Coffee Talk:

A Glossary for Birders

artwork by Scott Krych

In support of this year's IMBD coffee theme, the American Birding Association (ABA) presents this glossary on shade-grown coffee. It should be helpful for those wishing to understand some of the regular terms used in the growing discussions over birds and shade-grown coffee. A version of this glossary originally appeared in the February 2000 issue of *Birding*, the ABA's bimonthly magazine. It was assembled by David L. Gorsline.

First, however, there's the basic question:

What's the connection between our birds and coffee?

Older varieties of coffee (shade-grown coffee) continue to be grown under the shade of trees (often leguminous species) in order to retain and nourish the soil and to moderate the heat and light reaching the plants. Farms that mimic forest conditions suit the physiology of coffee. Depending on the species of shade trees and the structure of the tree cover, anywhere from a few to scores of resident and migratory bird species use coffee farms for food and cover. Ornithologists have consistently documented the importance of shade-coffee habitat in the increasingly deforested landscape of the Neotropics in Latin America and the Caribbean.

Unfortunately, the move to "technify" the coffee sector, begun in the 1970s and continuing today, involves replacing the traditional coffee varieties with newer hybrids, called "sun-coffee", that have been developed for sun tolerance (without shade) and compact growth, therefore yielding more coffee per hectare. The flip-side is that more chemical inputs—fertilizer, herbicides, and pesticides—are needed than in traditional cultivation, and, of course, the land is denuded of trees.

While you look through this glossary of coffee terms and familiarize yourself with the issues, here is a list of some activities that concerned birders and consumers can do on this important subject:

1. Learn more about the issues: shade-coffee vs. sun-coffee, certification, organic, fair-traded, sustainable. Becoming an educated consumer is the first priority. Most consumers—and that includes birders—will make responsible decisions when they are informed.
2. Raise the shade-grown coffee issue to your local birding friends and organizations, whether at a bird club meeting, IMBD activity, or a birding festival.
3. Seek out and buy shade-grown coffee for home and work. If your local retailers and specialty stores do not carry Song Bird Coffee or another brand of shade-grown coffee, ask that they do.
4. Ask for shade-grown coffee when you are at restaurants and espresso stands.
5. Support organizations that work on these important coffee issues.
6. Start a coffee-campaign network in your area to educate store owners and the media about the importance of shade-grown, songbird-safe coffee.
7. Join the coffee-hot-line e-mail discussion group run by the ECO-O.K and the Rainforest Alliance. To subscribe, send a blank message to: <*coffee-hot-line-subscribe@igc.topica.com*>.

COFFEE TALK: A Glossary for Birders

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Words that are underlined indicate cross-references within the glossary.

Alternative trade. See fair trade.

Arabica. One of the two primary taxa of coffee, *Coffea arabica*, has about two-thirds of the world market. Worldwide, coffee has at least 24 varieties (with exact classification a matter of debate). By contrast with robusta coffee, arabica shrubs thrive at higher elevations in a cooler, drier climate. Arabica beans are generally considered to produce better quality, more flavorful results. Colombia is a major producer. Two important, traditional varieties of the species are Bourbon and Typica (Spanish *típica)*.

Backbone tree. The predominant canopy species in a shade-grown coffee farm.

Beneficio. The mill that performs the processing of coffee cherries to produce green coffee beans.

Bird-friendly. The Smithsonian Migratory Bird Center has trademarked this term to describe environmentally sensitive coffee grown under defined criteria, including a shade spectrum or shade gradient. Among other things, the criteria state a minimum percentage of shade cover, exclude certain genera as backbone trees, and promote diversity by limiting the proportion of *Inga* trees in the canopy. Buffer zones and living fences are encouraged, while removal of epiphytes is discouraged. At present there are about a dozen companies adhering to this particular certification.

Building on the concept of a gradient, the Smithsonian Migratory Bird Center has used the following criteria to select coffee to be labeled "Bird-Friendly":

- recommended minimum of 10 species of shade trees, no more than 70 percent of *Inga*
- minimum shade cover of 40 percent at noon
- minimum height of 10 meters for backbone trees; some shorter and taller plants mixed in
- limit pruning of shade trees and removal of epiphytes whenever possible
- maintain road and stream buffers

Buffer zone. As it applies to coffee farming, a wide strip of vegetation along a stream to control erosion and runoff. Also, land that intercepts pesticide and fertilizer drift from non-organic fields.

Carbon sequestration. Capturing atmospheric carbon (carbon dioxide) and storing it by one of several mechanisms to reduce this greenhouse gas and its contribution to global warming. Carbon may be stored in living (green vegetation and forests) or non-living reservoirs (soil, geologic formations, oceans, wood products).

Coffee berry borer. *Hypothenemus hampei*, one of the few insect pests of coffee, and one that is perhaps more troublesome to sun coffee. The insect is called *la broca* in Spanish.

Coffee leaf rust. *Hemileia vastatrix*, a fungal disease of coffee, known in Spanish as *la roya*. Somehow, spores (perhaps from Africa) arrived in Brazil in 1970, and an outbreak occurred in Nicaragua in 1976, panicking the industry. For most of the Neotropics, the rust has not been the threat that was originally anticipated.

Cupping. Analogous to a vintner's wine-tasting: roasting, brewing, and tasting coffee under controlled conditions in order to assess quality. Coffee gourmets judge acidity, aroma, body, and finish.

ECO-O.K. Labeling program co-managed by the Rainforest Alliance, applicable to coffee and other agricultural products. Firms pay a licensing fee to use an identifying logo; they are subject to a "chain-of-custody" auditing procedure that monitors the flow of product from farm to consumer. ECO-O.K. certification addresses a wide range of issues: fair treatment of workers, community relations, minimizing use of agrochemicals, integrated waste management, and conservation of water, soil, wildlife, and the entire ecosystem.

Epiphyte. Any plant that does not root in soil but rather uses another plant species for support. Among flowering plants, the best-known epiphytes are orchids and bromeliads. In the forest, epiphytes shelter insects vital to the food chain.

Estate coffee. Coffee from a specific defined area under cultivation with common farming practices, intended to yield precise flavor characteristics in the cup. See also varietal coffee.

Fair trade. Promotion of more equitable, less exploitative dealings with producers in developing countries. Sometimes called alternative trade. The fair trade movement is more visible in Europe. In terms of coffee production, fair-trade principles stress minimum prices; credit availability; and stable, long-term business relationships directly with farmer cooperatives, avoiding intermediaries or middlemen. Sustainable agricultural practices are of perhaps secondary importance.

Finca. Spanish for "estate," a specific coffee farm, either large or small.

Gliricidia. A short deciduous tree, a legume, frequently used to supply shade for coffee plants, though not used as commonly as *Inga.* Because *Gliricidia* is deciduous, it does not provide cover at a time of year when the canopy for birds may be critical. This legume is probably not as important as *Erythrina*.

Green coffee beans. Unroasted coffee beans. See processing.

Inga. One of a genus of commonly used shade tree. *Inga vera*, in particular, is a legume, which provides good shade, and is regularly planted as an overstory tree in structured shade-coffee plantations throughout the Neotropics.

Legume. Any of the plants of the order *Fabales* (including peas, soybeans, and clover) important in nitrogen fixation. Legumes develop bacteria-harboring root nodules; from atmospheric nitrogen, the bacteria form compounds that can be taken up by plants and animals.

Of the genera important as shade trees on coffee farms, *Inga*, *Acacia*, *Erythrina*, and *Gliricidia* are legumes, while *Grevillea* is not.

Living fence. For coffee farming, a windbreak of trees and shrubs along a roadway or field to prevent drying-out of the understory.

Modernized coffee. See technified coffee.

Mountain-grown coffee. Readers may remember TV pitchwoman "Mrs. Olsen" who promoted coffee of this sort. The more-favored arabica prefers higher altitudes, and the grading systems of some producing countries account for elevation. The term "high grown" is also used. Generally means coffee grown above 4,000 feet. Associated with a denser, harder, more flavorful bean because the fruits mature more slowly. High-elevation coffee is often shaded by near-constant cloud cover rather than a leafy canopy.

NGO. Non-government organization. Any local, national, or international organization, profit or non-profit, whose members are persons not employed by a government. See the accompanying list of NGOs involved in shade-coffee and related issues.

Organic. Produced by an approach that views the farm as an ecosystem. Emphasis is placed on recycling, composting, soil health, and biological activity, with the goal of long-term protection of the farm environment. Synthetic chemicals are rigorously avoided.

In accordance with the 1990 Organic Foods Production Act, the U.S. Department of Agriculture is standardizing the use of the label "organic," subsuming various state standards, like those of Oregon and California.

Organically grown coffee is not necessarily shade-grown, but it usually is. This is because the trees of the canopy provide several necessities to the organic coffee farm, among them leaf litter (which acts as a fertilizer), resident wildlife species that control pests, and the retention of moisture.

Processing. All freshly picked coffee fruits (called cherries) go through several steps before becoming beans ready for the grinder.

For the first step, there are two ways to go about removing the red, fleshy part of the fruit: a fast wet process at the expense of a lot of water and a dry process where the cherries are simply spread to dry in the sun for up to three weeks. Coffee processed the first way is called "washed." The dry process is also called "unwashed," or sometimes "natural."

In either case, the next step is to thoroughly dry the beans and remove the parchment. The resulting green beans can now be accurately graded, and they are usually exported in this form.

The final step is roasting: beans are heated to above 200 degrees C, releasing steam and other gases. The beans lose weight, puff up, and turn a rich dark brown. The chemistry of the roasting step accounts for much of the flavor characteristics of the final product, from mild to espresso-dark.

Roaster. One of the last businesses to handle coffee before it reaches the consumer, the roasting firm may be a large corporation or a specialty business focusing on gourmet or other qualities of the coffee. Roasting is usually done in the importing country; the shelf life of roasted beans is limited.

Robusta. The other primary taxon of coffee, *Coffea canephora* var. Robusta. (The taxonomy is not clear-cut: some sources use "robusta" to refer to any variety of *C. canephora,* and some use "robusta" as a species name.) As indicated by the variety name, robusta trees grow taller, are more resistant to pests and disease, and produce more fruits than *arabica.* The caffeine content of the beans is about twice that of arabica. Considered inferior-tasting, robusta is often used for instant coffee and in supermarket-grade blends. It is grown in Africa and Brazil, but not very much in Central America, and holds the remaining third of the world market.

Shade-grown coffee, shade coffee. A term with no clear-cut definition, generally referring to coffee grown under a natural canopy and to farming practices nearer the "rustic" end of the shade spectrum.

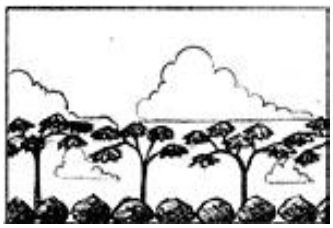
But unfortunately, at this time, “shade-grown coffee” can be whatever the seller says it is. A number of organizations and movements are working to establish a standard, enforceable label, among them the Rainforest Alliance’s ECO-O.K. program and the Smithsonian Migratory Bird Center’s bird-friendly criteria. Since coffee grown in the shade is slower-ripening, and often is drawn from vintage cultivars, there is the suggestion that it tastes better, with more complex flavors. (As it is with mountain-grown coffee.) However, the roasting process contributes just as much to the quality of coffee in the cup. Shade-coffee is usually contrasted with sun-coffee.

Shade spectrum, shade gradient. The shade-vs.-sun distinction is not black and white. Mexican researchers devised a five-category continuum of management practices to describe the assortment of coffee farms in Latin America. This basic shade gradient has become a familiar centerpiece in discussions on quantifying shade.

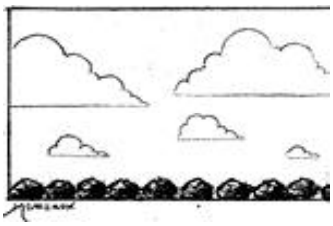
rustic (*rusticano*): the least intensified practice; coffee shrubs are planted in the existing forest with little alteration of native vegetation; also the least expensive practice, typically used by small family-owned farms that produce a modest crop of coffee. This is an increasingly rare practice and usually does involve some thinning of the canopy

traditional polyculture (*policultura tradicional*): more managed than rustic coffee, involving deliberate integration of beneficial plants (fruits, vegetables, nuts, medicinal plants, etc.), and resulting in greater species diversity than commercial polyculture (below); the crop diversification helps farmers in years when coffee prices are depressed; in many traditional indigenous systems there is no distinction between wild and domesticated plants and some plants are weeded, tolerated, or encouraged depending on household needs and the season.

commercial polyculture (*policultura comercial*): similar to traditional polyculture, but some shade is removed to make room for more coffee shrubs; yields are higher, but some agrochemical inputs (fertilizers, pesticides) are usually needed; generally planted with a distinct backbone species, but more diverse than specialized shade (below).



reduced or specialized shade (*sombra especializada*): uses a single, pruned canopy species to provide shade, typically from genera *Inga*, *Erythrina*, *Gliricidia*, or *Grevillea*; coffee shrubs are planted more densely, and the farm has a manicured look; since the overstory consists of one or two species, its vertical structural diversity is reduced.



full-sun or unshaded monoculture (*monocultura sin sombre*): does away with the canopy completely; the unshaded intensively-managed fields are highly productive if given the requisite agrochemical inputs.

Artwork © by George Dremeaux; material modified from Nolasco, M. 1985. *Café y Sociedad en México*. Centro de Ecodesarrollo, Mexio D.F.

Sun-coffee. Used to describe coffee that is not shade-grown, and generally used disparagingly—often neat rows of coffee beneath direct sun or scant shade, compared to the fuller canopy of a traditional farm.

Some of the production and related differences between sun-coffee and shade-coffee are presented below (Adapted in part from the Northwest Shade Coffee Campaign).

PRODUCTION AND RELATED CONSIDERATIONS

	Shade	**Sun**
Yield	Lower (~ 25-40%)	Higher
Plants/Hectare	1,000–2,000	3,000–7,000
Kg/Hct/yr	550	1,600
Lifetime of plants	24–30 years	12–15 years
Side-crops	High	Low/none
Flavor	Less bitter	More bitter
Who produces?	Mostly small-scale growers	Mostly large-scale growers
Weeding	Lower	Higher
Chemical Fertilizers	Lower	Higher
Pesticides	Lower	Higher
Irrigation	Lower	Higher
Soil Erosion	Lower	Higher
Sol Acidification	Lower	Higher
Toxic run-off	Lower	Higher

Sustainable. Here is another term that does not have a widely-accepted definition. For coffee agriculture and resource development, the term implies concern both for laborers' working conditions and for trading practices and land tenure systems that do not impoverish farmers—as well as sensitivity to the environment, minimization of pollution, and independence from non-renewable energy sources. At the intersection of ecology, economics, and politics, sustainability is concerned with the equitable allocation and consumption of resources, now and in the future.

Technified coffee. The word "technification" is a back-formation from the Spanish *tecnificación*. The practice of technification was spurred by the spread of coffee leaf rust to the New World in the 1970's; technification projects were assisted by the United States Agency for International Development (U.S.–AID). Technification goes beyond the intensive management of shade and shrubs to the application of agrochemical inputs and the introduction of higher-yielding, disease-resistant varieties of coffee that respond well to those inputs. Estimates, as of 1993, put the percentage of technified coffee acreage at 10 percent in El Salvador and Haiti, 40 percent in Costa Rica, and nearly 70 percent in Colombia.

Varietal coffee. Coffee of a specific cultivar, e.g., Bourbon. More loosely, "regional coffee," that is, coffee from a general area or country, with some common flavor characteristics. Estate coffee comes from a more specific area, while supermarket-grade blends mix coffee of different regions and cultivars.

Washed coffee. One of the two ways of processing, removing the red, fleshy part of the fruit. In washed coffee, the cherries are milled in a tank of water, which washes away the outer pulp and skin, leaving a mucilaginous inner pulp. The fruits are fermented in more water for several hours, and the inner pulp falls away, leaving the beans inside a husk that resembles parchment. At the expense of a lot of water, washing makes it easier to produce uniform, high-quality coffee, but disposal of the wash water is an environmental concern.

International Migratory Bird Day (IMBD) is the hallmark outreach event for Partners in Flight, a unique, diverse consortium of individuals and groups who share a vision of healthy bird populations. IMBD focuses attention on a valuable resource—the nearly 350 species of migratory birds that travel between nesting habitats in North America and non-breeding grounds in South and Central America, Mexico, and the Caribbean. It is also a call to action, raising awareness and concern about the myriad threats faced by migratory birds on their migration routes and in both their summer and winter habitats. To learn more about IMBD, including the hundreds of events held annually, please contact the IMBD Information Center at IMBD@fws.gov or 703/358-2318 or visit <*http://birds.fws.gov/imbd.html*>.

The American Birding Association is North America's largest membership organization for active birders—providing leadership to field birders by increasing their knowledge, skills, and enjoyment of birding, and by contributing to bird conservation. More information about the ABA is available from ABA, PO Box 6599, Colorado Springs, CO 80934; <*www.americanbirding.org*>.

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