

## Unforeseen consequences of the COVID-19 pandemic: Increased frequency of kite-string injuries in magnificent frigatebirds (*Fregata magnificens*) in Rio de Janeiro state, Brazil

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### Abstract

Kite flying is a popular hobby and sport for children and adults. Despite being illegal in Rio de Janeiro state, Brazil, the use of abrasive threads remains widespread and poses a health risk to both humans and animals. In this study, we analysed the records of 462 magnificent frigatebirds (*Fregata magnificens*) submitted to rehabilitation centres or found dead along the southern coast of Rio de Janeiro state from October 2016 to August 2020. Of these, 244 individuals (52.8%) presented wing lesions consistent with kite-string injury, which can have a critical impact on the ability of frigatebirds to fly and will ultimately cause their death. Even when veterinary care is provided, only a small proportion of the individuals (2%) will fully recover the ability to fly in order to be released back to the wild. In 2020, an atypical increase in the number of individuals with kite-string injuries (~1,200% increase compared to other years) was noted in the weeks following the suspension of school activities and commerce in response to the COVID-19 pandemic. The number of frigatebirds with kite-string injuries recorded in a given week was positively correlated with internet searches for kite-related terms, which also peaked during the quarantine period of the COVID-19 pandemic. This illustrates how pandemic events may aggravate existing human-wildlife conflicts, and how preparedness plans need to incorporate measures to help communities cope with boredom and isolation during quarantine in ways that do not negatively impact the welfare and conservation of wildlife.

**Keywords:** animal welfare, human-wildlife conflict, kite flying, manjha, pandemic, seabird