



**Russell Environmental and
Sustainability Services Limited**

2026

BAT SURVEY REPORT

Clonconane, Old Cratloe Road, Limerick



Russell Environmental & Sustainability
Services Limited

30/07/2026

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SUMMARY

Site:	An active construction site, with standing trees, hedgerows/treelines and stone walls at Old Cratloe road, Limerick.
Structure:	Standing Trees, Hedgerows/Treeline, Stone wall
Co-ordinates:	Longitude: -8.6682672 Latitude: 52.6809556
Bat Species Present:	Common pipistrelle <i>Pipistrellus pipistrellus</i> Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> Nathusius' pipistrelle <i>Pipistrellus nathusii</i> Leisler's Bat <i>Nyctalus leisleri</i> Brown long-eared bat <i>Plecotus auritus</i> Daubenton's bat <i>Myotis daubentonii</i> Natterers bat <i>Myotis nattereri</i>
Roost Location:	Mature trees, Stone Walls
Date:	Dawn and dusk on the 27 th and 28 th of July 2026

2.0 Introduction

2.1 Objective of the proposed works

Planning permission has been granted for Phase 5 of the residential development at Clonconane, Old Cratloe Road, and groundworks have already begun. Two mature Sycamores on the north-east boundary must be removed due to health and safety concerns for construction workers and house owners. In addition, a hedgerow running south-west through the centre of the site cuts directly across the footprint of the proposed houses and must be removed to allow the layout to proceed.. These works are necessary to allow construction to continue safely and in accordance with the approved plans.



Figure 1 Master Plan for Clonconane

2.2 Statement of Authority

Russell Environmental and Sustainability Services Limited (RESS Ltd.) was contracted by Whitebox Limited to complete a bat survey.

Dr Jane Russell-O'Connor holds a PhD in Ecology and a Degree in Ecology and Environmental Science from the University of Wolverhampton as well as a HDip in Science. She has been working in private industry in Ireland for over 12 years providing ecological and environmental services to private developers, architects and engineers as well as local authorities, government agencies, the HSE and the Heritage Council. This has involved vegetation surveys, freshwater surveys, large mammal surveys (including otter) bat surveys, Stage 1 Screening for Appropriate Assessments, NIS, Ecological Impact Assessments, Biodiversity Plans and Environmental Impact Assessments (Biodiversity Chapter). She previously managed a nature reserve and country parks in the UK, where she was trained in bat surveying through the Bat Conservation Trust and conducted surveys as part of her roles as nature reserve manager/country park manager for Wolverhampton City Council and ranger for Northampton County Council. She has more recently completed and passed both the Bat Conservation Ireland online courses. She also lectures part-time in Ecology and Environmental Science at South East Technological University, has published in peer reviewed journals and presented research at international conferences. She has conducted bat surveys in a wide range of buildings and vegetation types.

3.0 Background

3.1 Site Location

The site is located in the townland of Clonconane, positioned between the Old Cratloe Road and the Pass Road in Limerick (Figures 2 and 3). The development area is a former tillage field containing multiple hedgerows and treelines and is currently under construction. The hedgerow adjacent to the Old Cratloe Road is set on a stone-faced boundary wall, supporting hedgerow vegetation and mature trees (Figures 4, 5 and 6). The coordinates are Longitude -8.6682672, Latitude 52.6809556.

3.2 Site Description

The hedgerow/treeline in the south-west of the site is comprised of hawthorn, blackthorn, bramble, elder and ash. The tree of concern for health and safety reasons at the north-west boundary are two Sycamores, with a line of pine behind them that will not be removed. The treeline/hedgerows within the site are comprised of mainly Blackthorn, Hawthorn, Bramble with some Ash.

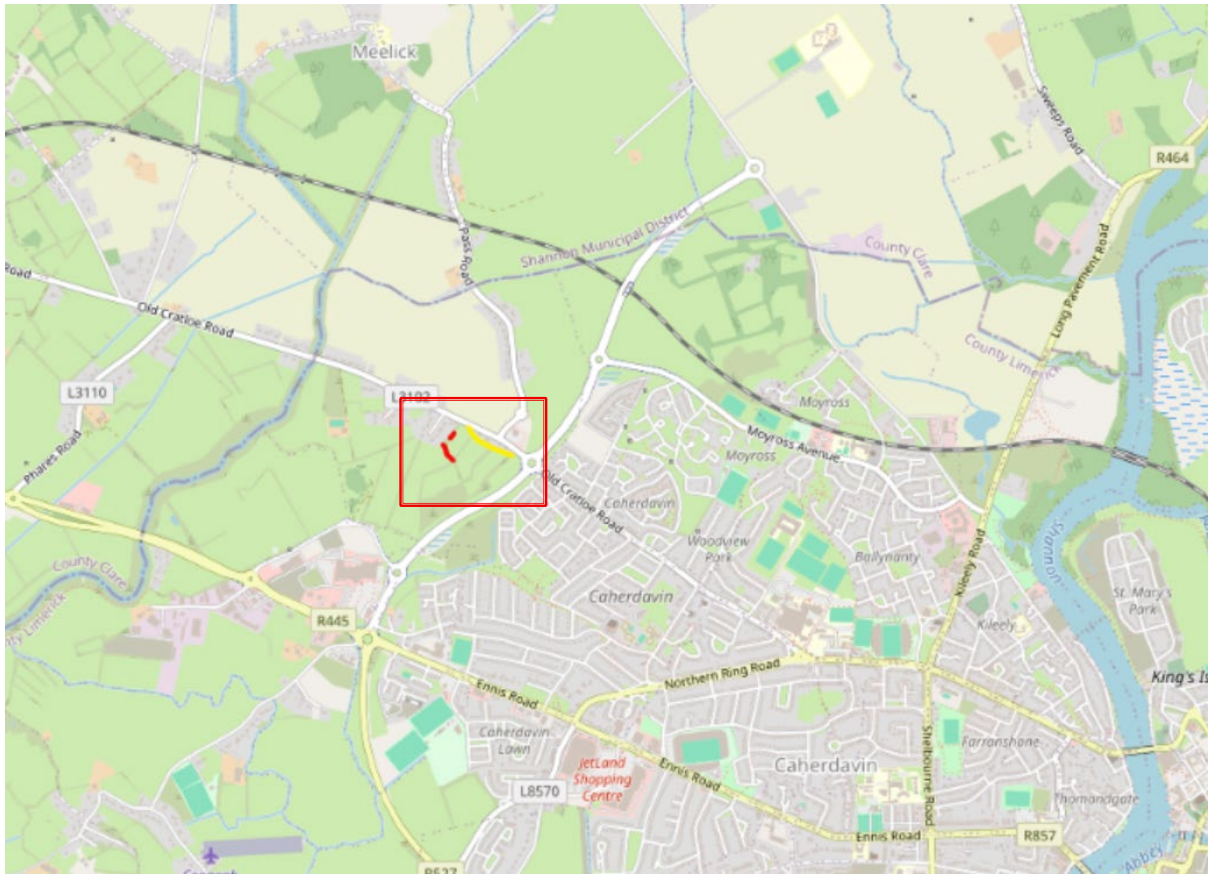


Figure 2 Location of the section of hedgerow/treeline marked in red (EPA, 2025).



Figure 3 Exact hedgerow/treeline location (EPA, 2026)

Yellow dot = individual trees where bat roosts are located that require removal

Red line = Hedgerows that require removal

Blue line = hedgerows where bats are roosting

3.3 Development Description

The planning application has been granted for the proposed Phase 5 at Clonconane, Limerick is for the construction of 99 no. residential units comprising of the following: 42 No. 2 storey, 3 bed, semi-detached units; 36 No. 2 storey, 4 bed, semi-detached units; 4 No.2 storey 4 bed detached units; 1 No. 2 storey, 3 bed detached unit and 2 no. blocks of 2 storey apartment units comprising 8 No. 1 bed apartments and 8 No. 2 bed apartments.

Planning permissions is also sought for the construction of all associated site works to include vehicular and pedestrian connections onto Old Cratloe Road (L3102), roadways, footpaths, green spaces, landscaping and boundary treatments, proposed biodiversity area, together with all associated drainage connection works and all ancillary site works at the townland of Clonconane, at Old Cratloe Road (L3102), Limerick.

This application is part of a larger development whereby planning has already been sought for Phases 1, 2, 3, 4, Creche and the Neighbourhood Centre and Residential Development.

3.4 Brief Description of the Site from the Perspective of Bats

The site is located in a peri-rural location outside Limerick City and is surrounded by occasional dwellings and farmland. The lands are currently under construction, however for planning reasons certain hedgerows must be removed, and for health and safety reasons two Sycamore trees require removal to allow construction works to continue (see in yellow in Figure 3). These trees are in unstable and in danger of falling. In addition, the hedgerows labelled H1 and H2 in Figure 3 also require removal, where bats are roosting and foraging.



Figure 4 Hedgerow/Treeline at the Southwest



Figure 5 Two sycamores of Health and Safety concern



Figure 6 Hedgerow/Treeline adjacent to the road with stone wall

4.0 Bat Survey

4.2 Objective of the Survey

This survey was carried out in response to health and safety concerns relating to the two Sycamore trees and one Oak within the site, where construction works cannot safely proceed with these trees in place. In addition, the hedgerow/treeline cutting through the site must be removed due to planning constraints affecting the layout of the proposed houses. As the works will involve the alteration and removal of trees and hedgerow/treelines, an assessment was required to determine whether these features support, or have the potential to support, bat species.

4.3 Survey Methodology

Survey of fauna was carried out by means of a thorough search within the hedgerow/treeline. The survey methodology was undertaken in accordance with those set out in Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023).

During the dusk and dawn surveys a SSF Bat 2 heterodyne, ultrasonic detector and an Echo Meter Touch 2 Pro (for Android) Bat detector with software app on Samsung Galaxy were used. An Echo Meter Touch 2 Pro (for iPhone) with associated software app, was also used.

A SSF Bat 2 Fledermaus Detector was also used at a range of different frequencies. A DS300 Depstech Digital Borescope, fibre optic, inspection camera was also used to look into small cavities, where necessary.

Vantage points were adjacent to the hedgerow/treeline along the Lacken Road.

The nature and type of habitats present are also indicative of the species likely to be present.

A digital camera was used to document items of interest.

4.3.1 Survey Constraints

The survey was carried out by means of a thorough examination of the site. There were no climatic constraints and seasonal constraints in regard to bat survey as it was undertaken at the beginning of the active bat season. Daytime temperatures reached 22° Celsius and fell to 18° Celsius at dusk and 18° Celsius at dawn. There was no rain during the survey field work.

5.0 Ecological Survey and Site Assessment

The initial survey was of the hedgerows/treelines within the site this consisted of an emergence dusk survey carried out on the 27th of July 2026, commencing at 20:30 and concluding at 22:30. A corresponding dawn re-entry survey was completed on the 28th of July 2026, beginning at 04:30 and finishing at 06:00.

In the surveys conducted there was evidence of roosting sites in the mature trees of the subject site hedgerow/treeline. The sonar results identified that seven species of bat were using the hedgerow/treeline at the time of surveying (Leisler's Bat *Nyctalus leisleri*, Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Nathusius' pipistrelle *Pipistrellus nathusii*, Brown long-eared bat *Plecotus auritus*, Daubenton's bat *Myotis daubentonii* and Natterers bat *Myotis nattereri*). The activity in the trees shown on the sonar readings in Figure 7 and 8.

Throughout the July 2026 dusk and dawn surveys, the hedgerow/treeline was observed by two surveyors for emergence and re-re-entry of bats species.

5.1 Indication of Significance of Site for Bats

During the dusk and dawn surveys, multiple bats were observed flying along and within the treelines and around the two standing trees within the site. This activity was recorded both visually and acoustically, with detections logged on the Echo Meter Touch Pro detectors (Figure 7 and 8). The treelines were used consistently as a commuting corridor, with bats travelling up and down in both directions.

From direct observations of flight paths and the concentration of activity around the stone wall and the treeline adjacent to the road, it is likely that potential roosting locations are present in all areas of concern. While no definitive roosts were confirmed during the surveys, the pattern of activity indicates that the south-western hedgerow/treeline, one of the two Sycamore trees, and the treeline and stone wall adjacent to the Old Cratloe Road hold significance for commuting, foraging, and potentially roosting bats.

Species	Count	Locations
Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	1	Foraging in the environs
Common pipistrelle (<i>Pipistrellus pipistrellus</i>)	97	Foraging in the environs, roosting in the sycamore trees of the hedgerow/treeline
Nathusius' pipistrelle (<i>Pipistrellus nathusii</i>)	4	Foraging in the environs, roosting in the mature coniferous trees of the hedgerow/treeline
Leisler's bat (<i>Nyctalus leisleri</i>)	10	Foraging in the environs, roosting in H1 and H2 trees of the hedgerow/treeline
Brown long-eared bat (<i>Plecotus auritus</i>)	1	Foraging in the environs
Daubenton's bat (<i>Myotis daubentonii</i>)	1	Foraging in the environs
Natterers bat (<i>Myotis nattereri</i>)	11	Foraging in the environs

Table 1 Bat species present within the site based on July 2026 sonar readings. Please note that these are the combined figures for both dawn and dusk, hence the same individuals may be recorded twice (i.e. once at dusk and again at dawn).



Figure 7 The sonogram readings for the hedgerow/treeline and standing trees at Clonconane July 2026



Figure 8 The sonogram readings for the hedgerow/treeline and stone wall at Clonconane July 2026

5.2 Legal Status and Conservation Issues – Bats

All Irish bat species are protected under the Wildlife Act (1976) and Wildlife Amendment Act (2000). Also, the EC 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 of the Habitats Directive, and the lesser horseshoe bat is further listed under Annex II.

6.0 Evidence to Support the Derogation Tests

As three species of bat were roosting in the trees (Common Pipistrelle *Pipistrellus pipistrellus*, Nathusius' pipistrelle *Pipistrellus nathusii* and Leisler's Bat *Nyctalus leisleri*) the works be required remove the trees require derogation licence.

Test 1: The reason for the derogation is (c) in the interests of public health and public safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.

i) In the interests of public health and public safety:

Two mature Sycamore located along the north-west boundary of the Clonconane site has been assessed as structurally unstable and at risk of falling. While their position does not present a direct hazard to pedestrians, it poses a significant safety risk to construction personnel who will be required to work in close proximity to it during the housing works and once the houses are constructed the trees may fall into the dwellings. The two trees' compromised condition, combined with their height and lean, means that any failure could result in serious injury to workers or damage to machinery and materials as well as home owners once construction has been completed. As a result, the planned housing works cannot safely continue until the Sycamores are removed. Thier removal is therefore necessary in the interests of public health and public safety.

In addition to the sycamores, two hedgerow/treelines (H1 and H2 Figure 3) within the site must also be removed. One hedgerow cuts directly through the development, obstructing the formation of housing plots. A second hedgerow/treeline runs along the western boundary of the site. Retaining either feature would prevent essential groundworks from proceeding and would compromise the safe and functional delivery of the permitted housing layout.

The removal of the Sycamores and the two hedgerow/treelines are therefore necessary in the interests of public health and public safety, and to allow the approved housing development to proceed. As these features support commuting,

foraging and potential roosting opportunities for bats, a derogation licence is required to permit their removal in accordance with wildlife legislation.

ii) For other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.

If the derogation licences are not granted then the construction works for which planning has been granted would be halted and a total re-design of the development and new application for planning would have to be made, resulting in significant delays and the reduction of the number of much needed houses to be built (including social housing).

Test 2 Absence of a Satisfactory Alternative Solution

Table 3 details the alternative solutions and illustrates that these are unsatisfactory

Alternative Solution	Reasons for "Unsatisfactory"
Do-Nothing 1	<p>The "do-nothing" option would prevent the commencement of the permitted housing works at Clonconane. The sycamores at the north-west boundary, along with two internal hedgerow/treelines, are located directly within the footprint of the approved housing layout. The two sycamores are at risk from falling and are a danger for the health and safety of construction personnel and future home owners. Retaining these features would obstruct essential groundworks, access routes, building positions, and could potentially cause harm from falling. As a result, the development could not proceed, preventing delivery of approved housing units and associated public benefits. This option is therefore not viable.</p> <p>Should the two sycamore trees be left then there would eventually be a loss of roosts as these trees would fall anyway.</p>
Do-nothing 2	<p>If the derogation licences are not granted then the construction works for which planning has been granted would be halted and a total re-design of the development and new application for planning would have to be made. This would result in significant delays and the</p>

	reduction of the number of much needed houses to be built (including social housing).
Retain All Vegetation and Redesign the Housing Layout Around It	Re-designing to retain the sycamores and the two hedgerow/treelines is not feasible. These features lie within areas designated for housing plots, internal roads, and service corridors. Any redesign would require significant reconfiguration of the layout, resulting in loss of units, non-compliance with planning requirements, and inefficient site use. Furthermore, the sycamores are structurally compromised and pose a safety risk to construction workers, meaning retention would not remove the hazard. This alternative is therefore unsatisfactory.
Retain Vegetation with Protective Fencing or Exclusion Zones	Protective fencing or exclusion zones would not resolve the issues. The hedgerow/treelines physically obstruct the areas where foundations, utilities, and access roads must be installed. Their retention would prevent machinery and personnel from operating within required working zones. In addition, fencing cannot mitigate the safety risk posed by the unstable sycamore, as workers would still be required to operate within its fall radius. This option cannot provide a safe or functional working environment and is therefore unsuitable.

Table 3 Alternative Solutions

Test 3 Impact of a Derogation on Conservation Status

The removal of the mature sycamores and the two hedgerow/treelines within the Clonconane site is not expected to have any detrimental impact on the conservation status of the bat species potentially using the area as the surrounding landscape contains extensive alternative commuting and foraging habitat, including treelines, hedgerows, and woodland edges that will remain unaffected by the works. Any potential roosting features within the sycamores or hedgerow/treelines will be subject to pre-works inspection, and removal will be undertaken under licence with strict adherence to mitigation protocols.

7.0 Monitoring the Impacts of the Derogation

No works should be carried out until a derogation licence is secured.

7.1 Mitigation Measures

To protect the bats present in the treeline/hedgerow the following mitigation measures must be implemented:

Measure 1: timing of maintenance/removal works

Work must be undertaken outside of the hibernation period (November 1st.to 31st March) and maternity period (1st if May to 31st of August) (See Figure 8).

Measure 2: Tree works

Tree works are to be carried out by a licenced tree surgeon and under the supervision of a qualified ecologist.

Any cutting of branches shall be done carefully with the possibility that individual bats may be found. If discovered, the animals shall be retained in a box until dusk and released on site.

Any branches that are cut should be sectioned and are to remain on the ground for up to 4 days to allow any bats contained within in them to move to another roost site.

Measure 3: rodenticides

No rodenticide usage in or near the hedgerow/treeline.

Measure 4:

All construction activities near the hedgerow/treeline should only take place during daylight hours.

Measure 5:

Any lighting used for construction should be directed away from the hedgerow/treeline.

Measure 6: bat boxes

Bat boxes are suitable for both species of bats found in the environs and may be erected on trees.

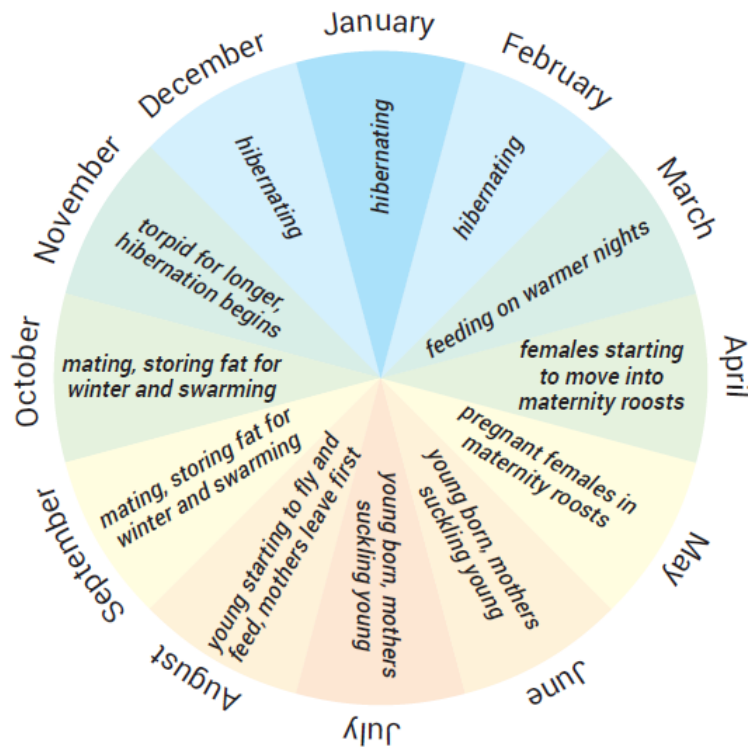


Figure 8 life cycle (Collins, 2023)

7.2 Monitoring and Verification of the Derogation

As detailed in Mitigation Measure 1, the timing of the works will be when there are no young or pregnant females roosting or during the hibernation period when individuals are unable to relocate to another roost during the cutting back activities.

Furthermore, as detailed in Mitigation measure 2, a qualified ecologist will be present on the site throughout the tree works to ensure that they are carried out correctly.

Following the completion of the tree works, a further dusk and dawn survey should be completed for the hedgerow and the nearby hedgerow on the other side of Old Cratloe road to ensure that the numbers of individuals for each species have not been permanently affected by the tree works. The findings of this survey will be submitted to NPWS.

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Appendices

Appendix i

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.

Appendix ii

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

Natterer's bat *Myotis nattereri*

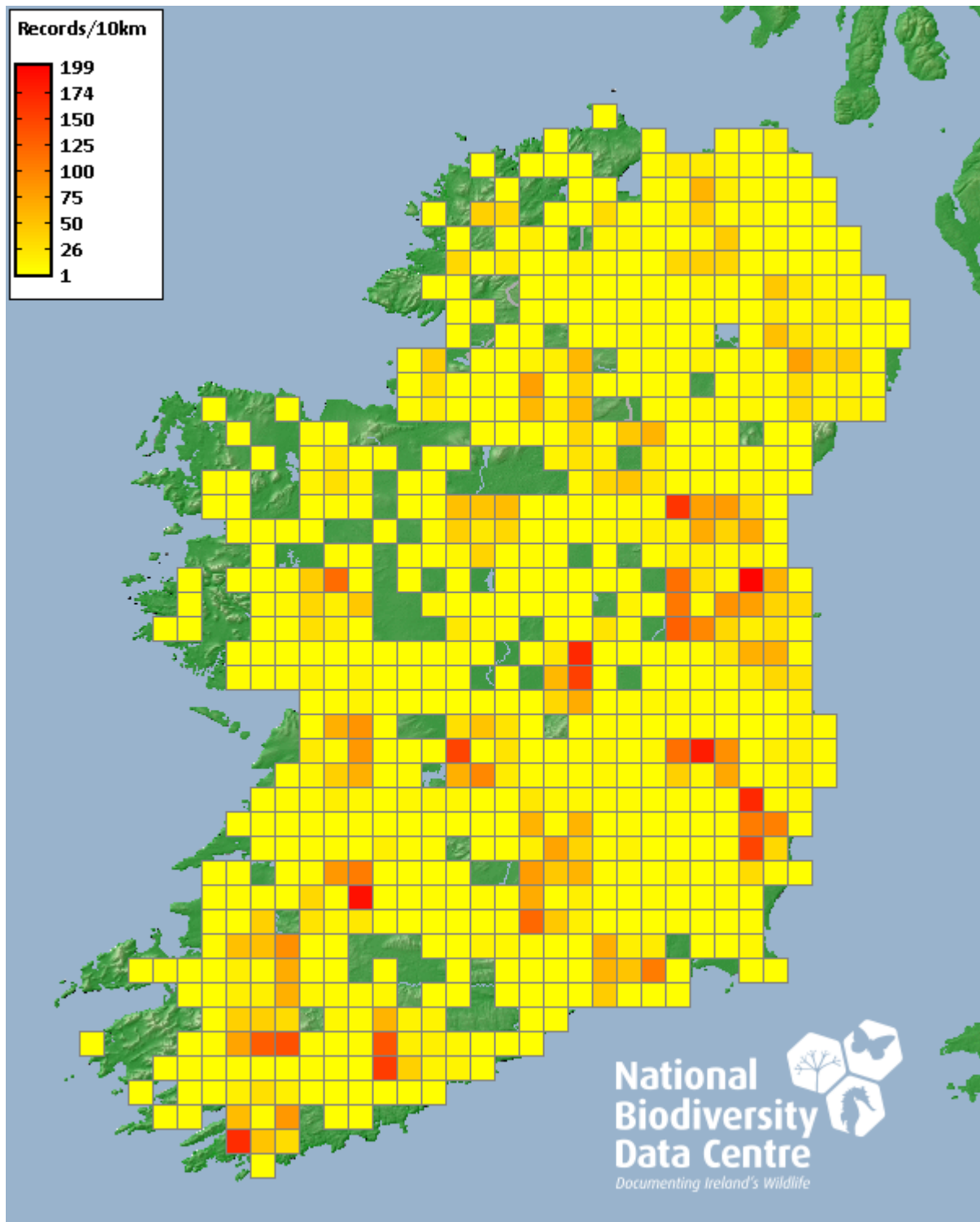
This species has a slow to medium flight, usually over trees but sometimes over water. It usually follows hedges and treelines to its feeding sites, consuming flies, moths,

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.

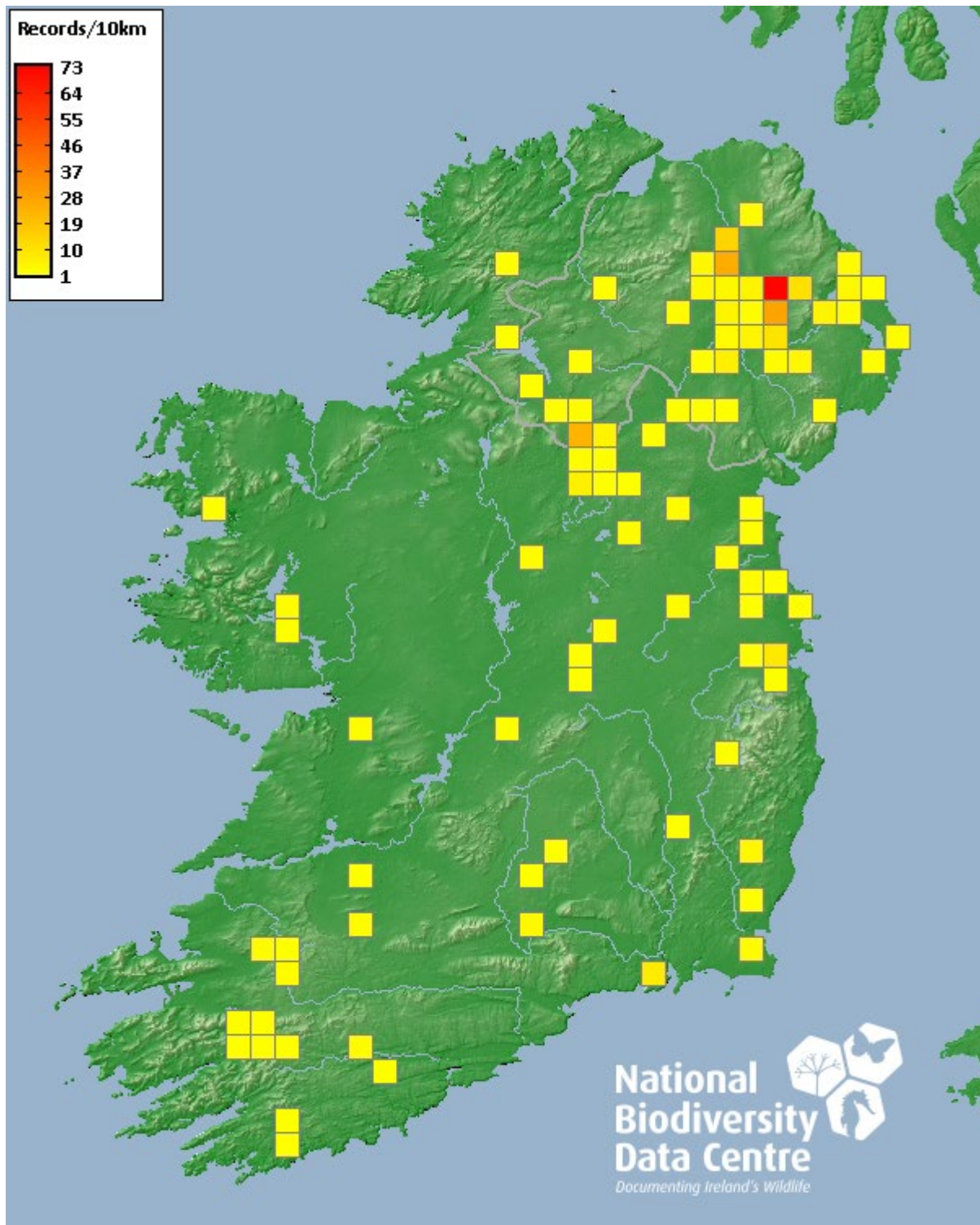
Daubenton's bat *Myotis daubentonii*.

Often called the 'water bat', this species is easily recognised in flight by its low, level flight a few centimetres above the surface of lakes, slow-moving rivers and canals. It skims like a hovercraft above the water in search of caddisflies, mayflies and midges, and may even scoop prey from the water surface using its big feet. Many other bats feed over lakes and rivers, but none has such a close association with water as the Daubenton's. The Daubenton's bat can even swim if it makes a mistake and ends up in the water. Daubenton's bats roost under stone bridges, in ruins, canal tunnels, trees and damp caves.

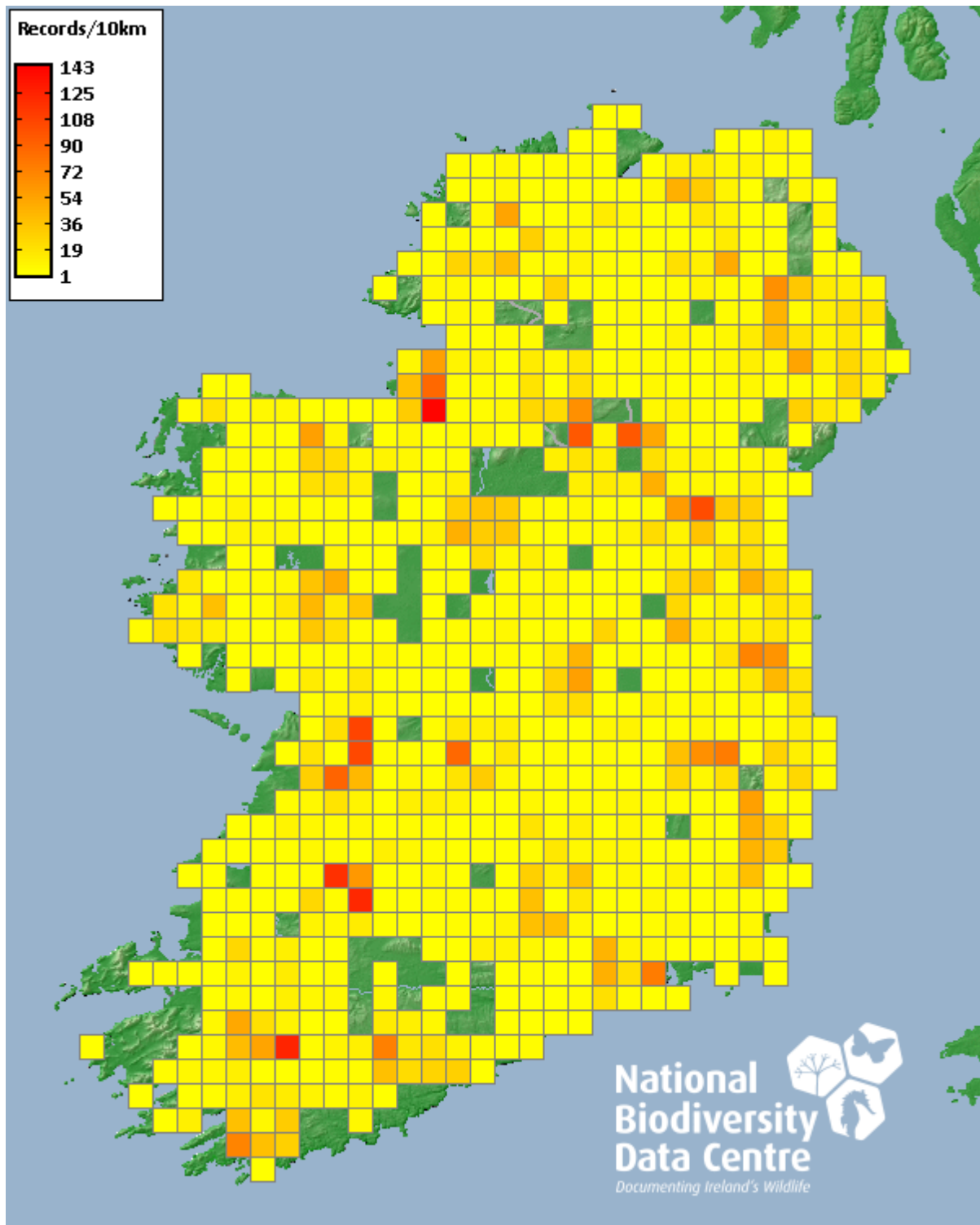
The Daubenton's bat annual trend is monitored using a volunteer-based programme – the All-Ireland Daubenton's Bat Waterways Survey. This scheme has been ongoing since 2006 and the Daubenton's bat trend has been reasonably stable since this time.

Pipistrellus pipistrellus

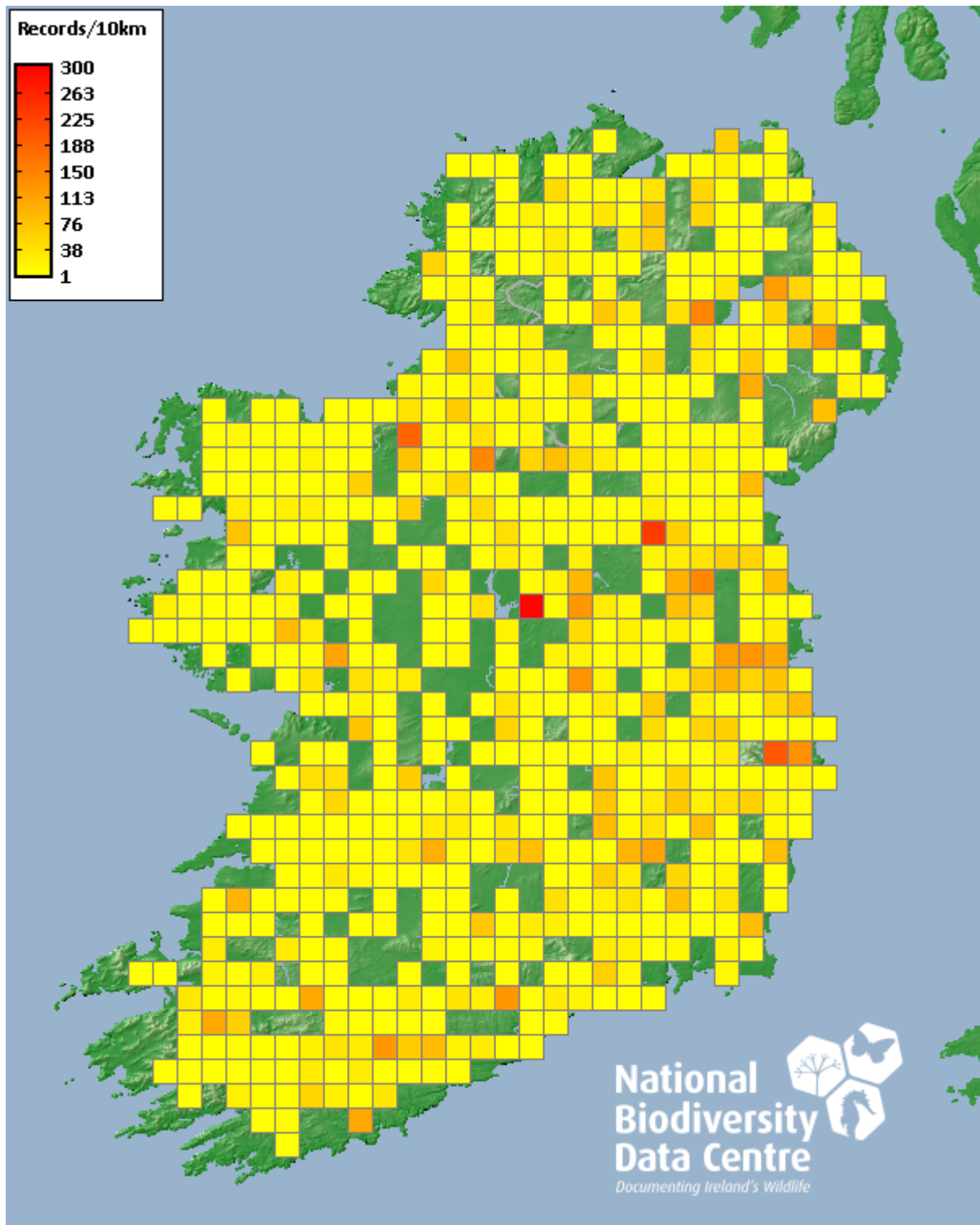
Citation: National Biodiversity Data Centre, Ireland, Pipistrelle (*Pipistrellus pipistrellus* sensu lato), image, accessed 24 July 2023, <https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119763>

Pipistrellus nathusii

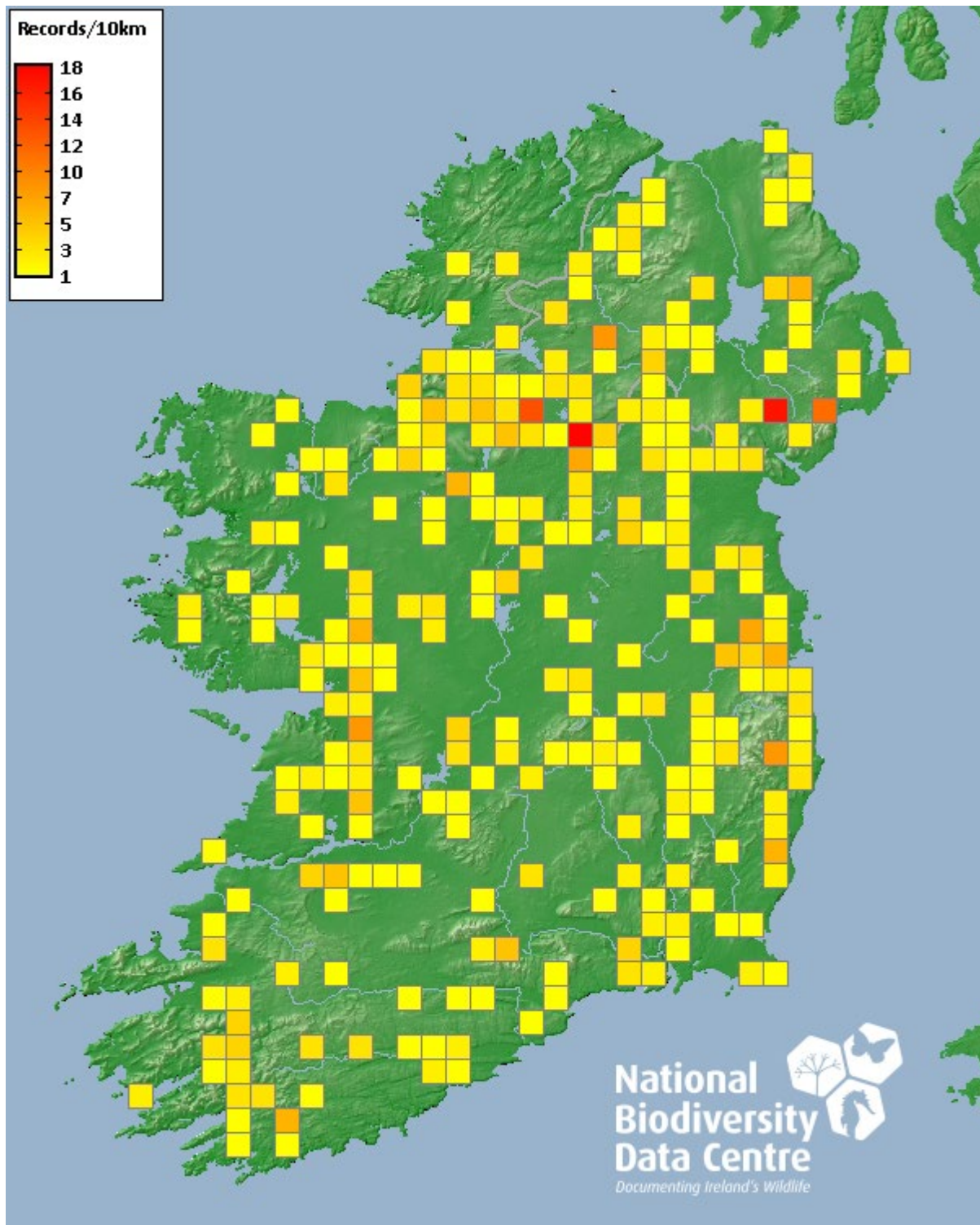
Citation: National Biodiversity Data Centre, Ireland, Nathusius's Pipistrelle (*Pipistrellus nathusii*), image, accessed 24 July 2023,
<<https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119466>>

Pipistrellus pygmaeus

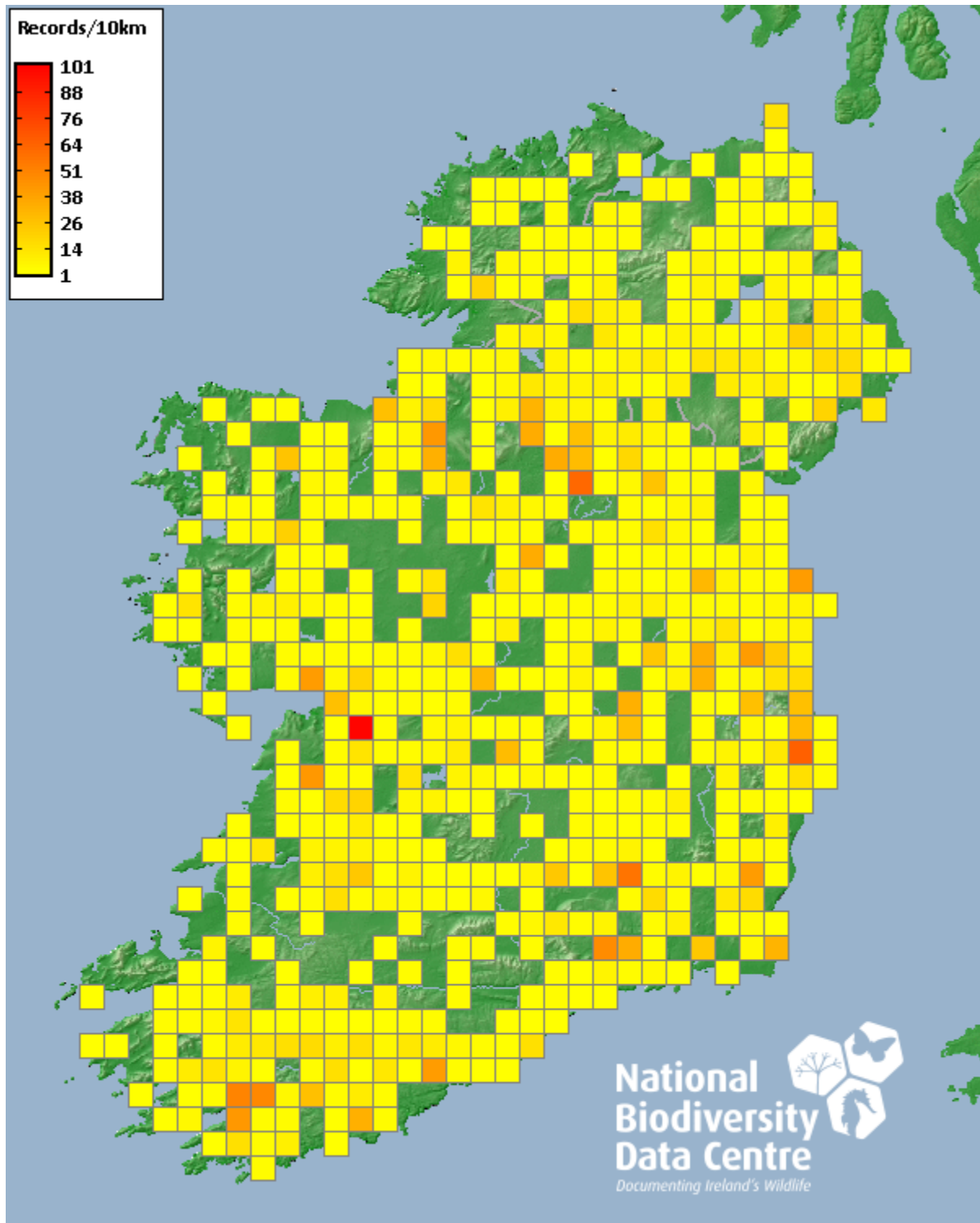
Citation: National Biodiversity Data Centre, Ireland, Soprano Pipistrelle (*Pipistrellus pygmaeus*), image, accessed 24 July 2023,
<<https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119441>>

Myotis daubentoni

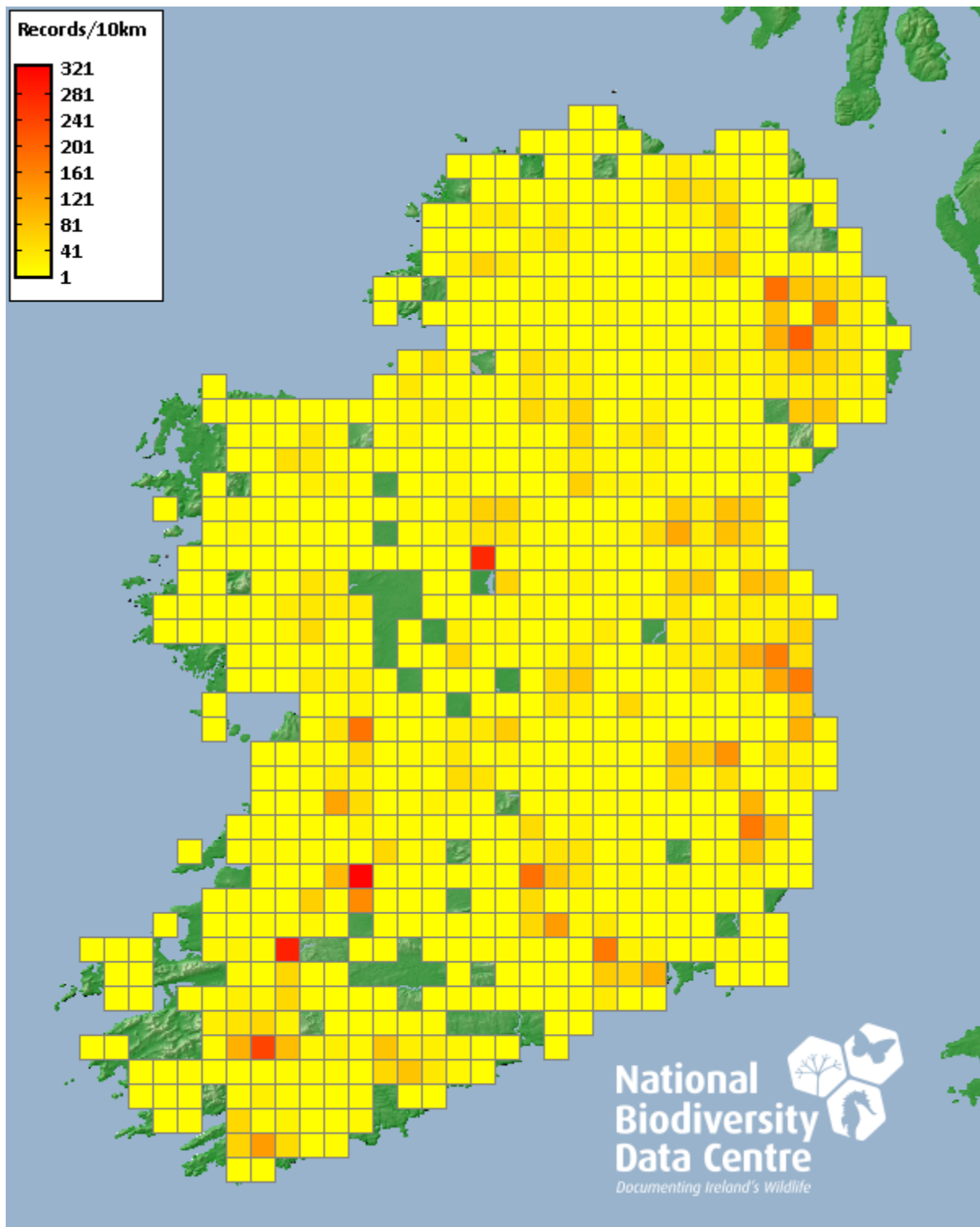
Citation: National Biodiversity Data Centre, Ireland, Daubenton's Bat (*Myotis daubentonii*), image, accessed 24 July 2023,
<<https://maps.biodiversityireland.ie/Species/TerrestrialDistributionMapPrintSize/119730>>

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>>

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/119463>>

Nyctalus leisleri

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