

## VOLUME 20, NO. 1 Spring 2002

### Counting the Bats of Britain

#### A Pioneering Program Spreads Across the United Kingdom

A. Walsh & T. McOwat

"Working with bats is great fun," says Tom McOwat. It's dealings with people that can be a real challenge. "The ideal batman is a salesman and a diplomat - and having a sense of humor helps."

McOwat has had more than his share of quirky encounters with humans during his years as a volunteer bat-counter for Bat Conservation Trust's National Bat Monitoring Program (NBMP) in the United Kingdom. "Householders are often fascinated by the enthusiasm of the bat worker who turns up to count bats emerging from the gables of their house," he says. "Some try to participate and invite a group of friends over to eagerly point out every bat that breaks the skyline from any direction. While small gatherings may be advantageous, 40 or so people, slightly jolly or plainly inebriated and enjoying a barbeque, are not the ideal counting assistants."

But if bat-counters can draw a cheerful crowd, they can also, at times, be just about the last thing a resident wants to think about. That was clearly the case when McOwat showed up at a home for a roost count one summer evening. The door was opened by a man with a child cradled in one arm and the yolk of a fried egg smeared in his hair and eyebrows. He welcomed McOwat into a kitchen where broken plates and scattered sausages, eggs, and bacon indicated a dramatically disturbed meal. "Ignoring the debris, he put me at ease and explained that his wife had had to leave urgently. He offered me tea, and we talked about bats with no further mention of his domestic situation. After half an hour I went out to count his bats."

Such encounters fit neatly into the poetic visions I entertained when I accepted the task of designing and coordinating a national program to count the UK's bat populations. I saw myself roaming the countryside, searching for bats in moonlit landscapes and collecting spellbinding tales of adventures in the field. So when the NBMP team - myself, Colin Catto, and Julie Agate - put together our first recruiting campaign to encourage the network of volunteer Bat Groups to help us count bats, our slogan was "The NBMP: The most fun you can have in the dark."

But as so often happens in science, the romance of fieldwork comes only after the drudgery of preparation. I have always had a firm belief in numbers. Mathematics is the language in which the book of nature is written. But the math is useless and the book illegible unless the numbers are accurate. So I spent much of the next five years cocooned in the basement of Bat Conservation Trust offices in London photocopying maps. Maps of rivers, fields, woods, towns, and mountains - all the places I would rather be than central London. But it was worth it. The sites were carefully chosen to represent the whole of the UK (England, Scotland, Wales, and Northern Ireland) in a statistically meaningful way.

Some 850 active volunteers are now collecting data for the government-funded program, which was born of obligations, under international conservation directives and the European Bats Agreement, to conserve the bats of the United Kingdom.



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Monitoring bat activity can play a critical role in conservation. The systematic counts provide the numbers we need to unravel population dynamics of bats and figure out whether specific populations are declining or increasing, the rate of change, and perhaps even what's causing the shift. Monitoring is an early-warning system for potential threats and problems.

At another level, working with local residents to count bats on their property gives volunteers an invaluable opportunity for education and public relations. Bats, more than most wild populations, interact with people and need human understanding to ensure their survival.

The ultimate goal of the NBMP is to develop monitoring strategies for all 16 bat species in the UK. The first phase, begun in 1996 and completed in 2000, got monitoring schemes under way for eight species. Volunteers use three primary methods: Counting bats as they emerge from summer maternity-colony sites; counting hibernating bats at underground locations in the winter; and counting echolocation signals collected by bat detectors in countryside surveys.

The simplest surveys involve maternity colonies. Two counts are made each June by volunteers, many of whom are "bat stewards" who have bats roosting in the roof space of their homes. Colonies typically number but a few hundred bats, so counting exiting bats silhouetted against the evening sky is a manageable task. Our colony-counting network includes 157 sites for lesser horseshoe bats (*Rhinolophus hipposideros*), 54 sites for serotine bats (*Eptesicus serotinus*), and 585 sites for pipistrelle bats.

Volunteers can advance from simple roost counts to the more complex bat-detector field surveys by attending NBMP training workshops on species identification using the detectors.

One bat-detector scheme surveys randomly selected stretches of waterway for Daubenton's bats (*Myotis daubentonii*). More than 716 such sites have been surveyed. Another version sends volunteers back and forth across kilometer-square sites in nighttime searches for four bat species: noctules (*Nyctalus noctula*), 45 kHz pipistrelles (*Pipistrellus pipistrellus*), and 55 kHz Pipistrelles (*Pipistrellus pygmaeus*). Volunteers have surveyed 367 of these sites.

NBMP organizers eyeball each proposed survey square to screen out potentially hazardous areas. But some sites still prove more challenging than others - and rivers, hedgerows, and nettle beds aren't the only obstacles. McOwat recalls the shock of once hearing a disembodied voice in the darkness demand an explanation for his late-night presence. "I explained I was looking for bats and that I had the farmer's permission to be there. The interrogation continued with my having to explain the purpose of the box with the red light and switches - bat detector not bomb detonator." Then came the critical question: "'Are you armed?' I answered with an indignant, 'No,' to which he sighed in relief. 'Thank goodness. Neither am I.' To this day, I'm not sure who was more relieved." The interrogator turned out to be a military police officer dispatched to investigate a suspicious person lurking near the boundary fence of a military installation.

Things really get rugged on the hibernation counts in caves, mines, and tunnels. To work underground, volunteers must earn a license from a nature conservancy agency or accompany someone with a license. Training focuses on species identification and the safety skills required for climbing and crawling about while counting underground. Some

hibernating bats hang like plumbs from the ceiling of caves and cellars, while others look like they're glued randomly onto the walls. Still other bats retreat into hidden nooks and crannies. We're now monitoring 250 hibernation sites.

Already, the project is bearing fruit. Recent figures obtained by combining NBMP figures for England with a longer running survey in Wales show that lesser horseshoe bat populations across the UK have been increasing by a statistically significant average of about 4.8 percent a year from 1993 to 1999. That's good news for the bats, for the NBMP team, and for conservation managers who have been working hard to reverse historical declines of this species. The status of the other bat species remains to be determined, since at least five years of data are needed to distinguish long-term trends from short-term fluctuations.

The NBMP was created to meet a need for coordinated monitoring of bat populations. In just five years, the liberal exchange of information among groups at all levels has provided a program that will be providing insight into the conservation needs of bats for years to come.

The UK government has found that this program delivers real value for the money and is a world leader in applying pioneering techniques to wildlife monitoring. I wish to thank all those researchers who contribute their data freely to this other monitoring projects because the sharing of scientific information dramatically increases its value.

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