

COFFEE AND ITS ROLE IN THE AMERICAS

Coffee holds an allure like few other beverages. In North America, millions of people enjoy its rich taste each morning. Coffee consumption is growing again in North America after falling off dramatically during the 60's and 70's. Much of this recent growth derives from increased sales of gourmet coffee beans, those produced at high elevations throughout Asia, Africa and Latin America. As more and more people learn to savor the finest coffees, they are increasingly seeking information about where their coffee was grown, under what conditions, and with what impact on local communities and the environment.



The answers to these questions start with a deep tradition of coffee growing. The coffee shrub is native to the rainforests of modern day Ethiopia. Although first cultivated by the Arabs in the Tenth Century, it arrived in the New World with European colonialism. Coffee quickly became a major cash crop and its cultivation and export significantly affected the history of many Latin American nations. Its impact has also been felt on natural landscapes throughout the region. Some of the highest quality coffee in the world is grown throughout the middle altitudes of northern Latin America, from Colombia to Mexico (4500 and 6000 ft.). These middle altitudes are home to millions of people, many of whom make their living growing or harvesting coffee.

Forests in these same altitudes are also home to a diversity of wildlife species. As deforestation rates escalate, scientists and conservationists have taken a hard look at coffee farming and found that, in many cases, the crop may actually be a key to conserving these middle elevation forests. Coffee is unusual in that it can grow in relative harmony with natural ecosystems. Because it is by nature a shade-loving plant, it can be productively grown under the canopy of native trees and thus simulate a natural forest.

Given this good news, one would think that coffee lovers could sit back and sip their brew with a clean conscience. Not so fast. The tradition of growing coffee under the shade of forest trees is threatened by “progress.” Over the last 20 years, coffee growers throughout the region have been removing shade trees and replacing their traditional varieties with new high-yielding, sun-tolerant varieties. This new full-sun farming system increases soil erosion and requires constant doses of fertilizers and pesticides. And full-sun plantations are no good for wildlife – the trees, bromeliads and bushes found on a shade plantation are completely absent.

The higher yields tempt farmers to convert to full-sun, and the majority of plantations in Brazil, Colombia and Costa Rica have already been cleared of trees. Even though full-sun farms are more expensive to maintain -- and despite their high environmental costs-- government agencies often subsidize the transition. Conservationists and coffee purists alike are campaigning to stop the conversion to full-sun, industrial coffee farming. The Rainforest Alliance believes that coffee consumers can make a difference through their buying decisions. The collective power of consumers paying slightly more for certified shade-grown coffee will help provide coffee growers incentive to maintain their traditional eco-friendly production systems.

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BIRDS AND COFFEE: WHAT'S THE CONNECTION?

Among the most passionate supporters of shade-grown coffee are those who love birds. The connection between coffee and migratory birds was observed over half a century ago.

In the early 1930s, while many North Americans were suffering through the depression, ornithologist Ludlow Griscom was in Guatemala, collecting birds for the American Museum of Natural History. He noted that coffee growers left much of the natural forest to shade their plants, and that "in such growth, the avifauna was little, if any, different from its original condition." This fact went unnoticed for decades.

In the 1970s and early 1980s, University of California biologist Robert Seib did a landmark study of snake diversity in Guatemalan coffee farms, opening the field to more research. A spate of recent studies has shown a clear connection between coffee and birds. Scientists also have surveyed mammals, arthropods and insects in coffee farms that are managed in different ways. The conclusions are imperative and unanimous: traditional shaded farms host high levels of biodiversity; the new "full-sun" farms are "biological deserts" with few signs of life.

Beginning in the 1970s, biologists from the Interamerican Foundation for Tropical Research (FIIT) in Guatemala began surveying migratory songbirds, raptors, bats, reptiles and other fauna in coffee farms. This research formed the basis for the Rainforest Alliance ECO-O.K. certification. The program certifies farms that meet a strict set of criteria including maintaining diverse tree cover, protecting wildlife, treating workers fairly, reducing or eliminating the use of agrochemicals and protecting soil and water resources.

There are about 250 species of birds that breed mainly in the temperate region of North America and winter mainly in the tropics. These travelers include waterfowl, shorebirds, raptors and songbirds. As they funnel down through Mexico and the narrow waist of the Central American isthmus, the birds are compressed into spaces much smaller than their breeding area.



The migration is a marvelous thing. In 1996, the Mexican conservation group Pronatura Veracruz, for example, counted 4.5 million raptors passing over a single town. Scientists guess that between two and five billion birds make the annual journey. Some take the trip slowly, stopping frequently to rest and refuel, but many go the distance without stopping. The blackpoll warbler, for example, makes an incredible leap from Alaska to the Amazon that includes a thousand miles over open water. The birds have fabulous navigation skills, using landmarks, stars, magnetic fields and other clues to find their way "home," sometimes to the same tree.

But all too often the home tree has been replaced by a mall or housing development in the United States or a cattle pasture in the tropics. Many species are in trouble for a variety of reasons, including: forest fragmentation in the north, deforestation in the tropics, nest predation by cowbirds, uncontrolled hunting, feral cats and pesticides.

The coffee/bird connection is about songbirds -- warblers, orioles, tanagers, flycatchers, thrushes, vireos and their forest-dependent cohorts. The status of these birds is much studied and debated. Some are clearly in decline. Others seem to be holding on. But no one doubts that, unless current land-use trends are modified, the future of many of these songsters will be bleak.

Every year in Central America a million acres of tropical forest are destroyed; Mexico suffers a similar loss. The Caribbean islands that host many migrants are mostly deforested. The reason that more bird extinctions have not been recorded on some islands, according to U.S. Forest Service scientist Joe Wunderle, may be that they found refuge in traditional coffee farms. Wunderle, who studies survival rates of migrants, says that shaded coffee farms are nearly as good as real forest for many species.

Russell Greenberg and his colleagues at the Smithsonian Migratory Bird Center (SMBC) support this supposition. The SMBC has been a leader in researching the bird/coffee connection and raising public awareness. In Chiapas, Mexico, SMBC biologists found that shaded coffee has considerably more birds (more than 150 species) than other agricultural systems and compares favorably with natural forest. SMBC researchers found 94 to 97 percent fewer bird species in sun coffee than on shaded farms.

The importance of coffee as bird habitat is magnified by two correlative conditions. First, coffee is widespread, the most important crop for many areas. Coffee is grown at intermediate altitudes between 500 and 1,500 meters, dominating an entire ecosystem. There are an estimated 7 million acres of coffee in the northern Neotropics, where most of the migratory

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birds winter. That's an area equal in size to the state of Maryland, a lot of real estate in that narrow bridge between the Americas. In addition, coffee is strategically valuable, often surrounding parks, forming biological corridors between green areas or standing alone, a forested island in a denuded landscape.

And it's more than migrants. Scientists have known for a long time that forests at intermediate elevations of Central America house a wealth of unique life forms, many of which are found nowhere else and some that are considered to be vulnerable or threatened. In Central America the most important habitat for invertebrates, like insects, is the same as major coffee production areas. That means that when the coffee farm loses its trees, the insects lose their homes.

The bomb is ticking. At least half of the coffee in the Central America and Colombia has already been converted to full-sun and is now of no more value to birds and other wildlife than a banana plantation or barren cattle pasture. Many farmers with shaded farms are under tremendous economic pressure to either convert to full-sun or sell the farm to developers. In the past 2 years coffee prices have been so low that selling coffee doesn't cover the cost of growing it. This leaves small, poor farmers with debt that might only be overcome by cutting down their trees to replace them with sugar cane, cattle or plastic hothouses for ornamental plants.

In an area where every acre of trees is precious, our challenge as people who care about the environment is to help farmers stay in the shade coffee business. Most want to keep their shaded plantations because the forested farms offer many advantages: they serve as watersheds and provide firewood, fruits, fibers, medicinal plants, and other products for their families. They allow farm communities to maintain a wholesome and productive way of life.

Fortunately, we can help maintain these refuges, help farmers, and help birds all by just buying certified eco-friendly coffee.



TERMS & DEFINITIONS YOU SHOULD KNOW

- **Arabica** - Botanically speaking, coffee falls within the genus *Coffea*. There are two species in this genus: *Coffea arabica* and *Coffea robusta*. *Coffea arabica* produces a higher quality, better tasting bean with lower caffeine content. It is generally grown at higher elevations.
- **Blend** - A mixture of two or more coffees from distinct origins in an effort to create a more complete “cup”.
- **Caffeine** - An odorless, bitter alkaloid which acts as a stimulant. The average cup of coffee has between 0.07 and 0.1 grams of caffeine, depending on the variety.
- **Coffee Cherry** - The green coffee bean matures into a fruit called a “cherry.” A ripe cherry turns bright red, thus the name.
- **Grade** - Coffees are graded within their country of origin, generally by a national coffee authority. In Latin America, the highest grade coffees are produced above 4500 feet in elevation. Grade names vary from country to country. For example, in Guatemala the highest grade is “Strictly Hard Bean” and in El Salvador it is “Strictly High-Grown.”
- **Green Beans** - Unroasted coffee beans.
- **High-grown** - The highest quality coffee is grown at high elevations. In Latin America, the highest coffee grades are assigned to coffee grown above 4500 feet. Many coffee experts feel that shade-grown, high elevation coffee produces the most distinctive taste characteristics. See “Grade.”
- **Organic Coffee** - Organic agriculture treats the farm as a closed system. As much as possible, inputs to organic farms are derived from on-farm sources. Emphasis is placed on recycling, composting, soil health and biological activity in an effort to improve prospects for long-term protection of the farm environment. Synthetic agrochemicals are prohibited.
- **Roast** - Green coffee beans are roasted over a hot flame or air to draw out the distinctive taste characteristics. Roast intensity varies from light to dark and is determined largely by the length of time the bean is exposed to heat. A range of names have emerged to describe the various roasts including from light to dark: American, Vienna, City, Full-city, French, Italian. No absolute standard exists for the intensity of roast and the name associated with it.
- **Robusta** - *Coffea robusta* is the coffee species that generally grows at low elevation, produces a lower quality, less costly bean with higher caffeine content (30-40% higher) as compared to *Coffea arabica*. It is used primarily in low cost blends sold in supermarkets.



- **Shade-grown** - Coffee is by nature a shade loving species. It has its origins in the rainforests of Eastern Africa, growing under the shade of the forest canopy. In many parts of Latin America, farmers have converted from traditional varieties to “improved” varieties of coffee that grow in full-sun, albeit with high input of synthetic pesticides and fertilizers. Shade-grown coffee is coffee that grows beneath a canopy of trees. Shaded coffee farms range from “rustic”, with coffee bushes as part of the understory, to highly managed plantations with exotic species serving as shade cover.
- **Specialty Coffee Industry** - The segment of the coffee market targeting connoisseurs who seek high-quality, rare and flavored coffees. It comprises between 15% and 25% of the total US market. The remainder of the coffee market sells primarily low quality blends and is largely controlled by three multinational corporations.
- **Technification** - Alternately referred to as “modernization.” The process of converting from traditional shaded coffee poly-cultures to full-sun, monoculture coffee cultivation. The change in the coffee industry is analogous to the “Green Revolution” in wheat, corn, and rice farming where new varieties were developed that required higher input of pesticides and fertilizers. In the case of coffee, new varieties were developed that tolerated high levels of sun, resulted in higher yield per unit area, but required higher chemical input to support the greater growth rate.