

Last Month's Program: Coffee

Tim Johnson

On October 23rd, Colorado native Gemara Gifford presented, "Coffee for Communities and Conservation." You can see a video of her presentation [here](#).

Gifford began with an overview of worldwide coffee production. Around the world, about 30,000 square miles (approximately 1/3 the area of Colorado) are devoted to coffee production; about half of this is in Brazil, Vietnam, and Indonesia.

Roughly 10% of the world's coffee comes from Central America and coffee all over the world is grown mostly on small holdings of less than about 12 acres.

Planting, harvesting, and the initial stages of processing beans are usually done by the farmers themselves, but they get only 5-10% of the ultimate retail value.

Gifford underscored the importance of coffee plantations for conservation with maps comparing world areas of high biodiversity with areas of coffee production. They overlap a great deal.

Coffee traditionally is grown under a canopy of trees, either local forest or agroforest. An example of an agroforest in Central America is a tree plantation, such as teak or cacao.

A major concern for conservationists is the accelerating trend to convert shade-grown coffee farms to crops grown in full sun using hybrid coffees that generate high yields, are sun tolerant, and give farmers more cash up front.

These plantations, however, need to be replaced more often and tend

to need higher inputs of water, fertilizer, and pesticides than shade-grown coffee.

They also require removal of the forest cover, which increases erosion and negatively impacts other crops, as well as bird and animal species.

Sun coffee can be less resilient to disease, which may have contributed to the catastrophic coffee leaf rust epidemic of 2012-2013, which destroyed 60-70% of Central America's coffee crop.

Thus, for a biologist, addressing coffee farming is a complicated story requiring interactions with farmers and their communities, as well as meaningful data evaluating the real impact of such farming on the local ecology.

Gifford presented data concerning the aspects of a forest that might most influence bird diversity. She looked at neotropical migrants and residents and, for some residents, she evaluated breeding and non-breeding members.

She presented striking graphs relating the likelihood that a bird would use a given area with the amount of forest cover in the area.

The best predictor for usage by both migrants and residents was the amount of canopy cover.

Tree density and the presence of epiphytes (plants that are supported by other plants and derive their nutrients and water from rain and air) were also important.

Migrants appeared to need less complex habitat than permanent residents.

The practical lessons for bird

conservation in Central America from Gifford's work include these messages:

1. Forest requirements for migrant and resident species are different.
2. Migrant birds require a habitat with a forest canopy area of 20% or greater.
3. Tree density should be maintained at 150-550 trees/hectare.
4. Resident birds require a habitat with a forest canopy of 25-40% or greater.
5. Epiphytes should be protected.

Gifford discussed the confusing certification process for coffee, noting that a buyer considering different types of certification is choosing what to protect.

Smithsonian-certified Bird Friendly coffee, for example, emphasizes environmental standards without consideration of farmers, while Fair Trade certification could ignore any ecological considerations.

Her reluctant favorite among certifications was [Rainforest Alliance](#), which includes consideration of habitat and people. Rainforest Alliance certified products feature a distinctive green frog logo.

But she would like to see the industry move away from certification toward what she called "relationship coffee".

This term would describe cooperation between coffee-growing communities and companies to improve conservation and agricultural practices in the process of producing coffee.

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Gemara Gifford has a degree in Zoology from Colorado State University and recently received an MS from Cornell University.

She is currently the Director of Development and Biodiversity at Trees, Water and People (TWP), an NGO based in Fort Collins. TWP (www.treeswaterpeople.org) works in Central America on the interconnected issues of poverty, agriculture, deforestation, and conservation.

Gifford concluded by describing TWP's recent work in Honduras,

in cooperation with the Center for Education in Sustainable Agriculture, in communities near the poorly-known Montecillos Reserve.

Here, TWP is engaging in agroforestry education projects, establishing community-operated tree nurseries, helping with farm crop diversification, and setting up processes for bird monitoring—a new project.

TWP also helps these communities upgrade inefficient wood-

burning cooking stoves in an effort to reduce deforestation and improve health, an effort they share with many other Non-Government Organizations (NGOs) in Central America.

A succinct summary of Gifford's outlook and the work of TWP is the title of Chapter 3 of her thesis: "Biodiversity conservation and sustainable livelihoods in agroecosystems".

(Her thesis contains much fascinating material and can be found at <https://ecommons.cornell.edu>).



Megan, Francis and Jeanette – Get ready for Christmas Bird Count! *Joey Kellner*