

The Daubenton's Newsletter

Bat Conservation Ireland Newsletter Special Edition 2014

All Ireland Daubenton's Bat Waterways Survey

Bat Conservation Ireland
needs you to survey your
local waterway this
summer



The All-Ireland Daubenton's Bat Waterway
Monitoring Survey 2014

www.batconservationireland.org



BAT CONSERVATION
IRELAND



*An Roinn
Ealaíon, Oidhreachta agus Gaeltachta*
**Department of
Arts, Heritage and the Gaeltacht**

NI EA
www.ni-environment.gov.uk

Northern Ireland
**Environment
Agency**

Introduction

The All-Ireland Daubenton's Bat Waterway Monitoring Survey has been running since 2006. This scheme is managed by Bat Conservation Ireland and is funded by National Parks and Wildlife Service (NPWS) and Northern Ireland Environment Agency (NIEA). The All-Ireland Daubenton's Bat Waterway Monitoring Survey methodology is based on that currently used in Bat Conservation Trust's UK National Bat Monitoring Programme (NBMP).

Surveyors undertake a daytime survey of their allocated sites to determine its safety and suitability for surveying. At the chosen site, ten points (i.e. survey spots) approximately 100m apart are marked out along a 1km stretch of waterway. The surveyors then revisit the site on two evenings in August and start surveying 40 minutes after sunset. At each of the ten survey spots, the surveyor records Daubenton's bat activity as bat passes for four minutes using a heterodyne bat detector and torchlight.

Bat passes are either identified as 'Sure' Daubenton's bat passes or 'Unsure' Daubenton's bat passes. A 'Sure' Daubenton's bat pass is where the surveyor, using a heterodyne detector, has heard the typical rapid clicking echolocation calls of a *Myotis* species and has also clearly seen the bat skimming the water surface. Bat passes that are heard and sound like *Myotis* species but are not seen skimming the water surface may be another *Myotis* species. Therefore, these bat passes are identified as 'Unsure'. The number of times a bat passes the surveyor is counted for the duration of the four minutes. Therefore, counting bat passes is a measure of activity and results are quoted as the number of bat passes per survey period (No. of bat passes/40 minutes).

This volunteer based monitoring programme has grown from strength to strength each year due to the dedication of volunteer teams like yourself surveying local waterways annually.



Daubenton's bat

A summary of the 2013 survey

A total of 224 waterway sites were surveyed by 172 survey teams in 2013; this included 39 new survey teams who surveyed 20 new waterway sites and 19 previously surveyed waterway sites. Seventeen teams surveyed two or more waterway sites ($n=69$) while all remaining teams ($n=155$) surveyed one waterway site. The majority of waterway sites were surveyed by teams composed of members of the public ($n=124$) and the remainder were NPWS staff ($n=16$), NIEA staff ($n=8$) and BC Ireland committee members/local bat group members ($n=24$).

A total of 224 waterway sites were surveyed in 2013, the second highest number of waterway sites since the monitoring programme began in 2006 (highest in 2011). Twenty-six waterways sites surveyed in 2013 were new waterway sites. Thirty-six waterways sites were located in Northern Ireland and 182 waterway sites in the Republic of Ireland. Thirty-two (6.6%) of the waterway sites surveyed in 2013 have been surveyed each year since 2006 while 73 (15%) of the waterway side surveyed in 2013 have been surveyed for at least seven of the eight years of the scheme. Overall, 485 waterway sites across the island have been surveyed at least once over the eight years of the monitoring scheme (Figure 4.1).

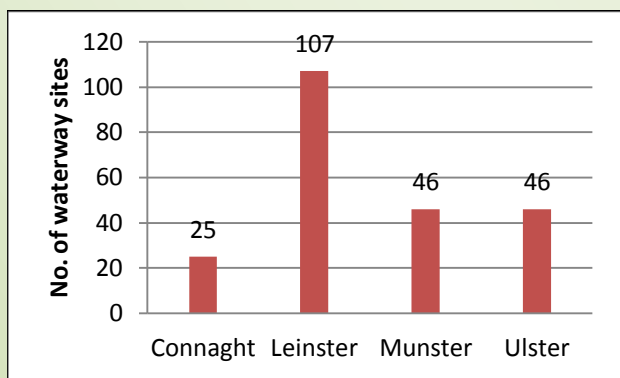
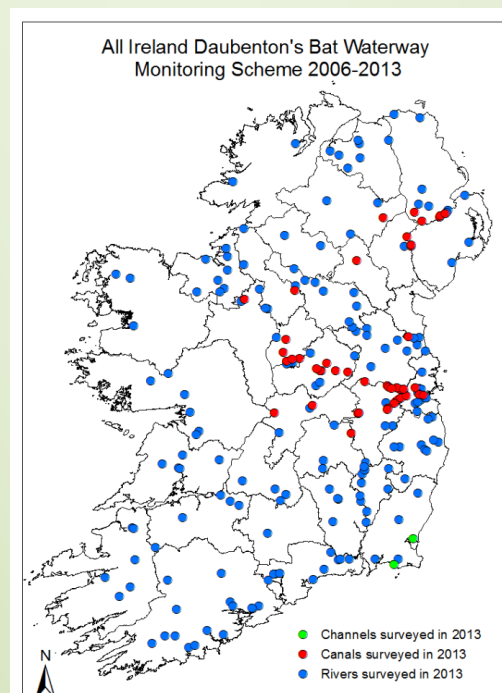
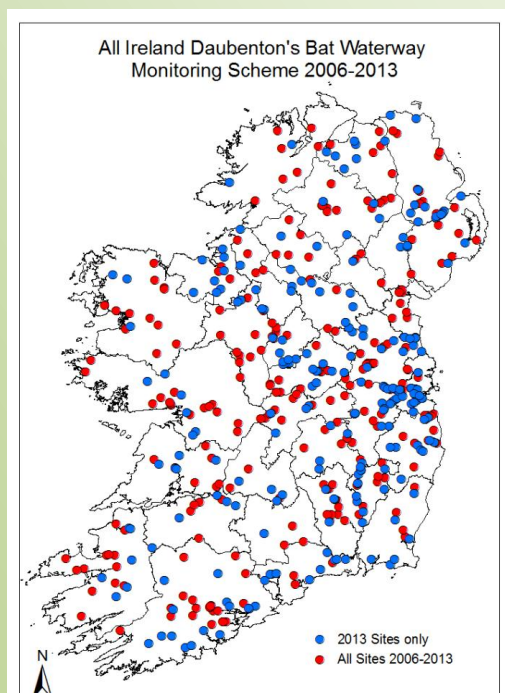


Figure 1: Number of waterway sites surveyed in each province in 2013 as part of the All Ireland Daubenton's Bat Waterways Monitoring Scheme.

Of the four provinces, the highest number of waterway sites were surveyed in Leinster ($n=107$, Figure 4.3) and County Kildare had the highest number of waterway sites surveyed per county ($n=19$).

In 2013 a total of 9 canals (46 waterway sites), three channels and 115 rivers (175 waterway sites) were surveyed. The Royal Canal had 18 waterway sites surveyed along its length while the River Barrow had nine waterway sites located along its length (Figure 2). A total of 407 completed surveys from 224 waterway sites were returned to BC Ireland in 2013 in time for statistical analysis and were surveyed within the required dates.



2013 Results

In 2013 'Sure' Daubenton's bat passes were recorded on 204 waterway sites (93.6%) (see Figure 4). At each of the 10 survey spots of each completed survey volunteers recorded Daubenton's bat activity for four minutes generating 40 minutes of data per completed survey. In total, 17,071 'Sure' Daubenton's bat passes and 3,216 'Unsure' Daubenton's bat passes were recorded during 271 hours 20 minutes of surveying. The mean number of 'Sure' Daubenton's bats passes per survey was 41.6 passes, which is the second lowest mean for the eight years of monitoring. In addition, bats were recorded on 54.5% of survey spots. Connaught, for the eighth year running, had the highest mean (Mean no. = 60.8 'Sure' bat passes) and in 2012 Munster had the highest proportion of survey spots with bats (61.7% of survey spots with bats).

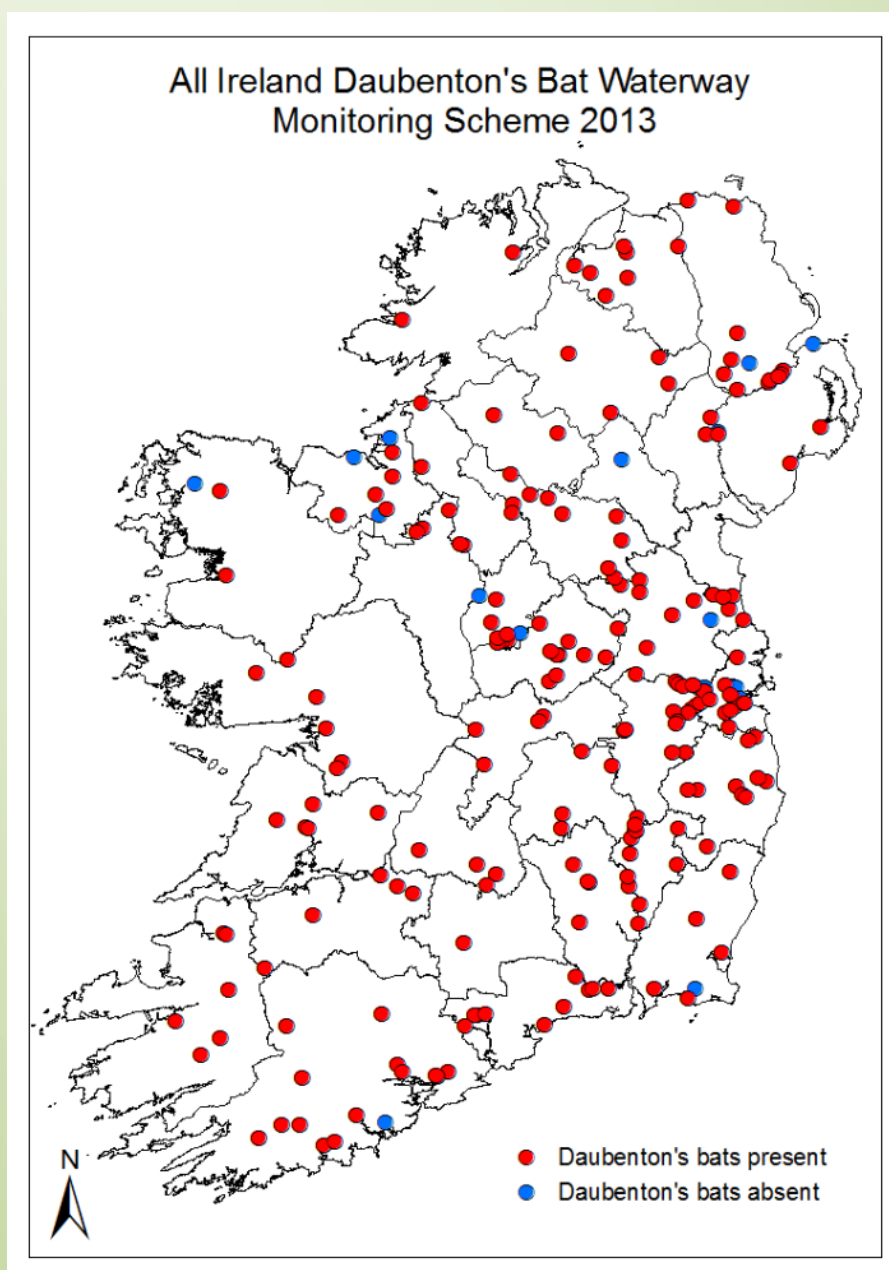


Figure 4: Location of waterways sites with Daubenton's bat recorded in 2013 as part of the All Ireland Daubenton's Bat Monitoring Scheme. Blue circles: Daubenton's bat not recorded; Red circles: Daubenton's bats recorded.

Monitoring the Daubenton's Bat Population

An important element of this monitoring programme is to provide data to determine the health of Daubenton's bat population. There are no precise biological definitions of when a population becomes vulnerable to extinction but the British Trust for Ornithology (BTO) has produced Alert levels based on IUCN-developed criteria for measured population declines. Species are considered of high conservation priority (Red Alert) if their population has declined by 50% or greater over 25 years and of medium conservation priority (Amber Alert) if their populations have declined by 25-49% over 25 years. These Alerts are based on evidence of declines that have already occurred but if Alerts are *predicted* to occur based on existing rates of decline in a shorter time period then the species should be given the relevant Alert status e.g. if a species has declined by 2.73% per annum over a 10-year period then it is predicted to decline by 50% over 25 years and should be given Red Alert status after 10 years. This is assessed using Power Analysis and analysis completed on the data collated through this scheme has shown that we need to survey between 150-200 waterway sites twice annually to detect Red Alerts in six years and Amber Alerts in ten years. Thanks to our volunteer teams, we have achieved this target each year since 2007.

To assess the population trend, the Daubenton's bat activity per annum is modelled. Only sites that have been surveyed for at least two years can be included in the data. That is why it is really important that volunteer teams survey the same sites from year to year. It means that we have more robust data to complete this important annual trend analysis. 2008 showed evidence of a downward trend in Daubenton's bat activity over the course of the survey from 2006-2008. Poor weather conditions in 2007 and 2008 may have been a factor influencing this decline. Poor weather conditions continued in August 2009 but Daubenton's bat activity showed a slight recovery. This recovery continued in 2010 and 2011 which, overall, had better weather conditions compared to previous years. However, a slight decrease was also noted in 2012 and again in 2013 which again may just attributed to the poor summer weather conditions.

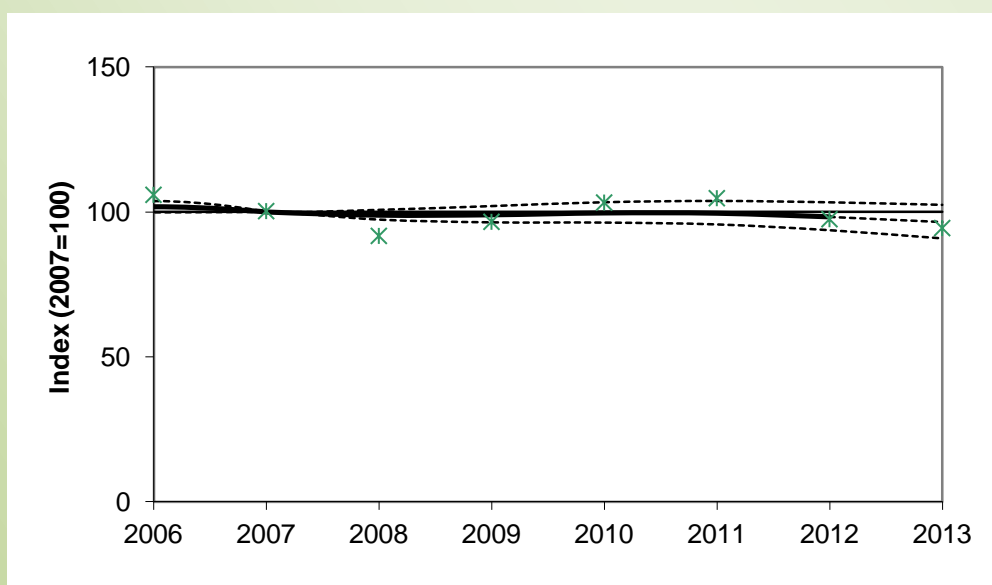


Figure 5: Results of the Daubenton's bat Binomial GAM/GLM Trend Analysis. Please see Annual Report for great details. If you would like a copy of the Annual Report, please email info@batconservationireland.org.

2013 Survey Season

2014 is the 9th year of the monitoring scheme and as always we are seeking your continued participation. As stated above, re-surveying the same sites from year to year strengthens the analysis and allows us to provide more accurate predictions on how the Daubenton's bat population is fairing while new sites provide Bat Conservation Ireland with greater details on the distribution of this bat species along waterways across the island.

For those new to this monitoring scheme, the surveying of Daubenton's bats is a great introduction to the world of bats. While surveying is completed at night-time, Daubenton's bats are very easy to identify on a waterway due to their very characteristic flight pattern. The Daubenton's bat can be found over rivers, streams, canals, pools and lakes and it is easy to observe when foraging because it flies very close to the water, typically within 30cm of the surface. It either trawls for insects, particularly aquatic insects, from the surface of the water by gaffing them with its large feet or the tail membrane or takes them directly out of the air (aerial hawking). The flight pattern and feeding behaviour of Daubenton's bats along waterways means that it can be relatively straightforward to observe this species using strong torchlight alone.



Plate 1 & 2: Flight pattern of the Daubenton's bat: figure of '8' pattern skimming across the water surface.

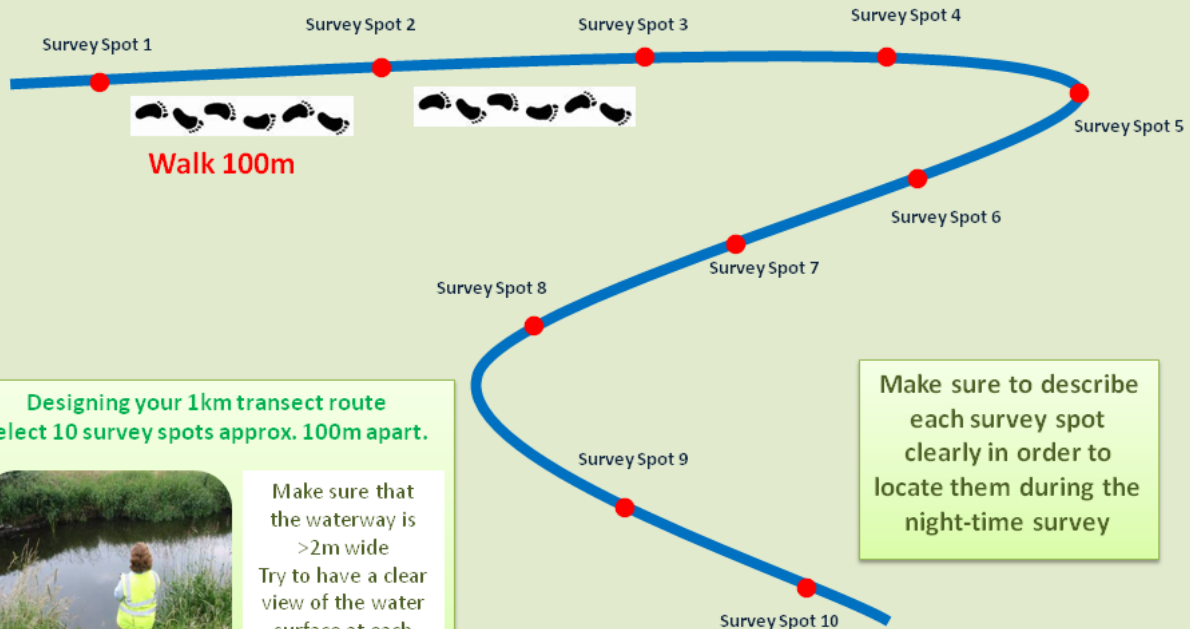
Surveyors also use a heterodyne bat detector along with the torch to detect the bats. This detector is tuned to 35kHz and surveyors listen for the rapid dry clicks that are typical of *Myotis* bats. The Daubenton's bat is a member of the *Myotis* family and all of the bats in this group produce this type of call. However, only the Daubenton's bat skims the water. So by listening for the rapid dry clicks and visually seeing a skimming bat means a positive identification of the Daubenton's bat.

Positive Daubenton's bat identification if:

1. The bat is flying close to the surface of the water, perhaps occasionally touching the surface.
2. When tuned to 35kHz sounds like regularly firing machine gun i.e. rapid dry clicks (regular repetition rate)
3. Then, when the bat is still in range i.e. (visible and audible) and you move the dial to 55kHz – 70kHz, the sound remains more or less the same (i.e. no change in the sound, it still sounds like rapid dry clicks).

Surveying for Daubenton's

The aim of this survey is to walk a route along a 1km stretch of river/canal. The activity of Daubenton's bats is recorded at 10 stopping points along the route on two evenings between the 1st and 31st August. THIS INVOLVES A TEAM OF 2/3 PEOPLE SURVEYING THE TEN SPOTS.



When to survey

Two separate evening counts should be made, one in each of the following survey periods: **1st-15th Aug and 16th-31st Aug** with at **least five days** between each survey.

Equipment

- | | | |
|-----------------------------|-------------------------|-------------|
| - tuneable bat detector | - thermometer (outdoor) | - stopwatch |
| - recording sheets/notebook | - pencil/clip board | - rough map |
| - torch | - head torch | |

Position yourself at the starting point 40 minutes after sunset.

- Just prior to starting time, record the following: Time, Temperature and Weather conditions.
- At each survey spot, tune your detector to **35 kHz** and simultaneously use a torch to scan the water to check whether Daubenton's bats can be seen skimming the water-surface. Do not use your torch continuously as this will discourage Daubenton's bats from travelling in vicinity of your spot.
- Stand still and count the number of Daubenton's bat passes for a total of **4 minutes**. Record the number of passes on the survey form or in a notebook.
- If you hear a bat that you think sounds like Daubenton's, but you did not see it skimming over the water-surface, record it as an 'Unsure Daubenton's Bat'. Ignore bat passes of other species.
- At the last point, record your finish time. If you are forced to abandon the survey early, note down the location, time and reason for stopping.

This is a **WALKING** survey, so the time required to complete the survey is determined by what type of terrain that needs to be covered. Routes along canal tow paths tend to be completed in 60-70 minutes while crossing fields along rivers can take a little longer (generally up to 100 minutes).

2014 Survey Season – Training Courses

Bat Conservation Ireland runs a series of free evening training courses. All are welcome to participate in the training and if you would like to commit to surveying as part of the scheme, you can register on the night of the training course or email Tina at info@batconservationireland.org. This training course consists of a one hour PowerPoint presentation followed by a discussion of potential survey areas. An outdoor practical session on a local river or canal to demonstrate the survey methodology is then completed. An information pack consisting of a detailed description of the methodology, maps, survey forms and online training details are provided for each survey team. Heterodyne bat detectors are also available on loan for the duration of the summer months.

2/3 waterway sites within 10km of home address or preferred survey is assigned to each volunteer team (minimum 2 people per team, maximum of 3 people recommended). Surveyors undertake a daytime survey of their allocated sites to determine its safety and suitability for surveying. At the chosen site, ten points (i.e. survey spots) approximately 100m apart are marked out along a 1km stretch of waterway. The surveyors then revisit the site on two evenings in August and start surveying 40 minutes after sunset. At each of the ten survey spots, the surveyor records Daubenton's bat activity as bat passes for four minutes using a heterodyne bat detector and torchlight. Results are then returned to Bat Conservation Ireland for analysis.

Video clips on Daubenton's bats: http://www.bbc.co.uk/nature/life/Daubenton's_Bat

Training Events

Course currently organised:

Monday 30 th June	Co. Wexford hosted with Wexford County Council)	Gorey @ the http://www.sealrescueireland.org @ 8.30 pm (co-
Thursday 3 rd July	Co. Westmeath with Westmeath County Council)	County Council Chambers, Mullingar @ 8.30 pm (co-hosted
Friday 4 th July	Co. Meath Ashbourne Tidy Towns Committee)	Venue TBC in Ashbourne @ 8.30 pm (co-hosted with
Monday 7 th July	Co. Sligo County Council)	Venue TBC in Sligo Town @ 8.30 pm (co-hosted with Sligo
Tuesday 8 th July	Co. Monaghan Monaghan County Council)	Venue TBC in Monaghan Town @ 8.30 pm (co-hosted with
Wednesday 9 th July	Co. Dublin with Dublin City County Council)	Municipal Rowing Club, Liffey Valley @ 8.30 pm (co-hosted
For further information on the venue please contact Niamh Ni Cholmain 2223369 or niamh.nicholmain@dublincity.ie		
Wednesday 23 rd July	Co. Laois IWT, Laois/Kildare Branch)	Venue TBC in Mountmellick @ 8.00 pm (co-hosted with the
Thursday 24 th July	Co. Carlow Volunteers)	Venue TBC in Carlow Town @ 8.00 pm (co-hosted with Carlow

Other courses to be confirmed: Counties Donegal (Glenveagh National Park), Cork, Galway and 3 courses in Northern Ireland.