

spent years looking for birds in some of the most remote wildlands of the Americas. Now, responding to the entrenched bias in wildlife research toward more pristine habitats, he has turned his conservation eye toward another jungle: the concrete one.

“It’s not much fun to drive into downtown Baltimore to go to a study site that is mostly pavement, hoping to catch a catbird in a Japanese honeysuckle bush,” he says. “But outside of refuges, this is the reality of where we are going with our environment.”

It is well known that sprawling land conversion along the eastern seaboard of the U.S. has led to the decline of many songbirds. But with only a trickle of research funding being directed toward understanding these highly modified habitats, biologists are largely in the dark about the dynamics of and threats to bird populations that persist in cities and subdivisions.

The house wrens in Paula Sullivan’s yard help to shed some light. They are among 5,000 birds that have been banded through Nestwatch. Every spring since the program began in 2000, a field crew has shown up at her

house with mist nets. Stretching the thin mesh between two poles across the grass, they catch, weigh, bleed, and leg-band birds that fly from her bushes.

For Sullivan, an avid birder, this adds color—literally—to the birds she sees out her back window. “It’s thrilling to see the bright bands on their legs and know they made it for another year,” she says. She collects data on the nesting behavior of these birds and seven other common species that occur in an urban-to-rural gradient from Washington, D.C., to forest tracts in Virginia and Maryland. She relays the data through a website to Marra’s team at the Smithsonian.

Back in the lab, the data she and other Nestwatch households have been collecting get interlarded with the scientist’s more skill-intensive blood analyses, population studies, and computer modeling to yield some new and surprising insights.

Using artificial nests with clay eggs at randomly selected participants’ backyards, the Smithsonian team tested the prediction that nest predation—measured by predator imprints in the clay—would be higher in more urban

environments. The opposite proved true. Although the habitat may be superior in more natural areas, rural birds’ eggs were dined on more often, due to a greater diversity of predators from raccoons to crows.

Or, take the case of West Nile virus. In collaboration with the New York State Department of Health, the Wildlife Trust, and the Consortium for Conservation Medicine, Nestwatch blood samples are helping unravel the complex epidemiology of this disease. It appears that nonnative house sparrows are an important reservoir for the virus and that the prevalence of the disease increases along the urbanization gradient. In short, urban sprawl changes the composition of bird populations, giving West Nile virus favorable conditions for growth.

Another Nestwatch study is using radiotransmitters to track catbirds. The results show alarmingly high rates of mortality during the fledgling period, suggesting that suburban areas are a dead end for many birds. Their killer? Domestic cats, says Marra. 🐾

By Joshua Brown

## CLIMATE: Raising the Bar on Kyoto

NEW STANDARDS REQUIRE PROJECTS TO SAVE MORE THAN JUST CARBON



Photo by © Mark Ballantyne

AT FIRST GLANCE, it seemed like one of those win-win scenarios. To provide charcoal fuel for its pig iron works, Plantar S.A. Reforestamentos, a private company in southeastern Brazil, sought to plant 23,000 ha of cloned eucalyptus trees. Using cultivated trees, the company argued, would sequester 1 metric ton of carbon for every ton of iron produced.

To finance its plans, Plantar turned to the World Bank’s new Prototype

Carbon Fund. The fund, which currently provides US\$105 million in support of emission reduction projects in developing countries, allows investing companies and governments to earn carbon credits toward meeting their Kyoto targets (see table). Instead of applause, however, the Plantar application drew the ire of 80 environmental and human-justice organizations. In a 2004 letter to the World Bank, they called for a halt to the project, charg-

ing that the plantation displaced people from their land and polluted area waters with agrochemicals.

Projects like the Plantar plantation are the Achilles' heel of the Kyoto Protocol, says John O. Niles, manager of the Climate, Community & Biodiversity Alliance (CCBA). Under Kyoto, investment in projects in developing countries is one of three main ways that developed nations can meet their emission-reduction targets. But in the rush to invest, governments often lack adequate safeguards to ensure that emission-reduction projects benefit the environment and local communities more broadly.

In 2003, forest advocates founded the CCBA to develop a gold standard of certification that could be used by governments, NGOs, or private investors seeking to invest in projects that delivered a bigger bang for their climate-change buck. And the potential size of that bang is what sets this project apart from other voluntary standards. Under Kyoto, most of the developed countries in the world will need to reduce their emissions by up to ten percent by 2012, and the value of global carbon trading could reach US\$45 billion by 2010.

To harness that huge economic force for environmental good, CCBA organized a coalition of nonprofit groups including The Nature Conservancy, Conservation International, the Hamburg Institute of International Economics as well as corporate heavy hitters including BP, Intel, Weyerhaeuser, and SC Johnson. In May 2005, the CCBA released the first multi-objective standards for land-use projects aimed at mitigating climate change.

To become certified under what is known as the Climate, Community & Biodiversity Project Design Standards, projects must undergo rigorous examination by an independent evaluator and substantively address three pressing global problems: poverty, loss of biodi-

Project	Country	Description	PCF Contracts (US\$ millions)
Coal-bed Methane	China	Capture of coal-mine methane for 120-megawatt power generation	17.00
Durban Solid Waste	South Africa	10 megawatt generator to produce electricity from landfill methane	15.01
Indocement Sustainable Cement	Indonesia	Reducing clinker contents in cement, alternative fuels, heat power generation	10.80
Xiaogushan Hydropower	China	98-megawatt run-of-river hydroelectric plant on Heihe River	9.22
El Canada Small Hydro	Guatemala	43-megawatt run-of-river hydroelectric plant to displace thermal power plants	7.50
Umbrella Waste Management	Mexico	6 bundled waste-to-energy projects totalling 21-megawatt capacity	6.30
Plantar	Brazil	Charcoal from sustainable plantation replacing coke for pig iron works	5.30
Pannogreen Pécs Fuel Conversion	Hungary	Conversion of coal-fired power plants to biomass	5.01

**The eight largest** emission reduction projects funded by the World Bank's Prototype Carbon Fund, listed by dollar value. Adapted from [www.carbonfinance.org/pcf](http://www.carbonfinance.org/pcf).

versity, and climate change. First and foremost, projects must demonstrate that they can make a dent in the levels of atmospheric concentrations of greenhouse gases by preventing or reducing emissions, sequestering carbon, or finding substitutes for fossil fuels.

But meeting these benchmarks is only the start. Under the standard's biodiversity guidelines, for example, the project must avoid planting invasive species or genetically modified organisms. It must also demonstrate that operations will have no negative impacts on threatened species that appear either on the IUCN's Red List or lists issued by the host country. The project also must contribute to the social and economic well-being of nearby communities, a criterion that gives local people a say in the project's design in its early stages as well as a forum to express and redress grievances.

The alliance field-tested its certification protocol in places as disparate as Indonesia, Bolivia, Scotland, and Madagascar. In November 2005, Futuro Forestal S.A., a sustainable-forestry

operation in Panama, became the first project to seek certification. Futuro Forestal S.A. reclaims tropical forests by planting abandoned cow pastures with native tree species. In its forest-maintenance, seed-growing, and sustainable-logging operations, the company trains and employs workers from local communities.

But the CCBA's greatest influence may be felt in China. Since the 1990s, China has embarked on a nationwide push to reforest steep slopes after agricultural conversions caused massive flooding, soil erosion, and siltation in waterways such as the Yangtze and Yellow Rivers. In May 2005, China's State Forestry Administration announced plans to use the CCBA standards to design several forestry projects in the country's Yunnan and Sichuan provinces. If the pilot projects are successful, the agency may use the standards to guide the management of millions of additional hectares of forest land. ▀

By Adelheid Fischer