

Post-1940 occurrence of the Eared Dove (*Zenaida auriculata*) in the Middle Paranapanema River Valley, São Paulo State, Brazil

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RESUMO. Ocorrência da pomba-amargosa (*Zenaida auriculata*) após 1940 no Médio Vale do Paranapanema no Estado de São Paulo. A ocorrência da pomba-amargosa (*Zenaida auriculata*) após 1940 no Médio Vale do Paranapanema no Estado de São Paulo foi documentada a partir de entrevistas com moradores antigos da zona rural. A espécie fazia o seu ninho em locais como pés de café e não era uma praga agrícola séria no período de 1940 a 1960. Atualmente, uma grande colônia reprodutiva de *Z. auriculata* em cana-de-açúcar cria um conflito muito sério entre técnicos ambientais e agricultores.

PALAVRAS-CHAVE: colônia, conflito ambiental, São Paulo, *Zenaida auriculata*.

KEY WORDS: colony, environmental conflict, São Paulo, *Zenaida auriculata*.

The Eared Dove, *Zenaida auriculata*, known locally as *pomba-amargosa*, or *avoante* in northeastern and other regions of Brazil, is a serious avian pest of germinating soybeans in the states of São Paulo and Paraná. Extra labor is needed to scare it away or, on rare occasion, to replant damaged soybean fields. One of the largest and most persistent colonies known for *Z. auriculata* is in sugarcane fields 20 km southwest of Assis (50°30'W, 23°15'S), in Tarumã, where a colony of more than four million individuals uses mostly post-harvest losses of annual crops for food (Falcone and Ranvaud 1998, Freitas 2002). The present *Z. auriculata* environmental conflict is viewed by many soybean farmers as a conspiracy of the powerful Nova América sugarcane mill, owner of the sugarcane colonial nesting ground, to undermine the viability of soybean production and hence reduce the price of land. In the early 1990s soybean farmers threatened to promote massive poisoning of *Z. auriculata* at the risk of harming several nontarget species, but backed down when a local non-governmental organization, the Centro de Desenvolvimento do Vale do Paranapanema (CDVale), pledged to search for a solution. Subsequently, Brazil's National Environment Fund (Fundo Nacional do Meio Ambiente) has supported the CDVale with grants (R\$ 77,840 in 1998 and R\$ 346,465.00 in 2000) for research on *Z. auriculata*.

Since approximately 1915, coffee, annual crops, and pastures have been replacing the original regional mosaic of mesophytic semideciduous forest, savanna woodland (*cerradão*), and savanna (*cerrado*). Forest and savanna vegetation cover were between 30 and 40% in the 1940s.

By the 1960s rates were less than 5% for forests and less than 10% for savanna (Monbeig 1952, Victor 1975, Dean 1995, Brannstrom 2002). Although coffee was a significant land use, approximately 29.2 million trees or 367 km² in 1940, it covered only 6.4% of the region. By 1960 coffee groves (32.8 million trees; 456 km²) covered 7.4% of local municipalities (Brannstrom 1998: 726, 728, 730).

Dozens of animal and plant species are endangered or extinct due to agro-pastoral expansion (Dean 1995: 222, 350-54). In the Middle Paranapanema municipalities of Assis, Cândido Mota, Tarumã, and Echaporã, animal species serving as the namesake of streams (*Tapirus terrestris* for the Anta Creek, *Blastocerus dichotomus* for the Cervo Creek, *Penelope* sp. for the Jacu Creek, *Pipile jacutinga* for the Jacutinga Creek, and *Tayassu pecari* for the Queixada Creek) do not exist at present (Brannstrom 1998: 257-58). Similarly, the tree *Ocotea* sp. (Lauraceae), found in fluvial postsettlement sediment deposits, does not occur in remaining forest fragments (Brannstrom 1998: 84, 103, Brannstrom and Oliveira 2000).

Questions regarding *Zenaida auriculata* were inserted into interviews conducted between April and August 1997 with local residents present since 1940 or earlier (Brannstrom 1998). Semi-structured interviews with informants were collected as part of a wider project. If the informant said he knew local birds, I asked how he identified *Z. auriculata*, how *Z. auriculata* made its nest, and how *Z. auriculata* ranked as an agricultural pest.

Informants confirmed that *Z. auriculata* existed in the Middle Paranapanema River Valley at least as early as

1940. For example, Informant No. 1 (b. 1930), native to Echaporã, recalled that as an adolescent and young adult he enjoyed hunting *Z. auriculata* and other fauna “with a slingshot and small rifle.” Another informant, No. 2 (b. 1936), said that he hunted *Z. auriculata* for food and sport as an adolescent in Echaporã. An older informant, No. 3, lifelong resident of Cândido Mota (b. 1924), who as a child was an avid bird-catcher and sold caged birds to wildlife traders, reported the existence of *Z. auriculata* during his adolescence. Finally, No. 4 (b. 1944), lifelong resident of the Pavão Creek in Assis, hunted *Z. auriculata* beginning in 1950 with slingshots, and reported that the behavior changed from “skittish” during the early 1950s to “tame” in the 1980s and 1990s.

Informants also reported that nests were primarily at the base of coffee shrubs, which was in fact made of between three and eight plants (Brannstrom 2000). For example, Informant No. 1 witnessed some *Z. auriculata* nesting in trees, but they nested predominately in coffee groves. No. 2 reported that *Z. auriculata* “made its nest in any place on the ground”, while No. 3 claimed that *Z. auriculata* built its nest at the base of coffee shrubs. No. 4, native to an area without coffee production, observed that *Z. auriculata* nests were “poorly-made [and] would fall apart with a strong wind”, and were generally located near water, especially in riparian vegetation.

Finally, informants reported *Z. auriculata*'s low rank as an avian pest. No. 1, for example, commented that *Z. auriculata* “really damaged” rice fields, but was third in the ranking of avian pests in annual crops, after the Chopi Blackbird (*Gnorimopsar chopi*) and Shiny Cowbird (*Molothrus bonariensis*). No. 2 reported that *Z. auriculata* fed on annual crops in fields and post-harvest losses, but was not the worst agricultural pest. No. 4, however, considered that *Z. auriculata* was not a pest for agricultural crops.

Thus, at least 40 years before establishing colonies with populations exceeding four million in sugarcane fields, *Z. auriculata* had established ephemeral nests among the land uses that replaced the original forest-savanna mosaic. Sugarcane, however, is a novel colonial breeding habitat for the species, which previously was known to form large reproductive colonies only in xeric vegetation in semi-arid regions, originally in the Caatinga of Northeastern Brazil and, since about 1950, in the Chaco of Argentina. Both in Argentina and São Paulo State the large population increase is thought to have been the result of agricultural practices, which formed landscapes that supply large amounts of food (mostly post-harvest losses and weeds) nearly throughout the year (Bucher 1990, Freitas 2002).

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REFERENCES

- Brannstrom, C. (1998) *After the forest: Environment, labor, and agro-commodity production in southeastern Brazil*. Ph.D. Dissertation. Madison: Department of Geography.
- _____ (2000) Coffee labor regimes and deforestation on a Brazilian frontier, 1915-1965. *Econ. Geog.* 76:326-346.
- _____ (2002) Rethinking the ‘Atlantic Forest’ of Brazil: New evidence for land cover and land value in Western São Paulo, 1900-1930. *J. Hist. Geog.* 28:420-439.
- _____ and A. M. S. Oliveira (2000) Human modification of stream valleys in the western plateau of São Paulo, Brazil: Implications for environmental narratives and management. *Land Deg. Dev.* 11:535-548.
- Bucher, E. H. (1990) The influence of changes in regional land-use patterns on Zenaida Dove populations, p. 291-303. In J. Pinowski and J.D. Summers-Smith (eds.) *Granivorous Birds in the Agricultural Landscape, 1989*. Warsaw: Polish Academy of Science.
- Dean, W. (1995) *With Broadax and Firebrand: The Destruction of the Brazilian Atlantic Forest*. Berkeley: University of California Press.
- Falcone, C. and R. Ranvaud (1998) Recent history of Eared Dove colonies in southwestern Brazil. *Ostrich* 69:427.
- Freitas, K. C. (2002) *Relação da dieta com atividades agrícolas e reprodução da pomba-amargosa (Zenaida auriculata, Aves, Columbidae) no Médio Vale do Paranapanema*. Master's dissertation. São Paulo: Instituto de Biociências, Departamento de Fisiologia.
- Monbeig, P. (1952) *Pionniers et Planteurs de São Paulo*. Paris: Librairie Armand Colin.
- Victor, M. A. M. (1975) *A devastação florestal*. São Paulo: Sociedade Brasileira de Silvicultura.