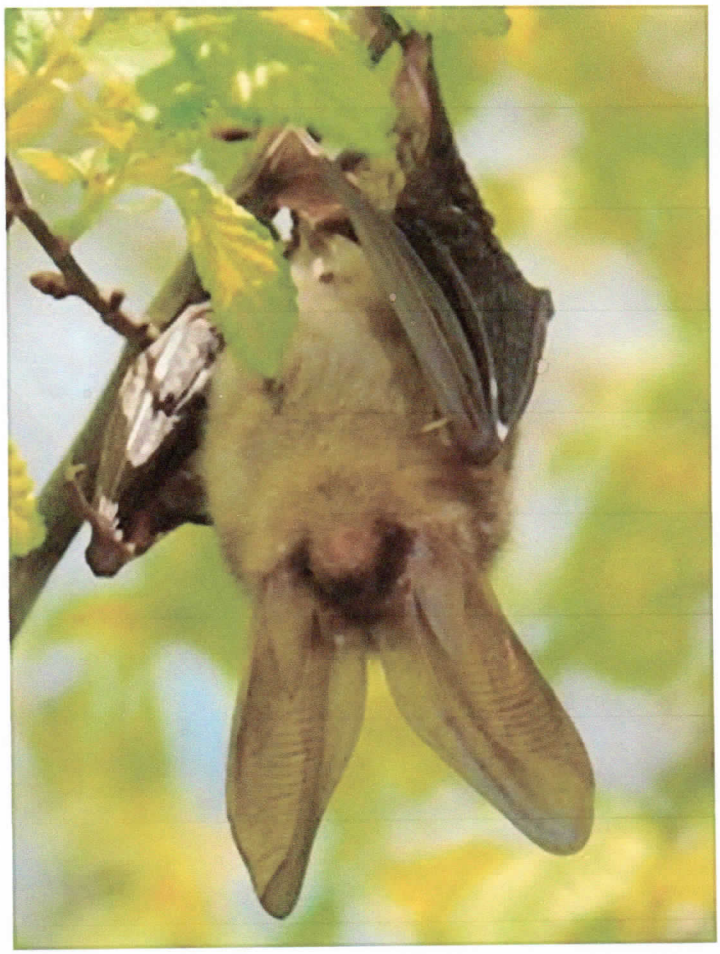
Bats of South Brent Island



NATURAL ENGLAND

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"Henlake Bats"

DEVON BAT GROUP

2011

Bat Habitats

Bats can be found in grassland, farm land and near water ways and ponds, so long as there are sufficient structures to roost in and peripheral wood, hedgerow, or man-made linear features for protection and navigation.
Some species of bats have adapted to urban habitat, roosting in buildings and foraging in wooded parks or gardens.
Habitat choice is species specific, with some bats commuting some distances from the roost to seek out preferred sites for their prey.
Trees are the most important natural habitat and support all species of bat, playing a fundamental role in their life cycle.
Trees may be used for roosting sites, night or day. They also are used for maternity and hibernation sites.
Bats also utilize trees and hedgerows as navigational landmarks for their nocturnal flight paths.
The edges of woodland and hedgerows are linear features which create corridors for commuting paths from roost site to foraging grounds.
Waterways and ponds provide bats with rehydration but also attract midges and other flying insects that congregate in thousands to provide a ready feast.
Daubentons bats are often seen skimming low over water and Pipistrelles often feed on small prey offered by water courses.

Bats and the Law

All UK bats and their roosts are protected by law - in brief,

You will be committing an offence if you :-

1 Deliberately capture, injure or kill a bat.
2 Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
3 Damage or destroy a bats roosting place (even if a bat is not occupying the roost at the time).
4 Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.
5 Intentionally or recklessly obstruct access to a bat roost.

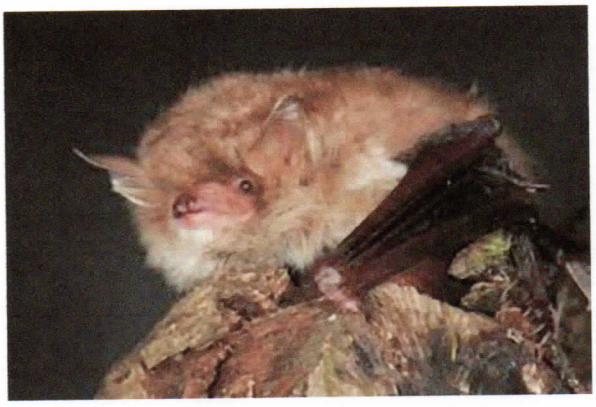
Updates on legislation and amendments are available from the Bat Conservation web site http/www.bats.org.uk/pages/batsandthelaw.html.

UK Biodiversity Indicators

In 2008 DEFRA Department for Environment, Food and Rural Affairs included bats in their set of indicator species.
The indicators show changes in aspects of biodiversity such as population size of important species, or land managed for wildlife.
They provide part of the evidence to assess whether the targets set out above have been achieved.
The six bats used as indicator species are Noctule, Lesser Horseshoe, Common Pipistrelle, Serotine and Daubentons.
Bats are indicators of environmental quality.
In 2003 the Bat Conservation Trust developed models for predating the occurrence of Daubenton's bats using environmental data from the Environment Agency's River Habitat survey (RHS).
In 2008 this work was revisited and sites in the National Bat Monitoring Programme Daubentons Bat Waterway Survey were matched to RHS monitoring data to understand links to environmental vehicles.
The model was recently updated incorporating newly available RHS variables.

Monitoring and surveying bat activity on 'The Island'

To conserve bats we need to establish the size of bat populations, working out which bats are where and how they are responding to the pressures of their changing environment.
Bats have distinct activity patterns both seasonally and nightly. Their activity is influenced by time of night and prevailing weather conditions.
Most species follow biomodal nightly activity patterns with a large peak at dusk and a small peak at dawn.
We began all surveys half an hour before dusk and continued for at least two hours.
The bat activity survey's comprised of a transept route with listening points continually walked throughout visits.
Once in a clockwise direction and, anticlockwise in the subsequent visit.
Detectors were used in the surveys and on some visits we recorded the bat calls and analyzed them later using bat sound on the computer.
Survey maps illustrate the location of all bat activity
The Island was monitored at least twice a month during the summer with some day visits organized to check trees and structures for bat roosting places. An endoscope was used to inspect deep inside the cracks and crevices.



March

Natterers Bat.

We began our survey during the day in the middle of the month.
After a very cold winter in 2010, bats were beginning to come out of hibernation and the odd bat had been reported flying near to the Island.
Accessing the site down the lane behind the church and looking at the area to the right, the leat and up to the weir.
A ladder was employed to inspect trees and to establish potential monitoring sites for the future. We also checked out gaps and holes from ground up in banks and walling.
No bats or evidence of bats was found in any trees at this time.
We did feel that this area should be monitored during the summer as previous years had shown that some species commuted on to the island using this route.
Crossing over the bridge a route was taken clockwise covering all areas.
The Linhay to our excitement had a torpid Pipistrelle tucked up between the gaps in the back lintel. A few droppings were found in and around the structure, mostly old and belonging to a Pipistrelle and another bat of medium size.
The Bridge on the Island was looked at by standing in the water. But droppings of a medium sized bat were found in a crevice in the walling weir side beneath the bridge.
Two night walks established Common Pipistrelle and one unidentified bat belonging to the Myotis group.

April

Bats are leaving their hibernation sites and having used up all their fat reserves during the winter are now seen feeding over the Island on warmer nights when and where the insects are present.
During winter when the temperatures drop and food is not available bats survive by finding sites that offer them humidity (without which they will dehydrate), a stable temperature and that are well protected from predators. Bats reduce their breathing, heart rate and all bodily systems until they become torpid. This enables them to conserve energy. They can remain in this state for weeks if necessary. As the temperature outside changes during winter they wake at times to either move to a better hibernation site often deeper underground if it gets colder, to occasionally feed, drink or to rid themselves of waste products. Arousal uses up a huge amount of energy and their fat reserves are only sufficient for them to become active four or five times during the winter.
So spring is a critical time for bats, a poor spring without many insects' means bats may starve to death at this time.
The Island offers good feeding even in rainy weather. The situation being sheltered means even in heavy wind there are areas such as by the weir pond and the island side of the railway bridge which have calm water in a wooded area ideal for insect life and therefore bats.
Pipistrelles both common and soprano were seen flying by the rail bridge. Lesser Horseshoe bats commuting from the church direction towards the rail bridge (some feeding on Island side of bridge)
Myotis (unidentified) by weir pond and rail bridge.
The bats seen are foraging in the trees or commuting along the tree edges.

May

Bats are now fully active. They are now actively looking for summer roosting sites and the females will now be establishing their maternity roosts. The females that mated in late autumn will have carried the live sperm over winter, ovulating and fertilizing the egg in the spring. The embryo develops at a rate that depends on available food supply and temperature. If the weather becomes cold and food scarce the females become torpid and will delay development of the baby. The females roost in single sex groups and the roosts are often in attics or in south facing parts houses, South Brent is rich with suitable maternity or nursery roosts especially for Lesser Horseshoes, Pipistrelles, Long eared and a few Whiskered. We have found no recent evidence in the last few years of Brandts bats in the area. Greater Horseshoe bats are breeding around South Brent and one Greater Horseshoe commutes from the village across the Island on a regular basis to his feeding grounds, which are beyond Lydia Bridge.
Pipistrelles, both Common and Soprano were monitored at the Orchard end of the Island, behind the Linhay, on the slower, shallower parts of the river and under the rail bridge. Long eared bats were monitored by the weir, rail bridge and Island bridge flying deep in the tree cover. Daubentons by the rail bridge and weir pond. We had also picked up a Natterers found on the ground by a member of the public near to the Gate (light weight but he was taken into care and released onto the Island a week later)

June

Female bats are now fully established in their maternity roosts and pups this year are being born much earlier than usual. Baby bats are generally born in June/July but the earliest recorded baby coming into care this year was on May 22nd in North Devon.
There are no maternity roosts on the Island; perhaps no sites reach the high temperatures required for a colony. A single Pipistrelle was seen to fly from the wall opposite the weir pond. Devon bat group members came out for an evenings bat monitor and we covered the Island monitoring with detectors and recording the echolocation sounds. These were analysed later.
Pipistrelles recorded on the path between the Leat and river. Common Pipistrelles down by the Orchard end, The Linhay and surrounding area. Both Common and Soprano Pipistrelles' Long eared, Whiskered, Lesser Horseshoe, Daubentons and possible Natterers feeding by the rail bridge (We also picked up a big bat faintly on our recordings (we hope it may be Leislers, rare in our area.) However this bat was not using the Island to feed. One greater Horseshoes was seen commuting.
To add to this list a Serotine was seen feeding at tree top level Orchard end and over the Linhay over two nights. A recording was not made of this bat but the sighting was made by a bat warden with many years experience.

July

Common Pipistrelle Bat.

Baby bats well under way. Mother bats only have one pup (rarely twins) a successful maternity colony seems to be made up of at least twelve bats to create the optimum temperature for the cluster of babies. The temperature within the centre of a cluster may reach up to forty degrees centigrade. Pups are born naked, pink and blind. After a few days soft grey fur develops and eyes open. The mother feeds them milk. Babies have milk teeth initially with slight hooks which helps them to hold on to the mothers along with toes and thumbs. The mothers carry the pups with them when flying in the first days after birth, if they change to a nursery roost or until the young becomes too big to carry. A baby bat is about a third of the size of mum when it born.

The mothers leave the baby in the roost after a few days when she needs to feed. Foraging is within two kilometres of the roost at this time and the roosts are chosen to ensure the prey they need is more protein rich during lactation.

It was found that we monitored smaller numbers of bats during July. Pipistrelles, Myotis and Lessers fed early by the rail bridge, weir and orchard end and then seemed to vanish perhaps to feed in different areas.

Bat rescues were steady in South Brent, Two Brown long eared, One orphaned baby Pipistrelle (common) and male adult Whiskered from the old railway station.

August

A feeding frenzy of Pipistrelles along the lane on the way down to the Island greeted us on our first visit of the month.

When going through the gate to the Island we recorded Whiskered, Soprano Pipistrelles feeding by the bridge and a lone Daubentons. Two Pipistrelles (common) were feeding in the open over the meadow, the first time we have seen bats in the open, other than the commuting Greater Horseshoe who didn't appear on the first visit.

No bats were feeding near the weir or weir pond on the second visit of the month but the weather turned nasty later in the evening. We commented that perhaps they were better at forecasting the weather than us!

Bats were seen coming onto the Island under the rail bridge to feed and then vanishing off into the shadows although in lesser numbers

We caught a glimpse of a Long Eared Bat in the torch light.

Baby bats fly at three weeks old and some pups would be out following the mums on the nightly forage. Milk is still needed until the young can catch their own insects. Usually by August most of the young are independent and by around seven weeks weaned. Not all females can produce young and not all the young will survive. Only about one in four bats reach maturity.

The adult females now are leaving the youngsters to fend for themselves and to build up reserves of fat again.

This is the month when we have a bigger intake of rescue bats, often juvenile bats, which run out of energy and ground themselves.

September

Bats of the Island are now feeding frantically so they can build up fat stores for the winter. Under the Railway bridge and by the weir both types of Pipistrelles, and a mixture of Myotis bats are feeding heavily. Lesser Horseshoes observed by the rail bridge and one behind the Linhay. Also a Pipistrelle was seen to pop out from under the roof of the Linhay on our second visit.
One more recording of the greater Horseshoe as he made his way across the Island in the direction of Lydia Bridge.
The males are becoming territorial and females are leaving the nursery roosts to socialize and look for a suitable mate. Male bats will mate throughout autumn and sometimes winter if they awake to find a torpid female near them.
Many species seem to have special sites where they gather together and take part in autumn swarming, part of the mating and socializing ritual.
The Island has a rich habitat for bats and as the wild flowers seed and the orchard develops can only help to increase the local bat population.

Lesser Horseshoe Bat

Species of bat using the Island and their prey

Greater Horseshoe - Rhinolophus ferrumiquinum
Moths (especially noctuids), beetles (cockchafer, dor and scavenger), Caddis, Diptera (e.g. crane fly)

Lesser Horseshoe - Rhinolophus hipposideros
Small moths, Diptera (e.g. crane fly), small beetles, lacewings

Whiskered bat - Myotis mystacinus
Mayfly, Small moths, Diptera

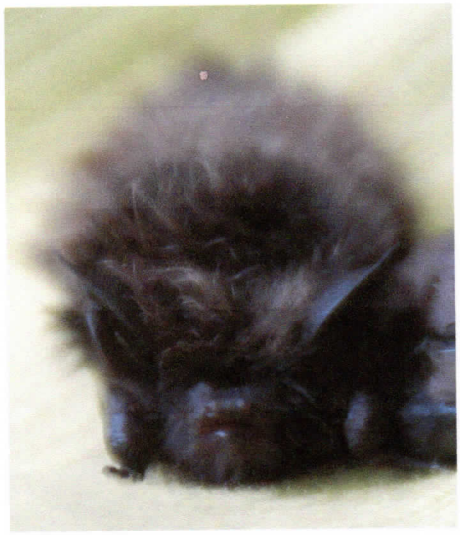
Natterers bat - Myotis nattereri
Diptera, moths, caddis

Daubentons bat - Myotis daubentonii
Caddis, Diptera (especially Chironomids), moths, beetles, mayfly, water boatman

Brown Longeared bat - Plecotus auritus
Moths (especially Noctulids), crane fly, caddis, beetles (especially scarab), Diptera (especially midges)

Pipistrelles (common and soprano) - Pipistrellus pipistrellus and Pipistrellus pygmaeus
Diptera, caddis, moths, mayflies, lacewings

Serotine - Eptesicus serotinus
Beetles (especially cockchafer), large moths



Whiskered Bat in care with Henlake Bats