertain the breeding status of birds using the application site, the following criteria were applied following the methodology used in the 'Atlas' surveys of 1988-1991 (Gibbons et al, 1993). This accepts the following activities as denoting breeding (including those probably breeding although definite proof was lacking):

- Bird apparently holding territory;
- Courtship and display;
- Nest-building (including excavating nest-hole);
- Distraction display or feigning injury;
- Adult carrying faecal sac or food;
- Adult entering or leaving apparently occupied nest site;
- Nest with eggs or eggshells found, or bird sitting but not disturbed;
- Nest with young; or downy young of ducks, game-birds, waders and other nidifugous species; and
- Recently fledged young.

Survey Findings

Bats

23. **Roosting.** As outlined previously, whilst the majority of the existing buildings and structures present within the site do not offer any opportunities for roosting bats on account of their structure and construction, the two existing brick-built residential dwellings within the site are considered to have 'Low' potential to support roosting bats.

24. Specific dusk emergence and dawn re-entry surveys of these buildings were undertaken in 2022 in line with the methodology outlined above.

25. No bats were recorded to be emerge from or enter the buildings during any survey work undertaken in 2022. As such, it is considered that the existing buildings do not support roosting bats and roosting bats therefore do not constitute a material constraint to the proposals.

26. **Foraging and Commuting.** Previous bat activity surveys undertaken at the site identified that the vast majority of bat activity at the site pertains to Pipistrelle *Pipistrellus* spp. bats, which are the most common and widespread species in the UK.

27. However, surveys identified that the site is utilised by Barbastelle bats *Barbastella barbastellus*, a rarer bat species which typically roosts in woodlands. Barbastelle bats are known to prefer more densely vegetated corridors of vegetation (woodland and dense hedgerows / scrub) to move between roosts and foraging habitats and are considered to have a larger home range (foraging area) than other bat species.

28. As outlined above, further seasonal bat surveys, constituting walked transect surveys and automated static monitoring surveys, were undertaken in Spring (April) and Summer (June and August) 2022. The results of these surveys are outlined below.

29. Activity recorded during the walked transect surveys undertaken in April, June and August 2022 was very limited, with only Common Pipistrelle recorded in April and June (maximum count of three and five registrations each) and Common Pipistrelle, Soprano Pipistrelle and Noctule recorded in August (maximum counts of 109, 16 and four registrations respectively).

30. Static detectors deployed within the site recorded similar levels of activity to work undertaken in 2020 and 2021, both in terms of the species which utilise the site, the number of registrations recorded and relative levels of use. In relatino to Barbastelle, with the exception of the April survey (which recorded a maximum of 36 registrations over the survey period at any given location), activity was recorded to be limited, with a maximum of two registrations across the survey period at one location in June and a single registration at two locations in August.

Amphibians

31. As outlined within the previous briefing note, the site supports a number of ditches associated with hedgerows along field boundaries; however, these were all recorded as being dry at the time of survey in 2020 and 2021. Further checks during survey work undertaken in 2022 confirmed that these features are still dry, and they are therefore not considered to provide suitable opportunities for breeding amphibians, including Great Crested Newts.

32. As outlined in Table 1 below, the survey confirmed the presence of Great Crested Newts in waterbody P2, with none recorded in waterbody P1. These results are concurrent with those of the eDNA surveys undertaken in 2021.

33. In line with guidance from Natural England, the survey identified that waterbody P2 supports, in total, a low population of Great Crested Newts.

Date	Weather Conditions	Ponds Surveyed	Maximum No. of GCN Recorded[2]	
			P1	P2
11.05.22	16C, 40% cloud cover, dry	P1, P2	-	-
13.05.22	18C, 0% cloud cover, dry	P1, P2	1	-
17.05.22	19C, 10% cloud cover, light rain	P1, P2	-	-
02.06.22	20C, 0% cloud cover, dry	P1, P2	-	-
13.06.22	19C, 20% cloud cover, dry	P1, P2	1	-
17.06.22	31C, 0% cloud cover, rain	P1, P2	1	-

Table 1: 2022 Great Crested Newt Survey results including weather conditions.

Breeding Birds

34. The hedgerows, treelines and woodland habitats within the application site provide suitable nesting opportunities for birds. In order to ascertain the assemblage of breeding birds which utilise the application site, specific survey work was undertaken in early June and late June 2021, in accordance with the methodology outlined above.

35. Species recorded to be present within the site are in Table 2 below. Information is presented in relation to the species present, and their status (where relevant) on the Birds of Conservation Concern (BoCC).

Species	BoCC
Blackbird *Turdus merula*	-
Blackcap *Sylvia atricapilla*	-
Black-headed Gull *Chroicocephalus ridibundus*	Amber
Bearded Tit *Panurus biarmicus*	-
Blue Tit *Cyanistes caeruleus*	-
Buzzard *Buteo*	-
Carrion Crow *Corvus corone*	-
Chiffchaff *Phylloscopus collybita*	-
Chaffinch *Fringilla coelebs*	-
Dunnock *Prunella modularis*	Amber
Green Woodpecker *Picus viridis*	-
Goldfinch *Carduelis*	-
Great Tit *Parus major*	-
Grey Heron *Ardea cinerea*	-
Herring Gull *Larus argentatus*	Red

[2] Maximum number of Great Crested Newts recorded using any one survey methodology

House Sparrow *Passer domesticus*	Red
Jackdaw *Coloeus monedula*	-
Kestrel *Falco Subbuteo*	Amber
Lapwing *Vanellus vanellus*	Red
Linnet *Linaria cannabina*	Red
Long-tailed Tit *Aegithalos caudatus*	-
Magpie *Pica pica*	-
Mallard *Anas platyrhynchos*	Amber
Pheasant *Phasianus colchicus*	-
Pied Wagtail *Motacilla alba*	-
Robin *Erithacus rubecula*	-
Red Legged Partridge *Alectoris rufa*	-
Skylark *Alauda arvensis*	Red
Stock Dove *Columba oenas*	Amber
Swallow *Hirundo rustica*	-
Song Thrush *Turdus philomelos*	Amber
Wheatear *Oenanthe oenanthe*	Amber
Whitethroat *Sylvia communis*	Amber
Wood Pigeon *Columba palumbus*	-
Wren *Troglodytes*	Amber
Willow Warbler *Phylloscopus trochilus*	Amber
Yellowhammer *Emberiza citrinella*	Red

Table 2: 2022 Breeding bird survey findings.

36. A total of 38 bird species were recorded utilising the application site during the course of the breeding bird surveys undertaken in 2022. The assemblage recorded comprises a range of common and widespread bird species which are typical of an agricultural landscape.