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BCI's Student Research Program Grows

One of the most important aspects of bat conservation is learning more about the ecology of bats. Without a basic understanding of bat needs, documentation of their status, or knowledge of their value to a particular ecosystem, convincing people and their governments to protect bats and their habitat is difficult.

Over the past several years, BCI has developed a strong support program for student research essential to the conservation of bats. Our ability to sponsor such research is made possible through grants to BCI from foundations and private donors, proceeds from educational workshops, and membership dollars. A major contributor to BCI's Graduate Student Research Fund is the Frank Cross Foundation.

For the second year, sponsorship of field research doubled. BCI is sponsoring projects in American Samoa, Argentina, Australia, Curacao, India, Madagascar, Poland, and the United States. Members can be proud of what their contributions are accomplishing. Education is often an important component of these projects. By helping a variety of students, both in the United States and abroad, bat conservation awareness is spread to local communities throughout the world. The long-term effect for bats is extremely positive.

In American Samoa, an important study began this summer to determine the roles of two flying foxes in maintaining biodiversity in Pacific island ecosystems and whether each bat affects the ecosystem in a unique way. Sandra Banack, a student at the University of California at Berkeley, is conducting the study. Her field work is being done in an area chosen for inclusion in the new National Park of American Samoa [see *BATS*, "A Park to Protect Flying Foxes," Winter 1992] and could provide valuable insight into long-term management of the park's resources.

In Argentina, BCI sponsored Carlos Iudica, an Argentinean graduate student at the University of Florida at Gainesville, in his comparative study of bat communities present in disturbed and undisturbed tropical forests in northwestern Argentina. The research area was one of rich biological diversity and had never been the subject of such a study. His research gained knowledge critical to managing deforested areas. An unanticipated bonus was the positive reaction of the nearby community, which responded by offering assistance to the research team and becoming involved in local conservation issues. High interest in the study also led Iudica to develop workshops for science teachers to help spread knowledge of the importance of bats to the local ecology. In addition, his local field assistants gained valuable experience; as a result of their participation, they will motivate others as they continue field work in the region.

In Australia, BCI is sponsoring Doug Wahl, a postgraduate student at the University of Canberra, conducting research on flying foxes. These animals have been on the protected list in New South Wales since 1986 (due to a BCI initiative), but farmers who can prove damage to fruit orchards are still allowed to cull a certain number. Wahl's study, which began in 1992 and will be complete late in 1993, is evaluating for the first time how the permit system affects flying fox populations. The final results could have major implications for flying fox management in New South Wales.

The field work in Curacao, which began in the summer of 1992, is being conducted by Sophie Petit, a French doctoral student at the University of Miami. Petit is studying the role of nectar-eating bats in the island's desert ecosystem, research which has the potential to make a critical contribution to conservation planning for Curacao. Many of the island's animal species rely heavily on the fruits of cacti to survive the dry season. Without bat pollinators, fruits are not produced, and an entire ecosystem could be endangered. The bats that pollinate the cacti live in caves that are increasingly disturbed by people. Documentation of the bats' importance is essential to gain official protection for the bats and their cave habitat. During her first field season, Petit convinced government officials to protect two important bat caves from human disturbance. An additional grant to BCI from the Whole Earth Center, a natural foods store in Princeton, New Jersey, helped her to complete this summer's work.

BCI is also supporting the work of Shahroukh Mistry, an Indian graduate student at the University of New Mexico, in his pollination and seed-dispersal studies of fruit bats in a montane tropical forest in India. Little is known about India's bats, and their values had not been documented. Since bats are officially considered vermin in India, they can be destroyed at will, placing them at extreme risk. In conjunction with his study, Mistry initiated a massive country-wide survey, which will enable him to develop a database on India's bats and help document their declining populations. With this information and knowledge gained from the study, Mistry seeks to gain the bats' protection. His work also includes presenting programs on bat conservation to the lay public and university students. "Most of these presentations," Mistry said, "could not have been made without my BCI grant and materials such as slides and publications."

In Madagascar, BCI is assisting the work of James Hutcheon and Michelle Zjhra. Their preliminary study, which seeks to understand the relationship between flying foxes and island plants, began this summer. Almost nothing is known about Madagascar's 28 species of bats or which plants are pollinated or seed-dispersed by them. Much of the island's flora is endemic. Compared to other tropical ecosystems, the rarity of Madagascar's mammalian frugivores and few bird species suggests unique ecosystem interdependencies. Eighty to 90 percent of Madagascar's forests have disappeared since 1970, with extinction of many species. Since bats play key roles in reforestation, planning for their thus-far-neglected conservation is essential.

Early in 1993, BCI also helped a Polish research team led by Tomasz Kokurewicz by donating field equipment unattainable in their country. With bat detectors and mist nets, researchers will be able to test the hypothesis that loss of foraging habitat is responsible for the dramatic decline in lesser horseshoe bats (*Rhinolophus hipposideros*). Once they have documentation, they hope to gain habitat protection for these bats in Poland. The project is being conducted with collaboration from Czechoslovakian bat biologists, since these bats overwinter in one country and breed and forage in the other.

The work in the United States will augment BCI's North American Bat House Research Project through helping Laura Finn, a University of Central Florida graduate student, in her investigation of how to develop better bat houses for hot southern climates. Additional funding for her project was supplied through a grant to BCI from the Whole Earth Center. Most of our knowledge of successful occupation of bat houses comes from northern areas. Her study, which began this summer, will continue into 1994. It seeks to document how bats make roost choices in warmer climates, especially with regard to temperature, and how they can be relocated from buildings into artificial roosts. Since bats in buildings are often

unwanted, learning how to provide alternative roosts on a consistent basis could help solve significant bat-human conflicts and prevent unnecessary bat deaths.

HOW TO APPLY
For guidelines on applying to BCI for a scholarship grant, call Tracey Tarlton at BCI (512-327-9721) to discuss your project. To qualify, projects must have direct conservation relevance. Each year BCI receives many more requests for assistance than it has funds to disperse, so scholarships are highly competitive.

HOW TO HELP
Your contribution to this special fund will enable BCI to assist additional worthy students. If you would like to make a donation to the Graduate Student Research Fund or sponsor a particular project, contact Cindy Lind at BCI. All funds go directly toward projects such as those mentioned here.

Carlos Iudica takes data on a bat in his study in northwestern Argentina. People from the surrounding community were so enthusiastic about his work that they became involved.

Left: Sophie Petit's research on the island of Curacao has already resulted in protection of two important bat caves from human disturbance.

Laura Finn began a study this summer to determine the temperature requirements of bats in bat houses in southern climates. Her work could help bats by providing alternate roosts for unwanted colonies living in buildings.