

AMAZON UPDATE: POLONOROESTE THREATENS BIRD HABITATS IN WEST BRAZIL

by Philip M. Fearnside

Polonoroeste, a US\$1.1 billion regional development project financed by the World Bank, has already brought rapid change to Brazil's Amazonian states of Mato Grosso and Rondônia. The bulk of the project budget (57 percent) is designated for the now-complete reconstruction and paving of the 1,500-km stretch of the Marechal Rondon or BR-364 highway from Cuiabá (capital of Mato Grosso) to Porto Velho (capital of Rondônia). Expanding a network of feeder roads and the settlement of new areas account for most of the remainder of the budget. A small fraction (3 percent) is destined for reserve protection, including Amerindian reservations.

Polonoroeste's impact extends far beyond Rondônia and the western half of Mato Grosso — the region officially considered the "area of influence" of the project. The highway paving, completed in September 1984, removed a major barrier restraining migration to Amazonia of small farmers displaced from southern Brazil (especially the state of Paraná) by land tenure concentration and mechanised soybean and wheat cultivation. Rondônia serves as a gateway to the Amazon region for an increasing flood of such migrants, many of whom fail to find land in that already-overflowing state whose area is approximately that of West Germany. Migrants leaving Rondônia move on to more distant Amazonian frontiers, such as Roraima and Acre. The Inter-American Development Bank approved a loan in 1984 to pave the stretch of the BR-364 highway from Porto Velho (Rondônia) to Rio Branco (Acre). Although it recently halted payments for the project until the State prepares an adequate environmental protection plan, work on paving this extension of the highway has already begun; its completion would ensure explosive migration to the far western part of the Amazon region.

Information is scant on bird species threatened by the project. The Brazilian Amazon's major bird research projects have been carried out in Belém (Pará) and Manaus (Amazonas), far from Rondônia.

Despite the paucity of ornithological work in Rondônia, some of the likely impacts on birds are apparent from the explosive pace of deforestation in the area. Even before Polonoroeste, satellite imagery from 1978 revealed that Rondônia had an exponential deforestation trend that was the fastest in the Brazilian Amazon. Additional satellite data from 1980 and 1983 have shown that cleared areas continued to increase at a faster-than-linear pace. The greatly accelerated rush of land-hungry migrants since the 1984 inauguration of the BR-364 highway assures that deforestation continues in a rapidly accelerating fashion.

Deforestation threatens birds through habitat destruction and degradation. A few species suffer additional pressure from hunting and the pet trade. Since many Amazonian birds depend on rain-forest, only a few canopy and open-habitat species can be expected to persist once the forest is gone. The original vegetation of most of Rondônia is dense tropical forest. Mato Grosso and a part of the eastern edge of Rondônia are dominated by *cerrado* (scrubland) vegetation.

The impact on birds is likely to be greater than the proportion of area deforested might lead one to believe. Much of Rondônia is occupied by small farms of 50 or 100 ha. Each farmer clears land as rapidly as the limitations of family labour supply and capital permit. Despite government promotion of perennial crops, the great majority of cleared land is planted to cattle pasture after a year or two of use in annual crops. As clearing proceeds, the forest remnants remaining in each lot will lose species of birds and other taxa from the effects of isolation in small patches. This effect has been demonstrated experimentally in the National Institute for Research in the Amazon/World Wildlife Fund — US "Biological Dynamics of Forest Fragments" (formerly "Minimum Critical Size of Ecosystems") Project near Manaus (Amazonas).

In newer colonisation projects, the 50 percent of each property legally required to be left in forest has been grouped into "block reserves" to reduce the fragmentation effect and to make enforcement more practical. Several invasions by squatters have already occurred in the block reserves. As a general rule, the requirements of Brazil's forestry code are not enforced in Amazonia.

The tendency to rescind commitments to reserves is potentially an even greater threat to the region's wildlife than is the current rapid rate of deforestation. Government maps of highway construction plans in Rondônia show roads cutting through six Amerindian reserves and two biological reserves. One of these, the Guaporé Biological Reserve, is to be crisscrossed by three different highways. When roads are built, invasion and deforestation of reserve areas becomes virtually inevitable. Road building in reserves also violates Brazilian legislation. If commitments to reserves continue to be rescinded whenever the land is desired for development, then the remaining bird habitats in western Brazil can be expected to succumb to the threat posed by Polonoroeste's migrants.

Philip M. Fearnside works for the Department of Ecology at the National Institute for Research in the Amazon.

World Birdwatch 8(2): 3 (1986).