

SHORT NOTE

Giant petrel (*Macronectes halli*) predation on red-billed gulls (*Larus novaehollandiae*) and white-fronted terns (*Sterna striata*) at Kaikoura

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Giant petrels (*Macronectes* spp.) are the largest avian predators and scavengers of the Southern Ocean ecosystem (Hunter & Brooke 1992). The species have a very catholic and opportunistic diet. At sea they are known to feed on krill, fish, birds, cephalopods and carrion, and are well known to scavenge on the discarded waste from fishing vessels (Johnstone 1977; Hunter 1983; Harper 1987; Marchant & Higgins 1990; Hunter & Brooke 1992). The 2 species of giant petrel are among the few procellariids that are able to walk extensive distances on land. This enables them to forage on seal and penguin carrion and a wide variety of smaller live seabirds such as burrowing petrels and penguin chicks. (Hunter & Brooke 1992; Copello *et al.* 2008).

For 48 of 49 years of research on the red-billed gull (*Larus novaehollandiae*) at the Kaikoura Peninsula, giant petrels were never seen, either on the colonies or nearby in the inshore region, although they are plentiful offshore (J.A. Mills, *pers. obs.*). However on 16 Jan 2012, an adult northern giant petrel (*M. halli*) was observed about 10 m from nesting white-fronted terns (*Sterna striata*) and red-billed gulls. The tern colony had about 300 pairs and the adjacent gull colony 149 pairs. At this time all eggs had hatched in both colonies. On the first day that the petrel was observed, both colonies retained their colony structure, but several gulls continued to dive at the petrel and defecated on the intruder which is a normal response to a potential predator (Fig. 1). The following day the gull and tern colonies had been abandoned and the surviving chicks and attending adults were scattered over an area 20 m

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away, including the intertidal region. Two days later the petrel was removed by the Department of Conservation and released offshore.

A regurgitated pellet from the petrel was recovered near the colonies and examined. The pellet contained a mass of feathers but no bones. All of the bones had been dissolved by stomach acid. Within the pellet were 6 tern bands from chicks. About 60% of the tern colony had been banded over the previous 5 weeks. All chicks were banded at 1 to 7 days of age. Because bands from dead terns were regularly removed during the breeding season after they had died, all of the banded tern chicks that were eaten by the petrel would have been alive. Based on the band numbers, the ages of the chicks killed ranged from 13 to 34 days old. It is suspected that gull chicks were taken as well, but only 13 chicks on the colony were banded and none appeared in the regurgitated pellet. The following season red-billed gulls and white-fronted did not nest at the sub-colony site, which is normal when disruptions such as this occur.

It is not known whether the giant petrel deliberately came ashore at the gull and tern colonies, or that it was by chance. There were at least 3 other giant petrels ashore in the Kaikoura region at the same time.

Adult red-billed gulls in diet of giant petrels

In the summer of 1995, two bands that came from red-billed gulls banded as chicks at Kaikoura were found associated with northern giant petrel nests on Little Sister I, Chatham Is (800 km east of Kaikoura). One of the bands (E109343) was from a female gull banded as a chick in Nov 1965 and subsequently seen breeding as an adult at Kaikoura in the 1972-73 season. The other band (E33985) was from a chick banded at Kaikoura on 23 Nov 1963. When found this band was in a corroded condition, indicative of being worn for many years on a bird. Thus both bands came from adult red-billed gulls and it is likely that they were depredated by giant petrels off the Kaikoura coast because red-billed gulls seldom venture more than 5 km from the coast, and no Kaikoura banded gulls have been seen on the Chatham Is, despite many observers looking for them. It is not known whether the adults were consumed as carrion or were killed by petrels, however giant petrels are known to kill and eat birds of this size.

In conclusion, these 2 separate incidences indicate that giant petrels could potentially be a major predator of coastal seabird colonies and of red-billed gulls and smaller seabirds at sea.



Fig. 1. An adult red-billed gull attacking the intruding northern giant petrel near the nesting colonies of white-fronted terns and red-billed gulls on the Kaikoura Peninsula. The petrel has numerous faeces on its plumage from defecating by the gulls during the attacks. Photo: Deborah Mills.

LITERATURE CITED

- Copello, S.; Quintana, F.; Pérez, F. 2008. Diet of the southern giant petrel in Patagonia: fishery-related items and natural prey. *Endangered Species Research* 6: 15-23.
- Harper, P.C. 1987. The feeding behaviour and other notes on 20 species of Procellariiformes at sea. *Notornis* 34: 167-192.
- Hunter, I.S. 1983. The food and feeding ecology of the giant petrels *Macronectes halli* and *M. giganteus* at South Georgia. *Journal of Zoology* 200: 521-538.
- Hunter, I.S.; Brooke, M. de L. 1992. The diet of giant petrels *Macronectes* spp. at Marion Island, South Indian Ocean. *Colonial Waterbirds* 15: 56-65.
- Johnstone, G.W. 1977. Comparative feeding ecology of giant petrels *Macronectes giganteus* (Gmelin) and *M. halli* (Mathews). pp. 647-688 In: Llano, G.A. (ed) *Adaptations within Antarctic ecosystems*. Washington, D.C.: Smithsonian Institution.
- Marchant, S.; Higgins, P.J. 1990. *Handbook of Australian, New Zealand and Antarctic birds. Volume 1. Ratites to ducks*. Melbourne: Oxford University Press.
- Warham, J. 1962. The biology of the giant petrel *Macronectes giganteus*. *Auk* 79: 139-160.

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