BENEFITS OF BATS

The more than 1,200 species of bats, about one-fifth of all mammal species, are incredibly diverse and most are highly beneficial. As the only mammal capable of true flight, they range from the world's smallest mammal, the tiny bumblebee bat that weighs less than a penny, to giant flying foxes with six-foot wingspans. Except for the most extreme desert and polar regions, bats have lived in almost every habitat on Earth since the age of the dinosaurs.

Right now, all around the world, bats are hard at work fulfilling tasks that are vital to healthy ecosystems and human economies. Many bat species consume vast amounts of insects, including some of the most damaging agricultural pests. Other bats pollinate countless plants, ensuring the production of fruits that support local economies, as well as diverse animal populations. Fruit-eating bats in the tropics disperse seeds that are critical to restoring cleared or damaged rainforests. Even bat droppings (called guano) are valuable as a rich natural fertilizer. Guano was a major natural resource in the United States a century ago, and it's still mined commercially in many countries. As if that weren’t enough for us to appreciate bats, and maybe even love them, a new treatment for human stroke patients has been developed from an anticoagulant found in vampire bat saliva. Now bats are literally saving our lives.

Pest controllers

Insectivorous bats are primary predators of night-flying insects, and many very damaging pests are on their menu. Pregnant or nursing mothers of some species will consume their body weight in insects each night. A single little brown bat can eat more than 1,000 mosquito-sized insects in just one hour.

The millions of Mexican free-tailed bats at Bracken Cave (owned and protected by Bat Conservation International, batcon.org) compose the largest colony of mammals in the world and eat up to 200 tons of insects each summer night. A favorite target of these bats in the US and Mexico is an especially damaging moth called the corn earworm moth (aka cotton bollworm, tomato fruitworm, etc.). Worldwide crop damage from this one type of moth is estimated at more than $1 billion a year, and research has concluded that freetails are so effective that they save farmers in south-central Texas up to $1.7 million a year in pesticide costs alone. That, of course, means fewer pesticides enter the ecosystem.

Research published in the journal Science (April 2011) estimates that through reduced crop damage and reduced need for pesticides, bats save US farmers between 3.7 and 57 billion dollars every year!

Pollinators

From deserts to rainforests, nectar-feeding bats are critical pollinators for a wide variety of plants of great economic and ecological value. In North American deserts, giant cacti and agave depend
on bats for pollination, while tropical bats pollinate incredible numbers of plants.

Most flowering plants cannot produce seeds and fruit without pollination. Bats that drink the sweet nectar inside flowers pick up a dusting of pollen and move it along to other flowers as they feed.

A few of the commercial products that depend on bat pollinators for wild or cultivated varieties include: bananas, avocados, dates, figs, peaches, mangoes, durian, cloves, cashews, carob and balsa wood.

**Seed dispersers**

Vast expanses of the world's rainforest are cleared every year for logging, agriculture, ranching and other uses. Fruit-eating bats are key players in restoring those vital forests. Bats are so effective at dispersing seeds into ravaged forestlands that they've been called the "farmers of the tropics."

Many of the bat-dispersed seeds are from hardy pioneer plants, the first to grow in the hot, dry conditions of clearings. As these plants grow, they provide the shelter that lets other, more delicate plants grow. Seeds dropped by bats can account for up to 95 percent of the first new growth. The pioneer plants also offer cover and perches for birds and primates, so they can add still more, different seeds to the mix that can lead eventually to a renewed forest.

Some biologists consider bats a "keystone" component of ecosystems in parts of the tropics and deserts. Without bats' pollination and seed-dispersing services, local ecosystems could gradually collapse as plants fail to provide food and cover for wildlife species near the base of the food chain. Consider the great baobab tree of the East African savannah. It is so critical to the survival of so many wild species that it is often called the "African Tree of Life." Yet it depends almost exclusively on bats for pollination. Without bats, the Tree of Life could die out, threatening one of our planet's richest ecosystems. Quite literally, the Tree of Life, and thereby the humans and myriad of other animals that depend upon it, receives its life from bats.