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Beach-foraging Behaviour of Forest Ravens *Corvus tasmanicus* and an Australian Magpie *Gymnorhina tibicen* at Wilsons Promontory, Victoria

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Summary

Observations are presented of Forest Ravens *Corvus tasmanicus*, and an Australian Magpie *Gymnorhina tibicen*, foraging by gleaning the sand on a beach.

Introduction

This note describes observations of foraging Forest Ravens *Corvus tasmanicus* and an Australian Magpie *Gymnorhina tibicen* on Norman Beach, Wilsons Promontory National Park, Victoria (39°01 S, 146°19 E). Observations took place for over 40 minutes between 1300 and 1400 h on 6 June 2002.

Observations

Two Forest Ravens, an adult and a dark-eyed juvenile, were identified by their deep calls, short tails and heavy bills, as well as by the location: they are the only corvid on Wilsons Promontory (Cooper 1975, Blakers *et al.* 1984, Emison *et al.* 1987). At the time of the observations it was low tide but both birds were foraging near the high-water mark. The substrate was characterised by a thin layer of dry surface sand (1–2 mm) under which it was damp. At all times the birds foraged independently and remained 5–15 m apart.

The juvenile Raven's primary foraging tactic was rapid gleaning of the surface sand, recorded at 67 gleaning manoeuvres per minute. It is presumed that it was feeding on surface invertebrates (e.g. Rowley & Vestjens 1973). Its foraging area was usually within a patch of about 2 m radius.

The adult Raven dragged up dry algae *Sargassum* and seagrass *Zostera*, which were partially buried in sand, and then gleaned the exposed damp sand for (presumably) exposed invertebrates (Plate 3). Other non-buried beach-cast organisms (e.g. Cunjevoi *Pyura stolonifera*) were also moved. Later investigation revealed small sandflies (Ceratopogonidae) under the disturbed litter.

The adult Raven also employed an alternative foraging strategy, making small excavations in the sand. With upper and lower mandibles apart, the bird shifted sand from side to side, creating a pit 3–5 cm deep (Plate 4). During this excavating process, the bird occasionally stopped and gleaned on the exposed damp sand.

After 15 minutes, the juvenile also attempted moving algae and seagrass, although not nearly as efficiently as the adult bird did. After 20 minutes of observation the Ravens departed, but returned 20 minutes later to the same location. Over the next 20 minutes sand-gleaning and excavations as already described, but no displacement of beach litter, were observed. Neither bird showed interest in a dead, dry and partially buried Australian Fur Seal *Arctocephalus pusillus* pup in the foraging area.



Adult Forest Raven foraging amongst algae and seagrass

Plate 3

Photos: James A. Fitzsimons

An Australian Magpie was also recorded during this time (and on the subsequent day) using a sand-gleaning technique similar to that of the Forest Ravens (Plate 5). However, the Magpie tended to display greater mobility when foraging, usually taking one or two steps forward before each gleaning manoeuvre. Forty-one gleaning manoeuvres per minute were recorded for this bird.



Excavation made by adult Forest Raven

Plate 4

Photo: James A. Fitzsimons



Gleaning by Australian Magpie

Plate 5

Photo: James A. Fitzsimons

Discussion

Forest Ravens are omnivorous though primarily carnivorous, and often scavenge (Rowley & Vestjens 1973, Rose 1999), but during the present observations appeared to be insectivorous. Previous observations on Forest Ravens at Wilsons Promontory National Park include predation on a Feather-tailed Glider *Acrobates pygmaeus* (McCulloch & Thompson 1987) and a Little Penguin *Eudyptula minor* (Fell 1987). The contents of a regurgitated Raven pellet collected from the Park included the remains of a fly (Muscidae) and a midge (Chironomidae) (Kloot 1980), which might have been the Raven's target prey in the current observations. The presence of a small quantity of beach sand in the

pellet (Kloot 1980) and also in 40% of Tasmanian Forest Raven stomachs examined by Rowley & Vestjens (1973) could be an incidental result of these types of foraging behaviour. Observations by Rose (1999), on the New South Wales coast, were mostly of Forest Ravens feeding on dead fish of various species and on fruits of Coastal Beard-heath *Leucopogon parviflorus*.

Rose (1999) also observed Magpies searching sand-dunes in New South Wales, but no foraging behaviour was reported. Several orders and families within the class Insecta, which potentially contain beach-dwelling species, have been recorded as prey of the Australian Magpie (Barker & Vestjens 1990).

The time between foraging manoeuvres recorded here for both the juvenile Forest Raven (0.9 s) and the Australian Magpie (1.3 s) is low compared with the North American Northwestern Crow *Corvus caurinus*, for which Robinette & Ha (2000) recorded times of 9.7 s and 6.3 s between foraging manoeuvres at rising and falling tides respectively. Northwestern Crows consumed bivalves, crabs, barnacles, snails and worms, which would require longer handling time, in that particular study (Robinette & Ha 2000). As the present sample size was small, for Ravens feeding rapidly on small invertebrates, further observations are required for a more valid comparison.

Although Debus (1983) noted the apparent requirement of reasonably undisturbed beaches with intact littoral vegetation for Forest Ravens in New South Wales, Secomb (1997) believed that Ravens tolerate a degree of human disturbance around the nest area. The observations described here took place during the winter 'off-season' at a popular tourist area; further foraging observations during the warmer months would assist in determining the impact of human disturbance on aspects of the ecology of the Forest Raven.

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