

## Project Update: October 2010

This second progress report is being submitted as, the breeding season of white-napped tit (*Parus nuchalis*) is about to complete. Now we will start surveying the other areas in the southern Aravallis to map the distribution range and assess the population of the species. This period is selected for survey as the newly fledged young ones can also be recorded.

### i. Success, if any after putting up the nest boxes:

White-napped tit breeds from May-September (pre-monsoon to end of monsoon), when other invertebrates and insects also breeds to bring out their progeny. This bird is totally insectivores and chosen this season to breed because of the more availability of the food material to nurture its young ones. As part of experimental conservation action, we had put up 45 nest boxes at different place in Aravalli hills of south Rajasthan at the beginning of the breeding season so as to make these birds get habitual to the nest boxes.

Nest boxes were meant to act as a conservation measure, mainly to enhance the availability of nest hole for the bird. The efforts did not go waste as we started getting success, as the birds started exploring these boxes that were placed in some of their breeding ground i.e., in Rajpura village in Kumbhalgarh Wildlife Sanctuary and Banki forest area just outside Udaipur (**Table 1**).

**Table 1: Details of Nest boxes used as a Conservation Measure in the Bird's Habitat**

S.no.	Place	Explored boxes	Box used for nesting	Box for probable nesting	Not occupied or Abandoned	Nest boxes used by competitors	Total
1	Rajpura*	30	6	-	11	13	30
2	Baanki	8	1	--	5	2	8
3	Bathera	--	--	--	5	5	5
4	Udaipur	--	--	--	2	--	2
5	Rajpura**						6
	Total	38	7		22	20	50

**Rajpura\*\*** six modified nest boxes have been placed and monitoring is in progress.

**Rajpura\*** one box was lost that was later recovered and modified.

### ii. How many nest boxes the birds explored?

Different pairs of the bird frequently explored 38 boxes out of 50 boxes, but till now only seven pairs occupied the nest-boxes. We suspect that one male has probably involved in breeding twice, which is based on color pattern and place it roosts. This clearly needs to be studied by ringing the birds. As of now we take it as one pair that has bred twice and chosen the **Nest Box # B: 10**. First and **B: 9** on the second occasion. We have placed these nest boxes on *Prosopis cineraria* and *Ziziphus mauritiana* trees on a riverbed respectively at a height of 2.5m facing west directions to protect it from direct sunlight falling into the nest hole in the morning hours. The tree with **B: 10** was situated along a dry riverbed and surrounded by *Acacia leucopholea* and *Acacia senegal* mixed thorn forest whereas tree with box **B: 9** that were in the middle of the dry riverbed had tree cover on the banks

Third nest box (**S: 25**) was on the *Acacia catechu* tree at a height of 3.2m. This tree was surrounded by dense *A. senegal* mixed thorn forest, with a dense *Capparis decidua*, *Capparis sepiaria* and *Balanites aegyptiaca* shrub layer. Fourth box (**S: 33**) was placed at a height of 1.3m from the ground level on *Acacia leucopholea* tree. The nesting tree habitat was dense *A. senegal* and *A. leucopholea* mixed thorn forest on hill slope with *Euphorbia* mixed *A. pendula* shrub layer and grass cover of c.70%. Fifth Box (**B: 3**) was placed on *Acacia senegal* tree at a height of 3m. Three birds were

exploring this box but Brahminy Starling was also keeping on disturbing the birds. Sixth box (**S: 19**) was placed on *Bauhinia racemosa* tree at a height of 2.3m. This area is quite open in comparison to other nest box site, but this particular tree was located in an open patch surrounded by dense *Acacia* and *Balanites*, *Capparis* mixed thorn forest. The seventh nest box **B: 14** was placed on a *Gmelina arborea* tree at a height of 3.1m and surrounded by dense *A. senegal* mixed thorn forest with dense shrub layer.

### **iii. How many nest boxes have been used for nesting?**

In total eight pairs of the bird had explored 38 boxes but only six pair occupied and construct nest in seven nest boxes and succeed in the form of fledgling come out. All the nest boxes had a brood size of 3-4 and success rate of hatchlings coming out was 100%. One male probably had bred twice in the season with different female partners using two different nest boxes within its territory.

### **iv. Whether competition was there?**

Competition is a natural phenomenon in all type of ecosystem and among all species but unexpectedly white-napped tit (*Parus nuchalis*) was facing major threat from five-striped palm squirrel (*Funambulus pennantii*), Indian bush rat (*Golunda ellioti*), and an ant species (Unidentified) and from a bird species i.e. Brahminy starling (*Sturnus pagodarum*). We were expecting intra-specific competition from chestnut-shouldered petronia and Brahminy starling (*Sturnus pagodarum*) but it has come from a different order i.e. from a mammal species. Though few boxes have been occupied by Brahminy starling (*Sturnus pagodarum*), and by an ant species, five-striped palm squirrel (*Funambulus pennantii*) was the menace for the breeding success of white-napped tit as they not only occupy the nest boxes but also make the holes bigger that allows other large bird species to occupy.

### **v. If yes, then what were the species?**

Five-striped palm squirrel (*Funambulus pennantii*) has become a major threat to this species in its habitat. Eight nest boxes were occupied by Brahminy starling (*Sturnus pagodarum*), two by an ant species and five by this squirrel species, otherwise all nest boxes have been explored by white-napped tit (*Parus nuchalis*).

### **vi. Has any thing been done to check competition?**

After monitoring the presence of squirrel and rat in most of the nest boxes, we decided to modify the nest box and therefore modified six nest boxes by covering them with a thin aluminum sheet around the nest hole of the box. Finally we have placed them in bird's territory and monitoring is in the process. Thin aluminum sheet will act as a barrier for squirrel and rat species to get a hold on the nest box and thus our experiment to keep away these two species being monitored to see whether it would work. In this way total 50 boxes have been placed in tropical thorn forest present in southern Aravalli hill range.

### **vii. Whether communities are aware of the nesting success of the bird in their area?**

One of our field assistants who belong to a local community is spreading words among different communities about the nesting success of this species in the area. Local communities are very receptive about their ambience and cooperate fully in the conservation programme; they also keep an eye on the nest boxes while grazing their livestock in the forest areas.

Future plan after this breeding success of the bird will include surveying the other areas, for assessing the population, preparing distribution maps and creating more awareness in other areas of southern Aravalli hills where this bird is present.

