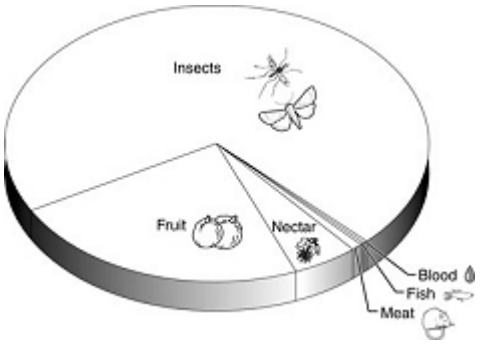
Benefits of Bats

Bats are hard at work around the world, fulfilling tasks that are vital to healthy ecosystems and human economies. Many of the more than 1,200 bat species consume vast amounts of insects, including some of the most damaging agricultural pests.



Others 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.

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.

Pest control

Insectivorous bats are primary predators of night-flying insects, and many very damaging pests are on their menu. Pregnant or nursing mothers of some bat species will consume up to 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 BCI's Bracken Cave in Central Texas eat tons of insects each summer night. And a favorite target of Mexican freetails in the United States and Mexico is an especially damaging pest called the corn earworm moth (aka cotton bollworm, tomato fruitworm, etc.) that attacks a host of commercial plants from artichokes to watermelons. Worldwide crop damage from this moth is estimated at more than $1 billion a year, and research in 2006 concluded that freetails save cotton farmers in south-central Texas more than $740,000 annually. Throughout the United States, scientists estimate, bats are worth more than $3.7 billion a year in reduced crop damage and pesticide use. And that, of course, means fewer pesticides enter the ecosystem.

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 – the process of moving pollen grains from the male part of the flower (the stamen) to the female part (the pistil). This process also improves the genetic diversity of cross-pollinated plants. 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, 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. And 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."

Regenerating clear-cut forests is a complex natural process, one that requires seed-scattering by birds, primates and other animals as well as bats. But birds are wary of crossing large, open spaces where flying predators can attack, so they typically drop seeds directly beneath their perches. Night-foraging fruit bats, on the other hand, often cover large distances each night, are quite willing to cross clearings and typically defecate in flight, scattering far more seeds than birds across cleared areas.

And 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.

Last Updated: Monday, 30 July 2012