

Birds of Sítio Piraquara, São Paulo, Brazil: an inventory combining citizen science data and ornithological sampling

Fabio Schunck, Marco Aurélio Galvão da Silva, Matheus de Moraes dos Santos, Clarissa de Oliveira Santos, Martin Kunze, Thomas Kunze and Erika Hingst-Zaher

Received 13 November 2023; final revision accepted 29 April 2024

Cotinga 46 (2024): 57–72

Published online 6 July 2024

A Região Metropolitana de São Paulo (RMSP), localizada no sudeste do Brasil, possui 22 milhões de habitantes e muitas informações ornitológicas produzidas por ornitólogos e observadores de aves ao longo dos últimos 200 anos. Entretanto, muitas localidades ainda permanecem pouco conhecidas com relação a sua avifauna. O presente estudo realizou um inventário ornitológico de campo, e analisou os dados produzidos por observadores de aves para o Sítio Piraquara, uma propriedade particular de 246 ha localizada na RMSP. Foram considerados dados de um período de cinco anos de atividade de observação de aves e dois anos de pesquisas científicas, totalizando 271 espécies de aves, sendo 75 endêmicas da Mata Atlântica e nove ameaçadas de extinção. O Sítio Piraquara ainda possui uma comunidade de aves com espécies de ambientes preservados, devido à presença de uma floresta nativa pouco alterada, a qual está cercada e conectada com outras florestas e próxima de uma reserva ambiental com mais de 10 mil ha, possibilitando conexões e visitas frequentes entre as comunidades de aves da região. Esses resultados mostram a importância da observação de aves e da pesquisa científica na produção de conhecimento ornitológico básico, sendo atividades complementares que precisam ser incentivadas através de eventos e atividades de observação de aves com a comunidade local, estudantes e observadores.

The state of São Paulo is home to 793 bird species³⁰, and the Metropolitan Region of São Paulo (MRSP), located in the state's eastern part and within the Atlantic Forest domain, stands out as one of the better-studied regions, based on ornithological information generated during the last 200 years³⁵. This knowledge dates back to the early 19th century, when the first European naturalists explored the region and amassed records of more than 600 species of birds, with several endemic taxa³⁵. The presence of various research institutions, non-governmental organisations, universities and independent researchers in the state of São Paulo results in the uninterrupted and long-term generation of ornithological data in different locations, primarily within the city of São Paulo. The largest of the 39 municipalities in the MRSP, São Paulo, has approximately 530 bird species reported to date^{6,12, 23,35}.

The MRSP is highly valued by both national and international birdwatchers who visit landscapes surrounding the urban area, such as the Serra do Mar (to the south), the Serra da Cantareira (to the north), the floodplains of the Tietê River (to the east) and the Reserva Florestal do Morro Grande (to the south-west). They often seek endemic and rare bird species, such as São Paulo Antwren *Formicivora paludicola* and Southern Bristle-Tyrant *Phylloscartes eximius*^{10,19,32,34}. Data generated by birdwatchers and uploaded to citizen science platforms have contributed not only to the production of basic knowledge about the natural history, occurrence and migration of birds in the

MRSP, but also to the direct application of this knowledge in conservation efforts.

The south-western part of the MRSP, including the municipalities of Cotia, Itapeverica da Serra and São Lourenço da Serra, has been relatively underexplored ornithologically in recent decades compared to its other regions, such as the municipality of São Paulo³⁵. The most significant systematic study of the birds in this region was made in the Reserva Florestal do Morro Grande⁸, a protected area that harbours part of the watershed that provides water to the MRSP. This reserve is also the largest remaining forest fragment in the MRSP, covering 10,870 ha. Some 198 bird species have been reported from Morro Grande, including endemic, rare and threatened taxa, alongside species that were considered locally extinct at the time⁸.

With the aim of contributing to the ornithological knowledge of the south-western MRSP, we conducted field ornithological inventories, and compiled and analysed citizen science data, for Sítio Piraquara, a farmstead and significant biodiversity hotspot adjacent to the largest urban area in South America.

Study area

Sítio Piraquara is a farmstead situated in the north-western part of the municipality of São Lourenço da Serra (23°50'34.51''S, 46°57'57.16''W; 785m), São Paulo, Brazil. It lies within the domain of the Atlantic Forest and in the boundaries of the Serra do Mar (Fig. 1), c.40 km from the Atlantic Ocean. Sítio Piraquara is located in a region that