Chapter 5

Discussion

This study was attempted to compile information on all of *S.magna* and their habitat. However, since *S. magna* is a rare species, it was difficult to find them, and this limited the amount of data that could be collected.

Foraging: *S. magna* preferred to forage on *Pinus kesiya* significantly more frequently than of other tree species. They may forage on ground because paper was found in their nest, which was assumed that this paper was tourist garbage on the ground.

Habitats: Coniferous forests support a low diversity of bird species. Only one species, Giant Nuthatch (*Sitta magna*), appears to be restricted to pine, or more precisely to the pine – hill evergreen forest in Northern Thailand. The results give an indication that under distributive conditions of constrained dispersal in forest types (coniferous forest and mixed coniferous forest), habitats of *S. magna* in other countries were also coniferous forest (Bird Life International, 2003).

The sampling plots were laid in coniferous and mixed coniferous (oak-pine forest) in Chiang Dao forest. Tree species with the highest IVI scores were *Pinus kesiya, Castanopsis diversifolia* and *Lithocarpus sootepensis*. This agrees with Li et al (1982) who reported that in China, the *S. magna* inhabits coniferous forest and mixed coniferous and broadleaf forest at 1,000–2,000 m and they found that in Myanmar the species is also rarely found far from pine forest, being almost entirely limited to areas in which large mature *Pinus kesiya* are present, generally between 1,200 – 1,800 m.

Breeding behavior: *S.magna* foraged alone from June to November. The male left their territory to follow female for mating; they foraged in a group (3-5 *S.magna*), if successful, they separated from a group for nest building. *S.magna* copulation usually follows pair formation during nest building period and before egg-laying period. Wallace (1963) report that some birds copulation is usually repeated at frequent intervals during the breeding season, mainly before and during egg-laying period in order that the eggs may be fertile.

Nest: The nests of *S. magna* were found in two forest type (coniferous and mixed coniferous forest). In coniferous forest found *Pinus kesiya* of a greater DBH (212cm) of upper emergent layer height (25m tall), habitat with a high number of tree of upper middle canopy layer (11-15m tall). In mixed coniferous forest found in live tree was *Lithocarpus sootepensis* and dead tree was in unknown species. The live tree is greater DBH (219cm VS 176cm) and higher (15cm VS 10cm tall). These are variable characteristic, and these are implied that *S. magna* used empty suitable cavities.

Parental care: Males and females shared in caring for the young. There was strong correlation between nestling ages and frequency of feeding bouts. Feeding rates of male and female, morning period was peak number of feeding and slump in afternoon. Rosenblatt (2003) found that parental behavior is based on reciprocal stimulus interaction between the parent and the offspring and includes behavior directed at the nest, eggs, and developing young.

The nestling fledged at 22.67 day old average (three nests) about March – April, which was in agreement with the observations of Livesey (1998) found nest early April

1933 contained three half-fledged young and was sited in a natural hole in a tree-trunk, about 2.1m from the ground. Li et al (1982) discovered a nest in early April 1983 in a hollow 8m high in an oak tree (*Quercus* sp), the nest hole was about 3 m off the ground where the trunk diameter was about 25cm.

The parents choose deeper cavity for nest (34 cm depth in average) for protected the nestling easy climbed out the cavity. The nestlings fledged at 22.67 day of age (in average), at this time, the nestling were completed feather, and fly for foraging by themselves. The parents willing to tolerate for their offspring for longer-lived and expected to place greater value in their own survival and future breeding opportunities, conform to *Sitta canadensis* invest for their own survival and future breeding opportunities which were observed by Ghalambor and Martin(2000).

Responses to playback: The variation in response strength was explained by the structural similarity between respondent and stimulus calls. This correlation could be caused by a preference to interact with known stimulus birds whose calls have converged during prior associations (Sandra et al. 2003). They conducted interactive playback experiments on foraging flocks of orange – fronted conures (*Aratinga canicularis*) and found that orance-fronted conures were significantly more likely to land, approach, and interact vocally with playback of chee contact calls recorded from nearby sites than they were with contact call stimuli recorded from more distant sites.

S. magna on Doi Chiang Dhao did not respond to the calls of the same species recorded at another location. This result has been recorded for other species Wright and Dorin (2001) examine the responses of 11 pairs of Yellow-Naped Amazon

(*Psittaciformes amazona*) the same roost, or the roost within the same dialect, and roost in foreign dialect areas, and found that overall pairs responded more strongly to duets from their own dialect than to those of the foreign dialect.