Chapter 6

Conclusion

S. magna was a rare bird species with less than ten individuals at Den Ya Kad site. It can be concluded that *S. magna* foraged mostly in the daytime. They performed comfort behavior in the afternoon more frequently than in the morning. *S. magna* performed comfort behavior on branches and perches more often than tree trunks. *S magna* foraged by climbing down and by climbing up along tree trunk and along tree branch. *S. magna* preferred *Pinus ke*siya more than other tree species for foraging even when the number of other species was significantly higher than that of *Pinus kesiya*. *S. magna* foraged in groups of 3-4 birds in their territory, sometimes alone or with other *S. magna* groups. *S. magna* started courtship behavior in November till to October; they mated and separated from groups to build their nest. *S. magna* used cavities in *Pinus kessiya*, *Lithocapus sootepensis* and dead tree (unidentified species), for nesting building at heights of 10-25 m above the ground. Availability of cavities in living trees is not a limiting factor. This study presents the first report of *S. magna* using a dead tree for cavity nests. *S. magna* used lichens, moss, animal hair and paper to line the nest cavity. They did not seal the entrance with mud.

Interesting patterns of vocal communication such as individual recognition, begging calls which base call innate. *S. magna* nestlings developed their call into complete or nearly adult call in 20-21 day of age. They made alarm calls perched near cavity nest to alert birds to approaching predators. The alarm call was rough repeatedly.

Four patterns of calls between male and female in mating period could be distinguished. These calls were made when the birds were perched on or clinging to a tree trunk.

Communication in birds is primarily by sight and sound. The ability to analyse behavior and sound has been enhanced and were used in bird's observation. Male birds used their melodious calls to both attract females and defend their territories against rival males. Birds call is innate but can change after by learning. Intra-specific birds calls were a bit different which each bird was recognize together. Learning and experience are important to call development of bird. Base of birds call from innate, when hatching birds call begging at first, next nestling hear their parent call, they can remember and develop till call perfectly.

The mature forest stand and diverse tree species of coniferous forest with suitable nesting and foraging habitats are essential requirements for *S. magna*, which specialized nesting and feeding habits and greater importance in preserving their habitat, which to be in agreement with small number of species (Less than ten *S. magna* in study area or only three nest found).

Planning on the large scale of Chiang Dao wildlife Sanctuary offers opportunities to achieve multiple objectives. This research was conducted in Chiang Dao Wildlife Sanctuary. I am the officer of this sanctuary. The *S.magna*'s data also support comprehensive zoning plan for each protected areas so that ecotourism and other human activity. These data can support Chiang Dao Wildlife Education Center for development of captive breeding program to save this species from extinction.

S. Magna has unique general behaviors. This research could lead to better ways to observe the birds which foraging along tree trunk and used cavity nest and may help other researcher to observe in other place, moreover, *S.magna*'s data can be used to encourage private sectors to support for *S.magna* conservation efforts.