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The Bats of Israel Yesterday and Today. 1989-90
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When BATS first reported the poisoning of bat caves in Israel [*BATS*, December 1985], members worldwide responded by writing letters of protest to Israeli government officials. Since then, the issue has gained a great deal of attention both in Israel and abroad. As a result, many positive changes have taken place.

The poisoning of bat caves began in the late 1950's with a campaign to control fruit bats *(Rousettus aegyptiacus),* perceived as crop pests by Israeli fruit growers. For many years, bat caves were fumigated with Lindane, an extremely toxic long-lasting organochlorine pesticide (the same group of chemicals as DDT and PCB's).

Since many insectivorous species occupy the same caves as fruit bats, they were poisoned as well. As a result, Israel's insectivorous bat populations declined dramatically over a period of 30 years. Ironically, these bats, who were not the target of the campaign, are protected under Israeli law. As their numbers declined, noctuid moth populations exploded, causing major crop damage that has since required extensive chemical control. Insectivorous bats had been the main predators of adult noctuid moths.

When the problem was brought to the attention of the Ministry of Agriculture in early 1986, Lindane use in bat caves was stopped on a trial basis in the Carmel region. It was chosen as a test area because it had been fumigated by both the Department for Plant Protection and Inspection (DPPI) and a group of anxious farmers. During the trial period, there were no substantiated claims of fruit bat damage to crops, nor have there been any during the past few years. The ban has been continued on an informal basis.

In early 1988, BCI member David Makin, a biologist who has been working to provide alternative solutions to poisoning caves, demonstrated how to use nets to capture and remove fruit bats from caves. The bats were banded and released. As a result of the demonstration, an agreement was made between the Nature Reserves Authority (NRA) and the DPPI to halt all fumigations, beginning in October 1988, throughout the entire country on a one-year trial basis. Fruit growers were told to stop fumigating caves with Lindane.

Under the new agreement, bat caves may not be fumigated unless bat damage to crops can be proven and the netting method suggested by Makin is not solving the problem. There are also other short-term methods growers can use to protect crops, such as shining lights and frightening bats away with loud noises. However, the DPPI has now acknowledged that fruit bat damage to crops has little significance and there is no need to continue cave fumigations. Thus far, no valid cases of crop dam age by bats have been documented, and Makin suspects that original claims were based mostly on misunderstandings and exaggerations.

The problem of bats in Israel is mainly an educational one," Makin says. Through new educational efforts, the image of fruit bats as pests is now being challenged, and the public

is being educated about all Israel's bats. Several educational workshops about bats, open to the public, have been well attended, especially by instructors with the Society for the Protection of Nature in Israel (SPNI). Rangers with the NRA have also increased their knowledge of bats through special seminars taught by Makin.

Other educational efforts include a book on Israeli bats and bats of the world, published by the Mammal Information Center of the SPNI with many photographs from Bat Conservation International and reprints of articles from BATS. Dr. Benny Shalmon, also a BCI member and director of the Mammal Information Center, has recently produced a large children's exhibit on bats. The exhibit includes nearly 40 of Merlin Tuttle's bat photographs, several of which are being made into posters. Over 30 copies of BCI's audiovisual program, "Bats: Myth and Reality," have been translated into Hebrew and are seen by thousands each year at SPNI field schools. In addition, the Center has produced bumper stickers with the message "Some Of My Best Friends Are Bats."

Bats are also being highlighted in the news. Both Makin and Shalmon have been interviewed on radio and television programs. Positive articles in major newspapers and nature journals have appeared, and a short educational program on bats is being produced for Israeli television. The program will present the first positive image of bats to the general public.

Another key to better understanding is research. In the past, very little research on bats in Israel had been done. David Makin's study on fruit bats, begun in 1982, is the first of its kind for the country. In this study, bats are captured, tagged, and released. Information about each bat is recorded. When they are recaptured later, researchers assess their movements, population trends, and growth and reproduction patterns. Another project, conducted by Professor Yom Tov of the University of Tel Aviv, began in early 1988 to survey species in the Dead Sea basin. Almost nothing is known about bats of the area.

The status of bats in Israel depends not only on the concern of the people of Israel, but also on conservationists and people worldwide. Although significant progress in bat conservation has been made in Israel, much more must be done before decimated populations of insectivorous bats can be reestablished and attitudes toward fruit bats can be changed. Continuing research and public education programs are a must.

You can help by writing to Mr. Uri Bidach, The Nature Reserves Authority, Jeremiah #78 Jerusalem 94467, Israel; and to Mr. S. Elchanan, Department of Plant Protection and Inspection, Ministry of Agriculture, P.O.B. 78, Bet-Dagan 50250, Israel. Thank them for the actions already taken and encourage them to continue the ban on fumigating caves with Lindane. Also encourage them to protect key roosting caves with signs and, where necessary, with fences or gates to prevent harm to bats.

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*Egyptian fruit bats have been the target of a poisoning campaign in Israel for over 30 years, which has also resulted in a drastic decline in the country's insectivorous bats. To date, no valid cases of crop damage have been proven; fruit bats prefer very ripe fruit which is not commercially marketable. PHOTO BY MERLIN D. TUTTLE*

*David Makin demonstrates a method to remove fruit bats from caves without poisoning them.* PHOTO BY S. ELCHANAN

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