Longevity and survival in female pipistrelle bats, and density of pipistrelle bats (*Pipistrellus pipistrellus*) in the Vale of York

Dr. Michael J.A.Thompson, 118, Strensall Road, Old Earswick, York.

Female adult pipistrelle bats (*Pipistrellus pipistrellus*) form large colonies in the summer to have their young. Trapping these colonies, using cone and soft bag technique, between 1977 and 1984, within a radius of just less than 13 kilometres from the centre of York, 1650 bats were ringed. The majority were adult females (72.1%), but rings were also placed on immature females (9.8%), juvenile females (10.4%) and adult and juvenile males (7.7%). Further ringing was carried out in 1985 but the results are not included. In 1977, ninety adult females were ringed, and from capture, release and recapture data, life tables for an unaged cohort was constructed. From the slope of the constructed survival graph (P=0.001), an age-specific survival rate for the Vale of York of 0.64 per year is obtained. From a variety of broadly comparable studies of unaged cohorts of different species carried out by various field workers, Tuttle and Stevenson (1982) quote a wide range of annual survival rates (from 0.38 to 0.98). The limited data on juvenile females suggest that during the first two years of life they survive less well than the adults. As no males have been recaptured during this period, there is no data on their survival rate. Three bats from this original cohort were recaptured in 1984 and, assumung they were at least one year old at the time of initial capture, then they are likely to have been at least eight years old. This longevity record for adult female pipistrelle bats in the Vale of York compares favourably with similar British and European records for this species (Stebbings 1977).

Other information from this long term 'on-going' ringing programme of pipistrelle bats has been obtained. Within the less than 13 kilometres radius or a 500km² area around York, 44 nursery colonies using 77 different roosts, had been located by 1985. From 492 recaptured bats, only 15 have been recaptured not in their colony of origin, showing a very high rate of roost fidelity. One bat, a juvenile ringed in August 1982, was recaptured at Knaresborough in 1985 (R. Deaton - pers. comm.). The 33 kilometres travelled by this bat makes it the second longest distance this species is known to have travelled in Britain to date (Stebbings, 1977). The longest movement in Britain is 69 kilometres (Stebbings, 1977).

It is estimated that the mean colony size of nursery colonies in the Vale of York for 1985 was 101 bats. This calculation is made before the young fly. Thus, from 44 colonies 4448 females were present within the 500km². Assuming the sex ratio at birth is equal, then the total number of 8896 pipistrelle bats are present, making a pipistrelle bat density of one bat per 5.62 hectares. This figure needs refining, but it does give, for the first time, some indication of bat density.

References

Stebbings, R.E. 1977 Chiroptera, Handbook of British Mammals. (Eds. Corbet, G.B. & Southern, H.N.) p.68-128. Blackwell. London.

Tuttle, M.D. & Stevens, D. 1982 Growth and survival of Bats. Ecology of Bats. (Ed. Kunz, T.H.), p.105-139. Plenium Press, London.

Bat in a Stew.

This was the literal title of an article which appeared in the journal Animal Kingdom (88 1 1985). Apparently the people of the Mariana Islands (in the western Pacific) consider their native fruit bat *(Pteropus)* to be a great culinary delicacy.

These 'flying foxes', as they are sometimes known, weigh about a pound and are active in the day. On the island of Guam hunting bats is very lucrative and one bat can sell for $20. There is a very unappetising picture of an unfortunate bat floating whole (complete with wings and fur) in a dish of coconut milk. Fortunately steps are being taken towards conservation of the species, which seem to have been 'loved' to virtual extinction.

Ed.