

AN OBSERVATION OF CARRION PREFERENCE BY THE AUSTRALASIAN HARRIER (*Circus approximans gouldi*)

Important constituents of the diet of Harriers in New Zealand are medium-sized mammals such as hare (*Lepus capensis*), rabbit (*Oryctolagus cuniculus*), and brush-tailed opossum (*Trichosurus vulpecula*). Carcasses of these animals commonly become available to Harriers either as a result of pest control methods, or as road casualties. The diet of Harriers includes insects, small birds, small rodents, frogs as prey or carrion, and larger mammals as carrion. However, because of their size and relative abundance, hare, rabbit and opossum occurring as carrion must be a major food source. Baker-Gabb (1978) has reported that mammalian carrion is an important food during winter and early spring. Robertson (in press) has shown that Harriers show distinct food preference and, in a series of feeding experiments, he demonstrated that hen pullets (*Gallus domesticus*) and Norway rats (*Rattus norvegicus*) were chosen more often than rabbits, brush-tailed opossums or eels (*Anguilla australis*).

During attempts to photograph Harriers at bait, carcasses were placed about 7 metres from a hide in the corner of a large paddock at Courtenay in Canterbury. On 11 May 1980, single carcasses of both hare and opossum were placed together. The following day it was noted that the hare was being eaten but not the opossum. Daily checks were made and it was noted that the opossum was not touched until two days later when the hare had been completely eaten.

Three first-year Harriers, at least, were known to be taking the bait, but only one bird fed at a time while the others waited nearby. The carcasses were placed no further apart than 50 cm and so one bird could easily dominate the bait. Further feeding experiments were conducted using different combinations of hare, rabbit and opossum for bait. These species were placed at random in each experiment to reduce any positional effect, e.g. influence of fences or the hide. Observations were made daily to record which species were being eaten, and bait was not replaced during the observation period.

TABLE 1 — Food Preference Tests for the Australasian Harrier.

Experiment: (bait combination)	Date Started	No. of days of daily observation	Result
1. hare v. opossum	11-5-80	4	Hare eaten completely before opossum eaten completely
2. hare vs rabbit v. opossum	16-5-80	8	Hare eaten completely, then rabbit eaten completely before opossum plucked but not eaten
3. rabbit (2 specimens) v. opossum (2 spec.)	24-5-80	6	Both rabbits eaten, opossums not touched
4. hare v. rabbit	30-5-80	4	Hare eaten completely before rabbit eaten completely

Table 1 gives the results of these experiments.

These results, although consistent, are based on only four experiments at one locality and during a single month. However, hares seemed definitely to be preferred of the three foods offered. Rabbit was preferred to opossum. Whether this preference is based on meat quality or ease of skin penetration is not known, but Robertson (*idem*) noted that skinned rabbits were preferred to unskinned ones. Skin toughness may be a factor determining the choice of hare or rabbit in preference to the tougher-skinned opossum, but this needs verification.

I should like to acknowledge the help given by Colin McRae of the Plains Destruction Board in providing freshly killed animals for these tests.

REFERENCES

- BAKER-GABB, D. J. 1978. Aspects of the biology of the Australasian Harrier (*Circus approximans approximans* Peale 1848). MSc Thesis. Massey University.
 ROBERTSON, H. A. (in press). Selection of carrion by the Australasian Harrier (*Circus approximans*) in New Zealand. NZ J. Zoo.

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THE EFFECTS OF WEATHER ON A CASPIAN TERN COLONY

From 1975 to 1979, I have made 11 visits to the colony of Caspian Terns (*Hydroprogne caspia*) in Whangapoua Harbour on the east coast of the Coromandel Peninsula. The harbour, which covers about 1500 ha and is separated from the sea by the Omaro Spit, 4.5 km long and 800 m wide, has one narrow entrance. The terns breed on what is locally called Shell Island, which is about 800 m inside the harbour entrance and so is exposed to the full force of north-easterly gales. The nesting area occupies about 400 m² of the island on a ridge of white sand, on one side of which the nests are within 3 metres of the water at normal high tides.

At the colony, I counted at most 100 adults in 1975 and 140 in 1977. In those years, strong winds combined with high tides to wash eggs and chicks from the nests, but without unduly damaging the sand ridge itself. Each time the birds would relay, and so the 1975-77 period presumably shows the usual pattern of the terns' breeding, the colony apparently raising about 30 young in 1975/76 and 60 in 1977/78.

However, in July 1978 occurred the worst storm for many years, and on 28 November 1978 I found that the nesting ridge had gone, leaving only a flat area of sand well below the level of the former ridge and apparently swept by normal high tides when backed by wind. There were some 140 scrapes and nests but only 28 adults, and the 22 eggs remaining were broken. The following year, on 18 October, the sand ridge had partly built up again and there were 80 adults, 41 nests and 47 eggs. However, on 19 November, the birds had shifted their nesting area slightly and there were 124 scrapes and nests, and 30 eggs. By early December, the tide had washed them all away,