

Foraging of Sulphur-crested Cockatoos: examining the roles of preadaptation, behavioural flexibility and interspecific competition in urban dwelling

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Some birds must adjust their ecology to colonize cities, whilst others are more inherently suited for urban life. Large parrots with neuron-rich brains and high cognition levels might be predicted to have the plasticity to exploit novel urban resources through innovative behavioural adjustments. Sulphur-crested Cockatoos *Cacatua galerita* have colonised many Australian cities, but their urban ecology is only now becoming known. We investigated their foraging in Melbourne to elucidate whether the species' synurbanization has involved ecological and behavioural adjustments in this activity, and whether interspecific interference competition is involved in food acquisition. Sixty-one percent of urban foraging flocks contained 1-10 members and the largest flock comprised 42 individuals. The diet comprised mainly grass seeds and roots (54%), bulbs and corms (22%) and tree fruits, inflorescences and seeds (22%). Supplementary, anthropogenic food was consumed infrequently and no innovative foraging behaviour with respect to such novel foods occurred. Gleaning and digging on grass comprised 68%, and arboreal feeding ~22%, of foraging behaviour. Feeding ecology mostly resembled that of nonurban conspecifics, except that in cropland the latter extensively exploit cereal crops using seed-head gleaning and stalk felling. Collectively, various heterospecific birds were close to foraging cockatoos for ~50% of the time, including other cockatoos. However, these close relatives spent only a limited time near Sulphur-crested Cockatoos, and only Long-billed Corellas *C. tenuirostris* had a significant, although small, agonistic involvement with them. Although 90% of these agonistic interactions caused Sulphur-crested Cockatoo displacement, the distance and duration were usually short and the cockatoo's foraging efficiency was minimally impaired. We concluded that Sulphur-crested Cockatoos: (a) are substantially preadapted for foraging in Melbourne, exhibiting few pronounced adjustments for urban life in this respect; innovative foraging techniques reported elsewhere appear to be either rare or have not yet arisen in Melbourne, and (b) mostly did not engage in obvious interspecific interference competition with other bird species to acquire food.

Keywords: cockatoo; synurbanization; diet; foraging behaviour; preadaptation; interspecific competition.