

**SITE AT
CHERRY ORCHARD POINT - PHASE 2
DUBLIN 10**
Bat Survey and Assessment of associated areas.

Report by

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06/07/2022 and 07/07/2022. 23/05/2023, 24/05/2023. 22/04/2024, 23/04/2024

SUMMARY

Site: Site in Cherry Orchard, Dublin 10

Structure; Brown/Greenfield site
.

Grid reference: GR IO 07758 32794

Bat species present: C. 20 Common Pipistrelles, C 30 Leislers Bats
Foraging/commuting along southern boundary..

Roost location: Off- site

Bat access: N/A

Proposed work: Development of medium density residential units.

Impact on bats: None anticipated.

Habitats present: Mosaic: Grassland (GA1) Recolonising Bare Ground
(ED3), Hedgerows(WL1) Scrub(WS1)

Bat survey by: **Gerard Tobin, BSc MA..**
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Introduction

A proposal to undertake development at a site in Cherry Orchard, Dublin 10, has resulted in a request for a bat/bird survey to ensure that any bats currently using the site are safe guarded during proposed works. Gerard Tobin was asked to undertake this survey to ascertain possible bat presence on-site.

The site consists of a series of fields with hedgerows. There is an area of recolonising bare ground to the west of the entrance gates and an area of scrub to the east across the road.

Site Location and access

The site is located in Cherry Orchard, Dublin 10 and is accessed off both sides of the road

Bat Survey

This report presents the results of a site visit by Gerard Tobin on 06th/07th July 2022 And 23rd/ 24th May 2023 and 22nd/23rd April 2024 during which the site and structures were inspected. The bat fauna occurring on the site are described and the likely impacts of the proposed works on the bat fauna are discussed with recommendations for mitigation measures if necessary.

Survey methodology

A survey of bat fauna was carried out by means of a thorough search within the site. The area was inspected for bat use. Principally their signs, such as staining, lack of spider webs, feeding signs or droppings indicate presence of bats though direct observations are also occasionally made. The nature and type of habitats present are also indicative of the species likely to be present.

A pre-dusk and post-dusk along with a pre-dawn and post-dawn examination of the site was undertaken.

The presence or absence of cavities in the building, suitable for bats, was used as an indicator of likely bat presence. Where suitable cavities were found a further visual examination of the area was undertaken using infra-red imaging equipment and a Ciel Electronique CDB 301 HD/FD Bat detector and an Echo Meter Touch 2 (for Android) Bat detector with software app on Samsung Galaxy GT along with both a “V-Scope” flexible fibre borescope and a fibre optic video camera capable of looking into small cavities. Identification of bat species using bat detectors is not definitive but is indicative of what species may be present.

A vantage point within the area and curtilage allowed visual confirmation of possible bat entrance/exit points in the buildings under examination.

A Magellan Explorist handheld GPS unit was used to mark the location of items of interest on-site. Heavy tree cover may compromise the accuracy of GPS locations.

Digital cameras (Canon 1000D and Canon IXUS 185) were used to document items of interest.

Survey constraints

The survey was carried out by means of a thorough examination of the site. There were no climatic and seasonal constraints in regard to bat survey as it was undertaken within the active bat season. Daytime temperatures reached 18° Celsius and dropped to 14° Celsius at dusk/dawn in 2022 and 2023 while daytime temperatures reached 16° Celsius

and fell to 12` Celsius at dawn/dusk. There was no wind and rain during the surveys in 2022 and 2023 while light winds accompanied the 2024 survey.

Brief description of Cherry Orchard from the perspective of bat habitat

The site is situated in an urban area adjacent to hedgerows, grassland and trees. There are also some buildings nearby. These habitats tend not to be favourable to species of bat when in an urban environment.

Results of bat survey

The site, potentially, offers limited opportunities for bat use, as no available roost features.

Indication of significance of site for bats

There is evidence that bats are commuting/foraging along the southern boundary of the site under examination. Bats were seen and heard foraging over this boundary of the site during field work but mapping showed no roosting activity.

Indication of significance of site for birds

There are birds (Meadow Pipits) currently nesting in the bare ground to the west of the site entrance.

Legal status and conservation issues – bats

All Irish bat species are protected under the Wildlife Act (1976) as amended and Wildlife Amendment Act (2000). Also, the EU Directive on The Conservation of Natural habitats and of Wild Fauna and Flora (Habitats Directive 1992), seeks to protect rare species, including bats, and their habitats and requires that appropriate monitoring of populations be undertaken. Across Europe, they are further protected under the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1982), which, in relation to bats, exists to conserve all species and their habitats. The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, enacted 1983) was instigated to protect migrant species across all European boundaries. The Irish government has ratified both these conventions.

All bats are listed in Annex IV which covers animal and plant species of community interest in need of strict protection and the lesser horseshoe bat is further listed under Annex II of the Habitats Directive which relates to animal and plant species of community interest whose conservation requires the designation of special area of conservation.

Potential impacts of proposed works on bat fauna

The proposed works should not adversely affect bats. The proposed works should not adversely affect bats. There are no bat roosts on site and a foraging/commuting presence is evident on the southern boundary of the proposed development. This proposed development will not adversely impact this commuting route.

Mitigation measures

As there are currently bats present foraging/commuting along the southern boundary of the area there is no requirement for compulsory mitigation measures and the following voluntary measures will ensure the safety of nesting birds and bats.

Application for a derogation licence

Works on a known bat roost is a notifiable action under current legislation if exclusion is sought and a derogation licence has to be obtained from the National Parks and Wildlife Service before works can commence. As there are no bat roosts identified during the surveys carried out on the site there is no licence required in this instance.

Measure 1: timing of works

Work can be undertaken after September 1st when bird nesting will have ceased. Nesting birds will have left (the nests must remain undisturbed until chicks have fledged).

Measure 2: timber treatments

Where chemical treatment of roof timbers and construction timbers is necessary then only bat safe compounds may be used and a list of suitable chemicals is given in the appendix.

Measure 3: hedgerows

All new plantings of screening and landscaping shrubs and trees will mimic the naturally occurring hedgerows with long, linear plantings being favoured. Native species will be planted and locally occurring species will be sourced.

Measure 4: lighting

Lighting has increased dramatically over the last number of years as a result of many new developments. This includes aesthetic lighting of bridges, monuments and buildings, flood lighting of sports grounds, street and road lighting and security lighting of urban and rural areas to name but a few. Lighting can impact on bats' roosting sites, commuting routes and foraging areas. Contrary to common belief, bats are not blind. While bats tend to rely on a type of sonar, known as echolocation, for orientation and hunting during the hours of darkness, vision is still an important sense for bats. When bats emerge from roosts early in the evening, they tend not to echolocate but rely on eyesight to fly from the roost to adjoining treelines or hedgerows. Various studies have shown that bats' eyesight works best in dim light conditions. Where there is too much luminance, bats' vision can be reduced resulting in disorientation. While light sensitivity varies between species, bats tend to have a higher tolerance for red visual light than white light. Short wave frequency (UV) light is most disturbing for bats. This is due to the fact that bats have a higher proportion of rods in their retina compared to cones. The rods allow greater absorption of light in dim conditions. Too much luminance at bat roosts may cause bats to desert a roost. Light falling on a roost exit point can delay bats from emerging and miss peak levels of insect activity at dusk. Any delays of emergence can reduce feeding periods. Lighting can also disturb bats' feeding behaviour. Many night flying insects are attracted to lights, especially those lamps that emit UV light. A single source of light in a dark area can cause local insect populations to congregate in concentrations around the light source. While some Irish bat species such as Leisler's bats will opportunistically feed on such insect gatherings, the majority of Irish bat species are too sensitive to such light sources and suffer from insect populations being reduced in traditional feeding areas. In addition, artificial lighting can increase the chances of bats being preyed on. Lighting can be particularly harmful

to bat populations along river corridors, woodland edges, along hedgerows and treelines and at lake edges.

There are certain types of light such as Low Pressure Sodium (SOX) which is typically orange light and is emitted at a single wavelength with a very low amount of UV. Therefore very few insects are attracted to this light source and it has a minimal effect on bats. However High Pressure Sodium (SON) light (typically pinkish-yellow light) is emitted over a slightly broader wavelength spectrum. It is a more intense light so attracts more insects and has a greater impact on bats. Metal Halide & Mercury vapour lights equally impact bats in that these white light sources emit light at wavelengths across the colour spectrum and emit high levels of UV. These light types can attract high levels of insects and because it is a close match to daylight has a greater impact on bats. Metal halide typically comes in three types: Quartz arc tube; Ceramic arc tube and Cosmo ceramic. The use of Luminary (Light) accessory shields can be mounted at the front or back of a luminaire. Masking can also be used such as by painting a section of the luminaire protectors, light will be blocked from penetrating through. Louvres can also be used, these can be either internal or external rows of slates angled to block light in a certain direction.

Avoid lighting along important commuting routes. Avoid the use of mercury or metal halide lamps Minimise light spills using shields, masking & louvres Keep light columns as low as possible Restrict lights to ensure that there are dark areas Restrict lights to ensure that there are dark hours. The following measures may also assist in the use of lighting around new developments and existing developments.

The use of sensor lighting can reduce energy wastage and if planting is used it will reduce the impact of lighting as will the use of demountable columns for lighting stacks.

The timing of lighting can be controlled using solar clocks. All of these measures will help to reduce and remove potential negative impacts on commuting and foraging bats.

Potential impact of work on bird fauna

Waiting until chicks have fledged for nesting birds will ensure that there will be no negative impact on birds. There is ample alternative nesting habitat available.

Predicted and Residual impact of the proposal

There are no bat roosts on site and their foraging / commuting presence is along the southern boundary of the proposed development. No bat roosts should be lost due to the proposed works. If the recommended measures are implemented bat foraging within the site of the proposed development can be facilitated and encouraged. There is ample alternative foraging habitat in the surrounding area with Cherry Orchard Horse Project lands being located nearby. The impact on avian species can be minimised if the suggested measures are followed.

No negative impact on foraging / commuting behaviour is anticipated. Field work was carried out over the following dates 06/07/2022, 07/07/2022, 23/05/22, 23/05/2023, 24/05/2023, 22/05/2023, 23/04/2024 and at a variety of periods within the active bat season. The area of the proposed development is surrounded by urban development and as such is not particularly suited to bats or bat roosting. The field work confirms that there are no suitable Potential Roost Features (PRF) on site.

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Appendices

Bat ecology – general

The bat is the only mammal that is capable of true flight. There are over 1,100 species worldwide, representing almost a quarter of all mammal species. There are 47 species in Europe - in Ireland, ten species of bat are currently known to exist, which are classified into two families, the Rhinolophidae (Horseshoe bats) and the Vespertilionidae (Common bats).

Prey

All the European bat species feed exclusively on insects. A Pipistrelle, weighing only 4 to 8 grammes, will eat up to 3000 insects every night, ensuring a build up of fat in the bat's body to allow it to survive the winter deep in hibernation.

Breeding and longevity

Irish bats can produce one young per year but, more usually, only one young is born every two years (Boyd & Stebbings, 1989). This slow rate of reproduction inhibits repopulation in areas of rapid decline. Although bats have been known to live for twenty or more years, this is rare as most die in their first and the average lifespan, in the wild, is four years.

Threats

All bat species are in decline as they face many threats to their highly developed and specialised lifestyles. Many bats succumb to poisons used as woodworm treatments within their roosting sites (Racey & Swift, 1986). Agricultural intensification, with the loss of hedgerows, treelines, woodlands and species-rich grasslands have impacted bat species also. Habitual roosting or hibernation sites in caves, mines, trees and disused buildings are also often lost to development. Summer roosts are prone to disturbance from vandals. Agricultural pesticides accumulate in their prey, reaching lethal doses (Jefferies, 1972). Chemical treatments in cattle production sterilise dung thus ensuring that no insects can breed within it to be fed upon by bats. Likewise, river pollution, from agricultural runoff, reduces the abundance of aquatic insects. Road building, with the resultant loss of foraging and roosting sites is a significant cause in the reduction of bat populations across Europe.

Extinction

As recently as 1992, the greater mouse-eared bat *Myotis myotis* became the first mammal to become extinct in Britain since the wolf in the 18th century.

Description of bat species known or expected from the area

Common pipistrelle *Pipistrellus pipistrellus*

This species was only recently separated from its sibling, the soprano or brown pipistrelle *P. pygmaeus*, which is detailed below (Barratt *et al*, 1997). The common pipistrelle's echolocation calls peak at 45 kHz. The species forages along linear landscape features such as hedgerows and treelines as well as within woodland.

Soprano pipistrelle *Pipistrellus pygmaeus*

The soprano pipistrelle's echolocation calls peak at 55 kHz, which distinguishes it readily from the common pipistrelle on detector. The pipistrelles are the smallest and most often seen of our bats, flying at head height and taking small prey such as midges and small moths. Summer roost sites are usually in buildings but tree holes and heavy ivy are also used. Roost numbers can exceed 1,500 animals in mid-summer.

Nathusius' pipistrelle *Pipistrellus nathusii*

Nathusius' pipistrelle is a recent addition to the Irish fauna and has mainly been recorded from the north-east of the island in Counties Antrim and Down (Richardson, 2000) and also in Fermanagh, Longford and Cavan. It has also recently been recorded in Counties Cork and Kerry (Kelleher, 2005). However, the known resident population is enhanced in the autumn months by an influx of animals from Scandinavian countries. The status of the species has not yet been determined.

Leisler's bat *Nyctalus leisleri*

This species is Ireland's largest bat, with a wingspan of up to 320mm; it is also the third most common bat, preferring to roost in buildings, although it is sometimes found in trees and bat boxes. It is the earliest bat to emerge in the evening, flying fast and high with occasional steep dives to ground level, feeding on moths, caddis-flies and beetles. The echolocation calls are sometimes audible to the human ear being around 15 kHz at their lowest. The audible chatter from their roost on hot summer days is sometimes an aid to location. This species is uncommon in Europe and as Ireland holds the largest national population the species is considered as Near Threatened here.

Brown long-eared bat *Plecotus auritus*

This species of bat is a 'gleaner', hunting amongst the foliage of trees and shrubs, and hovering briefly to pick a moth or spider off a leaf, which it then takes to a sheltered perch to consume. They often land on the ground to capture their prey. Using its nose to emit its echolocation, the long-eared bat 'whispers' its calls so that the insects, upon which it preys, cannot hear its approach (and hence, it needs oversize ears to hear the returning echoes). As this is a whispering species, it is extremely difficult to monitor in the field as it is seldom heard on a bat detector. Furthermore, keeping within the foliage, as it does, it is easily overlooked. It prefers to roost in old buildings.

Natterer's bat *Myotis nattereri*

This species has a slow to medium flight, usually over trees but sometimes over water. It usually follows hedges and treelines to its feeding sites, consuming flies, moths, caddis-flies and spiders. Known roosts are usually in old stone buildings but they have been found in trees and bat boxes. The Natterer's bat is one of our least studied species and further work is required to establish its status in Ireland.

Whiskered bat *Myotis mystacinus*

This species, although widely distributed, has been rarely recorded in Ireland. It is often found in woodland, frequently near water. Flying high, near the canopy, it maintains a steady beat and sometimes glides as it hunts. It also gleans spiders from the foliage of trees. Whiskered bats prefer to roost in buildings, under slates, lead flashing or exposed beneath the ridge beam within attics. However, they also use cracks and holes in trees and sometimes bat boxes. The whiskered bat is one of our least studied species and further work is required to establish its status in Ireland.

Brandt's bat *Myotis brandtii*

This species is known from five specimens found in Counties Wicklow (Mullen, 2007), Cavan, and Clare in 2003, a specimen in Kerry in 2005 (Kelleher, 2006b) and another in Tipperary in 2006 (Kelleher, 2006a). No maternity roosts have yet been found. It is very similar to the whiskered bat and cannot be separated by the use of detectors. Its habits are similar to its sibling.

List of Irish bat species and adjudged status on site

Bats		Status on site
<i>Chiroptera</i> ¹		
Common Pipistrelle ²	<i>Pipistrellus pipistrellus</i>	Present foraging/commuting
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	Potential
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	Potential
Brown Long-eared	<i>Plecotus auritus</i>	Potential
Leisler's	<i>Nyctalus leisleri</i>	Present foraging / commuting
Lesser Horseshoe	<i>Rhinolophus hipposideros</i>	Absent
Whiskered	<i>Myotis mystacinus</i>	Unlikely
Natterer's	<i>Myotis nattereri</i>	Potential
Daubenton's	<i>Myotis daubentonii</i>	Potential
Brandt's	<i>Myotis brandtii</i>	Unlikely

Foraging / commuting routes are along the southern boundary.

Photographic Record

Plate 1 – view east across site.

¹ Bat distribution records from O'Sullivan (1994) and Richardson (2000).

² Two common species of pipistrelle bat are present in Ireland, recent taxonomic revision. The species are identified by the frequency they use for echolocation (46Hz [Common] and 55Hz [Soprano]), and both occur in similar habitats. Roosts occur in buildings and trees.



Plate 2- Hedgerow



Plate 3 View north across site



Plate 4 GPS map of site showing recolonising bare ground to bottom of frame

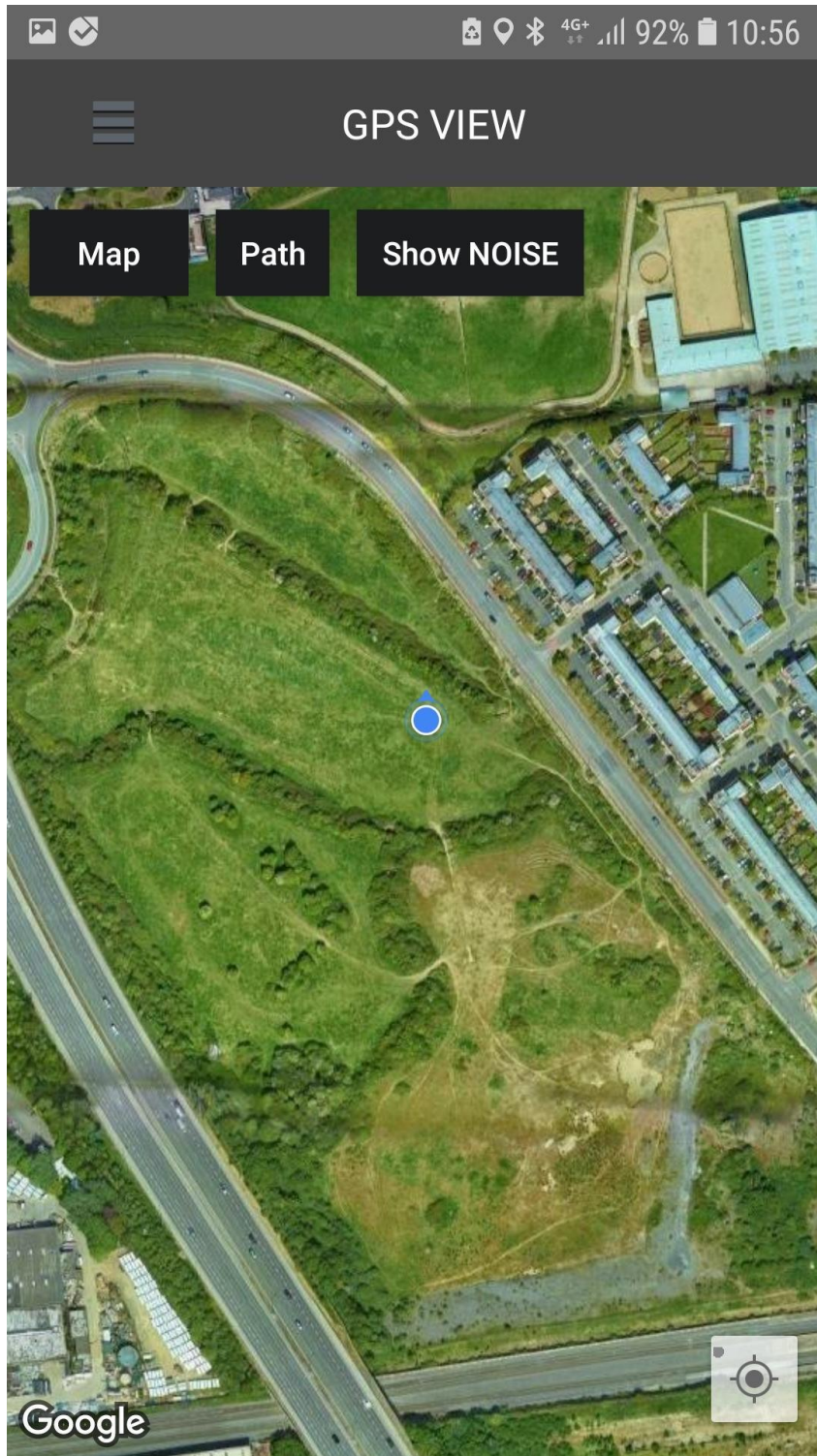


Plate 5 Nyctalus leislerii sonogram

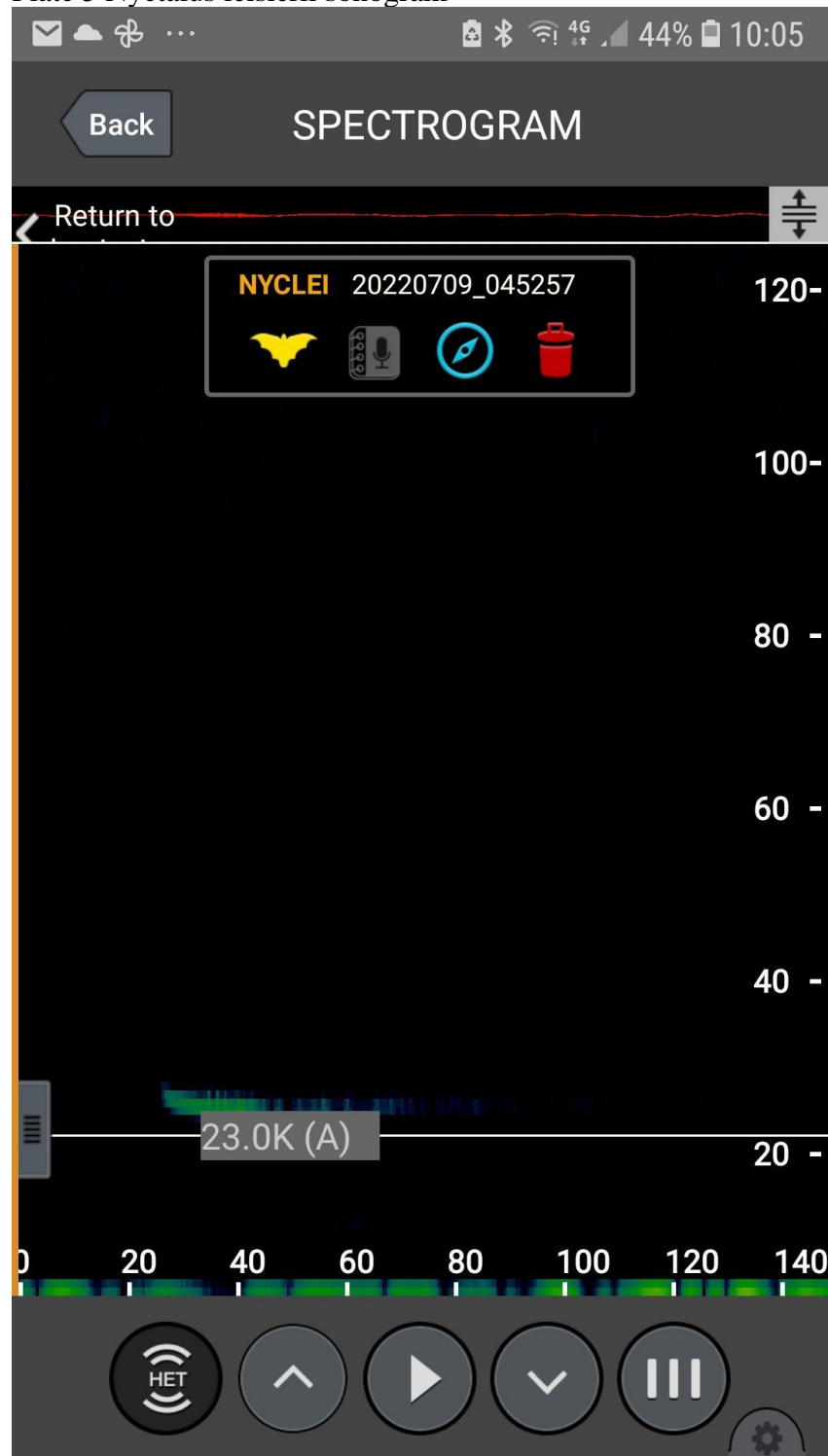


Plate 6 Map view

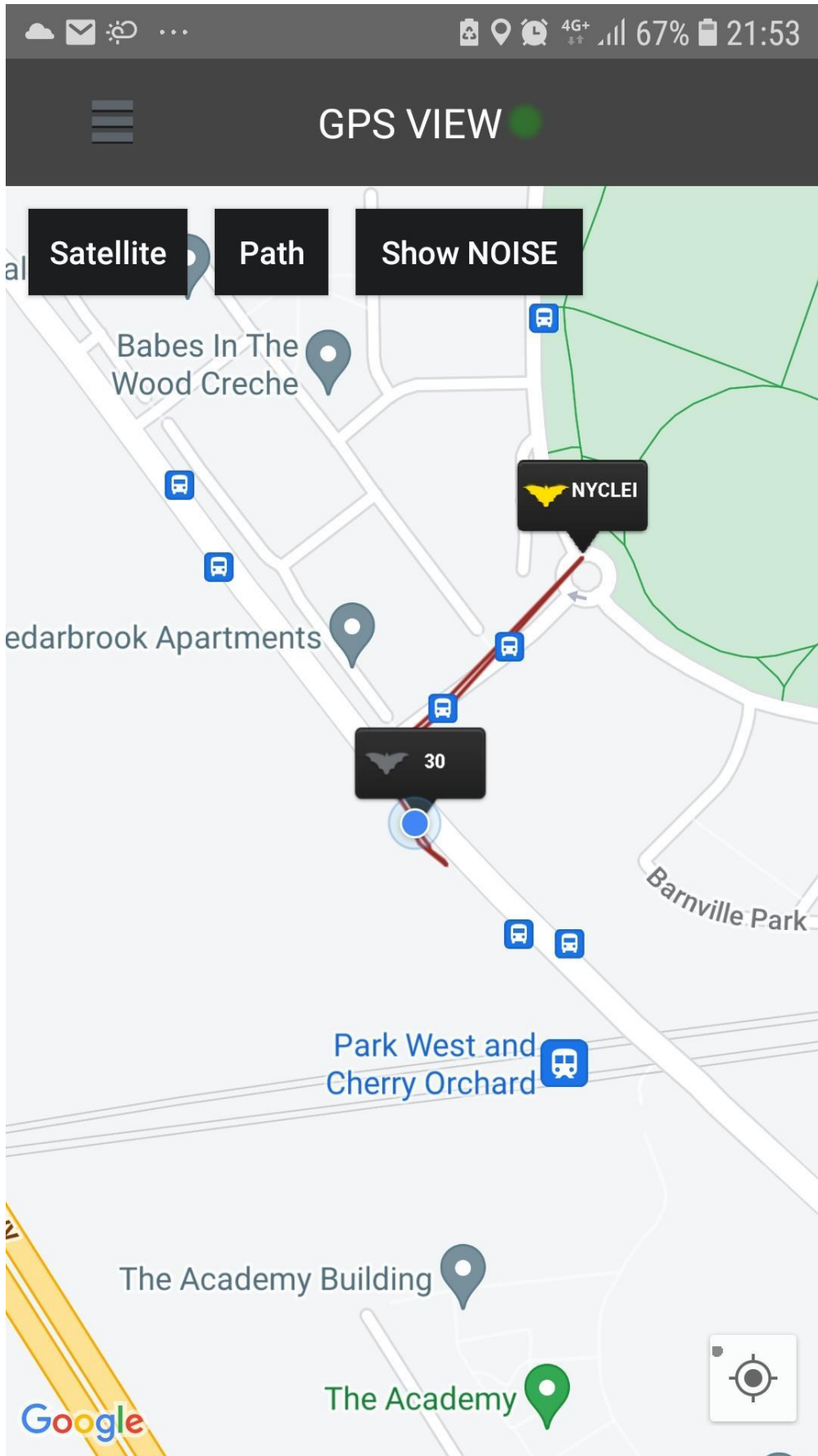


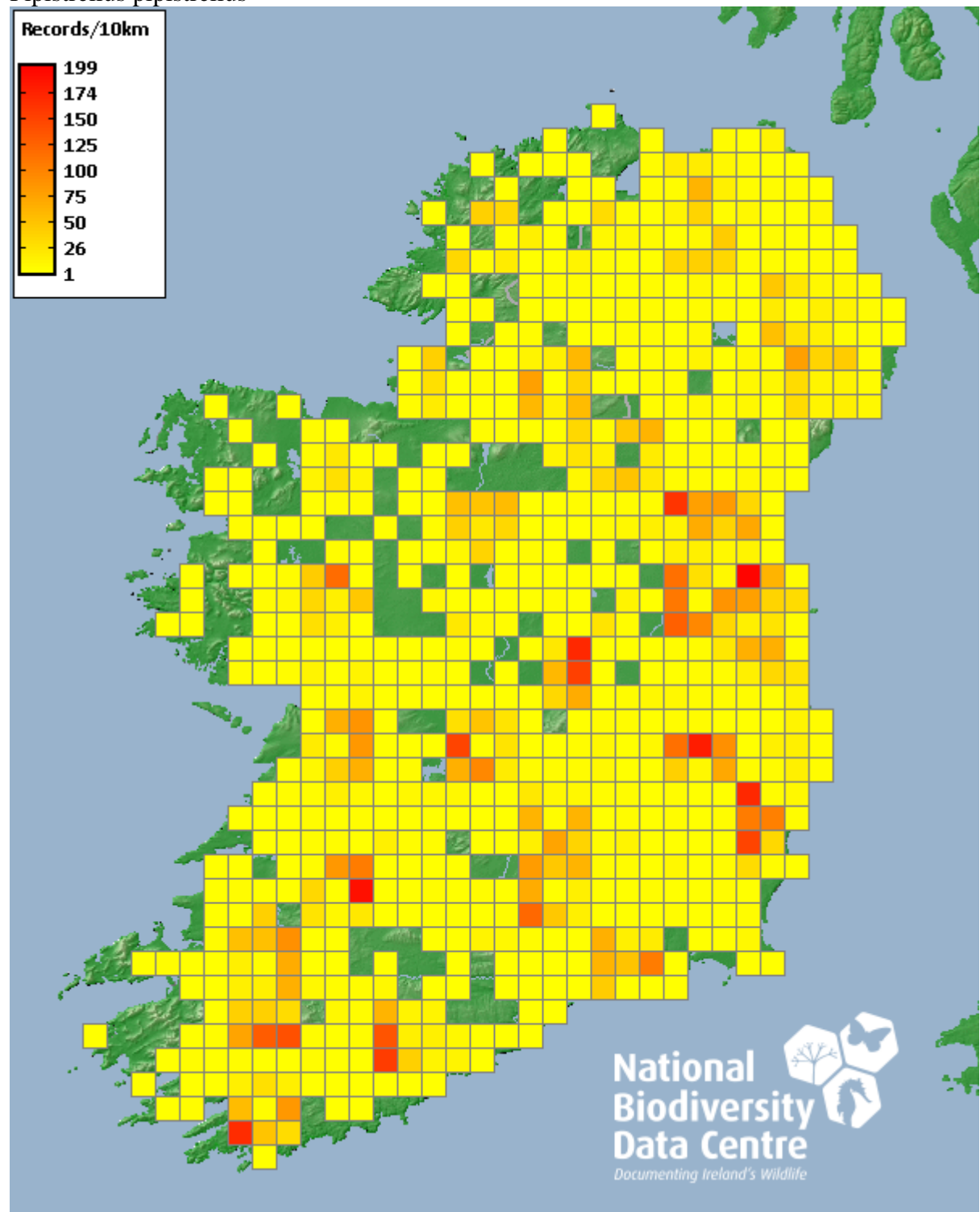
Plate 7 Forage route along south west corner of site. Observed 23/24 04 2024 height >C.30 M



Plate 8 Forage Route originating east of the site

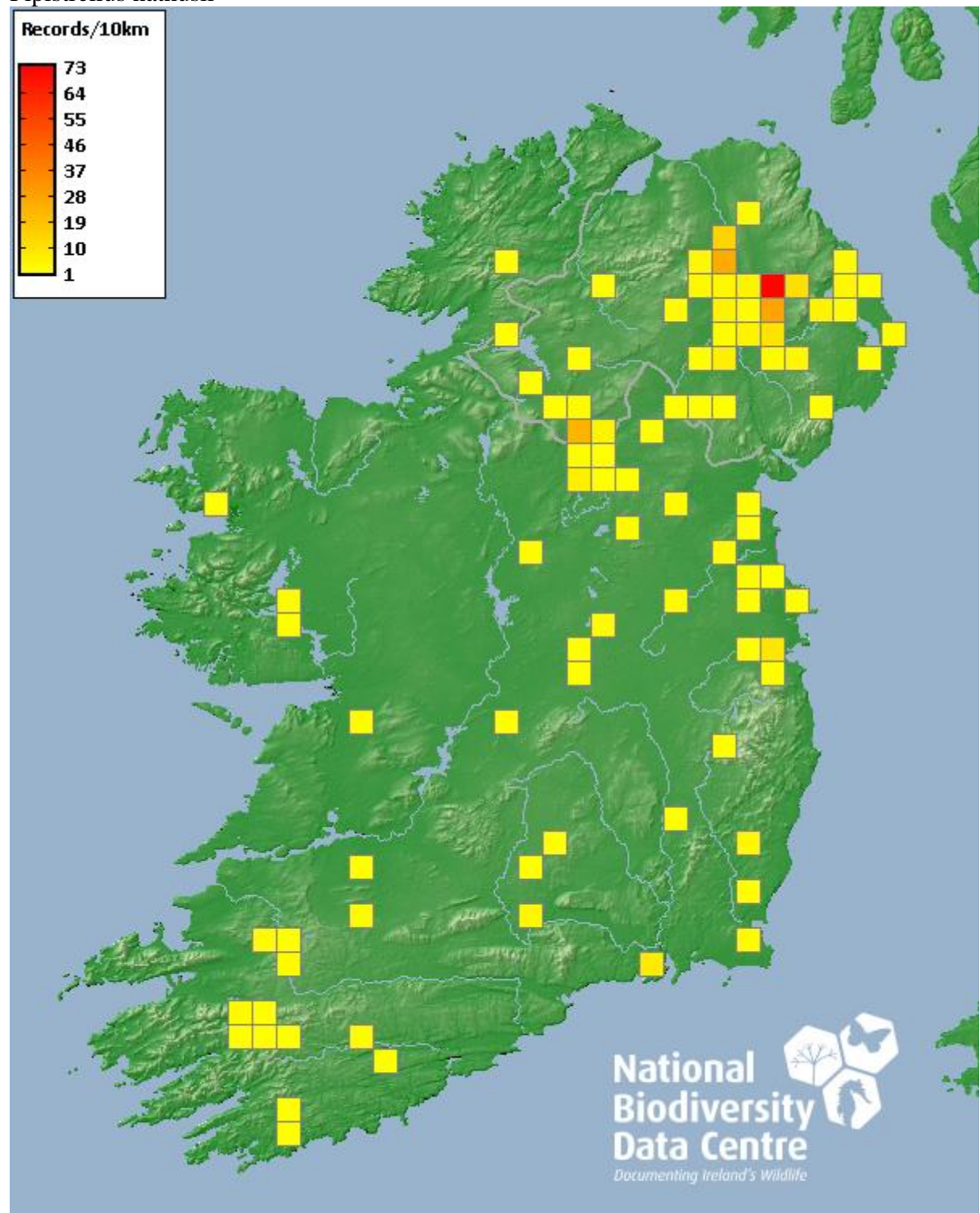


Pipistrellus pipistrellus



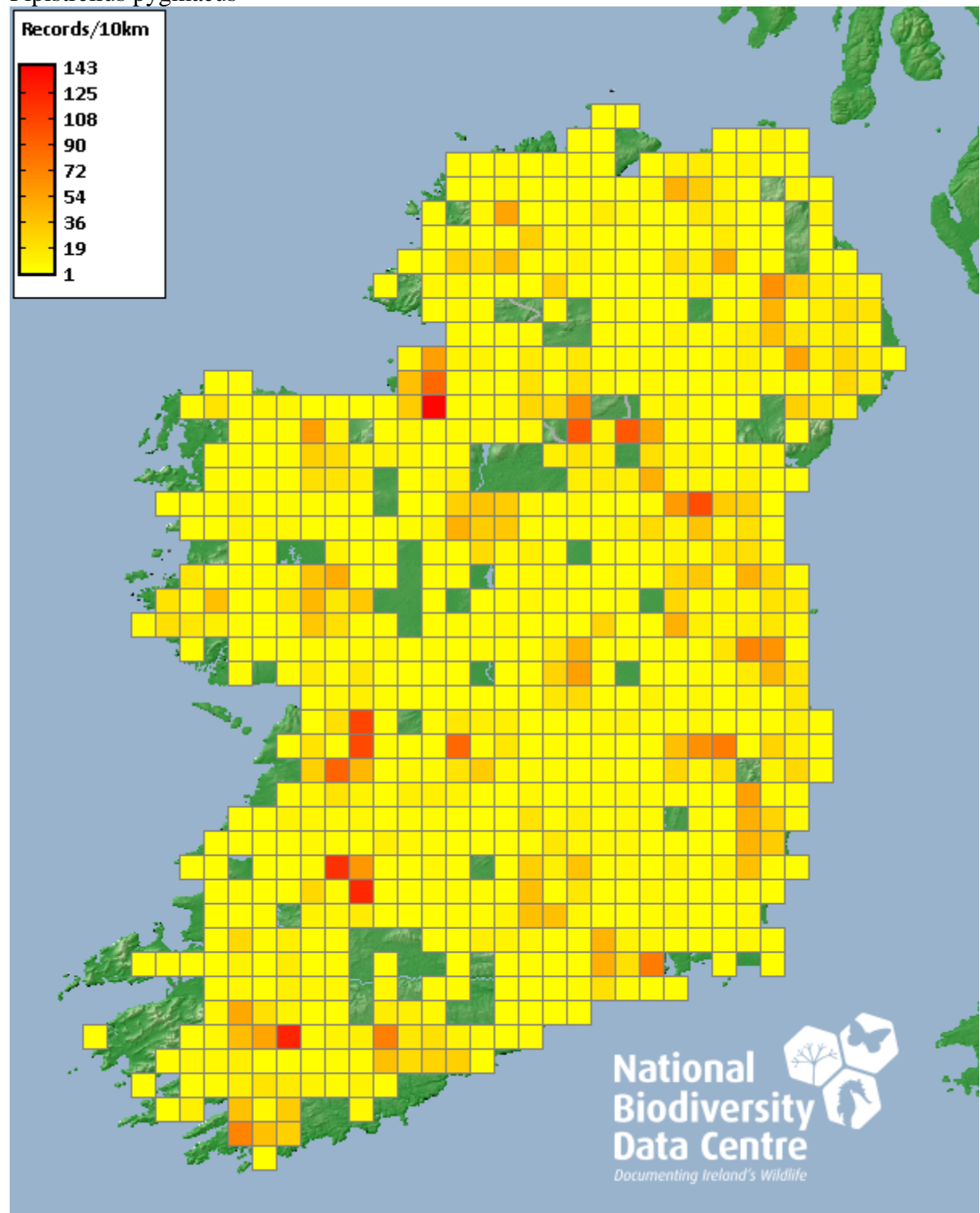
Citation: National Biodiversity Data Centre, Ireland, Pipistrelle (*Pipistrellus pipistrellus sensu lato*), image, accessed 24 July 2023, <<https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119763>>

Pipistrellus nathusii



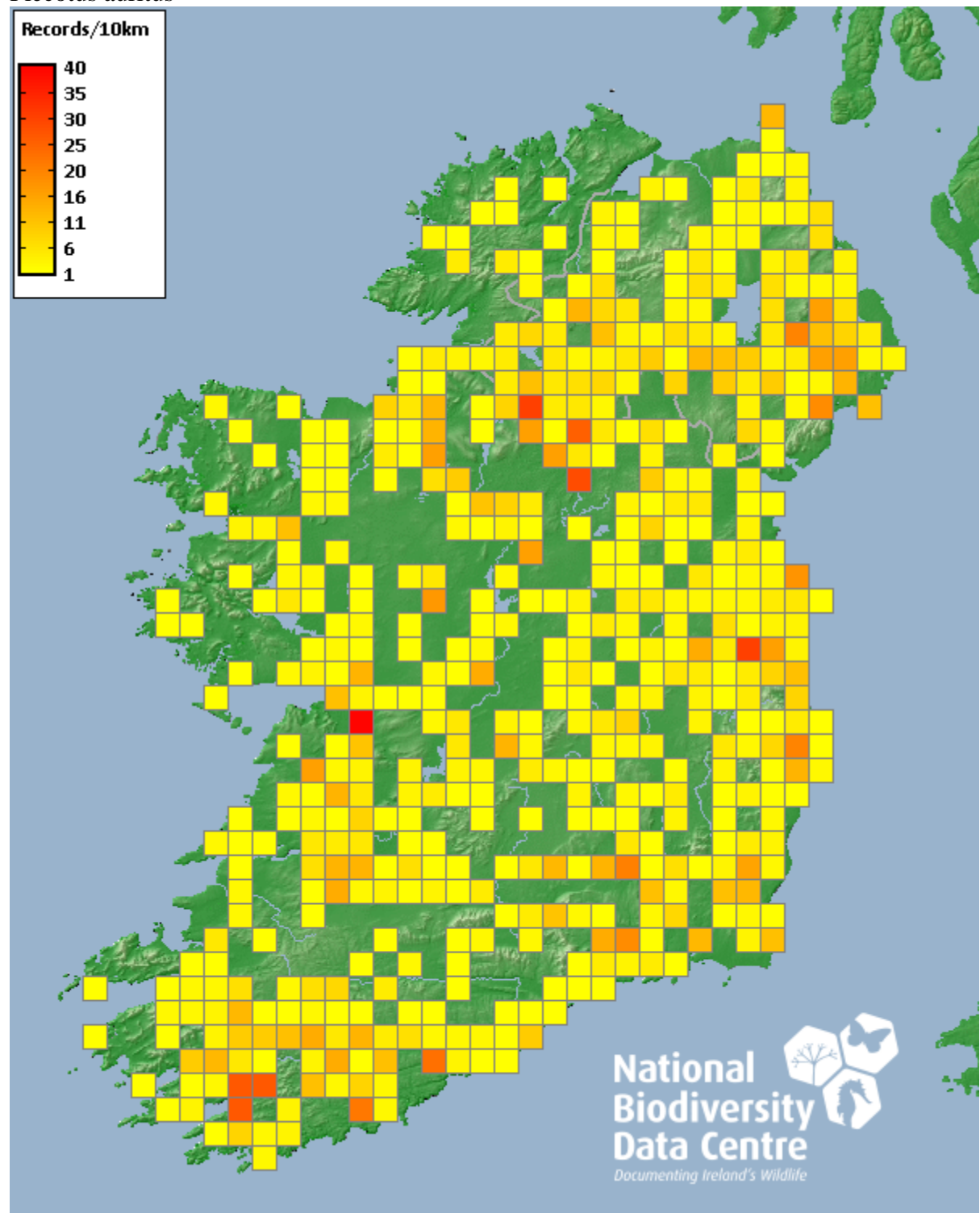
Citation: National Biodiversity Data Centre, Ireland, Nathusius's Pipistrelle (*Pipistrellus nathusii*), image, accessed 24 July 2023, <<https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119466>>

Pipistrellus pygmaeus



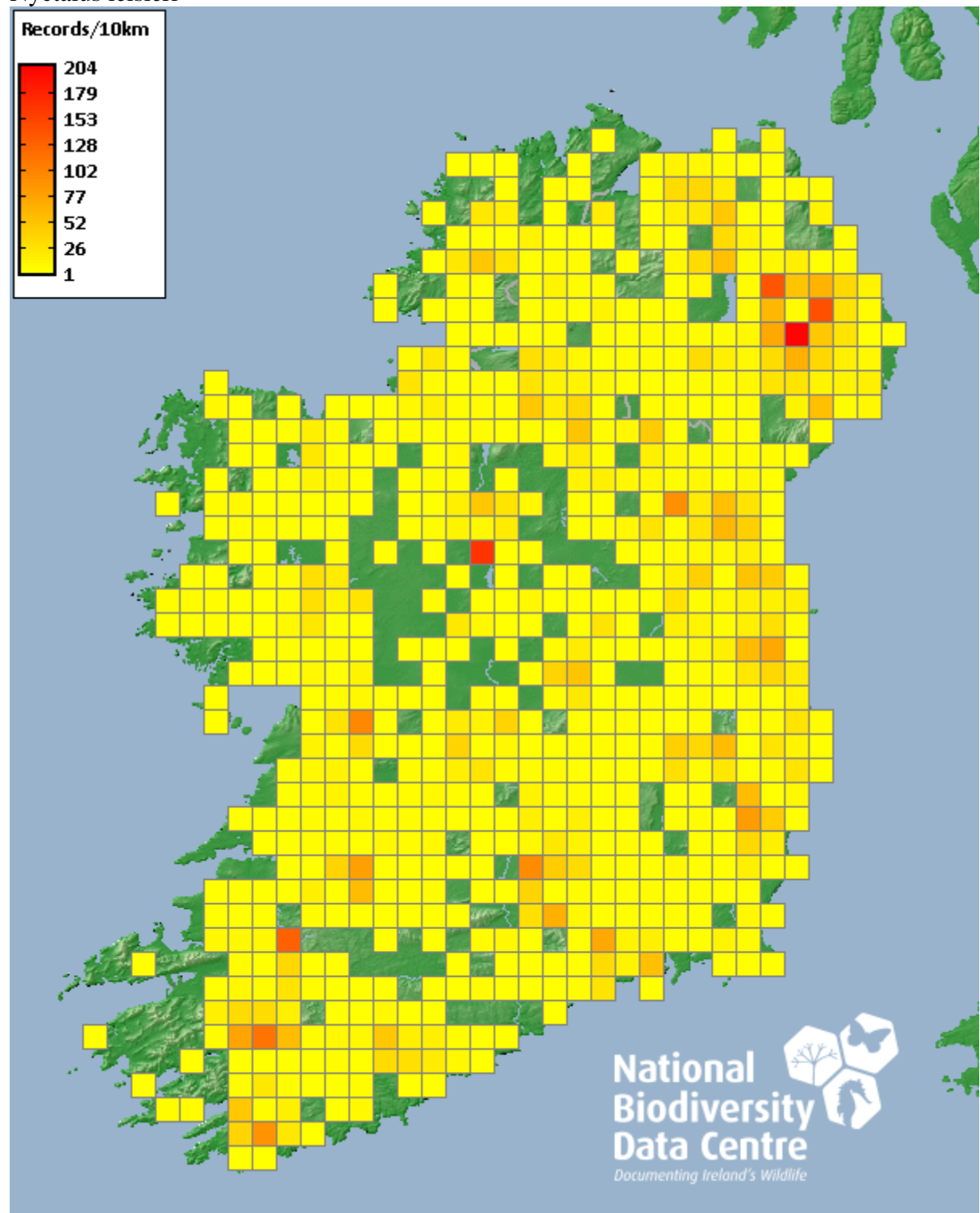
Citation: National Biodiversity Data Centre, Ireland, Soprano Pipistrelle (*Pipistrellus pygmaeus*), image, accessed 24 July 2023,
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Plecotus auritus



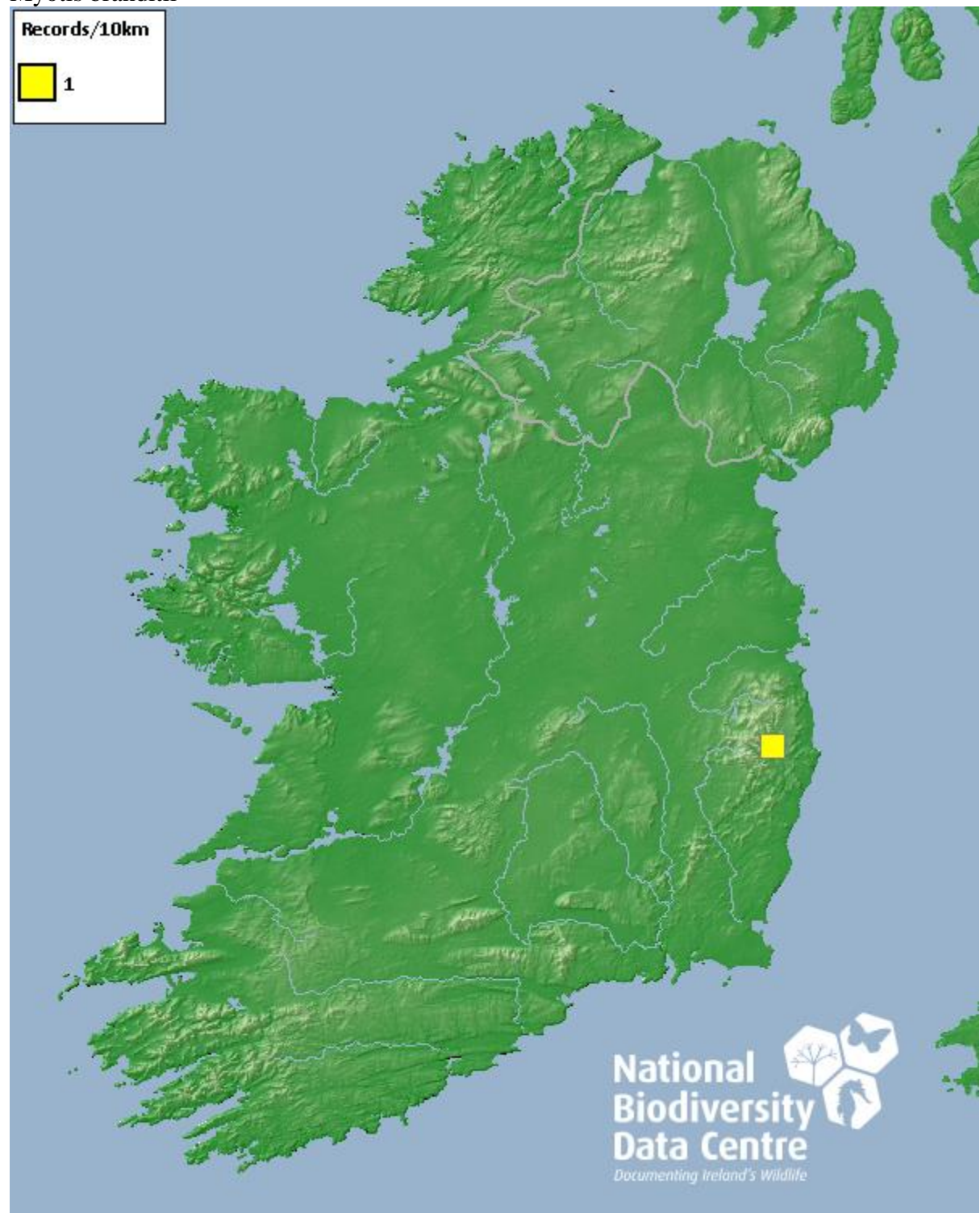
Citation: National Biodiversity Data Centre, Ireland, Brown Long-eared Bat (*Plecotus auritus*), image, accessed 24 July 2023, <<https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119278>>

Nyctalus leisleri



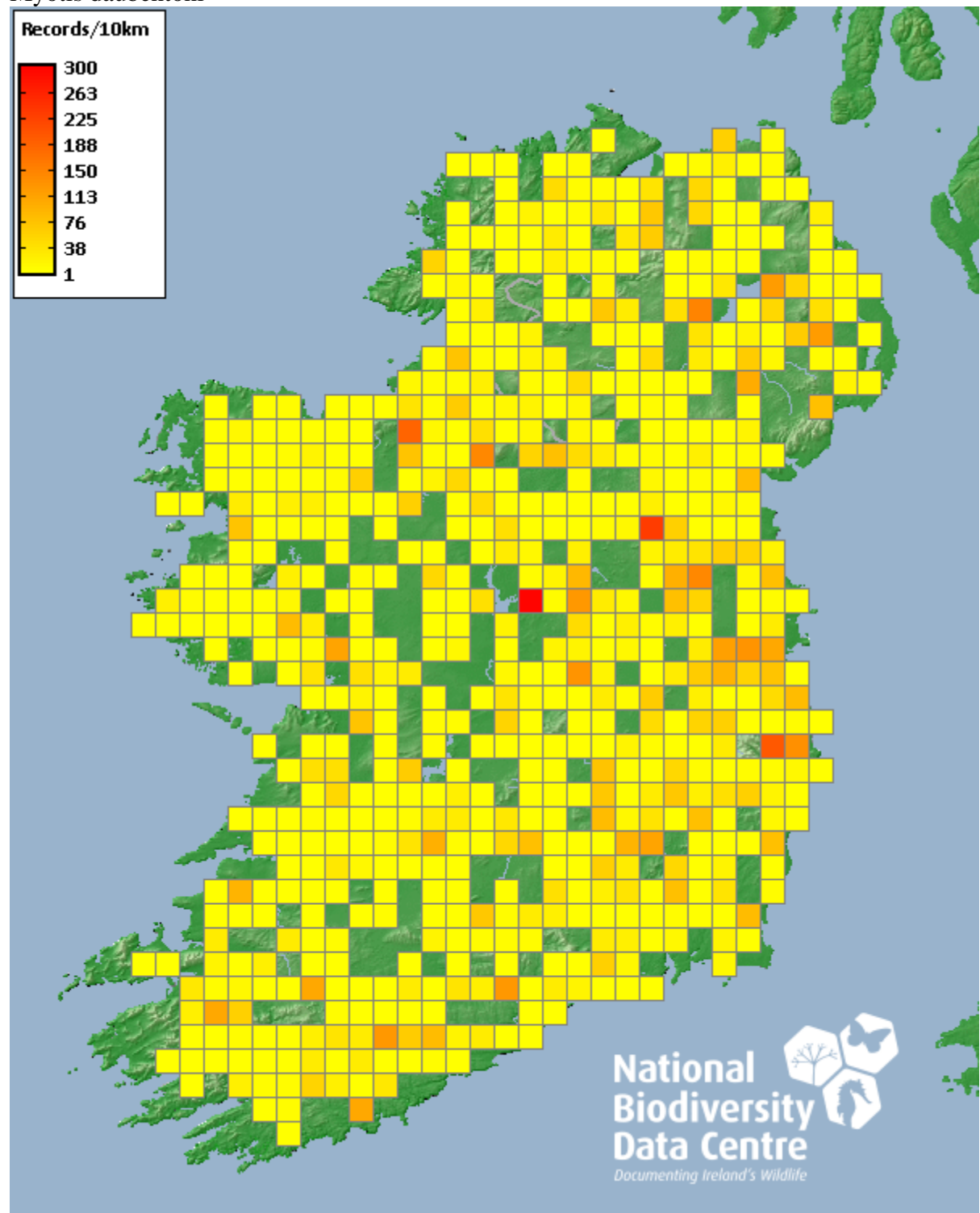
Citation: National Biodiversity Data Centre, Ireland, Lesser Noctule (*Nyctalus leisleri*), image, accessed 24 July 2023, <<https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119464>>

Myotis brandtii



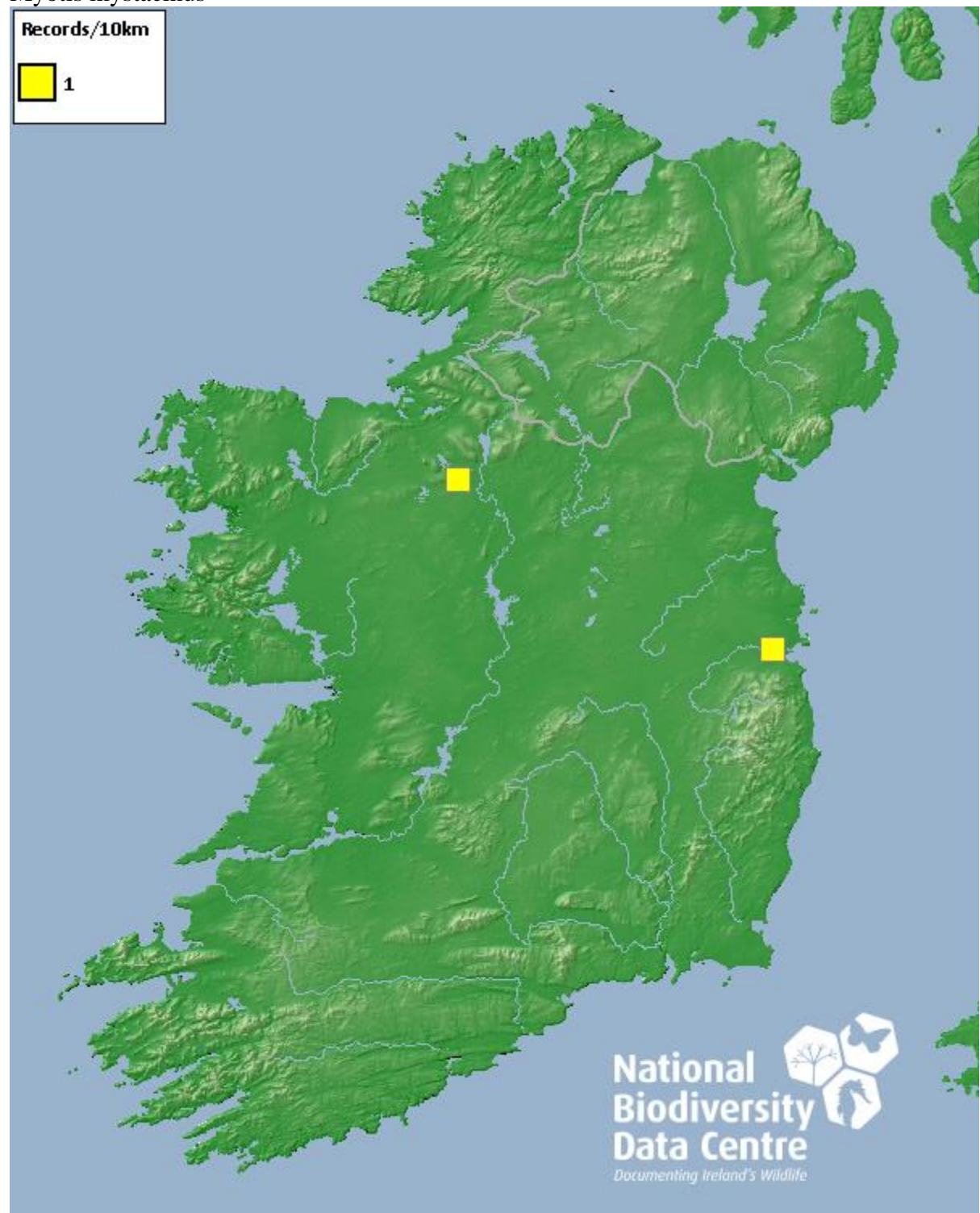
Citation: National Biodiversity Data Centre, Ireland, Brandt's Bat (*Myotis brandtii*), image, accessed 24 July 2023, <<https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119729>>

Myotis daubentoni



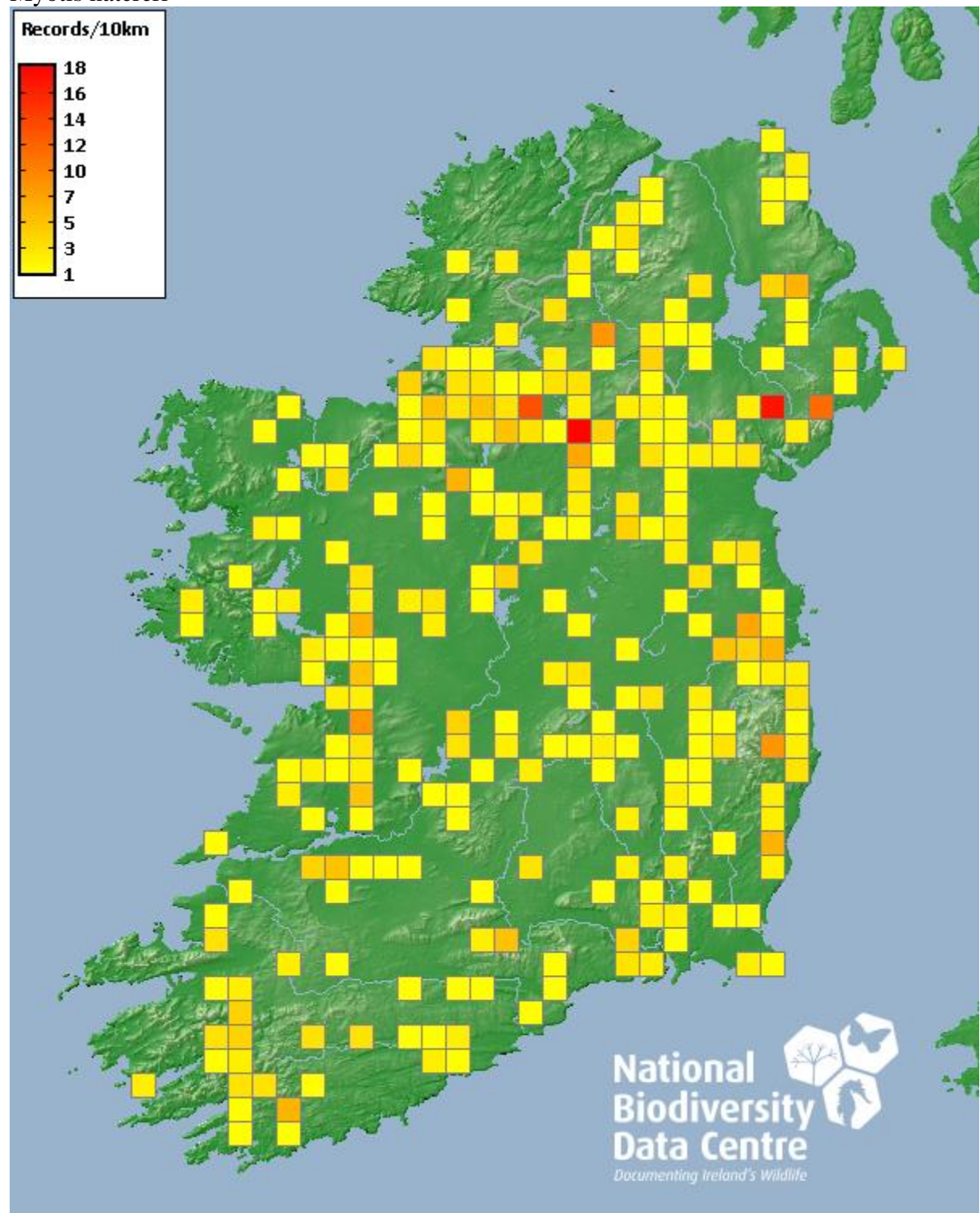
Citation: National Biodiversity Data Centre, Ireland, Daubenton's Bat (*Myotis daubentonii*), image, accessed 24 July 2023,
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Myotis mystacinus



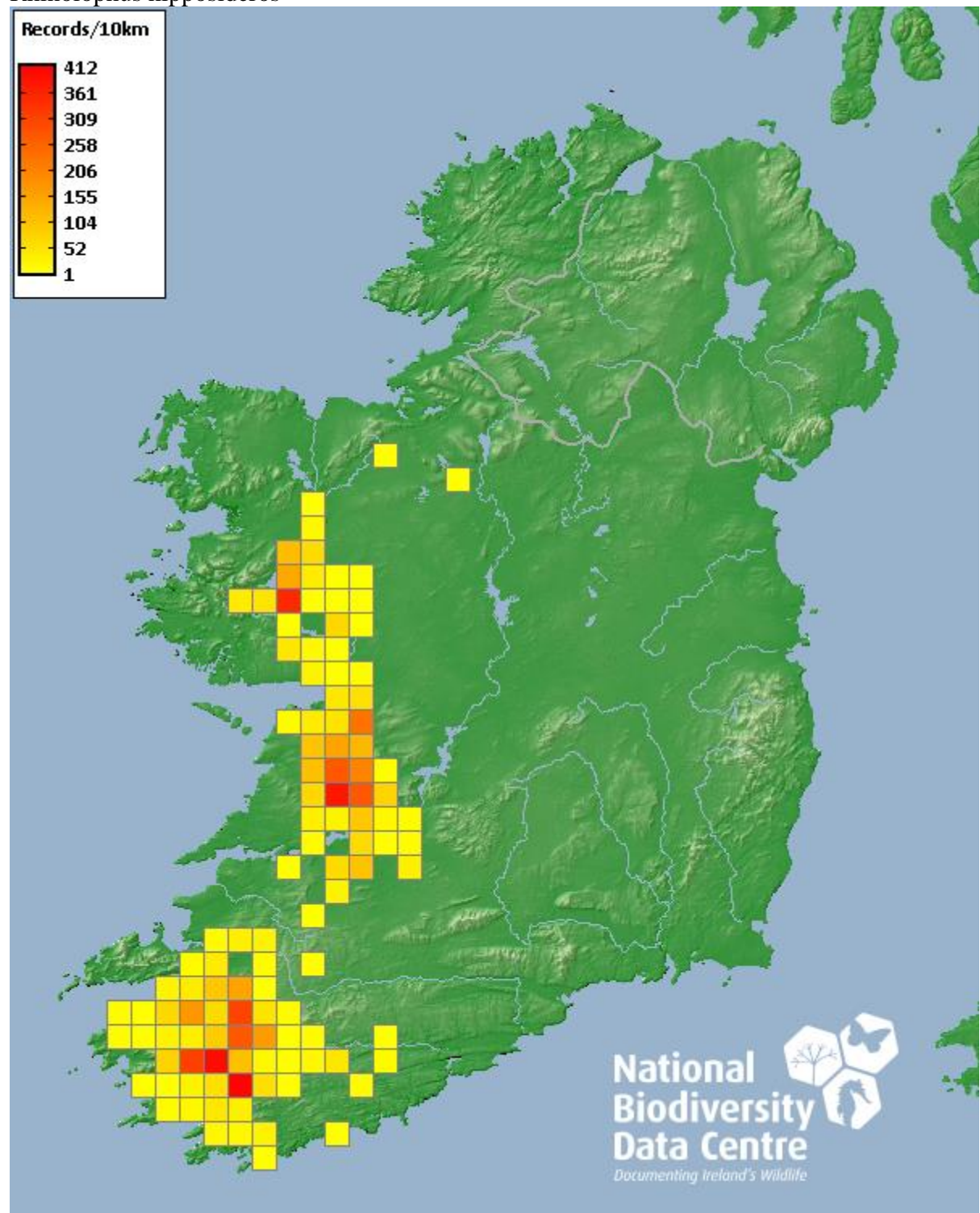
Citation: National Biodiversity Data Centre, Ireland, Whiskered Bat (*Myotis mystacinus*), image, accessed 24 July 2023,
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Myotis nattereri



Citation: National Biodiversity Data Centre, Ireland, Natterer's Bat (*Myotis nattereri*), image, accessed 24 July 2023, <<https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119463>>

Rhinolophus hipposideros



Citation: National Biodiversity Data Centre, Ireland, Lesser Horseshoe Bat (*Rhinolophus hipposideros*), image, accessed 24 July 2023, <<https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119456>>