POSSUM EXTINCTIONS AT THE MARSUPIAL FRONTIER: THE STATUS OF THE NORTHERN COMMON CUSCUS *Phalanger orientalis* ON SANTA ANA ISLAND, MAKIRA PROVINCE, SOLOMON ISLANDS

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ON zoogeographic maps, the Solomon Islands are shown as the north-eastern limit of Australidelphian marsupial distribution in Australasia. This distinction is due to the presence of a single New Guinean marsupial, the northern common cuscus *Phalanger orientalis*, which was probably introduced via the Bismarck Archipelago by prehistoric human agency (Flannery 1995; Spriggs 1997; Heinsohn 1998; Wickler 2001). *P. orientalis* is found across most of the principal Solomon Islands, with the exception of the remote far-eastern oceanic islands of Santa Cruz (Temotu) Province. In the scientific literature, the exact eastern limit of distribution for *P. orientalis* is generally given as San Cristobal (Makira) Island in Makira Province (Laurie and Hill 1954; Flannery 1995), the eastern most peninsula of which extends to 162° 23’ E. The next landmass to the east is the small 5 km diameter and 143 m high limestone atoll of Santa Ana (Owa Rafa) which lies across a 7.5 km open water crossing.

Curiously, during a visit to Santa Ana Island in May 2001, it was discovered that *P. orientalis* probably once occurred on that island, but is now considered to be locally extinct there. The circumstances surrounding its apparent extinction were related to me by Oscar Kuper, a Melanesian elder in Ghupuna Village on Santa Ana Island. This anecdotal information is paraphrased below.

According to Kuper there had been possums [*P. orientalis*] living in the bush on Santa Ana Island up until 1969 when a cyclone struck. The cyclone was so severe and devastating that it blew trees over, snapped them off at the trunk or stripped them of all of their leaves, and only left one house standing. After the cyclone had passed many cattle, pigs, possums, birds and other wildlife were found dead on the ground. The bush was eerily quiet as all the birds, bats and other wildlife were gone. The few possums that survived the catastrophe appear to have been hunted and killed by hungry villagers (and their dogs) who had lost their gardens, livestock, canoes and fishing equipment to the cyclone. The tree cover eventually came back and many birds and bats returned, but the possum [*P. orientalis*] has not been seen since and now appears to be extinct on Santa Ana Island.

The above oral historical record, if accurate, indicates that the eastern distributional limit of *P. orientalis* probably once extended beyond San Cristobal (Makira) Island to Santa Ana (Owa Rafa) Island at 162° 29’ E. This indicates that since about 1969, the north-eastern marsupial frontier has probably retreated by about 12 km. The story also indicates that seasonal cyclonic activity may play a significant role in possum mortality, and in extreme cases may even bring about local extinctions. Such mortality may be direct and due to falls and other storm-induced injuries, or it may be indirect and due to loss of habitat and food resources. Severe wind-induced defoliation may be particularly critical for folivores and frugivores such as phalangerid possums. Cyclonic tidal surges, some of which may be as high as 5 m (AIMS, 2000) may also be a significant cause of mortality and habitat damage on low-lying islands.

The case of *P. orientalis* on Santa Ana highlights the vulnerability to local extinction of species living on small islands within the cyclone belt. Micro-endemic species / subspecies, such as some Solomon Islands birds with very restricted single island occurrences, may be vulnerable to cyclone-induced...
total extinction. Furthermore, the impact of cyclone-induced habitat disturbance may be exacerbated by that caused by the current regime of excessive broadscale logging that is taking place across Island Melanesia. The two in concert may herald a new wave of extinctions and biodiversity loss in the region.

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REFERENCES


