

Urban concentration of large-mass flocking species: management strategies for a new airport in Australia

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Abstract. Construction of the new Western Sydney Airport began in 2018 and is scheduled to be completed in 2026. It is the largest Australian civil engineering project in the coming decade and will host 10 million passengers a year by 2031. The region surrounding the airport will be developed to accommodate a projected 30% increase in the Greater Western Sydney population. Already there are planning requests for intensive agriculture, waste water treatment, waste facilities, housing, public markets and more. Each of these new land uses presents its own wildlife attraction.

This decade of growth will be matched with the destabilisation of species due to habitat fragmentation and loss. Several large-mass flocking species are now well-adapted to living near humans in Australia. Despite overall population losses of millions (four species of flying-foxes) and hundreds of thousands (three species of ibis), remnant populations have adapted to and concentrated into urban areas. These species have daily foraging ranges up to 50 km resulting in increased transits through urban aircraft flight paths. The net result has been an increase in strikes of 143% for flying-fox and 89% for ibis between 2008 and 2017. Every year since 2015, flying-fox have been the most frequently struck genus in Australian airspace. From 2008 to 2017, the 10 Major Airports have experienced a 97% increase in flying-fox strikes and a 40% increase in ibis strikes while the 12 Regional Towered Airports have experienced a 393% increase for flying-fox and 300% increase for ibis.

Western Sydney Airport presents a rare opportunity to plan the landscape around the airport to reduce the incidence of wildlife strikes. Based on the development applications and the history of urbanizing species, we determined that the airport requires a baseline off-airport risk assessment to determine existing attractions and to model airspace use by high risk species. This baseline data will be used to inform planning decisions and future requirements for remote sensing technologies. The only practical way to achieve reduced strike rates is to deploy avian radar prior to aircraft movements and to develop tactical procedures for wildlife hazard management and communication.
