

BATLAS 2020

County Kilkenny



Common pipistrelle *Pipistrellus pipistrellus* (Paul van Hoof)

Bat Conservation Ireland
www.batconservationireland.org



BATLAS 2020

County Kilkenny

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BATLAS 2020 – A Bat Distribution Survey

Final Report 2016-2018

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**An Roinn Cultúir,
Oidhreacht agus Gaeltachta**
Department of Culture,
Heritage and the Gaeltacht

Executive Summary

BATLAS 2020 was an Ireland-wide bat survey distribution survey primarily funded by the National Parks and Wildlife Service with additional grants from several local authorities and district councils in the Republic of Ireland and Northern Ireland.

It follows on from the BATLAS 2010 project which was completed in 2008 and 2009 and was the first distribution survey of its kind for bats in Ireland. BATLAS 2010 focused on the population distribution of four target species: common pipistrelle, soprano pipistrelle, Daubenton's bat and Leisler's bat and used a team of skilled 'citizen science' volunteers who surveyed 2 to 3 suitable sites within each 10 x 10 km survey square, recording the presence or absence of the target bat species along with a suite of environmental variables (n=1,014 10 km squares on the island).

Methods for BATLAS 2020 were broadly similar to its predecessor, with the most significant change being that BATLAS 2020 incorporated more intensive levels of surveying, where possible, at a finer scale of resolution.

Thirty-seven training courses for BATLAS 2020 were delivered throughout the island of Ireland. Two hundred and thirty seven people registered their interest in participating and 121 volunteers actively surveyed and submitted data. This represented a 95% increase in volunteer participation from BATLAS 2010.

Coverage also increased for the BATLAS 2020 survey from 751 to 869 10km² squares (representing 86% of the island). A total of 3,621 survey sites were surveyed for BATLAS 2020 which was double the number of sites surveyed for BATLAS 2010. Detection rates across target species followed a similar order to those for the BATLAS 2010 study with soprano pipistrelle being the most commonly detected, followed by common pipistrelle, Leisler's bat and Daubenton's bat.

This report summarises the BATLAS 2020 data for the named county. Additional data held by Bat Conservation Ireland on the National Bat Database, including the Irish Bat Monitoring Programme records and ad hoc bat detector records (2010-2019) are also included in the dataset provided to the funding local authority.

It is envisaged that this data will provide baseline information on local bat populations within the local authority's jurisdiction and prove useful for biodiversity action plans, management of important bat habitats such as waterways and parklands, and for planning matters.

Kilkenny County Council, through the heritage office, provided funding for BATLAS 2020.



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1. Introduction

1.1 BATLAS 2010

BATLAS 2010 was Ireland's first systematic bat distribution recording scheme that followed a standardised methodology. It was devised by Bat Conservation Ireland in 2007 and was funded in the Republic of Ireland by the National Parks and Wildlife Service (NPWS) with assistance from the Heritage Council and in Northern Ireland by the NIEA. It was conducted during two field seasons (2008 and 2009) in the Republic of Ireland (Carden *et al.*, 2010) and in 2009 in Northern Ireland (Hopkirk *et al.*, 2010) to ascertain the distribution of four common target species - common pipistrelle, soprano pipistrelle, Daubenton's bat and Leisler's bat.

A total of 647 10km squares and 1,693 points were surveyed in the Republic of Ireland representing 71.6% of the total number of 10km squares in the country (n=904 10 km in the republic of Ireland) (Carden *et al.*, 2010). Squares that were not surveyed included some off-shore islands and parts of west Kerry, south-west Cork, east Dublin, west Mayo, north Sligo and north Kilkenny. Bats were present in 591 and absent from 56 of the 647 10km squares surveyed in the Republic of Ireland. Data for a total of 131 10km squares were collated for the BATLAS 2010 Northern Ireland project, some of which overlapped with squares located in the Republic of Ireland. A total of 751 10km squares were surveyed across the island of Ireland as part of BATLAS 2010.

An All-Ireland bat distribution dataset was produced as a result of BATLAS 2010. This helped to build on our knowledge of the factors dictating bat habitat preferences, which is crucial in devising suitable conservation policies for bats. The data contributed to the Bat Conservation Ireland Landscape Model (Lundy *et al.*, 2011) which predicted national bat distribution based on large scale habitat characteristics.

Secondly the resulting BATLAS 2010 maps revealed previously unknown patterns in bat distribution across the island. The data were used at a local, regional and national level including reporting in a European context (Article 17 Reporting 2007-2012 for the Republic Of Ireland). Ultimately, the survey was an encouraging learning tool and provided both a baseline for comparing changes in bat distribution and a methodological template to be improved and refined for future national surveys of this type.

1.2 BATLAS 2020

The proposed approach for BATLAS 2020 was similar to that of BATLAS 2010, however with increased numbers of survey sites and increased training and recruitment of volunteer citizen scientists. In addition to re-surveying the previous BATLAS 2010 sites, it was proposed for BATLAS 2020 that additional survey sites should be chosen and surveyed in a systematic fashion; at least 2 sites in each of the four 5km x 5km quadrants within a 10km x 10km square would be surveyed (i.e. at least 8 sites in each 10km square would be surveyed), where possible. The increased survey intensity would result in production of more detailed distribution maps and would be compatible with the 5km resolution of Bat Conservation Ireland's Bat Landscape Model.

The BATLAS 2020 key objectives were as follows:-

- Recruit a team of 'citizen science' volunteers
- Provide both in-person and remote training resources for volunteer teams
- Survey at least 80% of the 1014 10km squares the country (i.e. > 811)

- Survey a selection of off-shore islands
- Provide bat detectors, where required.

For each survey square, the primary goal was to:-

- Survey at least two sites within each of the four 5km² quadrants (i.e. North-West, North-East, South-West, South-East) recording the presence/absence of the four target species.
- Where possible, re-survey previous BATLAS 2010 sites taking into account factors such as accessibility, habitat suitability, potential mapping errors and suitability for future BATLAS surveys (new sites to be selected over 2010 sites if there were any more suitable options).

Volunteers were invited to select their own survey square(s). Upon registration (online portal), participants were sent a digital volunteer pack containing all the relevant information required to complete the survey which contained:

- A detailed BATLAS 2020 Manual (please consult this manual for detailed BATLAS 2020 methodology). This was updated annually and included detailed survey instructions and information on how to submit results.
- A set of Ordnance Survey maps at various scales including:
 - An overview map of the assigned 10km grid square, divided into the four 5km quadrants, and showing the locations of any BATLAS 2010 sites.
 - Finer scale 1km maps of any BATLAS 2010 sites within the 10km square.
- Survey record sheets.

1.3 Local Authority Funding

Primary funding for BATLAS 2020 came from the NPWS (National Bat Distribution Project SPU-C005-2016). However, to ensure adequate training facilities were available for volunteers (i.e. training courses and availability of bat detectors), additional funding was sought from local authorities. This additional funding resulted in the following:

- A combined pool of 26 heterodyne bat detectors were available for loan to BATLAS 2020 volunteers in 2016-2018 in the Republic of Ireland with an additional five detectors available in Northern Ireland through the Northern Ireland Bat Group (NIBG). A database was set up to manage bat detector loans to volunteers in April 2017. Thirty-four volunteers availed of bat detector loans throughout 2016-2018.
- Extensive training resources were provide, including a BATLAS 2020 training talk (~60 minute Powerpoint presentation), was made available.
- A total of 37 BATLAS 2020 training nights were delivered across the island in 2016-2018 by the team of seven trainers.

(See Appendix 1 for more details).

2. BATLAS 2020 Results – All Ireland

BATLAS 2020 began in 2015 when it was piloted and this was followed by three years of intensive surveying (2016-2018). The 2019 survey season was used as an opportunity to fill in gaps in the survey map. BCIreland received data for 3,621 discrete survey sites across the island of Ireland. A total of 869 10km squares were surveyed which represents 86% of the island, and this included surveys of 11 off-shore islands.

Table 1 lists the total number of records for each BATLAS 2020 target bat species in the 2015-2019 BATLAS 2020 dataset. Soprano pipistrelle was the most frequently recorded bat species (68% of the total number of survey sites) followed by common pipistrelle, Leisler’s bat and Daubenton’s bat. This was similar to the results of BATLAS 2010.

Records for the five other resident bat species are presented in Table 1. While these additional bat species were not targeted by the BATLAS 2020 methodology, surveyors were encouraged to make note of additional bat species when present. Brown long-eared bat was the most frequently recorded non-target bat species followed by Natterer’s bat.

Table 1: Total number of records for BATLAS 2020 Target Bat Species and Non Target Bat Species (2015-2019 dataset).

Target Bat Species	No. of Records (% of total survey sites)	Non-Target Bat Species	No. of Records
Common pipistrelle	1,977 (55%)	Brown long-eared bat	134
Soprano pipistrelle	2,465 (68%)	Natterer’s bat	78
Leisler’s bat	1,304 (36%)	Whiskered bat	34
Daubenton’s bat	1,105 (31%)	Nathusius’ pipistrelle	55
		Lesser horseshoe bat	14

The following maps show the All Ireland distribution of the four BATLAS 2020 target bat species (Figure 1).

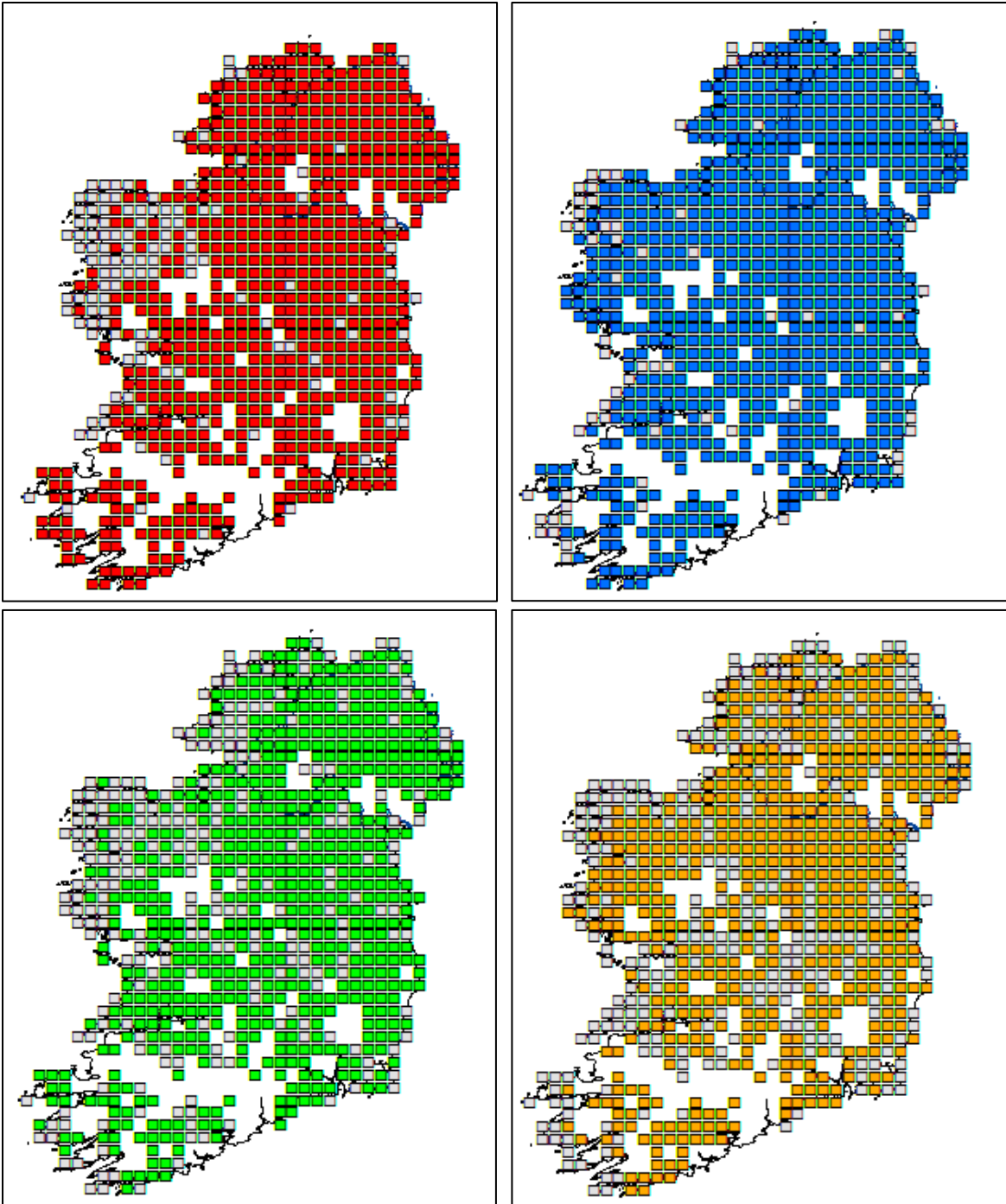


Figure 1: BATLAS 2020 10km distribution maps for the four target bat species: Red = Common pipistrelle; Blue = Soprano pipistrelle; Green = Leisler's bat & Orange = Daubenton's bat. Grey Squares indicate that the 10km square was surveyed but the specific bat species was not recorded.

3. County Kilkenny Bat Dataset

3.1 BATLAS 2020

The majority of 10km squares located in the county were surveyed. The data set for County Kilkenny is provided in an excel file suitable for GIS mapping. The BATLAS 2020 dataset includes 85 discrete grid referenced survey points across the county. Table 2 provides a breakdown of these results. No bats were recorded at 7 (8%) of the survey points visited during BATLAS 2020 surveys (See Excel file for reference). Figure 2a-d presents the results for the four target bat species.

Table 2: Total number of records for BATLAS 2020 Target Bat Species and Non Target Bat Species (2015-2019 dataset) for County Kilkenny.

Target Bat Species	No. of Records (% of survey points)	Non-Target Bat Species	No. of Records (% of survey points)
Common pipistrelle	53 (62%)	Brown long-eared bat	11 (13%)
Soprano pipistrelle	54 (63.5%)	Natterer's bat	8 (9%)
Leisler's bat	37 (43.5%)	Whiskered bat	0
Daubenton's bat	13 (15%)	Nathusius' pipistrelle	2 (2%)
		Lesser horseshoe bat	Not resident in Co. Kilkenny

3.2 Additional Dataset

Additional data provided in the Excel file (named County Kilkenny_Final) includes the following:

- Irish Bat Monitoring Data
- Ad Hoc Bat Records.

Please note, data collated by the Irish Bat Monitoring Programme involves repeated surveys and therefore the dataset includes multiple survey dates for the same site (e.g. Brown long-eared roost located in Ennisnag Church of Ireland).

3.3 County Kilkenny Dataset

A total of 415 bat records are provided in the Excel file (named County Kilkenny_Final). This dataset includes "unidentified bat" records as well as records not identified to species level (e.g. *Pipistrellus* species group). Table 3 provides a breakdown of the full dataset (2010-2019) for County Kilkenny to bat species level and all of these records are displayed on Figures 3.

Table 3: Total number of records for 2015-2019 dataset for County Kilkenny.

Target Bat Species	No. of Records	Non-Target Bat Species	No. of Records
Common pipistrelle	83	Brown long-eared bat	43
Soprano pipistrelle	96	Natterer's bat	17
Leisler's bat	67	Whiskered bat	0
Daubenton's bat	86	Nathusius' pipistrelle	7

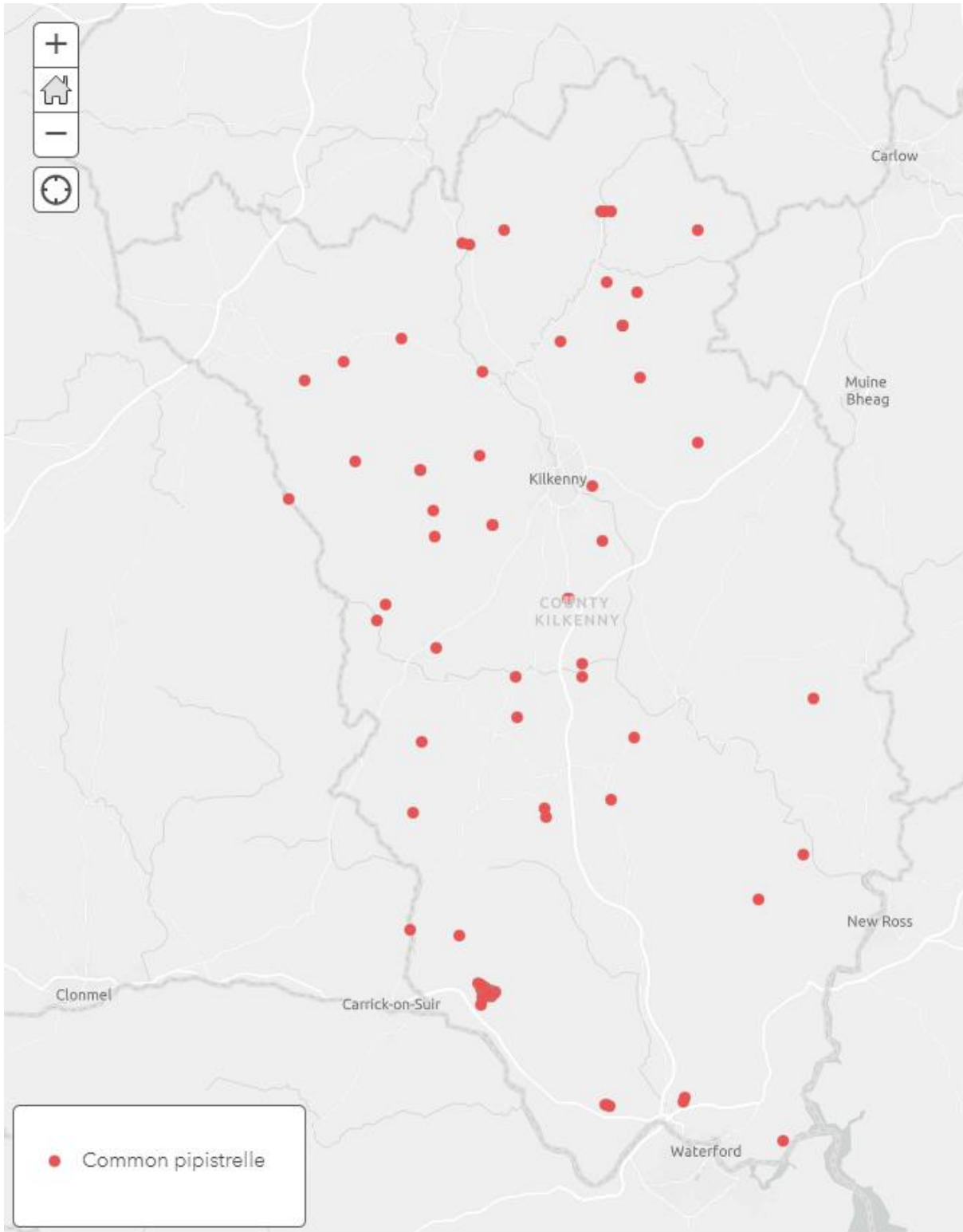


Figure 2a: Common pipistrelle records collated by BATLAS 2020 in County Kilkenny.

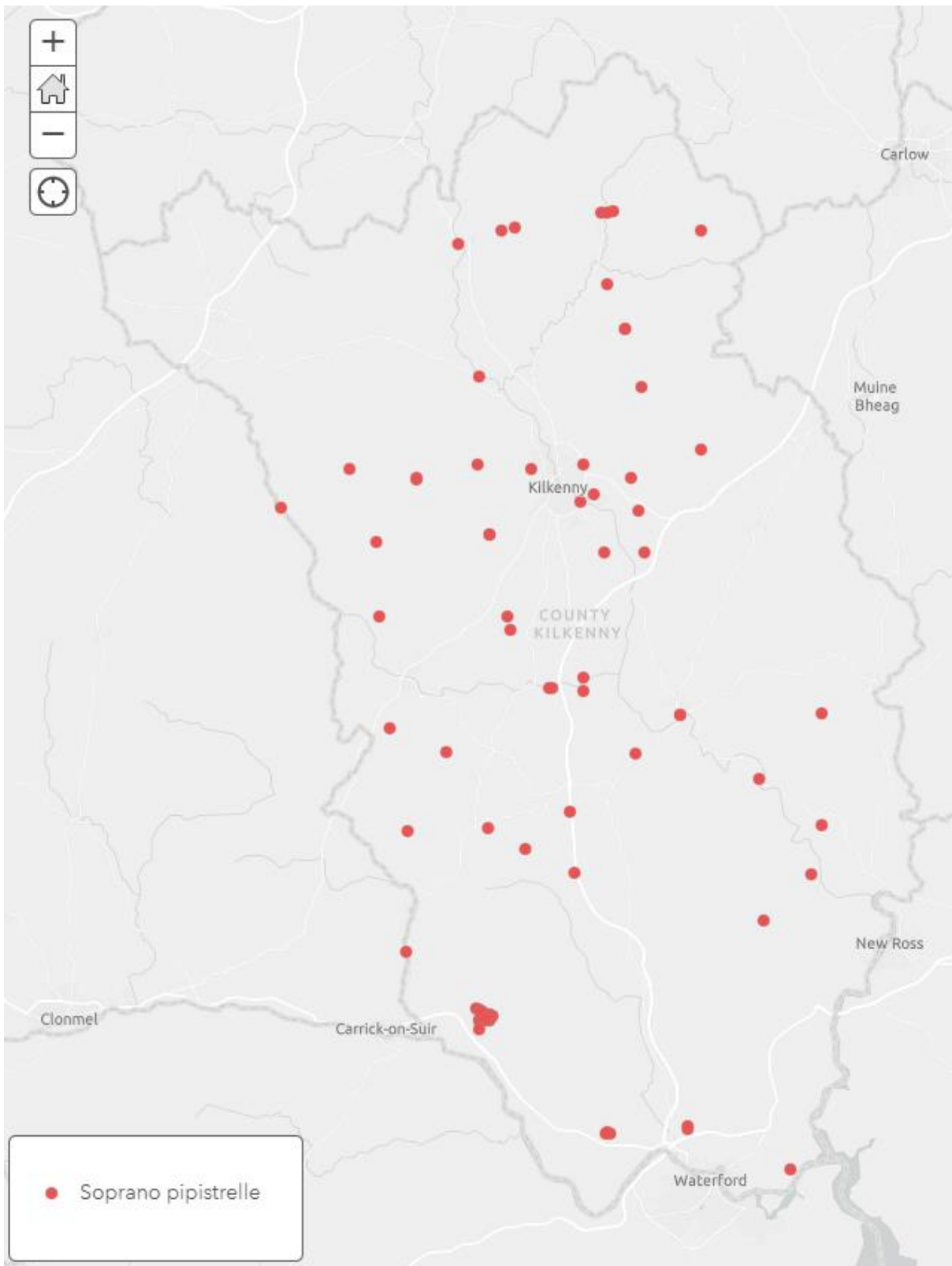


Figure 2b: Soprano pipistrelle records collated by BATLAS 2020 in County Kilkenny.

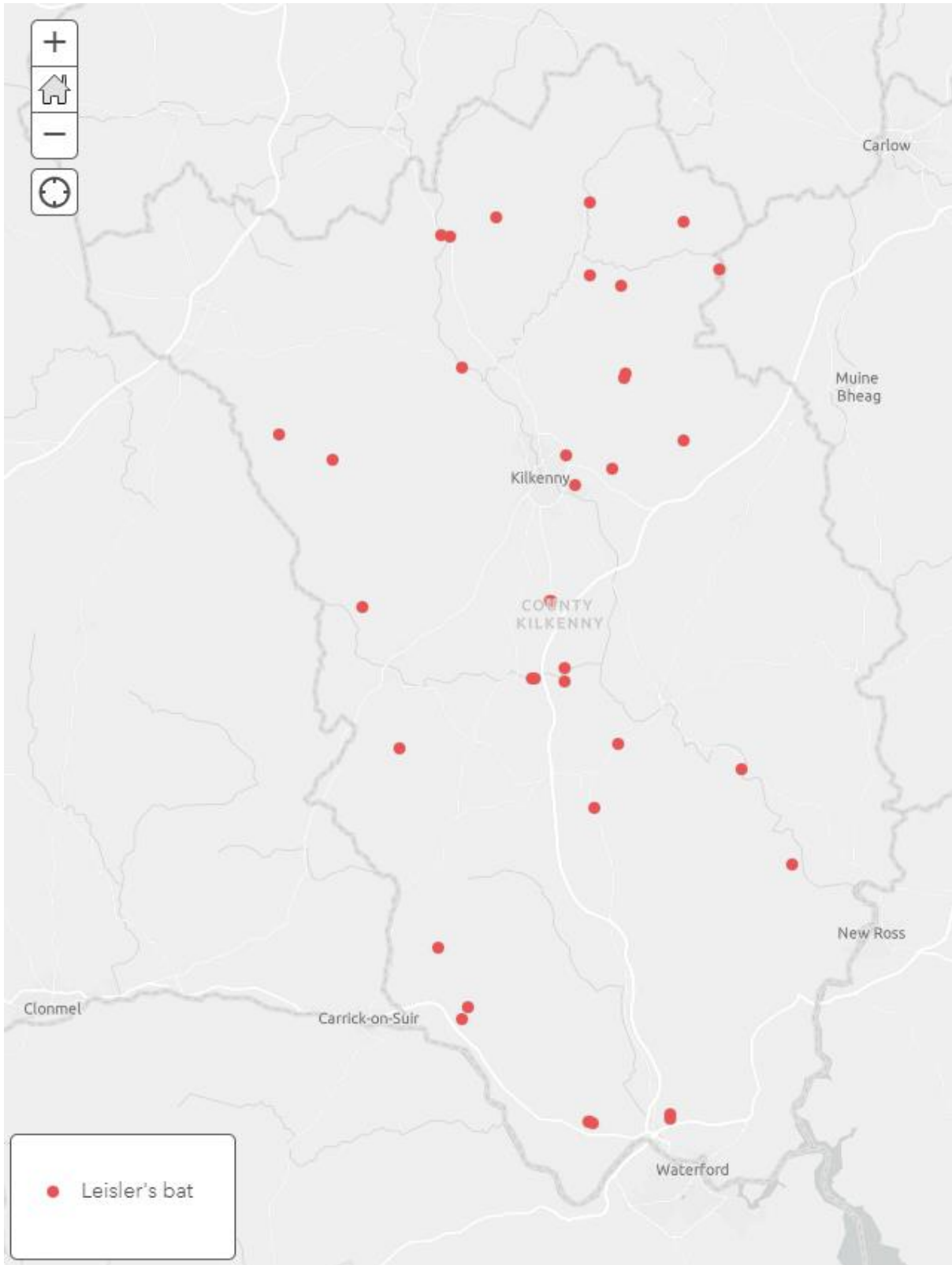


Figure 2c: Leisler's bat records collated by BATLAS 2020 in County Kilkenny.

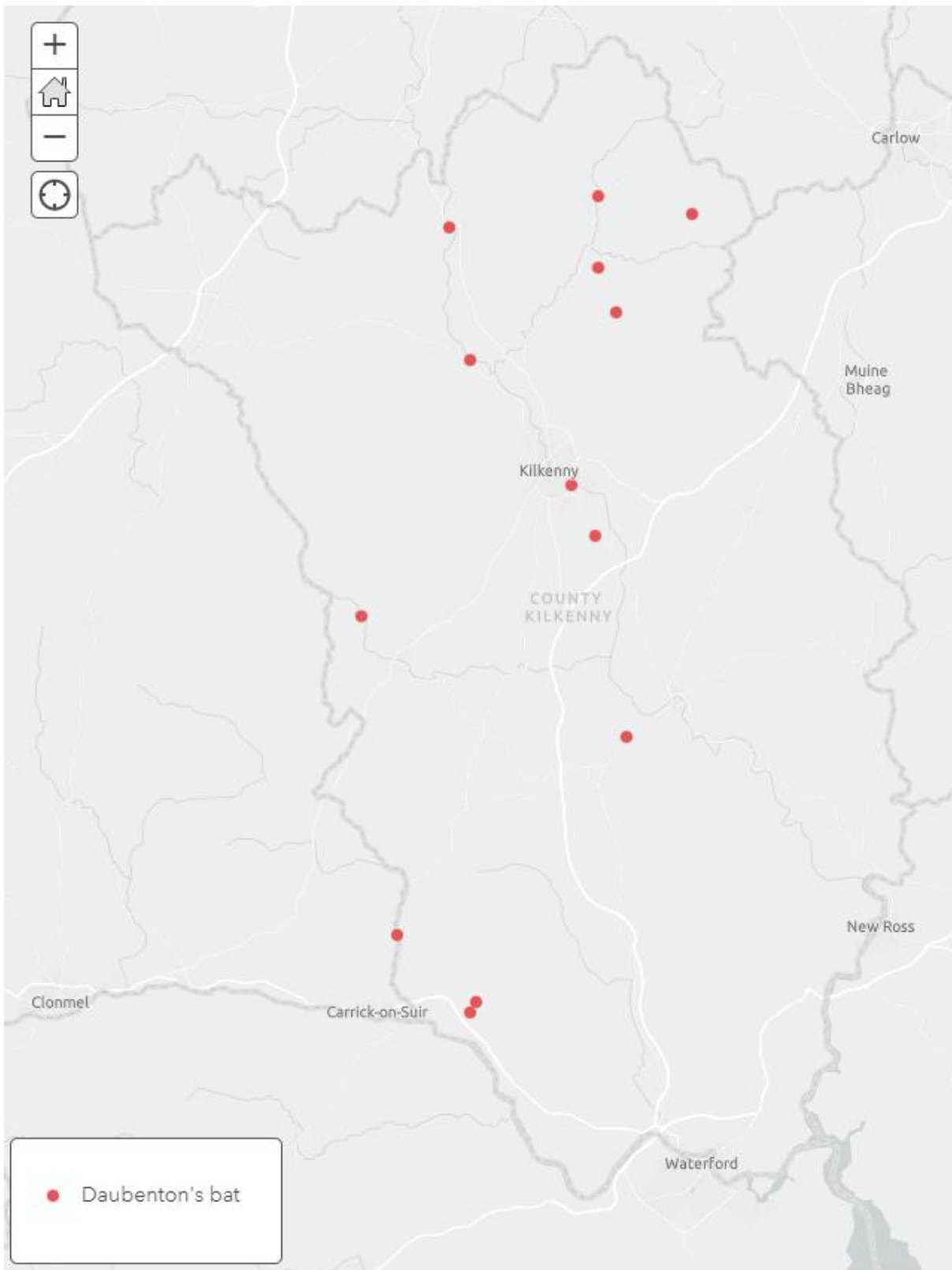


Figure 2d: Daubenton's bat records collated by BATLAS 2020 in County Kilkenny.

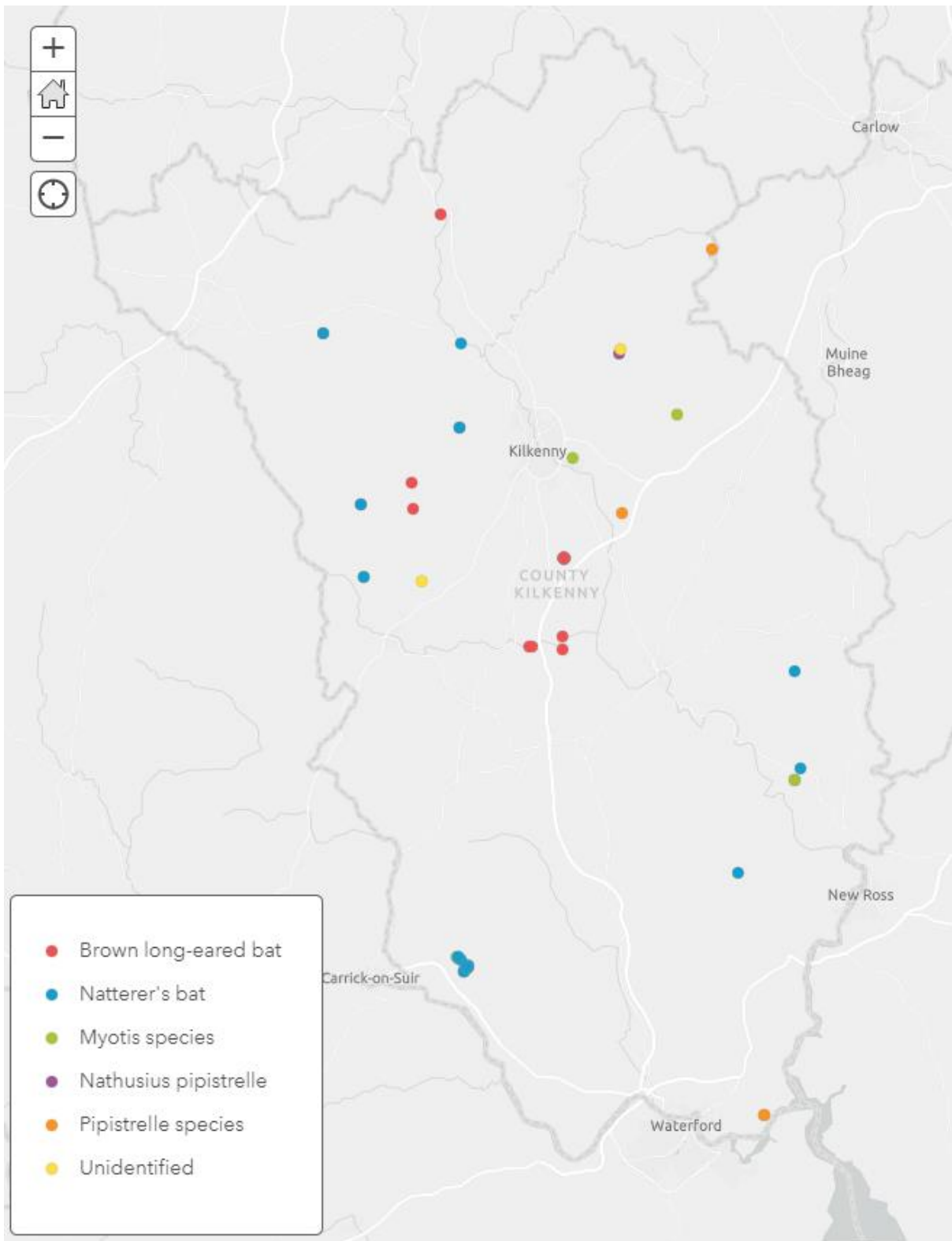


Figure 3e: All non-target bat records included in the County Kilkenny Bat Dataset.

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Acknowledgements

Bat Conservation Ireland would like to sincerely thank all of the volunteers who participated in BATLAS 2020. Your level of commitment to the conservation of bats across the island of Ireland is phenomenal and greatly appreciated. The success of BATLAS 2020 is due to your involvement and survey effort.

We would also like to thank the numerous bat groups that took on their local counties and populated the BATLAS 2020 database. Thank you for all of your support in relation to training courses, weekend survey trips and advice. Bat groups are the backbone to bat conservation on the island of Ireland and we appreciate your involvement.

A big thank you to NPWS for funding BATLAS 2020, particular, Dr Ferdia Marnell for his continuous support for bat conservation.

Thank you to all of the county councils, both in Northern Ireland and the Republic of Ireland, for providing additional funding for training courses and surveying.

BCIreland would also like to thank Dr Simon Pickett, principal co-ordinator and Dr Emma Boston, NI co-ordinator (2016) for their level of commitment and hard work to the BATLAS 2020 project. A big thanks to the regional trainers and surveyors for stepping in to get as much coverage as possible during the busy field seasons.

Appendix 1 – Training Courses

Table A: BATLAS 2020 training courses 2016-2018.

Location	Northing	Easting	Date	Trainer
Village Pub, Glasson, Co. Westmeath	209086	246845	08/07/2016	Tina Aughney
Creggan Country Park, Derry, Co. Derry	241792	417041	27/07/2016	Emma Boston
Cultra Manor, Cultra, Co. Down	342498	380116	28/07/2016	Emma Boston
Galway University, Galway, Co. Galway	129071	225960	10/08/2016	John Curtin
Ballyard, Tralee, Co. Kerry	83247	113435	25/04/2017	Tina Aughney
Library Seminar Room, Sligo IT, Co. Sligo	169285	336337	26/04/2017	Tina Aughney
GMIT Ecology Class, Castlebar, Co. Mayo	113606	289675	27/04/2017	Tina Aughney
Maghera, Co. Cavan	263981	285126	28/04/2017	Tina Aughney
Crom Estate, Co. Fermanagh	236628	324571	02/05/2017	Simon Pickett
An Creagan, Omagh, Co. Tyrone	262335	378920	03/05/2017	Simon Pickett
Glencaveagh Visitors Centre, Co. Donegal	204059	423074	10/05/2017	Simon Pickett
Roe Valley Country Park, Limavady, Co. Derry	267947	420293	11/05/2017	Simon Pickett
Pullough School, Pullough, Co. Offaly	219200	225203	17/05/2017	Tina Aughney
Langton's Hotel, Kilkenny, Co. Kilkenny	251026	155991	24/05/2017	Tina Aughney
Newbridge Library, Newbridge, Co. Kildare	280676	215316	25/05/2017	Tina Aughney
Malahide Castle, Dublin	322096	245438	25/05/2017	Kevin Delahunty
Antrim Castle Gardens, Co. Antrim	314481	387051	30/05/2017	Emma Boston
Clothworthy, Randalstown, Co. Antrim	308225	390192	30/05/2017	Emma Boston
Moira Demesne, Moira, Co. Down	314775	360680	01/06/2017	Emma Boston
Cabra Wetlands, Thurles, Co. Tipperary	213324	156250	05/06/2017	Tina Aughney
Focus Family Resource Centre, Killeshandra, Co. Cavan	231100	307118	08/06/2017	Ben Quinn
St Catherines Park, Lucan Demesne, Dublin	301679	236337	09/06/2017	Kevin Delahunty
Thomastown Community Centre, Thomastown, Co. Kilkenny	258458	141378	12/06/2017	Tina Aughney
Roscrea, Birr, Co. Offaly	225984	185872	14/06/2017	Tina Aughney
Ballyconnell, Co. Cavan	227186	318510	17/06/2017	Ben Quinn
Leitrim County Library, Leitrim, Co. Leitrim	212761	311423	22/06/2017	Ben Quinn
Johnston Centre, Wexford County Hall, Wexford, Co. Wexford	302133	116640	22/06/2017	Tina Aughney
NUI, Galway, Co. Galway	129071	225960	06/07/2017	John Curtin
NUI, Galway, Co. Galway	129081	225944	13/07/2017	John Curtin
Ennis School, Co. Clare	133342	177695	20/07/2017	John Curtin
Carnfunnock Country Park, Larne, Co. Antrim	338273	406729	04/08/2017	Simon Pickett
Kiltonga Church, Newtownards, Co. Down	347200	374480	11/08/2017	Emma Boston
Manor Hotel, Abbeylix, Co. Laois	243548	184083	14/08/2017	Tina Aughney
Wexford County Hall, Wexford, Co. Wexford	303142	122209	16/08/2017	Tina Aughney
Rathlin Island, Co. Antrim	314926	450552	19/08/2017	Simon Pickett
Limerick Library, Limerick, Co. Limerick	157979	157361	08/05/2018	Tanya Slattery
Arranmore Island, Co. Donegal	168142	415866	25/08/2018	Simon Pickett

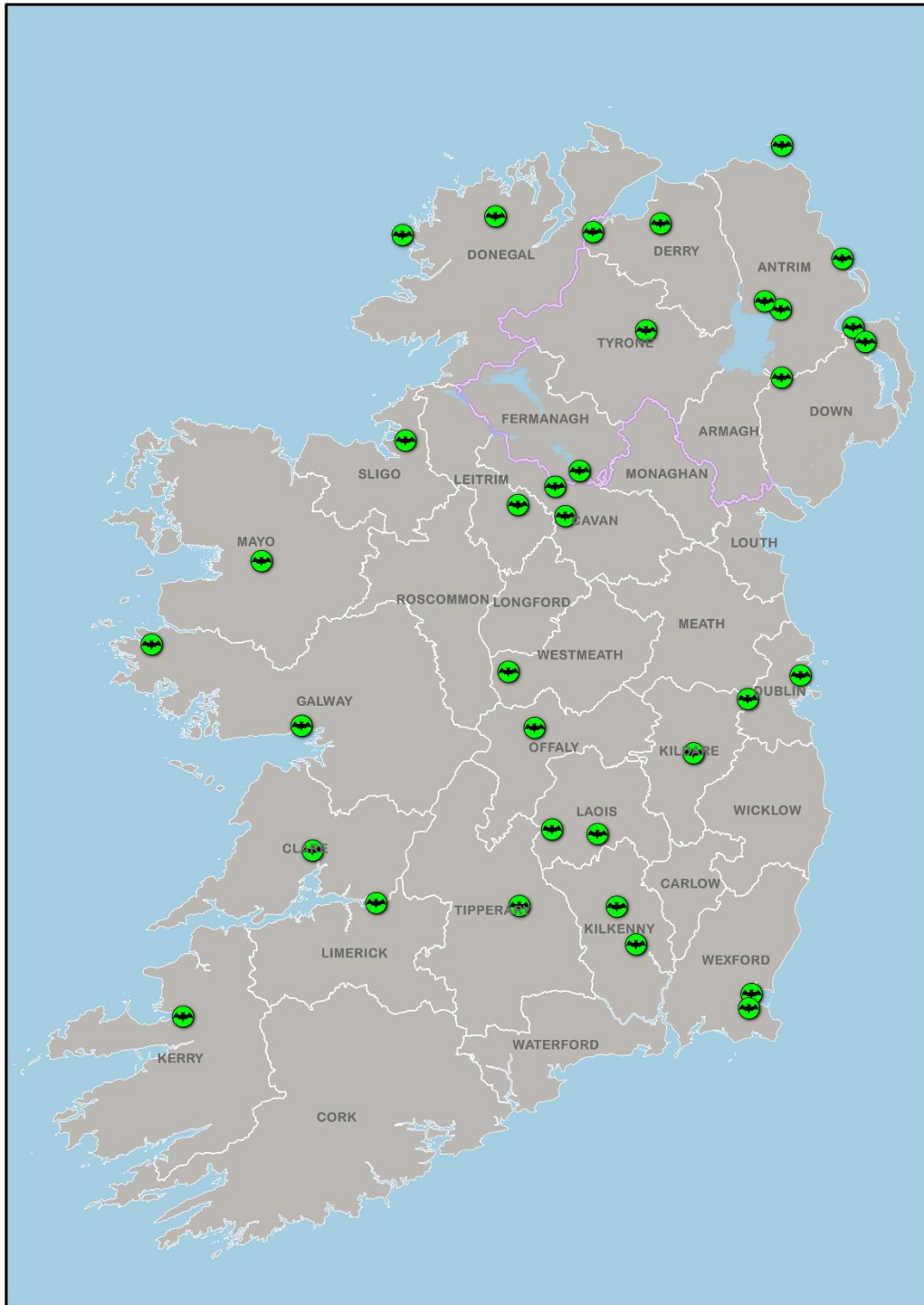


Figure A: BATLAS 2020 training courses 2016-2018.

Appendix 2 – All Ireland Daubenton’s Bat Waterways Survey

Table B: All Ireland Daubenton’s Bat Waterway Survey Sites in County Kilkenny.

Site Code	Waterway	Site Name	Grid Ref	County	Province
1078	River Nore	Knockanore	S5469643591	Kilkenny	Leinster
1079	River Nore	NE of Warrington	S5373654466	Kilkenny	Leinster
1080	River Nore	Threecastles Bridge	S4582162709	Kilkenny	Leinster
1082	River Barrow	Graiguenamanagh Bridge	S7072443544	Kilkenny	Leinster
1185	Dinin River	Dinin Bridge	S4789062850	Kilkenny	Leinster
1202	River Nore	Dysart	S5960039300	Kilkenny	Leinster
1238	Glory River	Monachunna Townland	S4810038100	Kilkenny	Leinster
1239	Kings River	Ballycloven	S4853939873	Kilkenny	Leinster
1242	Mountain River	Ballycoppigan Bridge	S7343549860	Kilkenny	Leinster
1269	River Nore	Threecastles Bridge d/s	S4650062600	Kilkenny	Leinster
1287	Kings River	Kells Bridge	S4941543690	Kilkenny	Leinster
1303	River Nore	Kilkenny City	S5150055500	Kilkenny	Leinster
1304	River Nore	Bennetsbridge North	S5524349272	Kilkenny	Leinster
1321	Kings River (Kilkenny)	Newtown	S4640043500	Kilkenny	Leinster
1351	River Nore	Lismaine Bridge	S4410566004	Kilkenny	Leinster
1352	River Dinan	Corbettstown	S5060066200	Kilkenny	Leinster
1498	River Barrow	Goresbridge Town	S5370068500	Kilkenny	Leinster