

Bats & Tidy Town Projects

Guidance Notes for: Tidy Town Committees

January 2015



BAT CONSERVATION
IRELAND

How can bats help with your Tidy Town project?

Under the **Wildlife and Natural Amenities** category of the Tidy Towns application, addressing the conservation and education needs of Ireland's bats can bring a thoroughly fun element to your community actions. Bats, as a unique group of Irish mammals, comprise a quarter of the terrestrial mammals in this country. Therefore they are an important and commonly seen mammal that people are genuinely intrigued by. It is also a great opportunity to see your town or village in a different light – literally, at night time.

Your Tidy Town group can do the following for bats:

1. Organise a Bat Walk & Talk – a great educational event.
2. Organise a Bat Survey of your management area.
3. Put up bat boxes and register them with Bat Conservation Ireland.
4. If you have a river running through your area, participate in the All Ireland Daubenton's Bat Waterways Survey and receive free training.
5. If you know of a bat roost, why not count the bats as they emerge in the summer and log the results with Bat Conservation Ireland.
6. Become a member of Bat Conservation Ireland and receive free training and use of a bat detector to survey your own area for bats.



Bat Conservation Ireland Members Training Weekends

Do I have bats in my area?

Bats are a common mammal that is found all across the island. There are, of course, some species that are more common and therefore likely to be found in more built up areas.

Do you have any of the following in your area?

- Waterbodies: rivers, streams, canal, ponds or lakes
- Hedgerows and treelines
- Woodland
- Old stone buildings with slate roofs
- Derelict buildings
- Parkland with mature trees

If you can tick off any of these, there is a good chance that there will be bats around your area.

But you can also visit the following website <http://maps.biodiversityireland.ie/> and go to the live maps, click on the Bat Conservation Ireland dataset and see what bat species have been previously recorded in your area or near to you.



Ireland's bat fauna

Ireland's bat fauna is comprised of nine resident species, forming one third of Ireland's land mammals. Eight species are vesper bats and all vespertilionid bats have a tragus (cartilaginous structure found inside the pinna of the ear). Vesper bats are distributed throughout the country. Nathusius' pipistrelle is a recent addition to the Irish list with it first being recorded in the 1990s

Common pipistrelle *Pipistrellus pipistrellus*

Soprano pipistrelle *Pipistrellus pygmaeus*

Nathusius' pipistrelle *Pipistrellus nathusii*

Leisler's bat *Nyctalus leisleri*

Brown long-eared bat *Plecotus auritus*

Natterer's bat *Myotis nattereri*

Whiskered bat *Myotis mystacinus*

Daubenton's bat *Myotis daubentonii*

The ninth resident species, the lesser horseshoe bat *Rhinolophus hipposideros*, belongs to the Rhinolophidae and has a complex nose leaf structure. This species' current distribution is confined to the western counties of: Mayo, Galway, Clare, Limerick, Kerry and Cork.

Two additional species have been recorded once: the Brandt's bat *Myotis brandtii* in the 2003 and Greater horseshoe bat *Rhinolophus ferrumequinum* in 2012.

Bats are widely distributed throughout a range of habitats in the Irish landscape. Due to their reliance on insect populations, specialist feeding behaviour and habitat requirements, they are considered to be valuable environmental indicators of the state and condition of the wider countryside.



Above: Natterer's bat (Photo: Tina Aughney).

Below: Brown long-eared bat (Photo: Faith Wilson).



Bats and the Law

Due to increasing pressure on bat populations, all Irish bat species are protected by the 1976 Wildlife Act and 2000 Amendment. They are also protected under the European Communities (Birds and Natural Habitats) Regulations 2011.

Consequently, it is a criminal offence to

- Intentionally kill, injure or take a bat
- Possess or control any live specimen or anything derived from a bat
- Wilfully interfere with any structure or place used for breeding or resting by a bat
- Wilfully interfere with a bat while it is occupying a structure or place which it uses for that purpose

This is a brief summary of the main points of the law. Further details of the Wildlife Act and the Habitats Directive may be found on www.npws.ie.

More information about bats and their conservation can be sourced from the following documents:

McAney, K. (2006) A conservation plan for Irish Vesper bats. *Irish Wildlife Manuals* No. 25. National Parks & Wildlife Service, DoEHLG. www.npws.ie/en/PublicationLiterature/IrishWildlifeManuals

Kelleher, C. & Marnell, F (2006) Bat mitigation guidelines for Ireland, *Irish Wildlife Manuals* No. 25. National Parks & Wildlife Service, DoEHLG. www.npws.ie/en/PublicationLiterature/IrishWildlifeManuals

Marnell, F. & Presetnik, P. (2009) Protection of Overground roosts for bats, *EUROBATS Publication Series* No. 4. www.eurobats.org/publications/publications_series.htm

Mitchell-Jones, A.J. & A. P. McLeish [Eds.] (2004) *Bat Worker's Manual*, 3rd Edition. Joint Nature Conservation Committee Peterborough.

If a bat is encountered during operations, please stop works and contact your local NPWS Conservation Ranger.

What is a Bat Detector?

A bat detector is a hand held device that picks up the hunting calls of bats and converts the bat echolocation calls into sounds that we can hear. While bats are not blind, they do rely on echolocation to find the insect prey items. Echolocation is where the bats emit a high frequency sound, which bounces off an object. From the returning echo that bats can determine whether the object is an insect or something to avoid such as ourselves. So when the bat is flying it is continuously making these hunting calls, searching for insects and avoiding obstacles. Using a bat detector allows us to eavesdrop on the hunting bat and, with training, to identify the bat species by their characteristic hunting calls.



Did you know that Ireland's smallest bat, the soprano pipistrelle, can eat 3,000 insects in one night?

What is a Bat Survey?

A bat survey, which is often completed as part of the wildlife section of the management plan, can be comprised of a number of elements. But the principal point of it is to find areas where bats are feeding, their roosting sites and the commuting routes or flights paths that bats use to fly between their roosts and their main feeding areas.

Daytime Survey often comprises of:

- Mapping the location of habitats such as hedgerows, treelines, rivers etc.
- Identifying buildings and structures that could be suitable bat roosts e.g. churches and stone bridges.
- Check buildings/structures that are accessible (and safe to access) for evidence of bat usage e.g. bat droppings.

Night-time Survey will comprise of:

- Emergence count of potential and/or known roosting sites.
- Using a bat detector to identify what species are present in the area and determine their main feeding areas, commuting routes and roosting sites.

Bat Survey Report will comprise of:

- Recommendations with regards to conserving particular habitats or roosting sites.
- Recommendations on how to enhance habitats or buildings/structures for bats.
- Mitigation measures in relation to planned works that may impact on local bat populations.
- Best places to located bat boxes.
- Planting of trees and hedgerows to increases feeding areas for bats.

What is a bat box?

Bat Boxes are artificial roosts erected to encourage bats to roost in areas where few roosts are present. Bat boxes can be made from various materials from untreated timber to woodcrete (combination of sawdust and concrete). Each bat species require different spaces to roost in. Therefore, bat boxes come in various shapes and sizes. The microclimate within a bat box is a very important factor. In general, they prefer warm spaces in the summer for rearing young and cooler spaces in the winter for hibernation. The bat box should be draught proof and made from a thermally stable material such as untreated wood, woodcrete, brick or stone. If possible, it is better to provide several internal chambers or several types of bat boxes in different locations so that the bats can move around as their needs change.

Timber Bat Boxes

These bat boxes tend to be cubic or wedge shape and often look like a bird box without the front entrance. Instead bats enter from below, through a narrow slit, into a draught-free chamber. These boxes can be easily made but for bats to use them, they need to be well sealed and well made. In addition, it is important that no chemicals or toxic paint is used to treat or paint the timber used as this will poison the bats. A number of different designs are available which are described below and are recommended for internal structures only.

Woodcrete Bat Boxes

This is a specialised bat boxes that are moulded into different shapes. As a consequence they cater for different species of bat. In addition, due to their composition, they last longer when open to the weather and their dark colouring make them very favourable for bat usage (i.e. they heat up quickly in the sunlight). Such boxes are purchased from websites such as www.nhbs.com. Bat Conservation Ireland recommends this composition of bat box for agri-environmental schemes especially for location outside on trees and external walls.

Integrated Bat Boxes

This is another specialised bat box that can be built into the walls and facade of a building and can be purchased in different shapes and sizes. They have the advantage of being permanent spaces for bats with good thermal properties. This bat box is highly suitable for locating within agricultural buildings such as hay barns.



Photo 1: Flat (self cleaning) woodcrete bat box hung on a south-facing aspect of a mature tree. Photo 2: Selection of woodcrete bat boxes. Photo 3: Integrated bat box

Erecting Bat Boxes

Bat boxes are more likely to be used if positioned where bats are known to feed. If you see bats zipping around in the evening in particular areas, then these areas would be a good place to position bat boxes. Bats, in particular, like hedgerows and treelines to commute along and will feed over ponds. Bat boxes should be located as high as possible (at least 4m off the ground) in sunny spots but areas that are sheltered from the wind.

If erecting on a mature tree, choose one that has a clean bark (no ivy) with no branches for 1m radius around the location of the box. Because timber boxes will only last up to 5 years open to the weather, BC Ireland recommends that woodcrete boxes are used on external surfaces and Timber bat boxes are used inside buildings.

If erecting on a building, erect as close as possible to the eaves of the building, on a south-facing wall and, if possible, on a building located adjacent to a treeline or hedgerow.

Bat boxes can also be erected inside a barn. This is an ideal location for Timber bat boxes as it protects the bat box from wind and rain (thereby increasing the life span of a timber box, which can be as little as 5 years if erected on external surfaces) while providing a wonderful space for young bats to practice flying. It also provides a suitable space for bats to feed when weather conditions are poor.

When erecting bat boxes externally (i.e. on a tree or external wall of a building), put up a minimum of three boxes facing in different directions to provide a range of temperature conditions. For example, boxes facing from south-east to south-west allow the sun to fall on each box for part of the day. During very hot days a south-facing box may overheat, but the other boxes should have some shade. Three boxes can be arranged around the trunk of large, mature and clean trunk trees.

When erecting bat boxes, erecting three different types of bat boxes will increase the chance of catering the different species likely to be found foraging on your farm.



Photographs: 1FF flat woodcrete bat boxes erected on timber poles (this bat box is often used by brown long-eared bats and pipistrelles); Two pipistrelles bats roosting in a 1FF woodcrete box; bat tube strapped to ceiling of culvert (similarly could be used for internal walls); timber maternity boxes erected on exterior wall.

For more information on bats and other more detailed guidance documents on topics such as bat boxes please check our guidelines: www.batconservationireland.org – there are series of guidelines on Bats in Buildings, Bat and Lighting etc. that will provide more detailed information. www.batroostireland.org is a website with specific information on bat boxes that have been successfully designed to provide suitable conditions for maternity roosts in Ireland.

Get involved in monitoring your local bat populations

Monitoring your bats is a great way to actively involve the Tidy Towns community in wildlife conservation. There are number of ways that your group can help:

1. All Ireland Daubenton's Bat Waterways Survey

If there is a stretch of canal or river running through your village, town or management area you can participate in this scheme. For two nights in the month of August, volunteer teams of at least two people, survey 1km stretches of waterway. Along this 1km stretch, 10 survey spots, 100m apart, are mapped. At each survey spot, the team scans the waterway surface for the Daubenton's bat using a bat detector and torch. Each survey spot is surveyed for four minutes each.

Bat Conservation Ireland provides free evening training courses that anybody can come along to or your Tidy Town group can host a training event to represent your county. A bat detector is loaned to teams interested in completing the survey. In return, Bat Conservation Ireland will provide a letter detailing the survey results to be included in your Tidy Town application.

2. Roost Monitoring

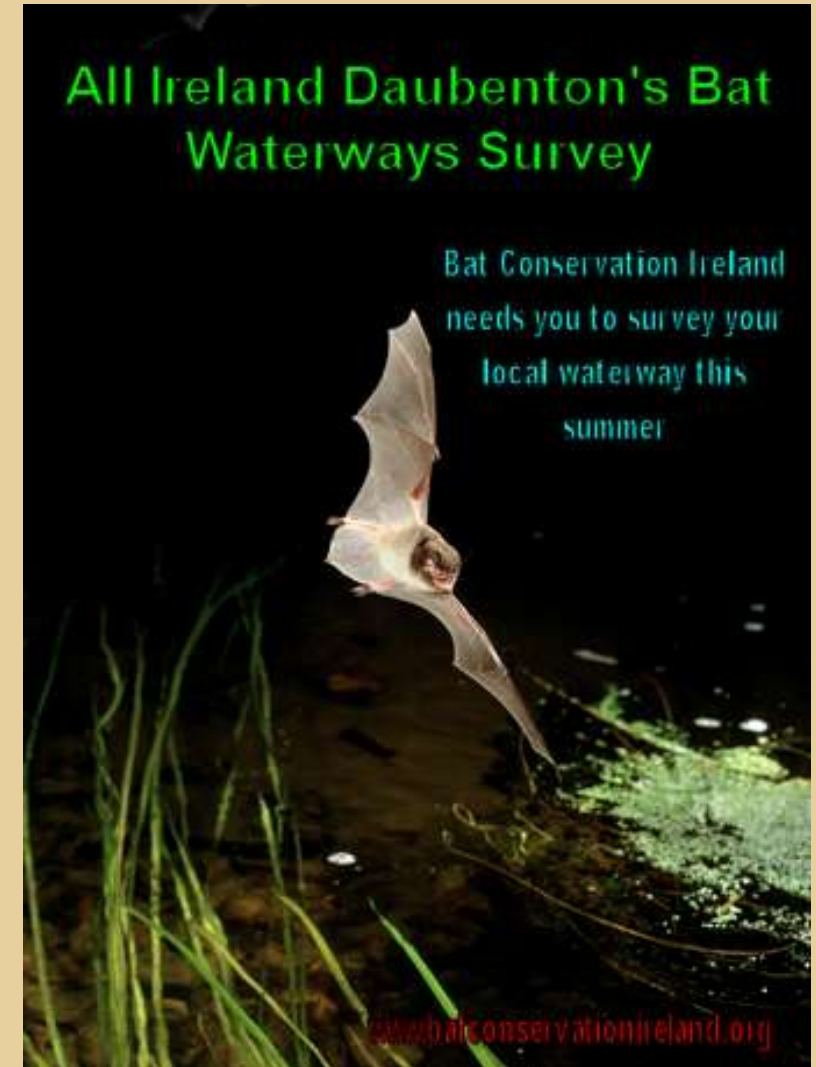
If there is a known bat roost in your area, you can complete an emergence count (as the bats emerge in the evening to feed, the bats are counted until all of the bats have left the roost) of the roost during the summer months and submit the results to Bat Conservation Ireland. If the roost is a brown long-eared bat roosts, this emergence survey will be included in the Brown Long-eared Roost Monitoring Scheme and training is provided to participate in this scheme as well as a loan of a bat detector. If the roost is belong to one of the other bat species, then a single Summer Bat Count survey is completed.

3. Bat Box Scheme

Bat boxes are often erected as part of the wildlife measures of Tidy Town groups. Bat Conservation Ireland are interested in logging all bat box schemes in the country in order to document what species are using bat boxes. So if you have a bat box scheme, why not register it with us.

4. BATLAS 2020

Bat Conservation Ireland will be aiming to re-survey the island from 2015-2019 and as a consequence, Bat Conservation Ireland members will provided with free training in order to complete the island survey. Trained surveyors will be encouraged to survey their areas and submitting the results in order to see what is the current distribution of our bat species. If you have an interest in learning how to survey bats, this is an ideal opportunity.



To register your interest in any of the monitoring or surveying opportunities, please email info@batconservationireland.org.

Bat Walks & Talks

Bat Walks & Talks are a great education event for the local community. Bat Conservation Ireland do not have the staff to host bat walks and talks at all of the requested events we receive, but we do have events in Biodiversity Week, Heritage Week and throughout the summer months across the country and many of the bat groups will also host such events. So keep track of our website or like our Facebook page to find out when an event near you is on. On the other hand, as a Bat Conservation Ireland member, you can receive training to host your own bat walk. We are very happy to provide the resources for such events.



Bat walks and talks – fun for all.



Bat friendly structures – bats will roost in crevices in the stonework of bridges. Bats will also roost in attic spaces of building such as churches.

Bats & Trees

All Irish bat species feed on insects associated with trees and shrubs, especially native species. The importance of trees to bats varies between bat species. Mature trees offer roosting sites for Leisler's bats all year around while other species such as Daubenton's and Natterer's bat will use them primarily in the summer. Tree species of particular importance include ash, oak, beech and Scot's pine.

Treelines and hedgerows are also very important linear landscape features for commuting bats in the countryside as bats prefer to travel in the shelter of such features to reduce predation. Loss of such habitats affects the ability of bats to travel safely from roosting sites to foraging areas. A gap of as little as 10m may force some species to seek an alternative commuting route and even change roosting sites.

Signs of bat roosts in trees, what to look for:

- obvious tree holes, cavities, spilt limbs, dead wood, loose bark
- dark staining on the tree bark just below a hole
- staining around the outer edge of a tree hole
- tiny scratch marks around a hole from bat claws
- bat droppings below a hole or stuck to the bark
- on warm days, audible squeaking noises can be heard



Bats & Stonework

Stonewalls and similar structures are an essential for roosting bats. A selection of suitable crevices in stone structures should be retained (similar to those illustrated in the photographs). These can be filled temporarily with timber or bubble wrap while all remaining crevices are re-pointed by hand. Once works are finished, remove temporary filling. Crevices should be at least 25cm deep, by 15cm long and 1-3cm wide.



Case Study – Renovation works in sheds and barns to provide roosting sites for bats



The majority of Irish bat species are fissure dwelling bats i.e. they like to squeeze into tight spaces. So these timber batons erected in a shed and stable have proved successful as bat roosts (there is a pipistrelle bat shown roosting in the space in the 2nd photograph).

Dimensions if you would like to replicate in your shed or barn: The timbers are 1.5 metres in length approximately x 102 mm deep by 51 mm wide. They are spaced 16 mm apart. There is also a strip of bituminous felt behind each against the roof. They run NE-SW within the stable and are at a height of no less than 4 metres. Bats will use most areas but prefer the apex a bit more than anywhere else overall (Courtesy of Brian Keeley).

If you have any examples of successful bat conservation measures, why not submit to info@batconservationireland.org

In addition, if you do erect bat boxes, register them with Bat Conservation Ireland. We are always interested to know what types of bat boxes were successfully used by bats.

If you are interested in learning more about bats, become a member; join our training courses and monitoring schemes.