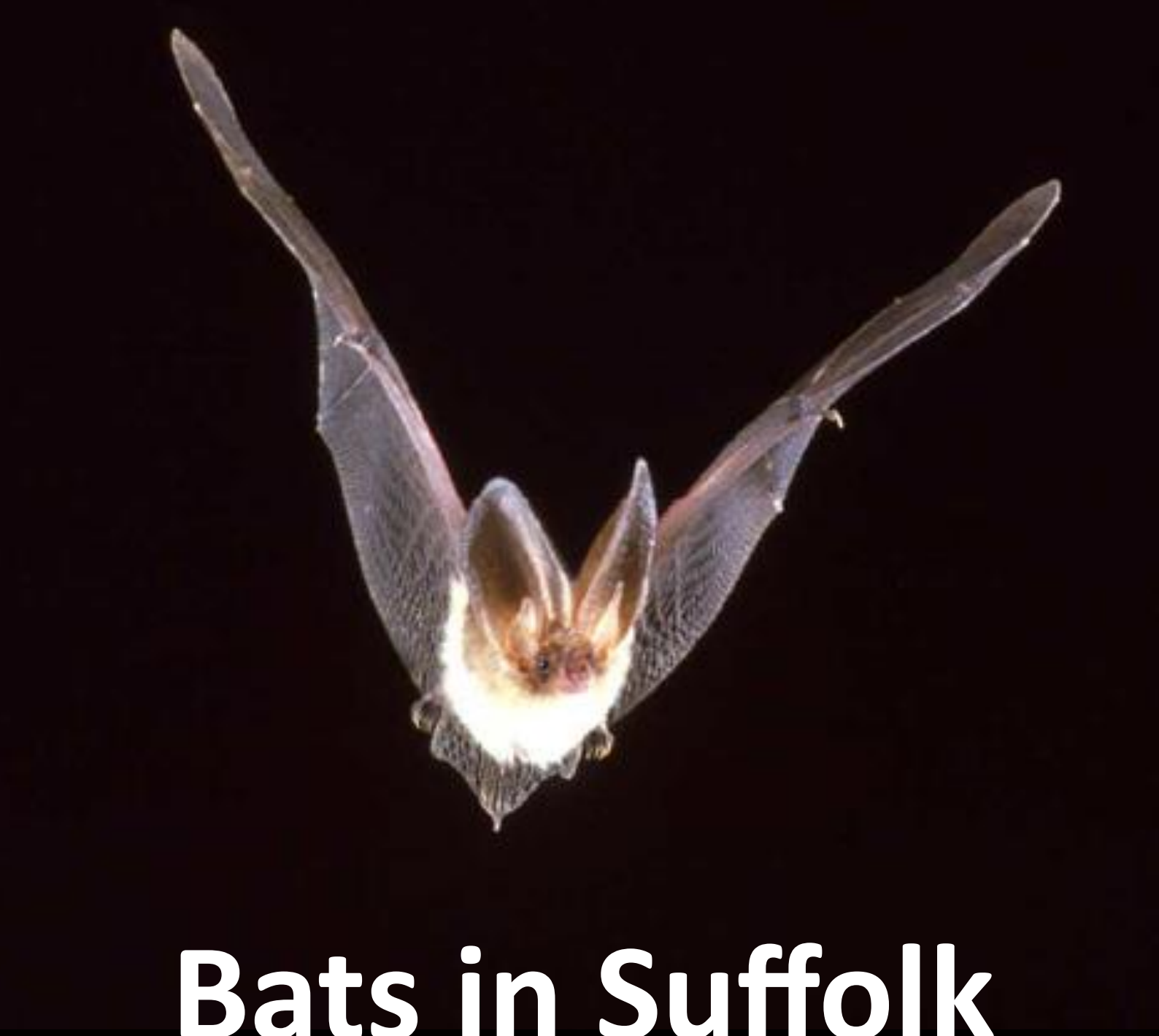


Bats in Suffolk

Distribution Atlas
1983-2016

CONTENTS

Editor: Sue Hooton

Published November 2017

Cover: Brown Long-eared Bat © Tony Tilford / Aurum Ecology

Introduction

The Suffolk Bat Group was formed in 1983 to record, research and conserve the county's bats.

The main source of records for the first fifteen years was from licenced members carrying out building surveys for English Nature (now Natural England). These early records are entirely random as they were all in response to requests from householders and developers asking for advice in various forms as a result of bats becoming fully protected under the 1981 Wildlife & Countryside Act.

By the late 1990s, bat detectors were becoming more frequently used by both group members and other interested naturalists. However records from this method were not considered to be sufficiently accurate to species level for submission to the Suffolk Biological Records Centre (now Suffolk Biodiversity Information Service).

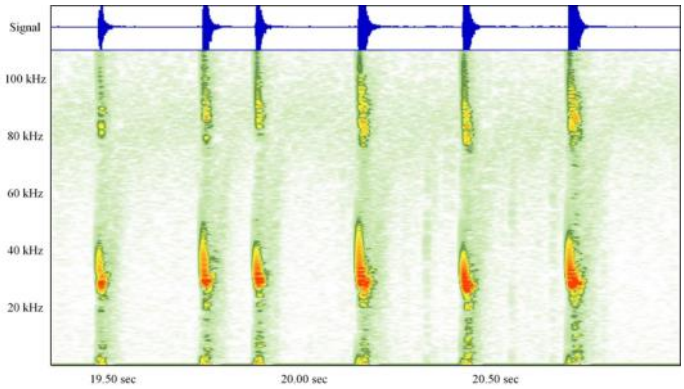
By 2000, computer software had been developed by which the sounds on the detectors could be recorded digitally and then analysed using programmes such as Bat Sound and Batscan. The sounds are converted into spectrograms and the various species display varying images enabling a positive identification to be made for most bats.

This transformed bat surveying and, although still not quite as instant as watching birds through binoculars for identification, an evening of recording can be quickly downloaded and the spectrograms viewed and compared with known images, enabling the species encountered to be positively recorded.

Since the last atlas in 2012, the lower prices and therefore the availability of static detectors has meant that they are no longer only available to consultants on expensive contracts. The group now owns two units and the British Trust for Ornithology (BTO) based Norfolk Bat Project has made units available on loan to a number of individuals in Suffolk. The static units are left at sites for several days and record all bat activity over the period, greatly increasing the number of records and therefore eliminating surveyor fatigue and periods of poor weather. The down side of this technology is the sheer volume of data that is gathered meaning several hours are spent using computer programmes such as Analook to analyse the data.

All this means that bats can be identified without having them in the hand which requires a licence and so opens bat surveying to many more people.

Above: Sue Hooton and Arthur Rivett recording bats © Arthur Rivett



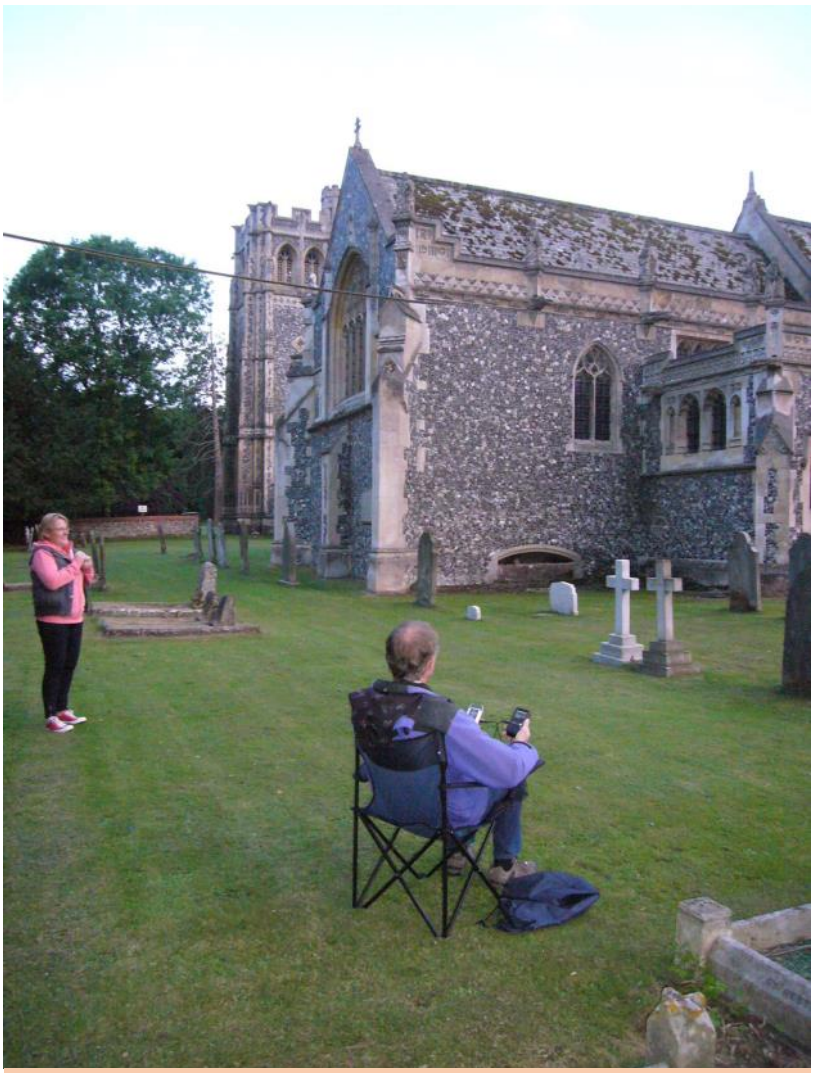
Right: The spectrogram for a serotine bat at 27 Khz using Bat Scan

From 2000 Suffolk Bat Group has purposely selected various areas around the county to carry out organised bat detector surveys. The main driver has been to investigate the distribution of Barbastelle bats across Suffolk. Barbastelle bats are rare in a European context and, up until the mid-1990s, East Anglia was thought to be the UK's stronghold and so this was an obvious species to concentrate on.

Prior to using detectors combined with software, most records of this species were from known hibernation sites which are themselves limited in number. However, this species is relatively easy to identify from detector recordings and by choosing suitable habitat, the records of this species and many others have increased greatly.

The following maps have been split into pre- and post-2012 for comparison. It is probably fair to say that most records today are from detector surveys run either by Suffolk Bat Group, Bat Conservation Trust, BTO or consultants. In Suffolk, we now have more licensed bat workers than at any time in the group's history, but the number of visits requested by Natural England is much less than in former times.

Bats' protected status means they are routinely surveyed for planning developments, not just for houses and building conversions, but also for wind farms, power stations and other large infrastructure projects.



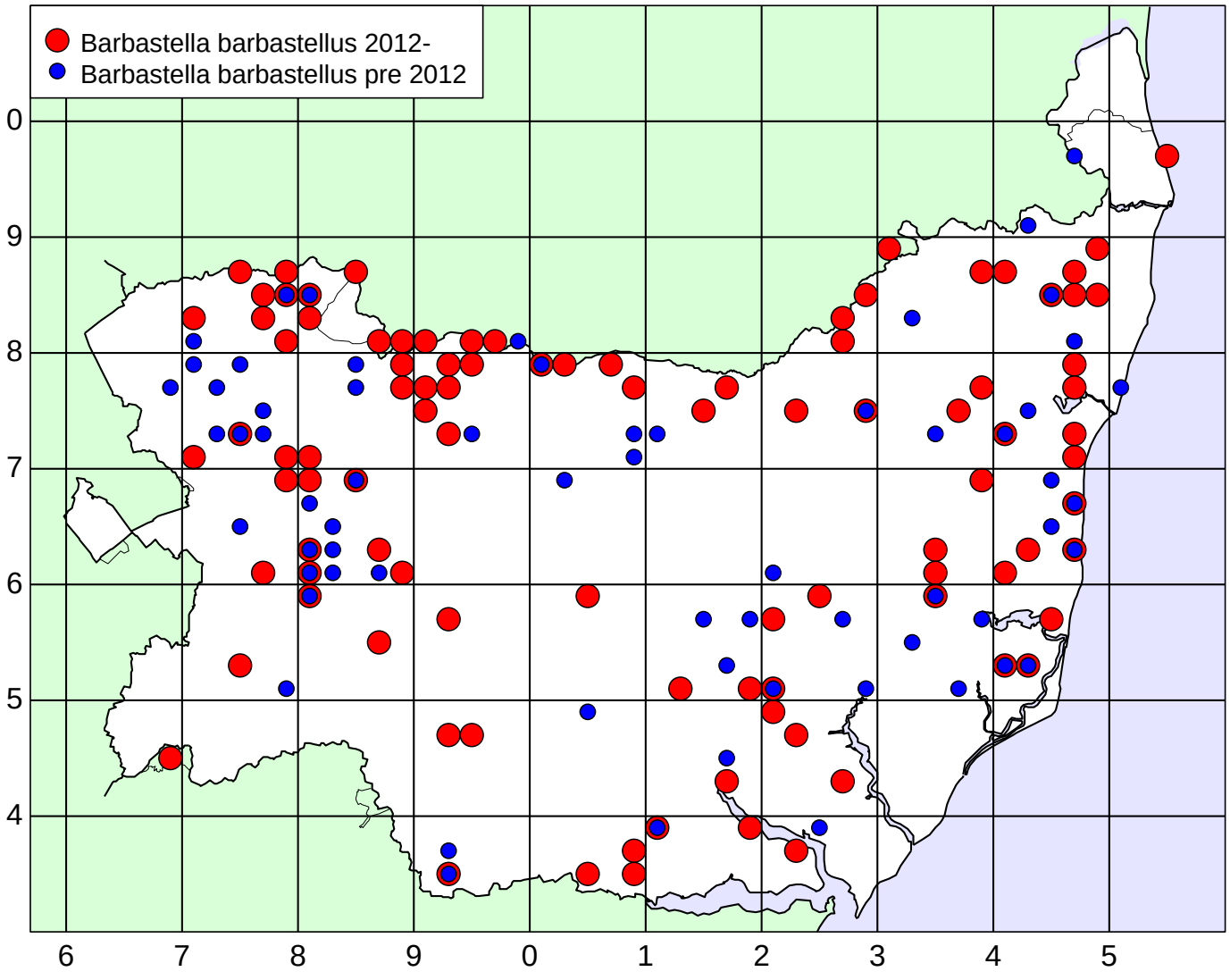
Volunteers undertaking a bat emergence survey at Elveden church
© Sue Hooton

Dennis Kell, a volunteer, fitting a bat box
© Arthur Rivett

Barbastelle Bat *Barbastella barbastellus*

The Barbastelle is one of Britain's rarest bats and is currently listed as endangered or vulnerable in most European countries. The first known breeding colony was discovered in 1996 in Norfolk and in the last few years, only four other colonies have been discovered in Britain. The species has a restricted distribution, the majority of records being confined to England north to Yorkshire and Wales, with only a few animals discovered each year. It was one of the UK Biodiversity Action Plan species with its own Species Action plan aimed at improving its conservation status. The Barbastelle is listed in Annexes II of the EC Habitats & Species Directive and the Bonn and Bern Conventions. It is also included in s41 Natural Environment and Rural Communities Act 2006 list of Priority species.

Barbastelle bat hibernating © Arthur Rivett



Most of the Suffolk records prior to 2004 relate to single animals in hibernation except for six animals discovered in January 2002, hibernating in a purpose-built site.

The majority of the records in the west of the county pre-2004 relate to hibernating animals. Barbastelles are remarkably tolerant of cold weather and have been noted as usually entering hibernacula only when the temperatures drop well below freezing for long periods.

The advances in bat detectors, particularly when used in conjunction with computer sound analysis, has enabled Suffolk Bat Group to survey a large number of potential new sites with initial help from Norfolk Bat Group. Ancient woodland and parkland have been the initial target habitat and Barbastelles have been found on every occasion. Breeding colonies have been located through radio tracking for proposed development, but as a tree dwelling species that favours old trees with lifting bark, this habitat, and therefore the location of colonies, changes every year.

An old tree with peeling bark in Hintlesham Hall woods, suitable roosting habitat for Barbastelle bats © Arthur Rivett

Between 2000 and 2012, records increased from 15 locations to 64; a massive increase and, since 2012, a further 74 locations have been confirmed. However, this does not mean they are more common, it is just that we are better at finding them. The map does now suggest they are widespread across the county in suitable habitat, but in very small numbers.

Good Barbastelle bat habitat - broad-leaved woodland with lots of trees with crevices for roosts and dense areas for foraging © Arthur Rivett

Serotine Bat *Eptesicus serotinus*

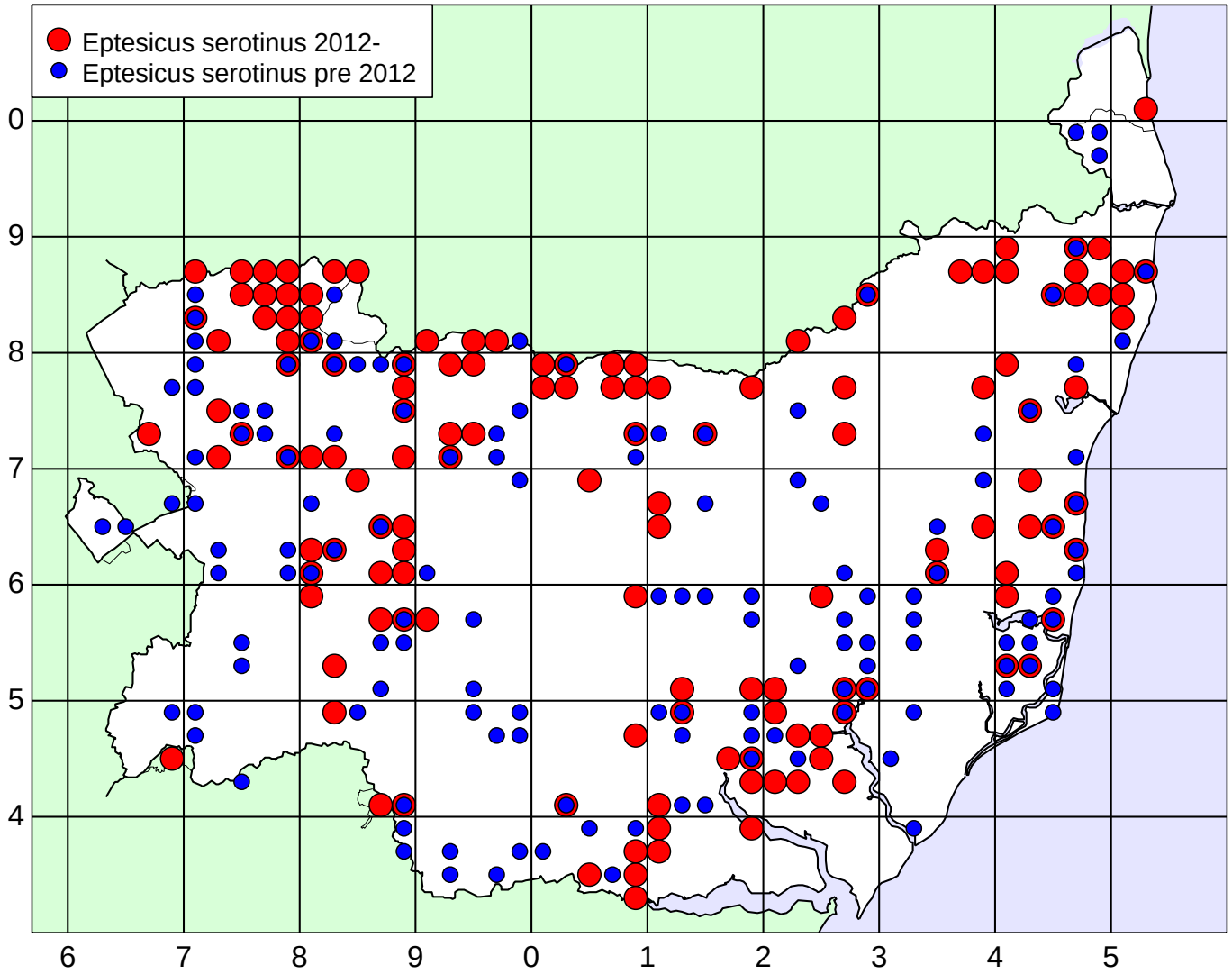
The UK range of this large bat, with a wingspan of approximately 30cm, is confined to the south and south-eastern counties, with few records north of a line between the Severn and the Wash. There are few Norfolk records, making Suffolk the northern breeding limit of this species.

The Serotine has a large, distinctive shaped dropping which has enabled the identification of many roosts as the animals, being crevice dwellers, tend to secrete themselves out of sight under tiles and roof timbers.

In 1985. only one colony of Serotines was known to exist in the county. Since then the species has been found to be widespread, albeit in small colonies. There are now some 45 known colonies, discovered by members of Suffolk Bat Group and by Robert Stebbings and Mark Robinson in their survey of Serotines on the Suffolk/Cambridgeshire border. By 2012 these bats were known from 136 locations and a further 99 locations added by the end of 2016.

All records relate to summer nursery colonies and detector records. Very few Serotines are recorded in hibernation and it is thought that most of them hibernate within buildings, in cavity walls or cracks in timber. Most nursery roosts are in either older houses with large roof voids or churches, often sharing the building with other species.

Because of the species' association with pasture, the current decline in livestock farming could have a significant influence on the survival of this bat in the eastern counties.



Serotine bat © Kevin Simmonds / Aurum Ecology

Grazed Breckland heath provides habitat for chafers and dung beetles, prey for Serotine bats © Arthur Rivett

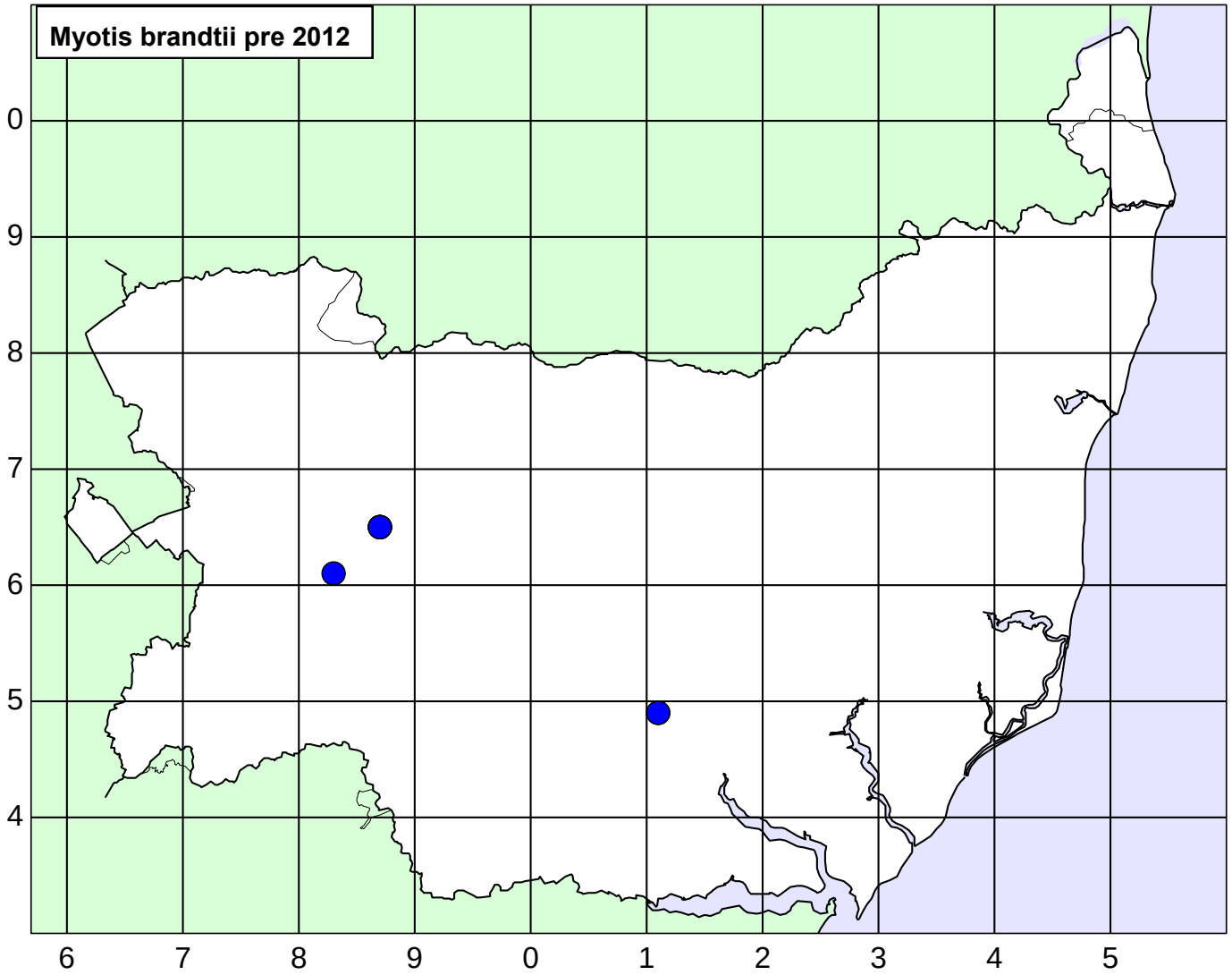
Myotis Bat Species

The Myotis group of bats consist of Natterer's, Daubenton's, Whiskered and Brandt's bats. While these species can be separated in the hand, their calls cannot currently be easily separated using detectors and software. Therefore, most detector records are recorded just as Myotis unless there are other field signs i.e. Daubenton's feeding over water or a good visual sighting in flight of Natterer's in suitable habitat.

Brandt's bat *Myotis brandtii*

The Brandt's bat was not distinguished from the Whiskered bat in Europe until 1971. It was recorded in Suffolk in the same year. The smallest of our *Myotis* species, Brandt's bats are scarce nationally with very few records for East Anglia. The only Suffolk records have been from animals in hibernation and none have been recorded since 2000.

Brandt's bat © Kevin Simmonds / Aurum Ecology

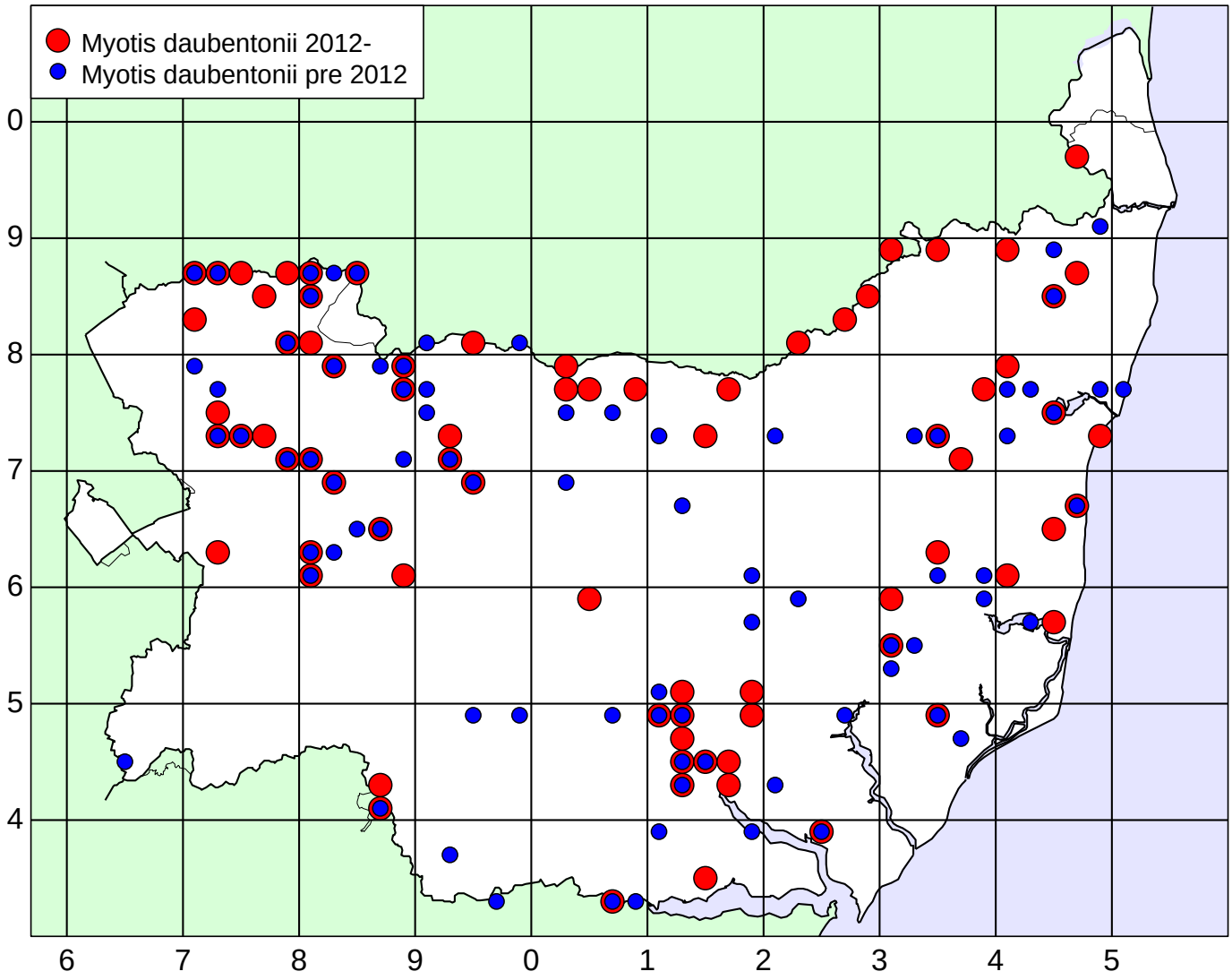


Daubenton's bat *Myotis daubentonii*

Nationally Daubenton's bat is regarded as widespread and records for Suffolk suggest it has a wide distribution, but is far from common in the county. Pre-2000 the vast majority of records relate to animals found in hibernation.

To date, only one regular nursery roost has been recorded in the county which at one time held over 400 animals, making it one of the largest breeding colonies in the UK. However, this is the most abundant species to be found in all the regular hibernacula with some sites holding several hundred animals. Counts at the larger sites over recent years indicate a relatively stable population. Since 2012 a total of 42 additional locations have yielded this species and its presence has been added to four more 10km squares.

Daubenton's bats hibernating © Arthur Rivett



Above: Daubenton's bat flying over water
© Kevin Durose / Bat Conservation Trust

Left: Daubenton's bat hibernating. Note the large feet used for trawling for insects when feeding over still water
© Sue Hooton

Good feeding habitat for Daubenton's bats - lakes and other waterways contain prey such as aquatic insects
© Arthur Rivett

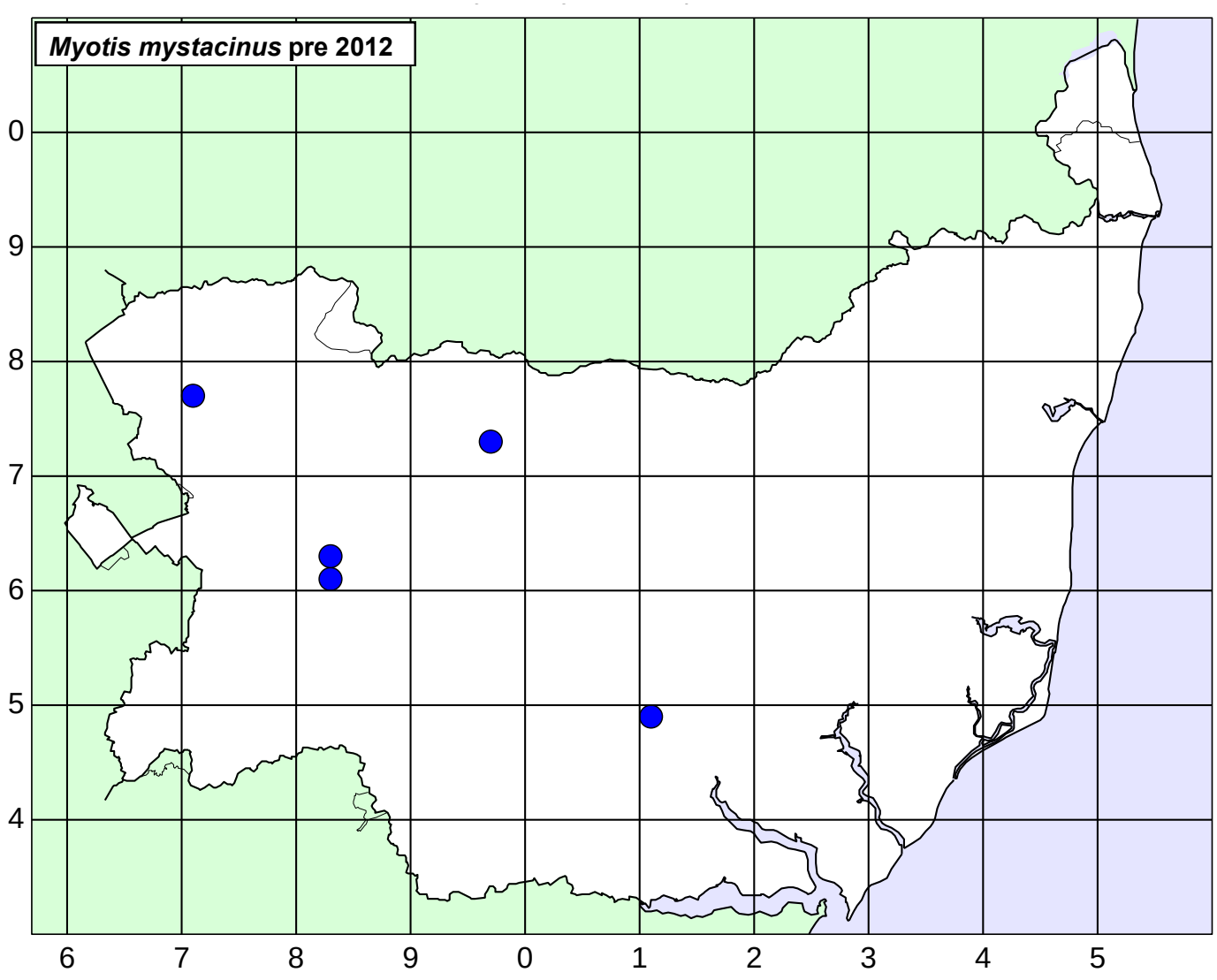
Whiskered Bat *Myotis mystacinus*

The smallest of our *Myotis* species, both Whiskered and Brandt's, are scarce nationally with very few records for East Anglia.

Records before 1971 referring to 'Whiskered' may relate to either species. All records, with one exception, relate to single animals discovered in hibernation sites. In January 2000, a Whiskered bat was found clinging to a wall of Stanton Primary School: after being taken into care it was released back into the area.

From the scattered locations of the records it would be reasonable to assume that a few small colonies are yet to be discovered. However, none have been added in the past five years.

Whiskered bat © Hugh Clark / Bat Conservation Trust

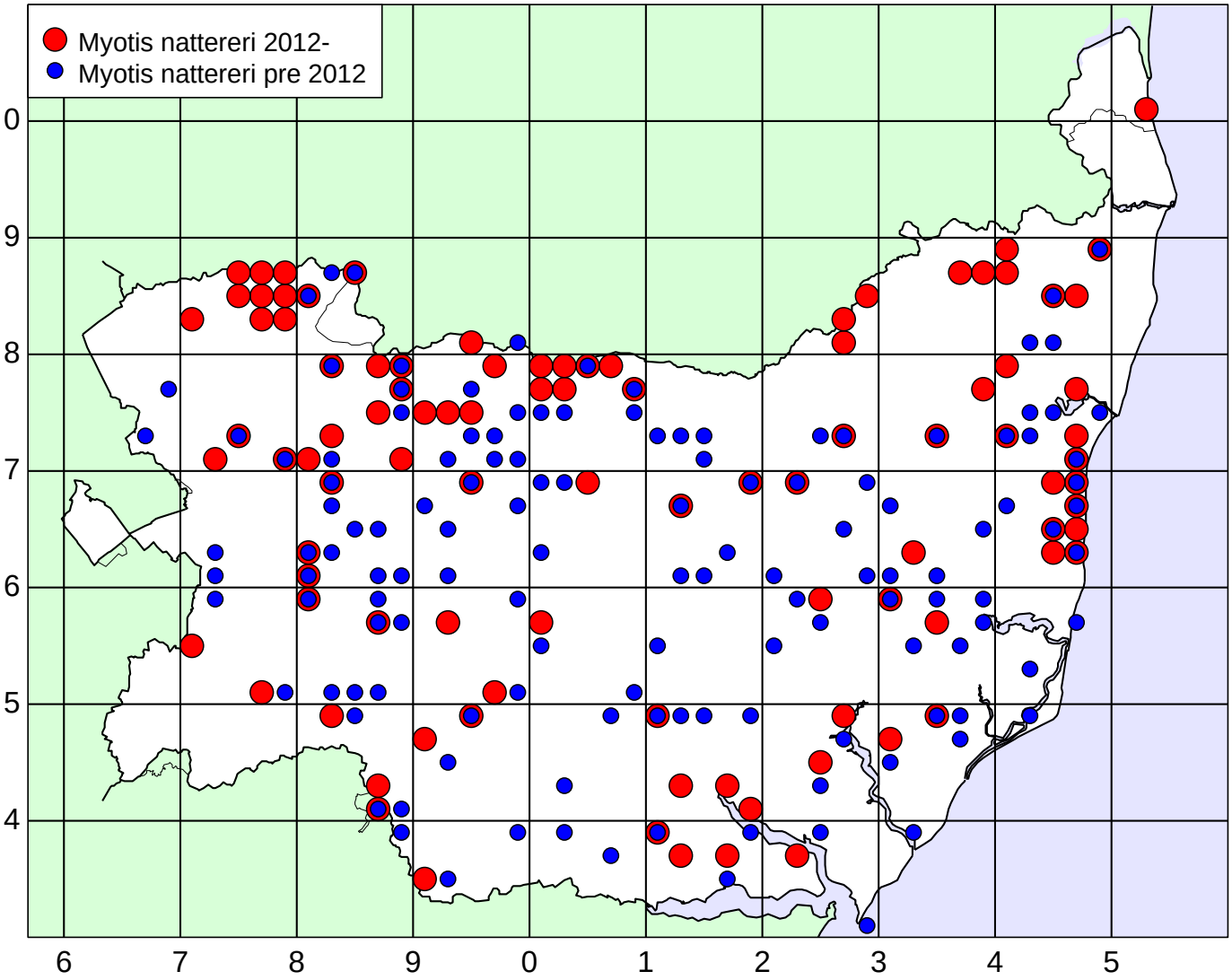


Natterer's Bat *Myotis nattereri*

This species has a widespread distribution throughout Great Britain and in Suffolk. Prior to the 1996 Suffolk Barn Survey, almost all records related to animals found in hibernation sites. The barn survey provided a three-fold increase in records of the species and located a number of nursery roosts. Barns that need surveying before planning applications for conversion still provide a number of new records, though these are now very much reduced as the number of available buildings diminishes.

Natterer's bat hibernating © Arthur Rivett

Natterer's use most of the known hibernation sites around the county with the highest numbers being found during cold spells of weather. They frequently share their hibernation sites with Daubenton's bat. Since 2012 a further 63 locations have now recorded this species indicating a very wide distribution across the county.



Natterer's bats at Tiger Hill Local Nature Reserve © Neil Catchpole

Natterer's and Brown Long-eared bat feed in woodland edges where they often take prey from foliage within the canopy. © Arthur Rivett

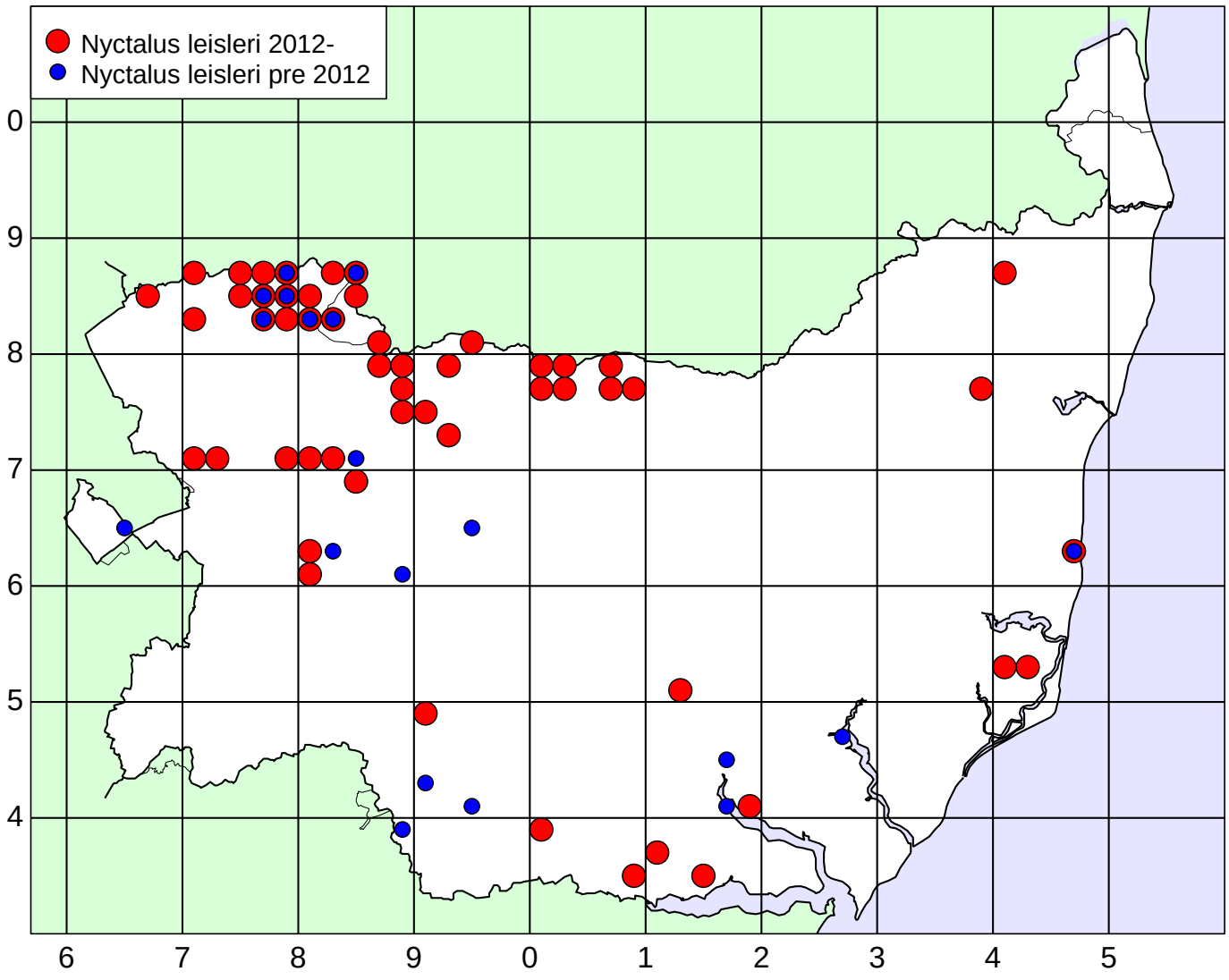
Natterer's bat tree roost, Ickworth Park © Arthur Rivett

Leisler's Bat *Nyctalus leisleri*

The Leisler's bat is common in Ireland, but is regarded as a rare species in Great Britain although records suggest it has a widespread distribution. The picture in Suffolk reflects the situation in the rest of the country, with only ten records outside Thetford Forest and only two of these relating to nursery colonies.

Prior to the start of the Thetford Forest Bat Box project in 1975, this species was unknown in the county. Over the years, Leisler's have been regular occupants of the boxes and in 1998 a breeding colony was discovered in a house in Brandon. It is possibly animals from this colony that occur in the Thetford bat boxes, but since 2012 records show that this animal is widespread in the north west of the county. The scattered records across the rest of the county require further follow up work to confirm the species status in the county.

No animals have been discovered in hibernation, but it is predominately a tree dwelling species and such sites are most likely to be used in winter, making them difficult to locate. Leisler's are known to fly quite long distances and so breeding and hibernation sites could be many miles apart.



Leisler's bat © Arthur Rivett

Good habitat for Leisler's bats. Grazed parkland and water provide a range of insect prey such as caddis flies and beetles © Sue Hooton

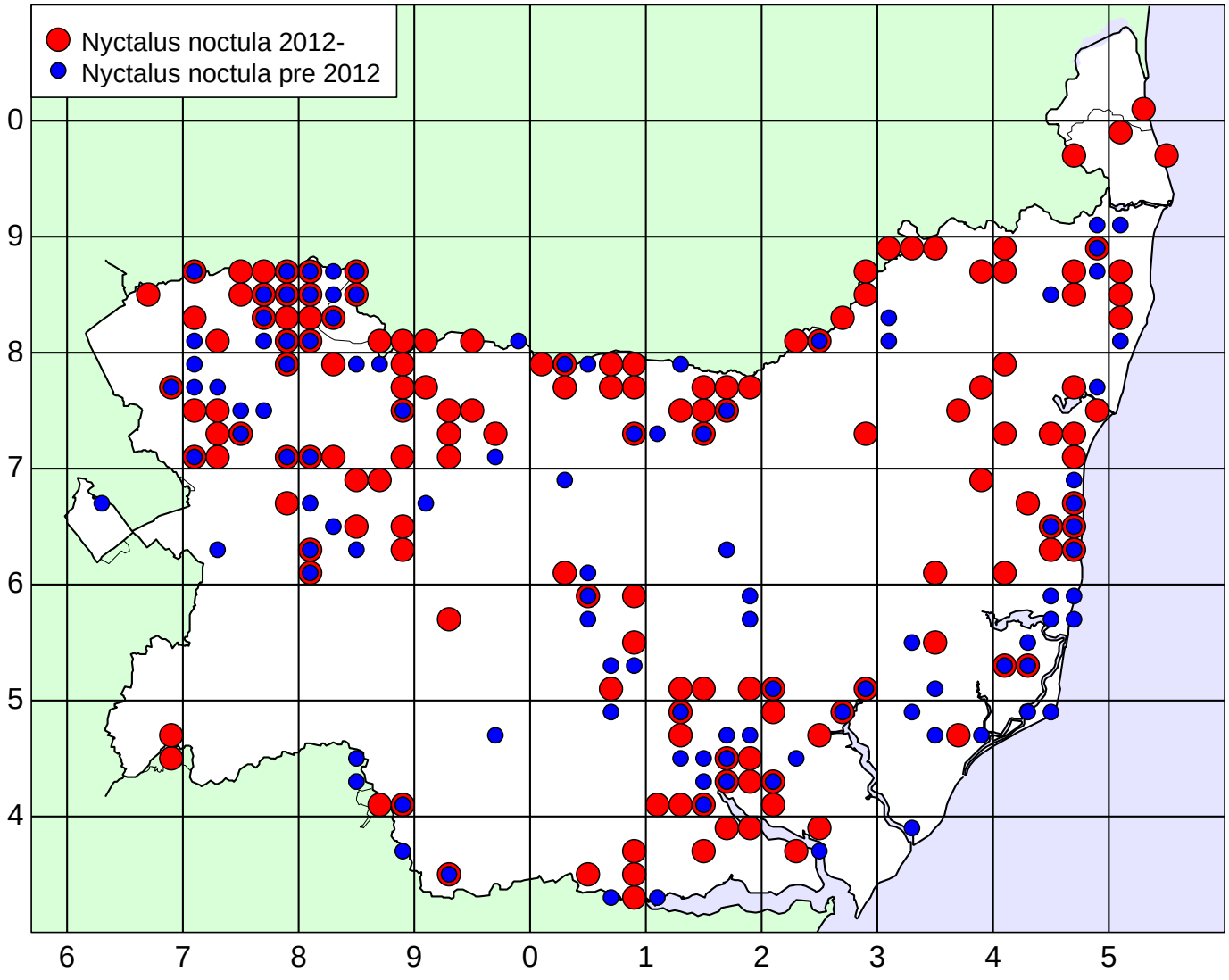
Noctule Bat *Nyctalus noctula*

The Noctule is Britain's largest bat, a tree dwelling species that tends to forage over wide distances above open habitats such as wetlands, pastures and widely-spaced woodlands. It has a widespread distribution in England and Wales, is rare in Scotland and is not found in Ireland where the Leisler's bat takes its place.

Records suggest that the Noctule is widespread throughout the county, but most records relate to either bat detector and sight records or animals discovered in bat boxes. The species has been known to breed in bat boxes in at least one of the county's project areas.

One of the largest known regular colonies of Noctule bats occurred in a white poplar on Purdis Heath golf course near Ipswich. Over 50 animals were seen emerging in August 2000 and no larger colonies have been discovered since that time. Almost all of the recent records are of individuals recorded on detectors but there are still six 10km squares that have never recorded this species and further six that have no recent records.

The Noctule is usually the first bat to appear in the evening, sometimes even before sunset. It can travel up to 10km from roost to feeding areas, flying well above tree level in the open.



Noctule bats being checked as part of long term monitoring of bat boxes in Thetford Forest © Luci Spencer

Noctule bat roost in woodpecker holes in Scots Pine tree © Arthur Rivett

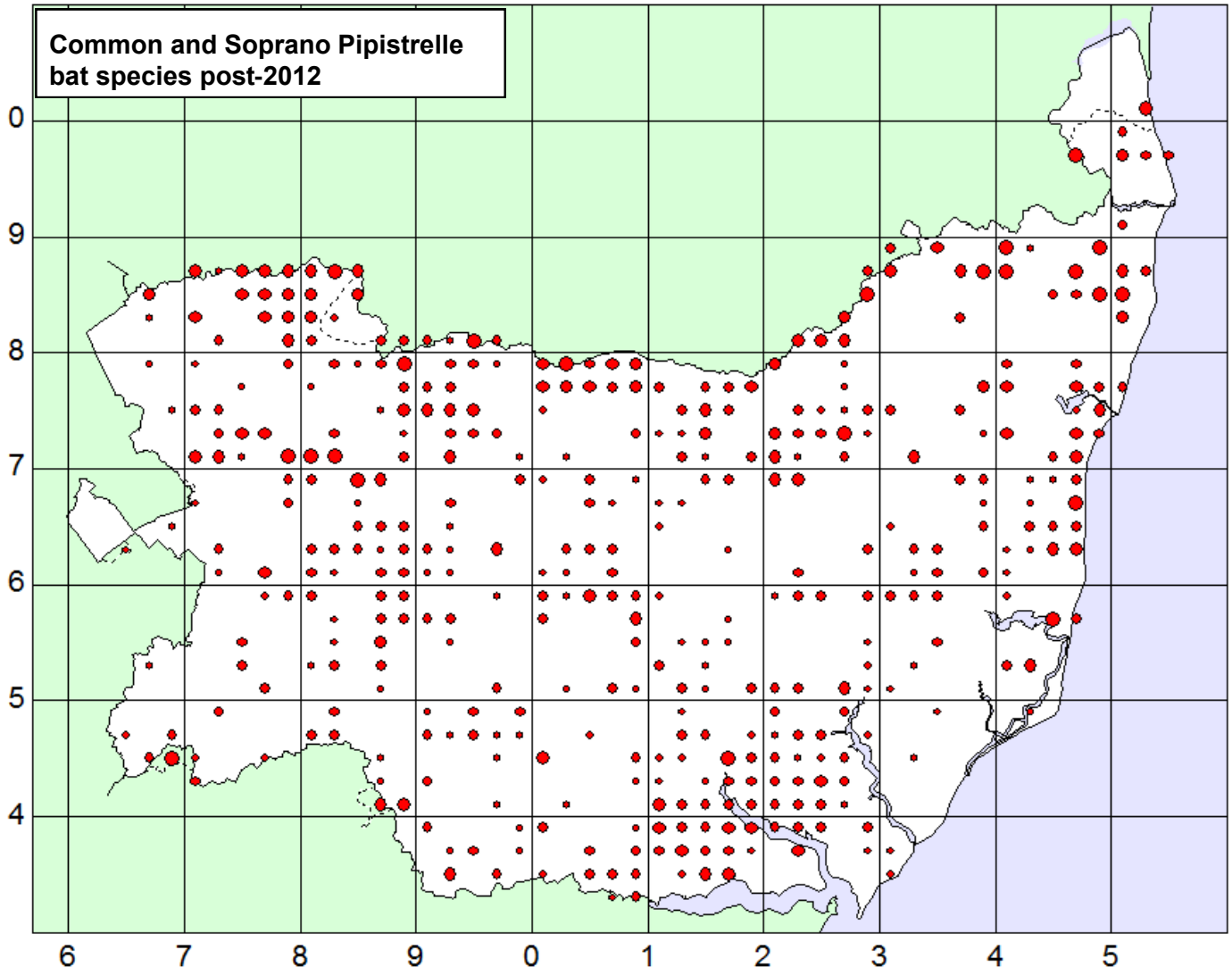
Pipistrelle Bat Species

The two commonest pipistrelle bat species are the most abundant bats in the UK and are, by far, the most frequently encountered bats in Suffolk.

In the 1990s developments in taxonomy resulted in this small bat being split into two species based on differences in the frequency of their echo-location calls. Both the 45kHz Common Pipistrelle and the 55kHz Soprano Pipistrelle occur in Suffolk, but only recently have attempts been made to differentiate species in the field and so all the older records relate to both species. The two species are extremely alike in appearance and there is no easy way of separating them in the hand although wing venation patterns are sometimes used.

Common and Soprano pipistrelles have very similar distributions, being found throughout the British Isles and, although widespread, there are still two 10km squares in the county that remain devoid of records.

However, there is now a third species - Nathusius' Pipistrelle - which is noticeably larger than the other two pipistrelles and the fur on its back is longer, sometimes giving it a shaggy appearance. The species echolocates below 40kHz and the roosts are often near water bodies. Most Nathusius' Pipistrelles are encountered in autumn, although some do remain all year and breed in the UK. Their distribution in Suffolk is only just being discovered.



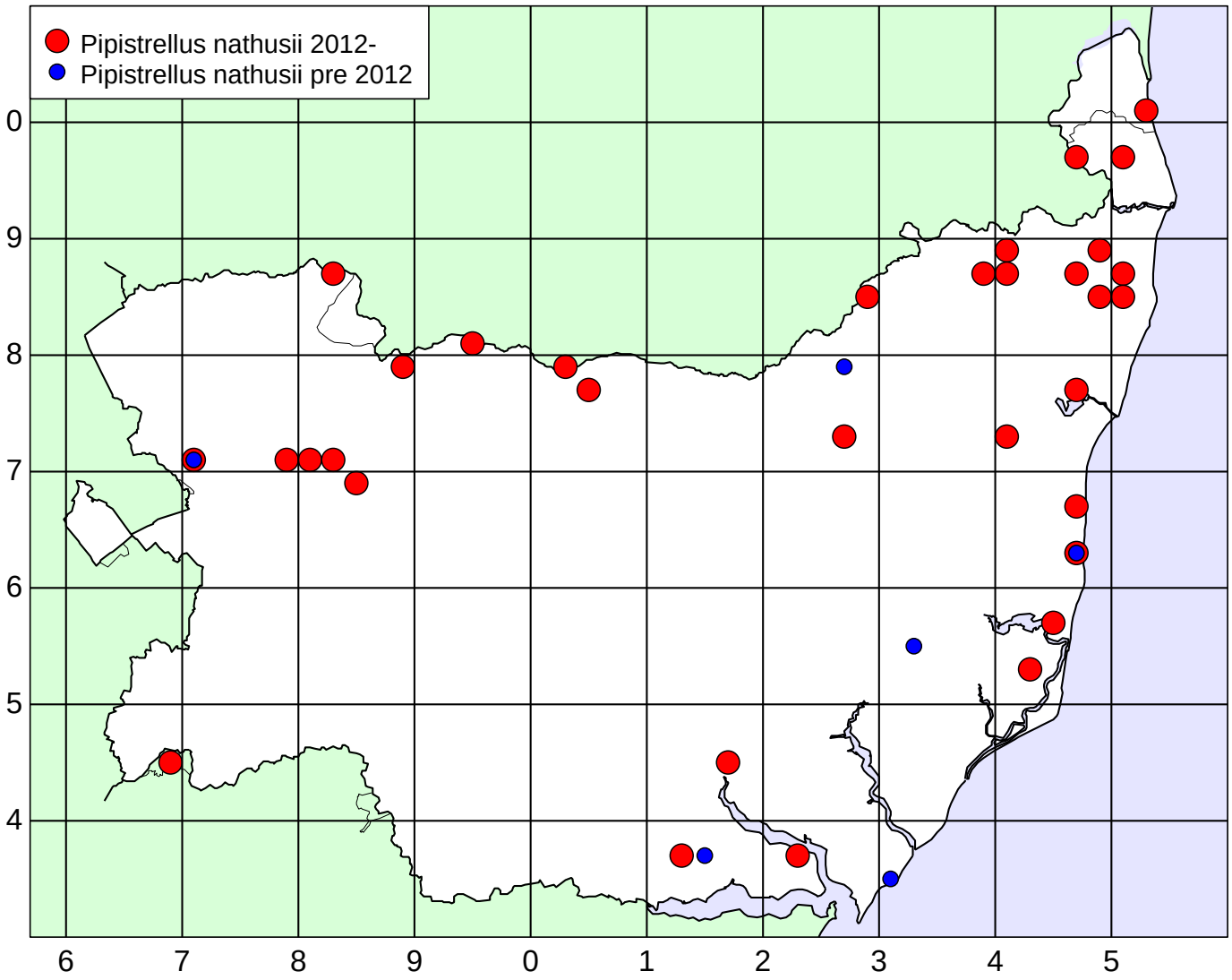
Nathusius' pipistrelle *Pipistrellus nathusii*

Nathusius' Pipistrelle is a migratory species on mainland Europe and occasional animals have been found in UK for many years, the assumption being that they were windblown migrants. However, in 1996 a small breeding colony was discovered in a Lincolnshire house roof and in 1997 a second breeding colony was found in Northern Ireland. In 1998 the first Norfolk record came from Filby Broad and there have been annual records from Paston Barn since 1999.

The species was only discovered in Suffolk in 2005 at two separate locations and may be more far more widespread than these records suggest. The consultants carrying out bat detector surveys near Great Blakenham reported abundant passes on two nights in June and September suggesting a breeding colony may be located close by.

Further field work since 2012 using detectors combined with computer software has increased the locations these bats have been recorded in from six to 31. The number of coastal locations may indicate migrating animals, although some of the records were mid season.

Suffolk Bat Group has now joined the National Nathusius' Pipistrelle Project with support from Essex Bat Group. This involves harp trapping with lures and ringing any Nathusius' Pipistrelles found, so hopefully more information on this species will be available for the next edition of the atlas.



Nathusius' Pipistrelle bat in the hand © Odette Robson

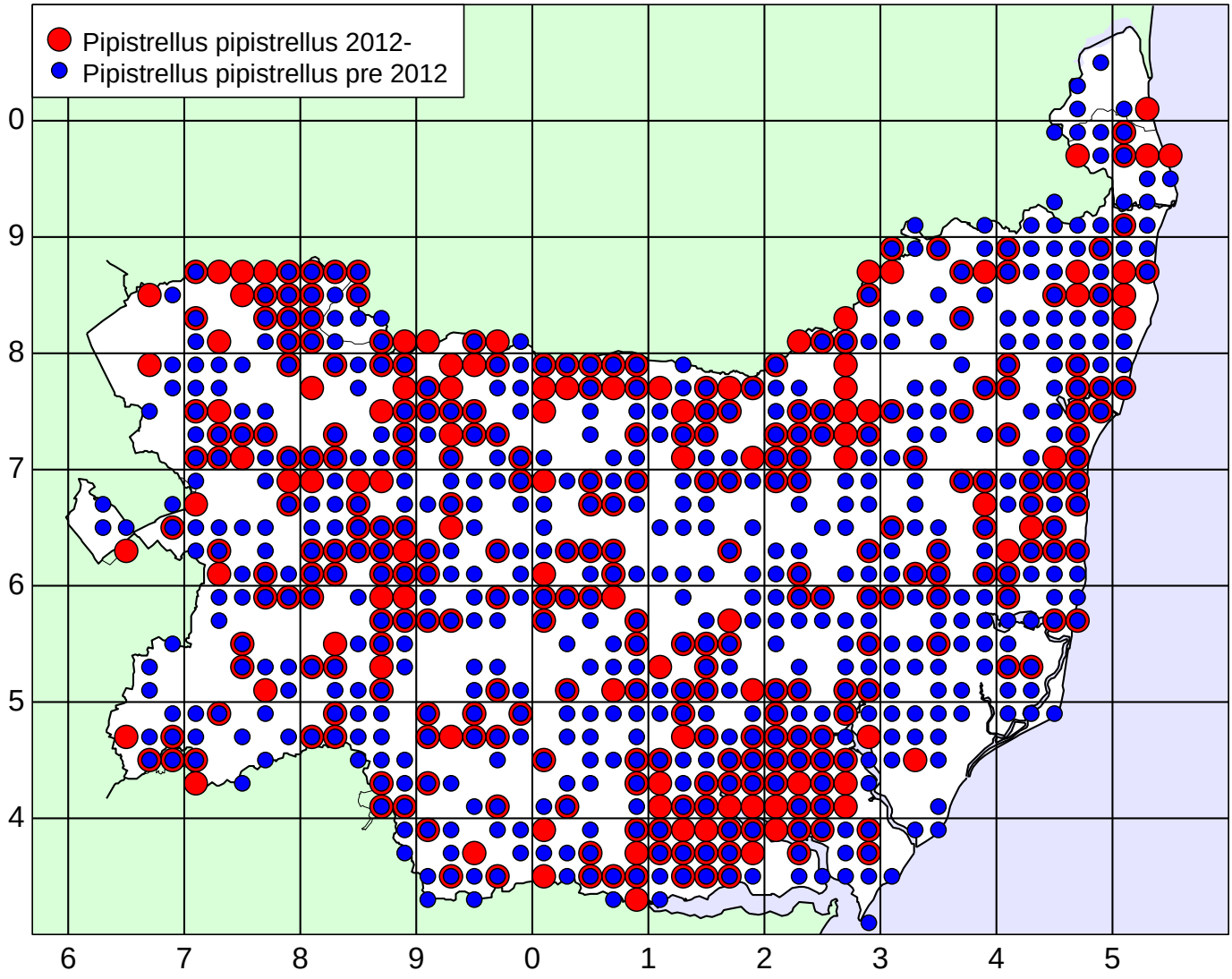
James Booty and Sue Hooton inspecting a harp trap for Nathusius' pipistrelles © Odette Robson

Common pipistrelle *Pipistrellus pipistrellus*

Both of the commoner species of pipistrelle bats are usually associated with buildings, particularly in the summer. Most roosts are found whilst following up Natural England enquiries where the animals are likely to be disturbed by building works or timber treatment. Over 350 roosts have been located in the county, the size of the colonies ranging from 50 - 400+ animals. These roosting sites include listed and historic buildings, modern houses, barns, churches, trees and bat boxes. Roosting sites in trees are notoriously difficult to locate and consequently are likely to be under-recorded, not just for pipistrelles, but for all other species.

There are very few records of pipistrelles in hibernation, usually they are discovered during building works and generally only single animals.

They are the only bat species to have been recorded in every 10km square in the county.



Holding three Common Pipistrelle bats in the hand © Luci Spencer

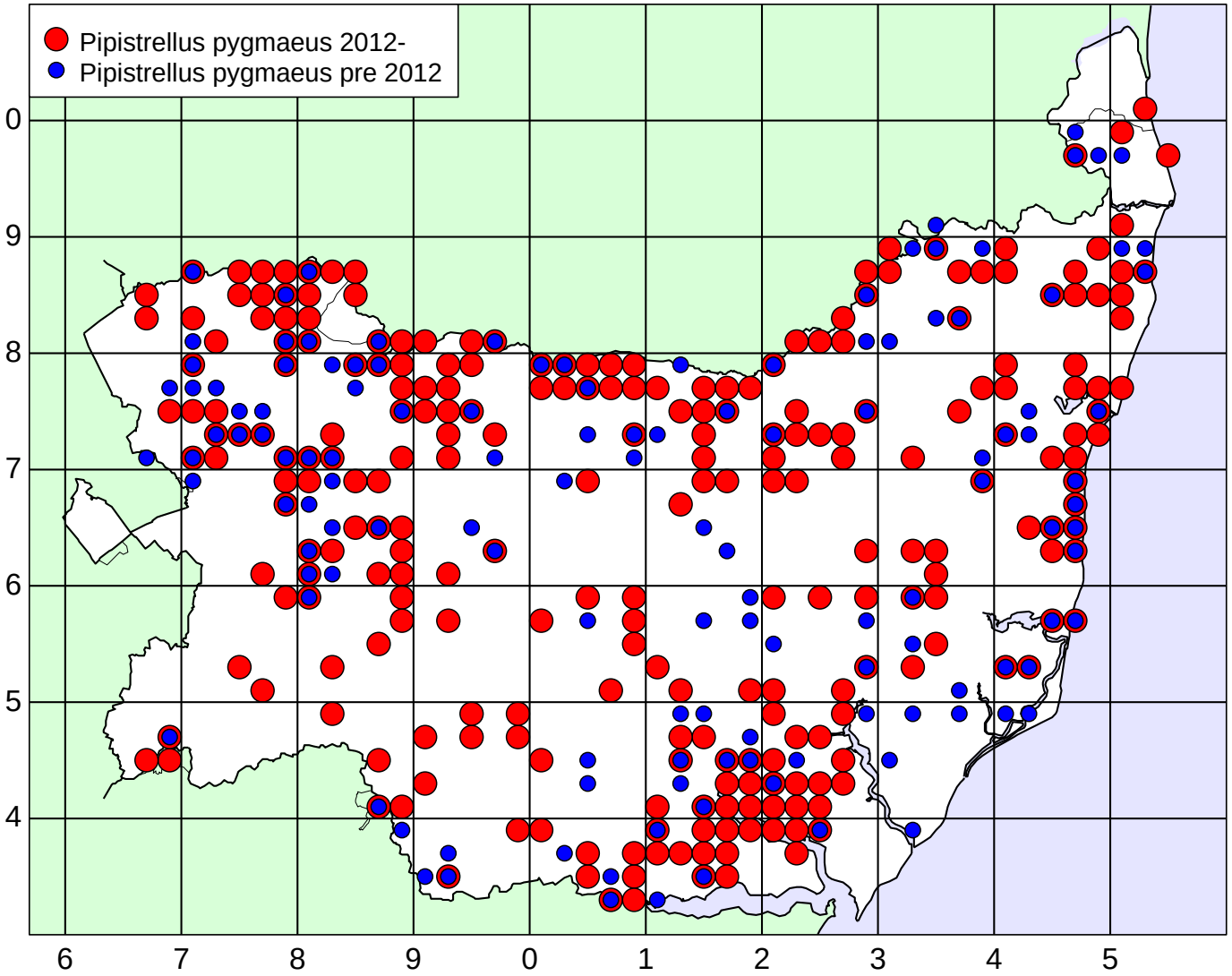
Farm ponds are good Pipistrelle bat feeding habitat as they provide lots of small insect prey such as midges.
© Arthur Rivett

Soprano pipistrelle *Pipistrellus pygmaeus*

Both of the commoner pipistrelle bat species have a very similar distribution, being found throughout the British Isles. However, recent research has found that Soprano Pipistrelles appear to be quite different from Common Pipistrelles in certain aspects of their biology. They may be more reliant on aquatic habitats for foraging and many of their known roosts are associated with river valleys (Oakley and Jones, 1998). They also form larger maternity roosts than Common Pipistrelles. The very large summer roost of Soprano Pipistrelles known to exist at Flatford adjacent to the River Stour in South Suffolk, certainly bears out these findings.

Soprano Pipistrelles at a roost site
© Kevin Simmonds / Aurum Ecology

The huge increase in records over the past five years is down to the ease of splitting the two pipistrelle species using detector software and not that this species is increasing and spreading its range.



Brown long-eared bat *Plecotus auritus*

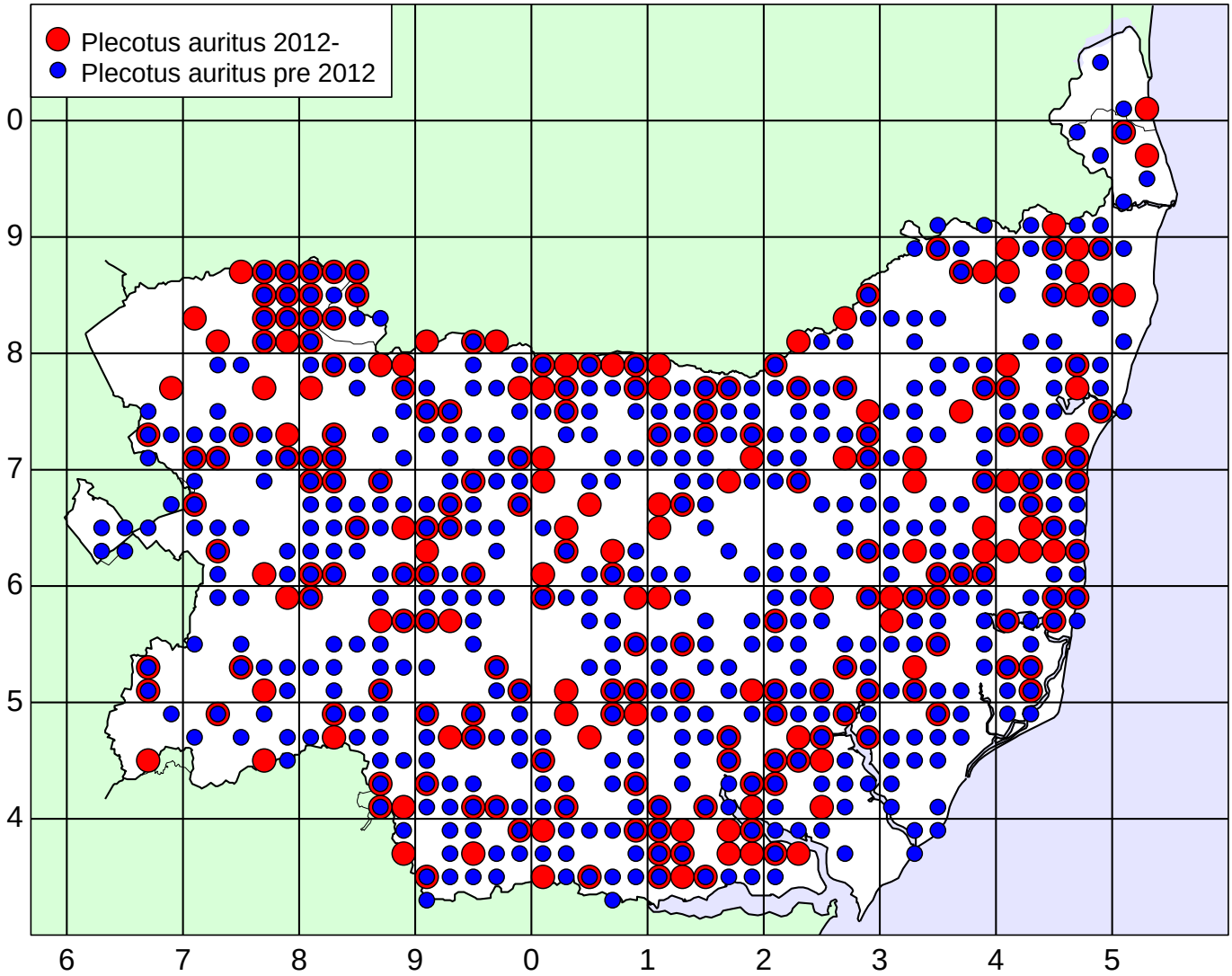
The Brown Long-eared bat is a common and widespread species second only to the pipistrelle in distribution, both nationally and in Suffolk.

This species is found in a wide variety of sites from modern houses, churches to timber framed barns and including ice houses and chalk tunnels. It is the only species regularly found both in summer and winter. They readily use bat boxes and some 65 animals were discovered in one Thetford box a few years ago! Nursery colonies are usually located within lofts where the bats cluster along the ridge board, giving rise to a characteristic line of droppings on the loft floor. This species is now regularly found in lofts during the winter and sometimes may not be hibernating.

They have a characteristic slow, fluttering flight with occasional hovering pauses and are more frequently seen than heard because of their very quiet echolocation sounds which are often not picked up by bat detectors.

Brown long-eared bat © Tony Spencer

A total of 88 new locations have been recorded since the last atlas and the species remains widespread across the county.



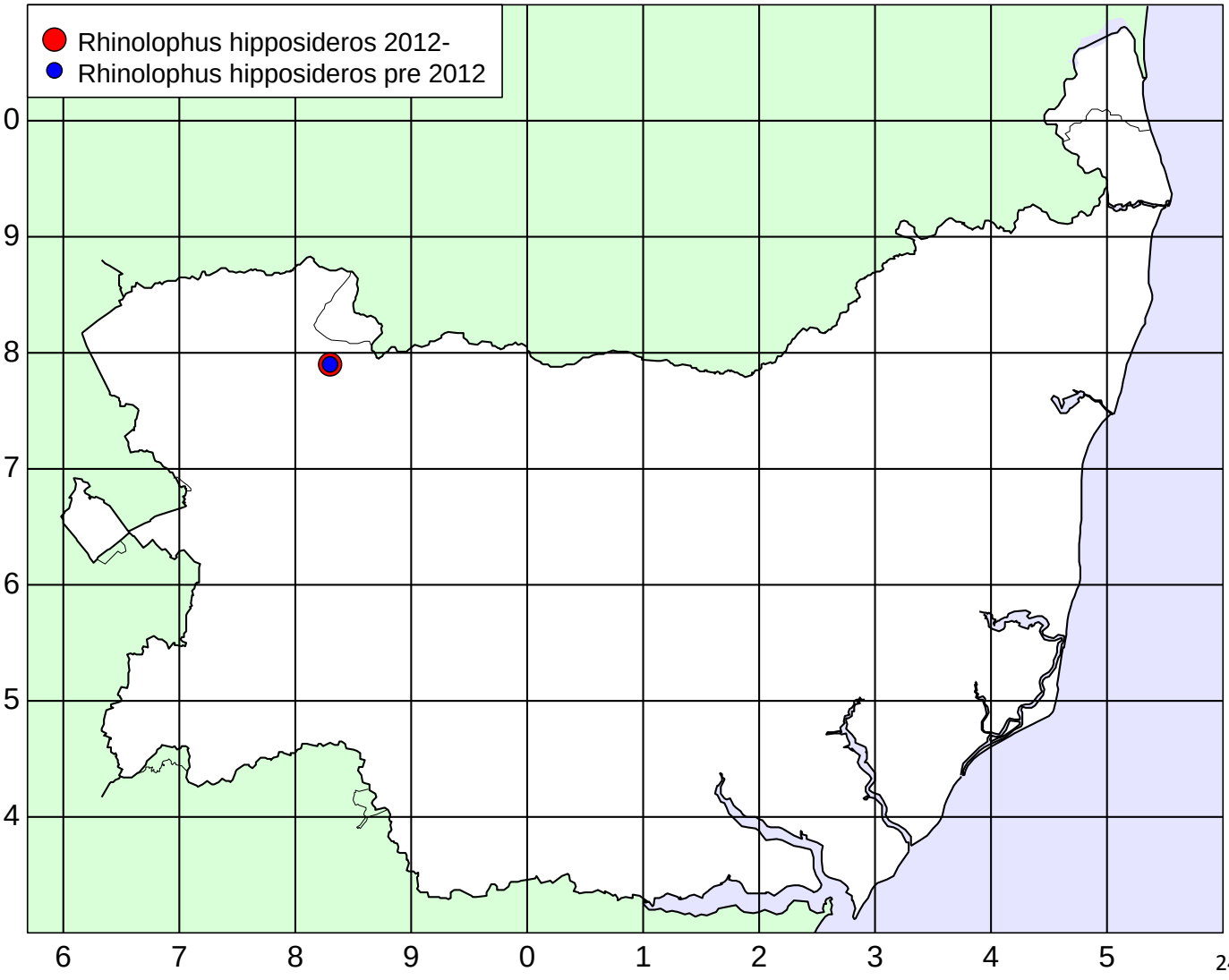
Lesser horseshoe bat *Rhinolophus hipposideros*

The discovery of a single individual Lesser Horseshoe bat hibernating in Suffolk in 1996 was probably the most exciting find in the history of the Suffolk Bat Group. This bat was found in the same site every winter until 2015 and Sue Hooton saw it move on 15 March 2016, so it was alive then. It has not been recorded since that time. Efforts were made during several summers to locate this bat in suitable habitat near to the hibernation site, but to no avail. Since this individual would now be more than 20 years old, the species may now become extinct in Suffolk. Prior to this, there had been only one other record of the species in the county in the past 100 years. The last occurrence was in December 1958, relating to a single animal which was ringed and remained until early 1959.

Lesser Horseshoes are now restricted to Wales and the south-west of England east-wards to Warwickshire, with the nearest known colony some 90 miles from the recent Suffolk site.

Lesser horseshoe bat
© Arthur Rivett

Studies have shown these bats rarely travel more than 15km between their roosts and so the appearance of one in Suffolk has always been intriguing. It is unknown whether it was a lost or displaced individual, or whether there is a small population existing somewhere in West Suffolk waiting to be discovered.



Summary

The maps show that bats occur right across the county. Only one square is yet to have bats recorded and so some pioneering work is required in the extreme north-east of Suffolk, maybe with neighbouring bat groups. However, there has been a very good spread of records amassed over the past 17 years. The squares that indicate several species occurring usually relate to areas where Suffolk Bat Group has carried out extensive surveys or an enthusiastic bat worker lives. There is still much to find out about the distribution of bats across the county and so having read this, we hope you will be inspired to go out and look for bats and submit your records to either Suffolk Biodiversity Information Service or the Suffolk Bat Group/County Recorder for Suffolk Naturalists Society (bats@sns.org.uk).

References

Oakley S. F., & Jones G. 1998. Habitat around maternity roosts of the 55 kHz phonic type of pipistrelle bats (*Pipistrellus pipistrellus*). J. Zool. 245:222–228.

Acknowledgements

Thank you to everyone in the Suffolk Bat Group who has contributed records over the past 33 years and to the Suffolk County Recorder for bats, Alan Miller. An incredible amount of work has been undertaken over this time and we now have a far more detailed picture of the county's bats. Thanks also to Gen Broad for her work in design and layout of this atlas.

How to submit records

To submit records in the future please send them to either:

Suffolk Biodiversity Information Service

c/o The Museum, High Street, Ipswich IP1 3QH

Email martin.sanford@suffolk.gov.uk

www.suffolkbis.org.uk

Or

Suffolk Bat Group, c/o Suffolk Wildlife Trust, Brooke House, The Green, Ashbocking, Ipswich IP6 9JY

Email bats@sns.org.uk

For more information on Suffolk Bat Group and for verification of bat records, please visit our website

www.Suffolkwildlifetrust.org/suffolkbatgroup

Back page:

Top: An old bridge provides an ideal hibernation site for bats © Arthur Rivett
Below: A green lane provides connectivity across the landscape and shelter for many species of insect © Arthur Rivett

Suffolk Bat Group

SBIS

Suffolk Biodiversity Information Service

Suffolk Wildlife Trust