



Agreement on the Conservation
of Albatrosses and Petrels

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Analysis of free-living seabirds from Brazil as potential hosts of *Toxoplasma gondii* and serological investigation for antibodies against *Leptospira* spp.

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SUMMARY

Dispersal patterns of zoonotic pathogens can be strongly influenced by mobility and contact among hosts. *Toxoplasma gondii* infection has been documented in many avian species, however, there is little information regarding free-living seabird populations. *Leptospira* can infect domestic and wild animals, with birds being potential carriers of the bacteria. The continental shelf of the southwestern Atlantic Ocean is a foraging area for seabirds that breed locally, as well as migratory seabirds wintering in the area, which may come into contact with each other in prey aggregation areas and contribute to *T. gondii* and *Leptospira* spread. Therefore, this study aimed to investigate the prevalence of two important zoonotic pathogens in free-living seabirds. Blood samples were collected from 322 birds of three local breeders (*Phaethon aethereus*, *Sula leucogaster* and *S. dactylatra*) in the eastern coast of Brazil (Abrolhos Archipelago), and two migratory species using the area during the pre-laying (*Pterodroma arminjoniana*) and the non-breeding periods (*Thalassarche chlororhynchos*). Serological agglutination tests for detection of anti-*Toxoplasma gondii* and anti-*Leptospira* spp. antibodies were performed. None of the seabirds in this study was seroreactive to *Leptospira* spp., whereas 34.5% (n = 111) of the animals presented antibodies anti-*T. gondii*. Antibody titers in seropositive birds ranged from 10 to 640. There were sero positive birds in all sampled localities. This study provides the first records for *P. arminjoniana* and *T. chlororhynchos* as seropositive to *T. gondii*, suggesting their potential role as sentinels for the environmental contamination by *T. gondii* and also *T. gondii* infection. These findings indicate the circulation of the parasite in the Brazilian coastal and oceanic regions, probably due to the ingestion of *T. gondii* oocysts by birds, the epidemiological involvement of migratory birds as hosts of pathogens, as well as the role of the historical introduction of

invasive vertebrates on Brazilian islands. Therefore, due to the serological evidence of infection, the dynamics of toxoplasmosis in seabirds, regarding their susceptibility towards the disease and the possible anthropogenic influence need to be better understood for the colonies to be included in the wildlife cycle of *T. gondii*.

Attachment: Acosta, I. C. et al. (2025). Analysis of free-living seabirds from Brazil as potential hosts of *Toxoplasma gondii* and serological investigation for antibodies against *Leptospira* spp. *Veterinary Research Communications*, 49(1), 14.
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