

RESEARCH PAPER

Population dynamics of baran owl (*Tyto alba stertens* Hartert 1929) in a portion of Cauvery delta, India

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ABSTRACT

The population of barn owl (*Tyto alba*) along with their reproductive status was studied in Tranquebar Taluk (in about 35 sq. km), Nagappattinam district, Tamil Nadu between February 1993 and January 1995 with special reference to availability and non-availability of crops and associated rodent population. The population estimation of barn owls was carried out in the daytime. The populations of field rodents were estimated by following live burrow count method in paddy, pulses (green gram and black gram), sugarcane, cotton field crops and fallow lands. The results indicated that there were many breeding pairs of barn owls between the period November and April. The number of nesting pairs reached a peak between February and April. Further, the barn owl nested (either eggs or any developmental stages like chicks, sub-adults was observed) during all months of first year of study (1993-1994), but this was not so during the second year of study (1994-1995). Maximum number of roosting barn owls was observed from May through August. The number of adults, sub-adults and chicks of barn owls was found to be maximum (77) during March 1993 while they were minimum (8) during June 1994. The rodent population in the field crops comprised of *Bandicota bengalensis*, *Millardia meltada*, and *Mus booduga*. The crop fields and fallow lands in the study area had smaller populations of rodent in February 1994-January 1995 than in February 1993-January 1994. The results of the present study obviously indicate that the barn owls are dependent on rodent pests' numbers for their reproduction.

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Of all the live birds on this planet, the barn owl (*Tyto alba*) has been found to be associated closely with human and his habitat. In England, the history of the relationship between man and these beautiful birds can be traced back at least to two millennia (Sparks and Soper, 1989). The owls help to maintain a natural balance as they are situated at the apex of the pyramid in terrestrial and aquatic ecosystems (Call, 1978). According to Clark *et al.* (1978) though studies on owls have gained importance from the late fifties of twentieth century still wide gaps exist on the biology and ecology of large numbers of species of owls, particularly in tropics, where the majority live.

In general, owls are highly beneficial to mankind since they are rodent hunters. By being ardent predators of rodents of economic importance at night, they help to keep a check on these destructive mammals and curtail the likelihood of deadly plague (Ramachandran Nambiar, 1996).

Barn owls have global distribution matched by few other species in the world (Burton, 1984; Taylor, 1994), with 36 subspecies distributed throughout the world (Taylor, 1994). As far as the Indian subcontinent is

concerned, there exists two subspecies viz. *Tyto alba stertens* in the peninsular India and *Tyto deroepstroffi*, a rare subspecies restricted to south Andaman Islands of the Indian Ocean (Bunn *et al.*, 1982; Ali and Ripley, 1983; Taylor, 1994).

Prakash (1988) reported that in India 14 species of rodents have been found to be of economic importance. In Cauvery delta, "the granary of South India", four species of field rodent pests are found. They are (i) the lesser bandicoot rat (*Bandicota bengalensis*), (ii) the soft-furred field rat (*Millardia meltada*) and (iii) the Indian field mouse (*Mus booduga*) known to inhabit the field crop (Sivaprakasam, 1988 and Neelanarayanan *et al.*, 1996); and (iv) the Indian gerbil (*Tatera indica*) is found in barren lands around the field crop (Sivaprakasam, 1988; Neelanarayanan *et al.*, 1996).

The barn owl has been reported to forage on *B. bengalensis*, *M. meltada*, *M. booduga*; *T. indica* (field rodents); house rat, *Rattus rattus* (commensal rodent); grey musk shrew, *Suncus murinus*; representatives of amphibians, birds and insects (Neelanarayanan *et al.*, 1995a; Santhanakrishnan, 1995; Neelanarayanan, 1997). Of these, *B. bengalensis*, *M. meltada*, *M. booduga*, *T.*