

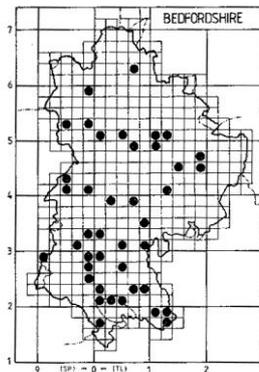
If you wander out at dusk, the bats you are most likely to see flying around are pipistrelles, yet despite them being so common there is still a lot we don't know about them but we've learnt a lot in the last twenty years as Jude Hirstwood explains

Photos © Nick Tribe

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When David Anderson wrote his first Mammal Report for the Bedfordshire Naturalist in 1986, pipistrelles were one of only six species of bat recorded in Bedfordshire and there were comparatively few records, not because they were rare but because few people had been looking for them.



**Pipistrelle Bat**  
*Pipistrellus pipistrellus*

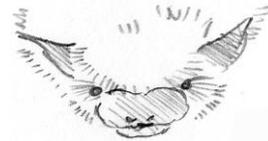
*Pipistrelle distribution in 1986*

It was only in 1993 it was realized that we had been harbouring a **cryptic species** in our midst; what had been thought to be one species of bat was in fact two. What tipped researchers off was that there were two **peak frequencies**, one at 45 kHz and the other at 55 kHz. Once people started looking they found other differences. The biggest give away was how different the genetic make up was between the two – far more than is usually found between **species** and more like that found between different **genera**. So two new species were recognised *Pipistrellus pipistrellus* the common pipistrelle (which John Adams wishes they had called the bandit pipistrelle) and *Pipistrellus pygmaeus*, the soprano pipistrelle so called because it has the higher peak frequency



Once they started looking they found other physical differences and now there are rather different

descriptions The book (see box in next column) says "*P. pipistrellus* tends to be slightly larger than *P. pygmaeus*. Dorsal fur typically dark brown with a black base, whereas *P. pygmaeus* tends to lighter brown over its entire length. *P. pipistrellus* usually has a dark pigment over the face giving it a "masked" appearance (hence bandit pipistrelle). *P. pygmaeus* often has exposed pink flesh on the face



Common Pip Illustration Joan Childs



Soprano pip. Illustration by Joan Childs.

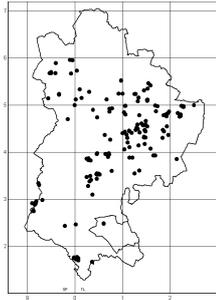
But let's be honest it is no easy matter to distinguish between species even when you know what you are looking for. Look at the judicious use of words like "often" and "usually" Even when an experienced licensed bat worker has the bat in a (gloved) hand, it has to be confessed that sometimes, even after concerted peering at intimate part of the anatomy and blowing on the bat's fur (in order to look for the black base) they often rely on the echolocation call as the bat flies off.

At the recent South East Region bat conference I attended a session on recognising bats in the hand run by Jenny Clark who is one of the country's most experienced bat rehabilitators, I was much taken by her description of the soprano pipistrelle – that it had "a short flat nose, like it had flown into a window".

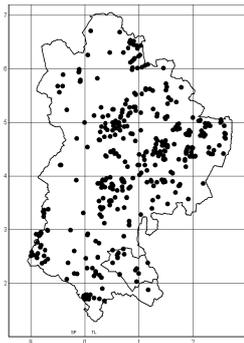
Once researchers started looking closely, other differences began to emerge. Ian Davidson Watts did his PhD investigating differences in the ecology of the two species. Sopranos tend to live in larger colonies and this may be why they have the

reputation of being smelly. Smelly bats is the major reason householder give for wanting them excluded from their perhaps understandably. There is also a significant difference in where they roost. Common pipistrelles are fairly widely distributed by soprano roosts are always either close to woods and/or water bodies.

While it is not unknown for different species to share a roost as far as we know no-one has ever found a mixed soprano/common roost. Bob says he has never yet been to a site near woods and water that if it had pips didn't have sopranos.



*Soprano Pipistrelle. All records 1986-2007*



*Common pipistrelle All records 1986-2007*

Jenny Clark says she also uses the bats' personality to help her identify them and says it is easy to distinguish between the two. Common pipistrelles are "wonderful, brave, sociable and take life as it comes" So much so that she uses them as healing bats, that is if she has a very poorly bat she will put it in with a common pipistrelle who will go up and sit with it ("give it a cuddle" where her actual words).

Soprano pips are altogether different "like a child on E numbers. Grizzly highly strung, nothing satisfies them. Unlike commons they are never happy in captivity, nothing you can ever do will be good enough for them. They get very stressed and rub away the fur under their chins." This ties in well with some of the soprano pips we have encountered. Mark Best still bears the emotional scars of hand netting a very stropo soprano during his training. Bob said afterwards he had never met such a cross patch. You could hear the bat's protests from several feet away; as temperamental as a small child denied sweets at a supermarket checkout lying on the floor screaming its head off.

However, this is far from the end of the story. Elsewhere in the world pipistrelles are widespread. There are 31 different

species worldwide. A number of these are common in Europe. Many of these are migratory species, covering enormous distances. Nathusius' pipistrelles ringed in Latvia reappeared in France, So when the occasional Nathusius' pipistrelle was reported it was assumed it was a migrant who had got blown off course. (There are records of them on North Sea oil rigs) – until that is they found a maternity roost in Northern Ireland and another near Bristol. As is so often the case once people started looking, they found other Nathusius records. (Jon Russ tells us he now has 481 records) Now if you thought identifying the two pips species already mentioned was tough here came



another challenge. Yes, if you get one in a mist net and you have your wits about you, they are different in appearance – shaggier in the fur and their face shape is more mouse like. You may be able to see what I mean if you look at Nick Tribe from the Leicestershire Bat Group's most excellent photo (which he also given us permission to post on the website where you can check it out in colour).

You can, if so minded, peer rather more closely than is polite at the penis, which has a characteristic rings of hairs round it. (I recently met Nick for the first time at a BCT Regional Forum meeting after which he sent me these photos. Foolish man said "I bet you won't be using the one of his wedding tackle" – He doesn't know me very well yet.



But if the darned thing is in the air, what hope have you? This species has a peak frequency of about 38 kHz, not very far away from the common pip frequency. so it's far from easy to tell. (Bats modify their calls depending on their environment a bat in the open sounds very different from the same bat in what is termed a "cluttered environment" – by which biologists mean a place with lots of stuff like leaves and trees in it). Indeed we have been heavily reliant on advice from John Russ, who has his own website dedicated to Nathusius' and who has kindly double checked recordings for us, as anything under 40 is a possibility .

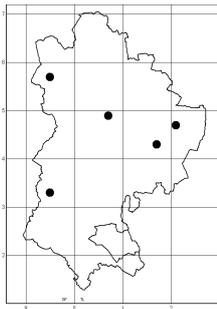
Mark Smyth of the Northern Ireland bat group says that Nathusius' have their own distinctive smell, but Bob , who has had an opportunity to sniff one, (it takes all sorts to make a world) says he couldn't smell anything out of the ordinary.

Now the bat group is not without Nathusius records A dead one was found in Marston Moretaine in 1995.

Then in 2007 some very Nathusius-like calls were picked up while Dean Alexander was doing the serotine survey. When Nathusius' have been found, they have been near large water bodies, so doing surveys at Priory Country Park seemed promising, and indeed last year records of Nathusius' were obtained on two separate occasions.

Editor's Npte

*Nathusius pipistrelle All records 1986-2008*



We are unlikely to encounter one in the hand unless we are very lucky with mist netting, nor is it likely we will locate a roost as these are often a long way from where they forage- though there have been records of them cohabiting with soprano pipistrelles.

So if you are with us this season and people start jumping up and down because they think they have heard a Nathusius, (or better still netted one) you'll now have a better idea of why their excitement knows no bounds.

*Editor's Note 2011. Since this article was written we have heard more Nathusius' at Priory Country Park but have failed to catch one*

### Want to know more?

Try the Bristol University website.  
Jon Russ' Nathusius site.  
Links to both are on our website  
Or download the pipistrelle leaflet from BCT.  
And don't forget we are interested in any records you might get. Don't ignore the pipistrelle just because it is common (or soprano – she says hastily).



### Glossary of Technical terms

**Genus** (pl genera) A number of different species which are closely related but which cannot interbreed.. Given a two part latin name, the first for their genus (a bit like our surnames), which is written with a capital letter, and the second a specific name which should be written in small letters e.g. *Pipistrellus pipistrellus*

**Species** – usually defined as a group of animals which can interbreed

**Cryptic species** Two or more species which appear very similar physically but which are genetically very different and cannot interbreed. With the advent of DNA sequencing, more of these are being discovered all the time (as if identifying bats wasn't difficult enough already).

**Peak frequency** The echolocation calls of bats cover a range of frequency but there is usually one frequency when the sound is most distinct and is loudest. In theory a useful way to distinguish between species, particularly if you have a sonogram to analyse.