



# Perfect Blend

Rather than clearing Colombian forests to make way for coffee plantations, merging the two could benefit migratory birds.

By James Lowen

Juan Pablo Echeverri hands me an espresso. "The coffee was cultivated and brewed right here," he says. We're at Hacienda Venecia, Juan Pablo's family-run farm in Colombia's Andean highlands. Inhaling the roast's heady scent, I glance towards some tall, native trees. Binoculars raised, my vision suddenly fizzes with feather – a rainbow of birds nibbling fruit or gleaning insects. A sun-yellow flash announces a Canada warbler – an adult male judging by its ostentatious necklace and studious spectacles. The flock swirls onwards.

As I prioritise *café solo* over optics, I wonder whether growing coffee plants under the shade of rainforest trees might just stave off this migratory bird's slump towards extinction.

The weight of an AAA battery, *la reinita de Canada* (Canada's little queen) flies about 6,000km to spend seven months amid South American mountains before returning to North America to breed. Calamitous deforestation on its Andean wintering quarters is thought responsible for a 75 per cent population decline across four decades. Concern for the Canada warbler's plight has galvanised "a multinational collaboration to co-ordinate recovery efforts." ▶

Caldas is part of Colombia's Coffee Cultural Landscape, which made it onto the World Heritage list in 2011.

The Canada warbler (pictured) and ovenbird (bottom left) are just two migratory species that have been spotted among the coffee farms of Central and South America.

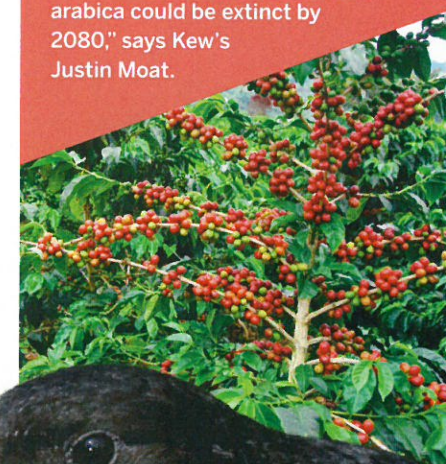


Left: workers harvest young coffee plants before relocating them. Below: a bean damaged by coffee borer beetle. Bottom right: the Baltimore oriole favours coffee and cacao plantations where crops are grown under a shady canopy. Bottom: coffee plantations blanket hillsides in Colombia.



### In hot water: the extinction threat

It's not just migratory birds that may be on the way out – coffee itself is in trouble, say botanists at the Royal Botanic Gardens, Kew. Of 124 species of wild coffee plants, 60 per cent are now threatened with global extinction. These include one of the two cultivated species, *Coffea arabica* (below) – with disease, pests and climate change all taking their toll. Research published in January found conservation measures to be inadequate for wild coffees. "The worst-case scenario is that wild arabica could be extinct by 2080," says Kew's Justin Moat.



says Diana Eusse of Colombian wildlife charity Asociación Calidris. Joining forces with ProColombia (the national tourist board), Bird Studies Canada and BirdLife International's Preventing Extinctions Programme, Calidris is fighting to save migratory and resident species alike in the context of a 90 per cent reduction in Andean forest.

and planted 80 hectares with native trees," Diana says. She also hails the "potential importance" of coffee grown in plantations shaded by indigenous trees. "Shade-grown coffee can generate financial incentives" for landowners to retain or enhance forest. Ever the caffeine fiend, this intrigues me. Might savvy purchasing decisions help my addiction save tropical wildlife?

Among the world's most important commodities, coffee is big business in Colombia. Arábica exports are worth £2 billion and rose 20 per cent between 2013 and 2018 – only Brazil and Vietnam



ship more. The Zona Cafetera of Caldas, Risaralda and Quindío employs 800,000 people. But coffee grows on hills from 900–2,000m, the same elevational band favoured by the Canada warbler and other migratory birds – and originally swathed in native forest. On Andean slopes, bean is battling bird.

#### Past, present and future

Coffee plantations were established here during the 19th century. The rainforest understorey was eradicated to make way for coffee bushes, but the canopy was retained to provide shade under which wild *Coffea arabica* naturally thrives. This approach persisted until late last century, when the race for higher yields led to inexorable clear-felling, so the crop could ripen in the sun. In Colombia, where Canada warblers mostly winter, the area of shade-grown coffee more than halved between 1997 and 2013. Worse, 69 per cent of Colombian coffee plantations now lack shading trees. Such 'sun-grown coffee' provides

minimal service to wildlife.

Concerned by this transformation, the US-based Smithsonian Migratory Bird Centre (SMBC) paved the way for researchers to investigate whether shade-grown coffee could help biodiversity. The ensuing body of evidence provides considerable hope.

The Cornell Lab of Ornithology calculates that at least 42 species of North American breeding songbird – warblers, tanagers, orioles and more – winter on

**At least 42 species of North American songbirds winter on Central or South American coffee farms.**



Warbler: National Geographic Image Collection/Alamy; ovenbird: All Canada Photos/Alamy; tanager: Capan/Alamy; borer beetle: darrags/Alamy; plantation: Jesse Kratz/Getty; Coffea arabica: thicckwinkl/Alamy; oriole: Corbis/Getty



Tree: Morley Reed/Alamy; hands: Heeb Christian/Frisma/Alamy; picker: Dennis Denner/Cavan/Alamy; thrush: AGAM/Alamy; tanager: All Canada Photos/Alamy

Central or South American coffee farms. Cornell's Amanda Rodewald found such migrants in the northern Andes to be more numerous in shade-coffee than natural forests – and, remarkably, those in shade-coffee improved their physical condition for their northbound migration. “With their nectar, insect and fruit resources, shade-grown coffee plantations can provide good foraging habitat for birds,” she says. Some birds like what they find so much that they return year after year. “One particular cerulean warbler even returned to the same farm for five consecutive winters.”

**Paying dividends**

Coffee isn't solely for the birds. Shade-grown coffee supports high levels of biodiversity, from insects to mammals, explains Ana González of Colombian research institute SELVA. Researchers in Mexico learnt that amphibians such as pygmy



free-fingered frog and Mexican robber frog relished the higher humidity and denser leaf litter found in shaded plantations. The equivalent landscape in Costa Rica was found to be home to 17 mammal species (including northern raccoon, grey four-eyed opossum and nine-banded armadillo). An Indonesian study counted 90 per cent more bees on shade-grown coffee farms than sun-ripened alternatives. But it's not just wildlife that benefits – coffee producers can, too. Nobody denies that sunny coffee plantations yield more beans than shady ones. But the latter's slower maturation imparts a deeper flavour that can garner higher prices. Leaf litter feeds plants, lowering fertiliser costs. Shade-grown coffee plants grow for twice as long – so need less frequent replacement. Birds naturally control pests such as coffee borer beetle. Overhanging trees reduce soil erosion, sequester carbon and offer the potential for harvesting other forest products – which SMBC's

**Top left: after planting, it can take up to four years for coffee trees to bear fruit. Top right: coffee cherries turn bright red when ready for harvesting – the beans are then separated from the fruit. Above: the cherries are usually picked by hand. Bottom left: the wood thrush's wintering habitat is being lost to coffee plantations.**

Robert Rice found “can potentially boost the value of coffee farmers' holdings by about 10 per cent”. Then throw in the market premium that producers receive if their crop is independently certified as ‘shade-grown’. This uplift is feasible because coffee drinkers willingly pay extra to support good causes. In the UK, we are familiar with organic, Fairtrade and Rainforest Alliance coffee. Each certification scheme presses a different button to garner our custom. Organic labels confirm that ▶

Shade-grown coffee supports high levels of biodiversity, from insects to mammals.



The fiery red plumage of the male summer tanager makes it relatively easy to spot amid the greenery of the forest canopy.

Below: dried coffee beans. Right: more research is needed to determine if shade-grown coffee helps resident birds, such as sparkling violetear hummingbirds, as well as migrants. Bottom left: the black-and-white warbler is one of the most common migrants to visit shade-coffee areas.



The nine-banded armadillo (right) and northern raccoon (far right) are among the mammals found in areas of shade-coffee in Costa Rica.

## Consumers need more transparent information to guarantee they are making the right choices.

crop and land have not been sluiced with chemicals. Fairtrade guarantees producers an equitable minimum price. Rainforest Alliance coffee promotes sustainable agriculture over biodiversity.

In 1996, SMBC launched the first – and, by all accounts, still best – certification scheme for shade-grown coffee. The primary goal of Bird Friendly coffee is avian conservation. Standards are ostensibly exacting: certifiers grant use of the label only if the canopy is 12m high or more, provides at least 40 per cent shade over the organic crop, contains native species and is both floristically and structurally complex. Though well established in North America and Japan, Bird Friendly coffee may be new to UK readers. Though not yet in supermarkets, Bird & Wild and Cafeology sell



roasts through Ocado, Amazon and the Royal Society for the Protection of Birds. This sounds promising – but is it? Or is shade-grown merely hype?

### Coffee critics

The concept is not without critics. From his work in Honduras, Samuel Jones (University of London) is concerned that “monocultures damage understorey habitat for scarce amphibians and birds.” Chris Sharpe of Venezuelan charity Provita has been unimpressed by shade-coffee farms in Costa Rica and Belize. “Only in Venezuela,” he says, “have I experienced plantations that provide what birds need – complex architecture with canopy layers comprising solely native species.” Ana is

Beans & Hummingbird: James Lowen; warbler: Scott Leslie/NPL; armadillo: Carlos José Pacheco/Alamy; raccoon: Ian Butler/Alamy

increasingly concerned that not all certified coffee is produced under as high standards as the Bird-Friendly label. “Some farms obtain certification without necessarily meeting shade-grown parameters,” she warns. “Consumers need more transparent information to guarantee they are making the right choices to protect wildlife habitat.”

Moreover, you need a lot of certified land to make a landscape-sized difference. As Colombia’s 300,000 producers typically run farms covering just 20,000–50,000m<sup>2</sup>, the challenge is mighty. Encouragingly, both production and area certified have nearly tripled since 2008. Yet

the US market share of Bird Friendly coffee remains tiny (less than 0.5 per cent) and the total land involved is little more than the size of Liverpool (128km<sup>2</sup>).

Nevertheless, advocates and sceptics have found common ground on a few points. From a wildlife perspective, shade-grown coffee can never fully replace native forest. But it is better than no trees at all. In a sea of deforestation, any semblance of woodland helps buffer natural forest patches and enables animals to move between them. In the Colombian Andes, for Asociación Calidris and others, shade-coffee has become part of a pragmatic conservation mix whose mainstay is forest protection and restoration. The world is not going

to stop drinking coffee but we can select a less environmentally harmful roast. Back home, I brew a ‘conservation coffee’ from Colombia’s answer to Starbucks, Juan Valdez. A Canada warbler adorns the packet. Together, image and aroma transport me back to the Andes – and their hills of hope. ☒



**JAMES LOWEN** is an award-winning and espresso-loving author. He travelled to Colombia courtesy of ProColombia and BirdLife International.

**FIND OUT MORE** Read about SELVA’s work: [selva.org.co/en](http://selva.org.co/en) and BirdLife International’s Preventing Extinctions Programme: [bit.ly/2UdsYOV](http://bit.ly/2UdsYOV).

