Conservation of the Edible-nest Swiftlet *Aerodramus fuciphagus* in the Andaman and Nicobar Islands: A critical analysis

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ABSTRACT

Amongst birds, the Edible-nest swiftlets are unusual, not only because they live in caves, but also because they build their nests exclusively of saliva. By the end of the 18th century collection of the edible nest, rank amongst the world's most expensive animal products, had become widespread throughout its range (Medway, 1969; Lau and Melville, 1994; Koon and Cranbrook, 2002; Nguyen et al, 2002). While unrestricted and excessive nest collection across its range resulted in widespread and alarming declines in population, under carefully managed and scientific harvest regimes swiftlets' populations have grown and have contributed significantly to local economies (Koon and Cranbrook, 2002; Naguyen et al, 2002).

Nest collection in the Andaman and Nicobar Islands, the western extremity of the species' range, started in the 18th century. While local consumption of the nests are insignificant, international demand led to widespread and uncontrollable nest collection in these islands leading to serious declines in population (Sankaran 1998). A program to

conserve the Edible-nest Swiftlet in the Andaman & Nicobar Islands commenced in 1995, and is being implemented by local Forests Department and Sálim Ali Centre for Ornithology and Natural History (SACON). Based on the action research done and currently underway and the empirical data collected between 1995 and the present by SACON, it is clear that the conservation of the Edible-nest Swiftlet can only be achieved when economic benefits accrue to nest collectors in particular and local people in general (Sankaran and Manchi 2008).

A programme to conserve the Edible-nest Swiftlet in the Andaman & Nicobar Islands has been underway since 1999 and is being implemented by the Department of Environment and Forests, Andaman & Nicobar Islands and SACON. During Phase 1 (1999– 2002) and Phase 2 (2002-2009) and phase 3 (2009 – on-going), the conservation strategy that has been undertaken included: (a) organizing and motivating nest-collectors to protect caves round the clock for the duration of the breeding season, and (b) developing alternate populations of the Edible-nest Swiftlet in houses, both to increase populations as well as to augment livelihoods.

During 2000 and 2001, in-situ protection of the 29 caves bearing the Edible-nest Swiftlet population was established at two sites: 28 caves Chalis-ek, Ramnagar and one cave on the Interview Island in North and Middle Andaman Islands. During 2010 in the process of expansion, protection of 170 caves at Baratang Island was commenced. Nest collectors were organized and motivated for protection of the Swiftlet caves round the clock for over six to seven months to ensure successful breeding of swiftlets. Incentive to

the erstwhile nest poachers to effectively protect caves in which the Edible-nest Swiftlet breed, had been that they would be allowed to harvest the nests once breeding has been completed.

Research and monitoring is continually undertaken in the caves under protection, by marking all nests and daily monitoring. The population was estimated on the basis of nest counts (Medway 1962 and Kang et al. 1991). 168 Caves at Baratang Island were surveyed to measure estimate the difference in the population in the absence of protection

A simple method for the conservation of swiftlets in houses has been devised, where existing structures in which the non-commercial Glossy Swiftlet nest are developed and renovated or new structures are built so as to attract the Glossy Swiftlet. Eggs of the commercially important Edible-nest Swiftlet are then transferred from specifically protected caves to the nests of the Glossy Swiftlet, who act as foster parents by incubating the eggs and rearing the young Edible-nest Swiftlet. As swiftlets are parochial, the young Edible-nest Swiftlet returns to the house and when mature begin nesting there, a new population of the Edible-nest Swiftlet is established. As the house is `owned', and as it is in the best interests of the owner to manage his swiftlets scientifically, the population is safe and secure from indiscriminate nest harvesting, and therefore grows. Swiftlet ranching generates significant revenue for local economies as well as considerable employment opportunity both in swiftlet houses as well as in the cleaning, processing and packaging of swiftlet nests.

On the basis of the results from priliminary survey during 1997 predicted the species will be nearing extinction within 12-15 years in the Andaman and Nicobar Islands. Implementation of the conservation program designed has resulted in positive changes on the ground. After a sharp decline in population, 29 protected caves exhibited 52% of significant growth in Edible-nest Swiftlet population. In all 29 caves, 10874 chicks fledged from 8010 protected nests between 2001 and 2010 (Figure 1). Additionally, 444 chicks were fledge during 2000 from 260 nests protected in a cave at Interview Island and 427 nests protected in 168 caves at Baratang Island during 2010, resulted in the successful fledging of 598 chicks.

In 28 caves at Chalis-ek the population of Edible-nest Swiftlet showed consistent growth of 98.69% (n = 460) between 2001 and 2010. 6589 protected nests yielded the successful fledging of 7730 chicks. After a 56.67% decline in population since 1997, 260 breeding pairs were observed in one cave at Interview Island in the year 2000 when protection commenced. 2590 chicks fledged from 1681 nests between 2000 and 2010.

Overall a downfall of 73.68% (n= 2109; Sankaran, 1998) in nest numbers was recorded in 168 unprotected caves (Figure 2). The unprotected populations of Edible-nest Swiftlets in 16 caves at the Interview Island and 152 caves on Baratang Island showed 78.06% (n = 310) and 72.93% (n = 1799) decline respectively between 1997 and 2008. This depicts an estimated loss of approximately 2,249 breeding pairs (4498 individuals) out of the 3,716 breeding pairs (7433 individuals) recorded in 1998 (Sankaran, 1998)

throughout the Andaman and Nicobar Islands. Around 60.5% of the caves at Baratang were abandoned by the species.

Efforts of the e*x-situ* conservation at Tugapur house resulted in the commencement of nesting and breeding during 2007. One fully constructed and two incomplete nests of the Edible-nest Swiftlets were observed in the house. Egg laid in the fully constructed nest resulted in the unsuccessful breeding attempt. After required renovation of the house again two nests were observed during 2011.

The outputs from the efforts in in-situ and ex-situ conservation were severely affected during the coarse of time mainly due to the inclusion of the species in the list of Scheduled-I, high priority species list, of Indian Wildlife Protection Act (1997).

Precisely, the Edble-nest Swiftlet conservation program designed with the involvement of the local nest collectors and local forest department has proved to be the best way towards conservation and sustainable usage of this high value natural resource.

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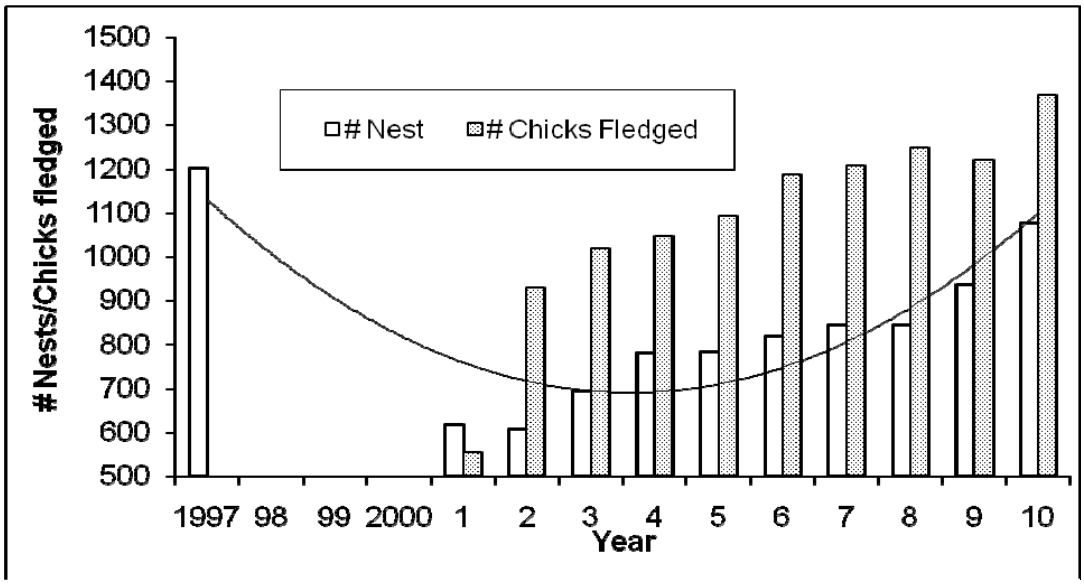

Figure 1. Population trend of the Edible-nest Swiftlet in 29 protected caves between 2001 and 2010

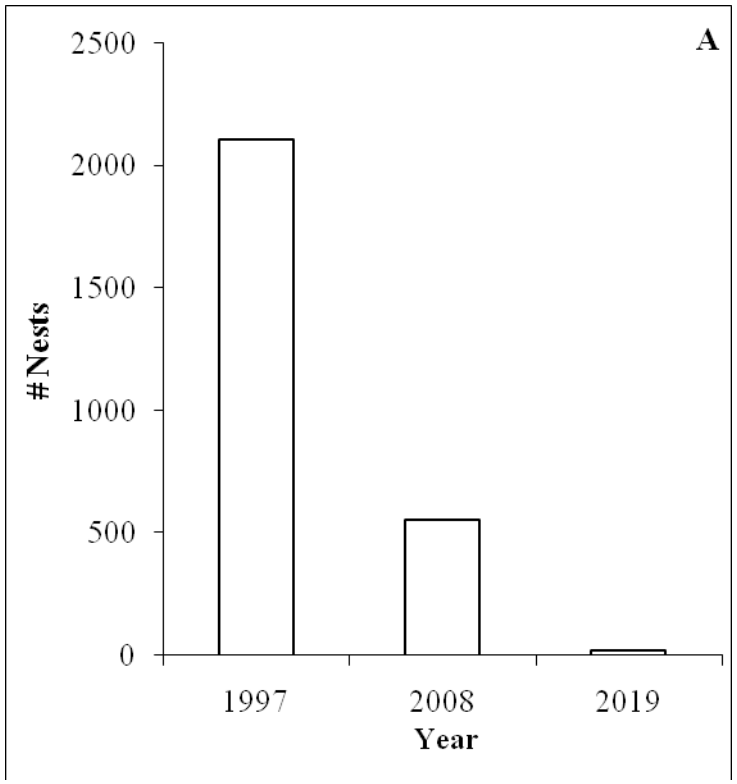

Figure 2. Populatio trend of the Edible-nest Swiftlet in 168 unprotected caves between 1997 and 2008