Rose Energy Project: Report on a Bat Survey at Land off Ballyvannon Road, near Glenavy for a Proposed Biomass Fuelled Power Plant

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Bat Ecology

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CONTENTS

1.0 INTRODUCTION

1.1 On the 9th October 2007, Debbie Brown of Marenco asked Hopkirk & Russ Bat Ecology to carry out a bat survey of a site of a proposed biomass fuelled power plant at land off Ballyvannon Road, near Glenavy, Co. Antrim. This survey was in addition to an earlier survey undertaken in May 2007 which formed part of the Terrestrial Ecology Assessment submitted along with the Environmental Statement for Rose Energy.

2.0 BAT BIOLOGY

2.1 There are 8 known species of bat in Northern Ireland:
Common pipistrelle (*Pipistellus pipistrellus*)
Brown long-eared bat (*Plecotus auritus*)
Daubenton's bat (*Myotis daubentonii*)
Leisler's bat (*Nyctalus leisleri*)
Nathusius' pipistrelle (*Pipistrellus nathusii*)
Natterers's bat (*Myotis nattereri)*
Soprano pipistrelle (*Pipistrellus pygmaeus*)
Whiskered bat (*Myotis mystacinus)*

2.2 In March, female bats begin to form maternity colonies (a gathering of bats that live in a cohesive, generally species-specific group) begin to roost collectively. In the months from May to August each female bat may give birth to a single baby bat (pup), exceptionally, twins may be born. The pups are cared for in a nursery colony until they are able to fly at 4 weeks and are weaned at 6 weeks.

2.3 Bats have been found roosting in many types of location; abandoned mines, bridges, caves, in trees and almost every area of buildings, modern and old. Each species of bat having it's own specific foraging and roosting requirements. The disturbance of bats when in their roosts or the loss of a roost or their habitat has been shown to have detrimental effect on all species of bat.

2.4 Throughout the spring, summer and autumn months, bats emerge at night to forage for their insect prey. During autumn, they must seek to store enough body fat to sustain them through the winter, a time when insect abundance is markedly reduced. From the month of September, bats in Ireland enter a state of hibernation or they may migrate. They are prompted to enter hibernation by changing day length, which stimulates hormonal changes.

2.5 During warm winter nights bats may emerge to forage or in response to their metabolic needs. Hibernating bats are particularly vulnerable because it may take as much as 20 minutes for them to become active from a torpid state and because they use up valuable food reserves each time they are aroused from hibernation.

2.6 Factor affecting the reproductive success of bats are:

1. Low reproductive rate
2. Sensitivity to disturbance
3. Changes in land use
4. Exposure to toxic chemicals due to remedial timber treatment
5. Deliberate and unintended exclusion or entombment
6. Vandalism

2.7 Bats rest during the day in roosts (day roosts), where for most species, they will be completely hidden, even when using a roost such as roof voids. Bats may also use night roosts to temporarily rest or as feeding perches.

2.8 Day roosts may be further categorised as:

1. Individual roost, used by single male or female bats
2. Transition roost, used by small numbers of bats as they begin to gather into colonies or disperse from larger colony roosts.
3. Maternity roost, used by a colony of female bats usually ranging from a few tens to exceptionally over 1000 animals that are engaged in parturition (the birthing process)
4. Harem, one male and up to nine female animals
5. Hibernacula, where bats enter prolonged periods of torpor

2.9 Some species of bat are relatively abundant but many are vulnerable or threatened with extinction. It is because of these factors that bats are legally protected with both national and European legislation.

3.0 LEGISLATION

3.1 Under the Habitats and Species Directive (92/43/EC), enacted through the **Conservation (Nature Habitats, etc.) Regulations (Northern Ireland) 1995**, it is illegal for anyone without a licence intentionally to kill, injure or handle a bat of any species, to possess a bat, whether alive or dead (unless obtained legally) or to disturb a bat when roosting or which may lead to a reduction of its local abundance or distribution of its species. It is also an offence to damage, destroy or obstruct access to any place that bats use for shelter or protection whether bats are present or not, or to disturb a bat while it is occupying such a place; this applies even in houses and outbuildings. The only exception is for bats in the living area of a house, which may be carefully removed. This explanation should be regarded only as a guide to the law. In case of doubt, reference should be made to the legislation which may be found at:
http://www.opsi.gov.uk/sr/sr1995/Nisr_19950380_en_4.htm#(T)34protectionwildanimaleuropeanprotectedspecie

3.2 In some circumstances, bats may be excluded from a roost, or roosts may be altered / damaged, but this may only be legal after an exclusion order has been obtained from:

Mr Declan Looney, Wildlife Inspector
Northern Ireland Environment Agency
Department of the Environment (NI)
Klondyke Building, Cromac Avenue
Gasworks Business Park
Lower Ormeau Road,
Belfast, BT7 2JA
Telephone: 028 90569 602
Email: declan.looney@doeni.gov.uk

4.0 AIMS

4.1 The aims of the survey were:

1. To describe any evidence of bats in the study area
2. To assess the impact of a change in use of the study area
3. To suggest mitigation measures if appropriate.

5.0 STUDY AREA

5.1 The study area is located at grid ref. J13257250 and is an area extending to five hectares of improved grassland, semi-improved grassland and marshy grassland located off Ballyvannon Road, near Glenavy Co. Antrim and within site of Lough Neagh.

6.0 METHODS

6.1 The area was subjected to an intensive study for bats on 13th, 25th June, 7th July and 20th September 2008.

6.2 Trees, an unoccupied bungalow, its roof void and a corrugated steel barn was surveyed from the ground for entrance holes to potential roosts, night perches for bats and related signs of bat usage. Observations were made from sunset, at night and in the pre-dawn period using a Pettersson D240X bat detector.

7.0 RESULTS

Conditions

7.1 The level of bat activity at an area is dependant on many site-specific conditions, but in general bats are more active in the months from April to September. Where a colony of bats has occupied a roost, discrete evidence in the form of droppings and other signs may remain for weeks or even years. However, in some locations, evidence of bat activity may disappear quite quickly. The degradation rate of evidence such as bat droppings is determined by factors such as exposure to weather and by insect or fungal destruction. Bats are usually cryptic and may not leave any evidence. In particular, bats may be completely hidden when they roost deep within a structure and may occupy holes or crevices at any time after a survey. Most species of bat move roost frequently.

7.2 Bat surveys should normally be carried out throughout the active season, in spring summer and autumn and depending on the site, tree or underground hibernacula surveys may also need to be carried out.

Day surveys

7.3 There was no evidence of bat activity found within the site. No evidence of bat droppings or other activity was found on top of or below the layer of insulation in the bungalow roof void.

Night surveys

7.4 Bats of the species Leisler's *Nyctalus Leisleri,* Soprano pipistrelle *Pipistrellus pygmaeus,* common pipistrelle *Pipistrellus pipistrellus* and whiskered *Myotis mystacinus* were recorded commuting across the site from the river corridor in the northeast of the site, across an area of marshy grassland and onwards in a westerly direction outside of the survey site (Figure 2, A to B).

7.5 A few pipistrelles, *Pipistrellus spp.* whiskered *M. mystacinus* and Leisler's *N. leisleri* bat species foraged over improved grassland at the commuting crossing point (Figure 2, E).

7.6 In the pre-dawn of 21st September, a Nathusius' pipistrelle, *Pipistrellus nathusii* was recorded flying along the northeast river corridor edge of the site and calling from an oak tree that was the only bat roost found (Figure 2, C).

7.7 Low numbers of *Pipistrelle* spp. bats were observed foraging and commuting along the trunk road but no bats were observed to emerge from a tree cavity in a pine tree on the trunk road edge (Figure 2, location G, Plate 5).

7.8 A hedge and tree line running northwest to southeast through the site was used by an individual foraging Soprano pipistrelle *P.pygmaeus* close to the main commuting route but no emerge or return of bats was observed at an oak tree in the hedge line (Figure 2 A).

7.9 A common pipistrelle *P. pipistrellus* was observed foraging over the entrance road leading to the bungalow (Figure 2, H).

7.10 An occasional Soprano pipistrelle *P. pygmaeus* was observed to forage and commute along a boundary hedge (Figure 2, G)

8.0 CONCLUSION ANS MITIGATION

8.1 Two significant areas in the site were:

- The identified main commuting route that was consistently in use throughout the active season surveys
- The Nathusius' pipistrelle *P. nathussii* roost in an oak tree at the extreme northeast of the site.

8.2. It is unclear why bats choose the observed commuting route but the shortest route between the river corridor and principal foraging areas may be the reason.

8.3 The commuting route may continue to be used by bats during the construction phase and operational of the site if:

- Tree and hedgerow species are maintained at the river corridor
- The hedge running at the northern edge of marshy grassland is retained as far as is possible.
- It would also be preferable if a corridor of grassland running beneath the commuting route is retained.

- Works in the vicinity of the commuting route should as far as possible be carried out during the months of November to February inclusive

- Lighting during construction phase in the vicinity of the commuting route in the active season March to October is not used after sunset

- Lighting in the operational phase is shielded so that it does not illuminate the commuting route.

8.4 If the commuting corridor does become unacceptable to bats due to disturbance during construction it is probable that bats may simply re-route by continuing to fly along the river corridor and thence to the existing tree and hedge at the west of the site (Figure 2 D to E).

8.5 It is therefore essential for retention of the trees, shrubs and vegetation at the river corridor and extreme west of the site (Figure 2 A, C, D, E).

8.6 The proposed pond area in the west of the site will result in the loss of some foraging habitat, however all bat species forage at the edge of waterways where insect prey are abundant and some species such as Nathusius' pipistrelle *P. nathusii* prefer to roost close to water.

8.7 Removal of the tree and hedgeline that runs through the centre of the site should not have any significantly deleterious effect on bats as no roosts were found, it is not a significant commuting route for bats and it is proposed to replant with a deep corridor of shrubs and Cypress trees favoured by pipistrelle species.

Signed Date

Figure 1 Site outlined in red

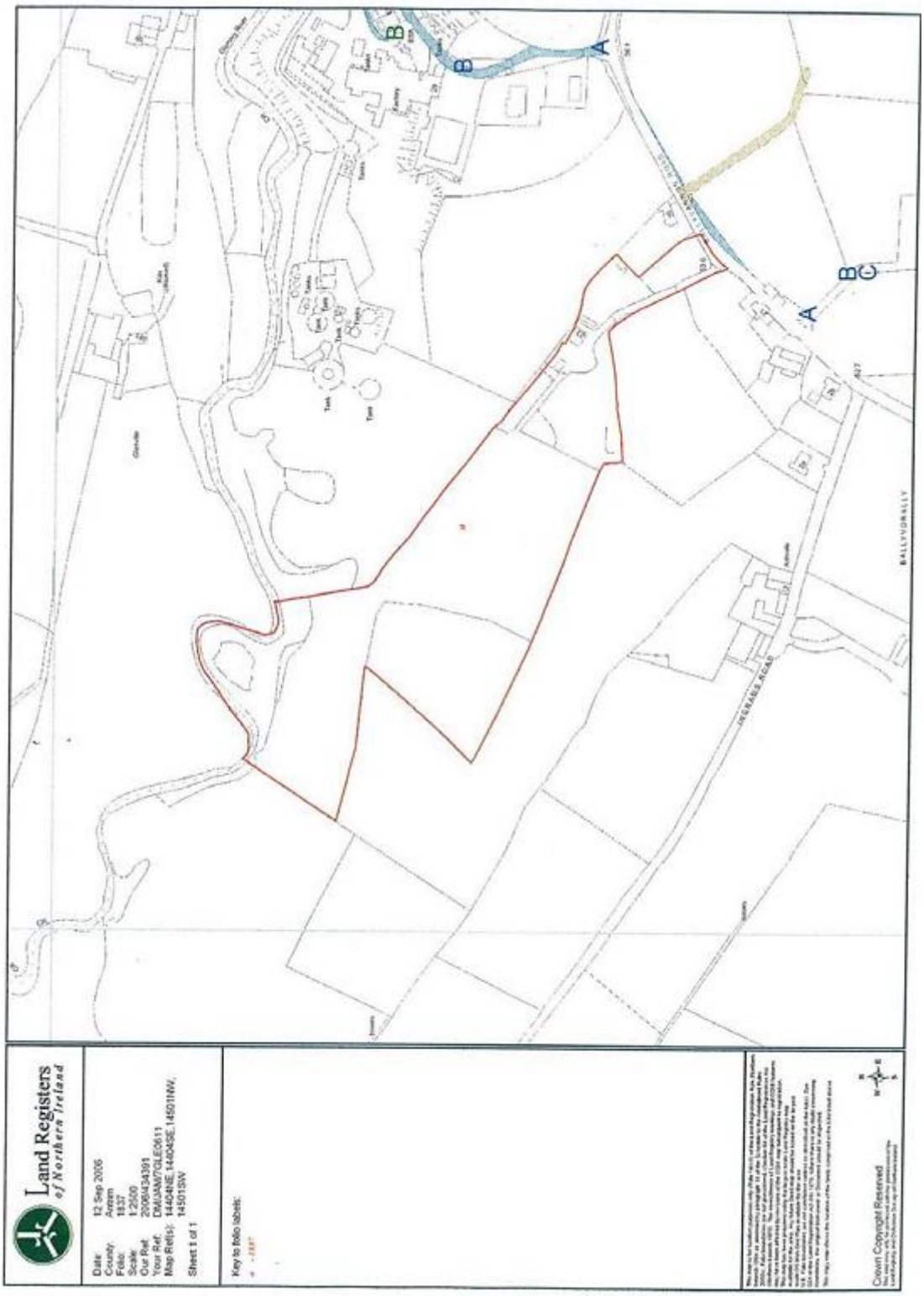

Figure 2 Site with stimulated bat activity

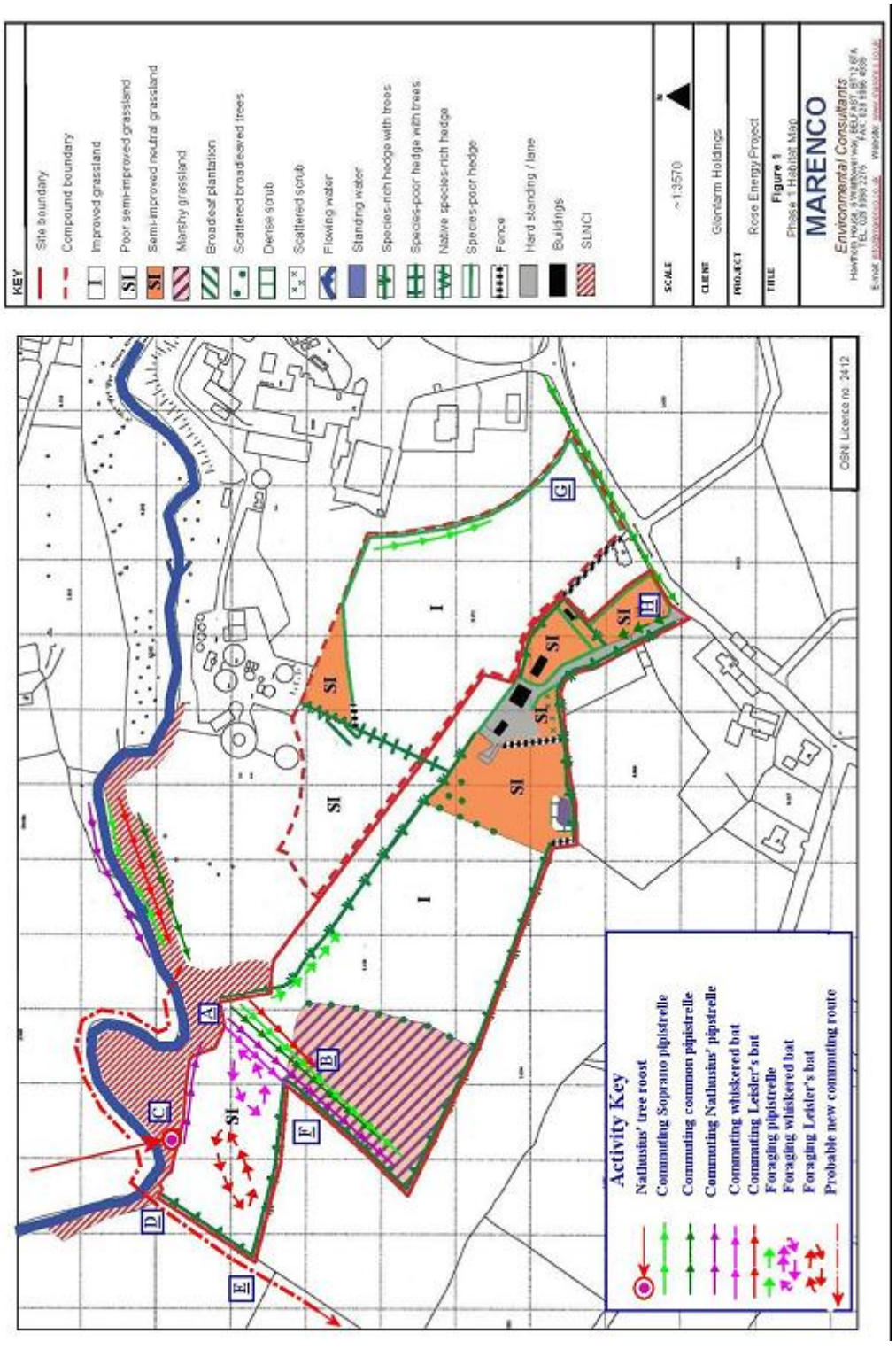

Figure 3 Proposed development of site

Plate 1 View from east of site with main commuting corridor indicated

Plate 2 Cottage on main road of site

Plate 3 Bungalow close to eastern entrance of existing site

Plate 4 Roof void of the bungalow

Plate 5 Tree cavity and potential bat roost at edge of trunk road (Fig 2G)

Appendix 1 - LEGAL PROTECTION OF BATS

International protection

Bats are protected by national legislation also protected under several international Conventions, Directives or Agreements. Where these place obligations on the U.K. government, they have been translated into domestic legislation.

- **European Union Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats and Species Directive).** This Directive places a legal requirement on all Member States of the European Union to protect specified habitats and species through their own domestic legislation. In the U.K. this has been implemented by the Conservation (Natural Habitats, etc.) Regulations (N.I.), 1994. All species of bat in Northern Ireland are on Annex IV ('European protected species of animal'), which requires they be given full protection.

- **Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention).** This convention places obligations on Member States to protect threatened or endangered species and their habitats and to ban the use of many unselective methods of capture. It is translated into domestic legislation through the Wildlife (Northern Ireland) Order 1985. All species of bat, except the common pipistrelle, are on Appendix II, which requires that they are given special protection. The common pipistrelle is in Appendix III, which requires the regulation of its exploitation.

- **Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).** This global Convention is intended to encourage co-operation between Member Parties in the conservation of species that move between range states. It provides for the protection of migratory species, but its main intended method of operation is to encourage range states to set up Agreements to benefit species listed in Appendix II, which includes all European bats. One such agreement is the *Agreement on the Conservation of Bats in Europe*, 1994. Its main provisions are to restrict the killing or capture of bats; the protection of key bat habitats; the co-ordination of research and conservation experience and work to increase public awareness of bat conservation. These requirements do not appear to need any changes to current U.K. domestic legislation.