



# Mammals in winter

There is a mole working its way across our garden at the moment, throwing up its earth mounds every few feet. It's heading directly south and, at its present rate, should reach our leek patch next Sunday and the village green on about 5 January.

Actually, although there is dispersal in the autumn, moles tend to settle in a generally smaller range area in the winter than in the summer. They remain active, insulated from the outside temperatures, but may be less active than in the summer.

Most of our other mammal species remain active through the winter. Some species may be able to change their diet somewhat, but that may not be enough for some and is not possible for, say, hedgehogs and especially bats, which feed only on insects. Of all our mammals, bats are the only ones that can undertake migrations; indeed, we know that some bats from elsewhere in northern Europe arrive with us in the autumn and probably some of ours move further south, but we do not know much about the migrations of bats to and from the UK. Bat migrations are not the long intercontinental migrations of many bird species, rather migrations to places where there are more suitable hibernation sites (although some species regularly migrate up to 2000km).

Bats, hedgehog and dormouse are our only true hibernators, although badger and squirrels may go torpid for a period. Some scientists see a clear distinction between torpor and true hibernation; others just regard hibernation as extreme torpor. Certainly our true hibernators will seek somewhere where they are insulated from subzero temperatures but where, when they drop their body temperature to that of the surroundings, their whole body processes will slow down enough to enable them to eke out the winter on the fat they have built up in the autumn. That makes them a bit vulnerable to predators and other events. It will take a hibernating bat between half an hour and an hour to become fully active from the initiation of arousal, despite having special 'brown fat' that can be called upon as a quick source of energy. Actually, even bats do not sleep right through the winter; they will spend more time in torpor as the autumn progresses, but

even in the depth of winter most species will awake every 10 days or so, usually to drink or excrete, sometimes to feed or change roost site. They can cope with these natural arousals, but an unscheduled arousal can cost them up to about two weeks of their stored energy reserves and so could be crucial to their survival. So, seeing a hedgehog or a bat out in the depths of winter is interesting, but doesn't necessarily mean that it is in trouble.

Hedgehogs are sometimes exposed in winter gardening activities. It's best to just recover them and let them sort themselves out. Dormice generally hide away and are unlikely to be found, but can sometimes hibernate in nest boxes. Although there are no natural caves in our part of the country there is a surprising number and variety of disused tunnels and other underground features that bats can use for hibernation. But, curiously, the species we mostly find in them are not the ones we are used to seeing in buildings in the summer. Of the three species most regularly found in buildings in the summer around here, we find a very few long-eared bats in underground sites, but we have really no idea where the bulk of the most common species, pipistrelle bats, and the less common serotine bat spend their winter.

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