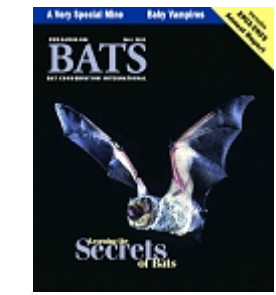



## VOLUME 21, NO. 3 Fall 2003

### Solar-powered Bats

An Australian researcher finds that some small, insect-eating bats unexpectedly choose hibernation roosts that expose them to the vagaries of Australian winters. These nocturnal hunters seem to rely on solar power to rouse them from torpor on sunny winter days for a night of foraging.



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New technology – tiny, temperature-sensitive transmitters – allowed Christopher Turbill, a BCI Scholarship recipient from the University of New England in New South Wales, to locate hibernating bats and record their fluctuating temperatures.

During the summer, Turbill says, long-eared bats typically roost under peeling bark or shallow tree crevices. “We expected that in winter they would shift to better-protected and well-insulated tree roosts and hibernate in a similar way to cave-dwelling bats.”

Instead, by radiotracking bats to their roosts, he found that they settle into surprisingly exposed positions – still under bark or in shallow crevices – on the sunny sides of tree trunks. The bats’ skin temperatures during winter torpor, as recorded in these roosts and transmitted to remote data-loggers, can vary daily by as much as 32.4 degrees F (18 degrees C).

The data suggest that these mammals, after being warmed by the sun, can more easily rouse themselves after as much as two weeks of continuous torpor, enabling them to hunt insects that abound on warm winter evenings.

Turbill, whose BCI-funded research is part of his Ph.D. work, studied lesser long-nosed bats (*Nyctophilus geoffroyi*), Gould’s long-eared bats (*Nyctophilus gouldi*), and chocolate wattled bats (*Chalinolobus morio*). The transmitters were attached to captured bats with nontoxic glue and the bats were released. The transmitters fall off in about five weeks.

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