

# PREDATION ON *PTEROPUS TONGANUS* BY A BARN OWL IN AMERICAN SAMOA

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BARN Owls (*Tyto alba*) are thought to be occasional predators on flying foxes (fruit bats) in American Samoa, but adequate documentation is lacking. Amerson et al. (1982) found partially eaten carcasses of flying foxes on Alava Ridge, Tutuila Island, American Samoa, and suggested they might have been killed by owls. Engbring and Ramsey (1989) also mentioned a possible interaction between a Samoan flying fox (*Pteropus samoensis*) and a Barn Owl. Peregrine Falcons (*Falco peregrinus*) regularly take flying foxes on Fiji (Watling 1982, White et al. 1988) but no falcons, hawks or other non-human predators occur in American Samoa (Pratt et al. 1989, Grant and Banack, pers. observ.). In this note we describe probable Barn Owl predation on a Tongan flying fox (*Pteropus tonganus*) equipped with a radio transmitter and document a mid-air attack by an owl on a bat. These observations are of added interest because the prey weighs as much as or more than the owl.

We attached a transmitter with a motion detector and collar assembly (mass = 31 grams: Telonics, Mesa, Arizona) to a male Tongan flying fox (485g) on 5 December 1992. Over the next 104 days we periodically monitored its movements and activity rate. It routinely roosted during the day in primary forest in Oa Valley and fed in an agroforest area 2 km away in Amalau Valley, Tutuila Island. Each night between about 19:00 and 19:20 it arrived in Amalau and spent the night, alternating between active periods (feeding, flying, and maintenance behaviours) and inactive periods (hanging nearly motionless from a branch). It generally departed for its day roost in Oa between 02:00 and 05:00.

At 18:59 on 19 March 1993 we detected the arrival of this bat at its Amalau feeding area. The signal received indicated that it was flying about within the feeding area until 19:25 when it appeared to have landed in a tree approximately 75 m from the radio tracker. The fast pulse rate of the transmitter over the

next 28 minutes (until 19:53) indicated that the bat/transmitter was still moving within the tree. From 19:53 until dawn (0610 on 20 March 1993) only the slow transmitter rate was heard, indicating a lack of movement. In the morning, the dead bat with its transmitter was found on the ground beneath a tree. It was lying ventral side down. The right humerus had been shattered and the flesh associated with this humerus and the breast along with the sternum had been removed. The ribs had been twisted or snapped off. The carcass had been eviscerated--only the intestines were found in a pile nearby. There was no blood on the ground where the carcass lay, suggesting it had been eaten from a tree perch. A close examination of the remaining carcass disclosed two puncture wounds in the neck and two small fresh perforations in the wing membranes, which were not present when we collared the bat.

We suspect the bat was caught by a Barn Owl either while it was in flight shortly after its arrival in Amalau or perhaps upon alighting in a tree. The fast signal pace (activity) from the tree was probably due to the tearing and eating by the owl. The slow signal rate probably began when the discarded carcass fell to the ground below.

Between 18:00 and 18:30 on 22 June 1994 J. Richmond and Banack watched an owl attack a *Pteropus tonganus* departing from its roost in Olovalu Crater, Tutuila Island. The bat screeched as the owl grabbed it with its talons. They tumbled down and became temporarily entangled in a canopy mist net. At this point the owl released the bat and both escaped.

Barn Owls are relatively common in American Samoa and are the only non-human predator on bats in American Samoa. Two to three were seen and/or heard nightly in both the Amalau and Olovalu study areas. Grant and Trail (unpubl. data) have identified the remains of over 500 rodents, birds, and lizards in

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