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Seasonal habitats, decadal trends in abundance and cultural values of magpie geese (*Anseranus semipalmata*) on coastal floodplains in the Kakadu Region, northern Australia

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Abstract

The magpie goose is an iconic tropical species highly valued as a conservation asset and by Aboriginal people as a cultural resource. Most of the global population occurs in the Kakadu Region of northern Australia, which is at high risk from the combined impacts of invasive species and future sea-level rise. Future management responses require an increased understanding of their spatial and temporal dynamics and customary value. Historical aerial-survey data of geese and their nests in the Kakadu Region (1981–2006, 25 years) were used to characterise seasonal use of floodplains. Habitat ‘hotspots’ co-occurred with high abundance of plants that provide nesting material in the wet season and food in the dry season, particularly the bulbs of *Eleocharis dulcis* sedge. Goose numbers across the Northern Territory (1958–2000, $n = 42$ years) exhibited 20-year decadal trends coupled with similar trends in rainfall and stream flow (1954–2006), which in turn were influenced strongly by global-scale interactions between the El Niño–Southern Oscillation and Pacific Decadal Oscillation. Stream flow drives the spatial and temporal dynamics of magpie geese at regional and decadal scales through its direct influence on floodplain-vegetation dynamics. Customary harvesting practices of geese and their eggs ascertained from interviews (2011–2014) showed that their cultural value extends beyond consumption, highlighting the need to address socio-ecological contexts in future management responses.

Additional keywords: climate change, El Niño–Southern Oscillation, ENSO, invasive species, Pacific Decadal Oscillation, PDO, Ramsar, SOI, Southern Oscillation index, traditional owners, World Heritage.

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