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ASIA-PACIFIC FORESTRY WEEK 2011

New Challenges - New Opportunities

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*Featuring*

# FOREST NEWS

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# Contents

## TIGERPAPER

Observations of Black eagle nesting in Sri Lanka.....	1
Accommodation of aquaculture and conservation together: Example from community-based aquaculture in seasonally waterlogged areas of Noakhali, Bangladesh.....	5
Portrait of community mapping stages through zoning system on management of Teluk Cendarawasih NP, West Papua.....	13
Tree diversity and biodiversity conservation potentials in Khadimnagar NP of Bangladesh.....	20
Diversity of odonates in Nandankanan Zoological Park with range extension notes of White dartlet in Orissa, India.....	29

## FOREST NEWS

Challenges and opportunities to feature at Asia-Pacific Forestry Week 2011!.....	1
State of the world's forests.....	4
UN-REDD approves US\$15.2 million for five countries.....	7
Restructuring of the FAO Regional Office for Asia and the Pacific.....	8
Generating income for coastal communities from sustainable management of mangrove resources.....	9
Sustainable community-based mangrove management in Wunbaik Forest Reserve.....	11
Asia-Pacific Forestry Chips and Clips.....	13
Transferring practical skills to forestry professionals in China..	14
National forest assessment project in Vietnam approved.....	15
FAO Asia-Pacific Forestry Calendar.....	16



## TIGERPAPER



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### TIGERPAPER

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**Front cover:** Young Black Eagle in its nest, high up on the wild mango tree (Photo courtesy of Madhava Meegaskumbura)

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## ***OBSERVATIONS OF BLACK EAGLE (*Ictinaetus malayensis*) NESTING IN SRI LANKA***

by Pradeep Samarawickrama, Krishan Ariyasiri, Udeni Menike, Niroshan Samarasingha & Madhava Meegaskumbura



*A Black Eagle perched close to its nest, though it is generally understood that these eagles rarely perch, the authors observed one bird sitting for nearly 50 minutes (Photo courtesy of Krishan Ariyasiri)*

Observing a perched Black Eagle is considered to be a rare occurrence; even one of Sri Lanka's greatest ornithologists, G. M. Henry, never observed one perched. But its slow and elegant flight has caught the attention of many naturalists, including that of Henry's. In his article to the *Journal Nature*, more than a half a century back, he noted, "I have never seen it perched, and the feature of its flight that has particularly struck me is the slowness with which it can sail without any wing-flapping, even when it finds itself in a deep pocket among the trees where it would seem inevitable that it must either crash or extricate itself by flapping flight. It seems to be able to avoid stalling even at what appears little more than walking pace, and certainly at very low speeds." (Henry, 1933).

But it wasn't the unusual slowness of flight that led us to the discovery of a Black Eagle nest, but rather

a piece of nesting material from one of its favorite prey items, the squirrel. In February 2010, three of us initially noticed the fluffy material from the inner linings of a squirrel nest hanging from a tree, while hiking in Gannoruwa forest reserve in Kandy. Pradeep's previous experience in observing many raptor nests alerted his senses – when the squirrel nesting material splayed across a branch was discovered – to the possibility of a raptor nesting close by. Confirming his hunch, upon closer scrutiny he discovered an eagle nest about 10m above where the squirrel nesting material lay.

A nest, containing a single fairly well developed young eagle was located towards the top of a tall tree (*Mangifera zeylanica*), a tall, endemic and threatened Sri Lankan wild mango tree species, located within Gannoruwa forest reserve, Peradeniya, Sri Lanka. This was well within the wet-

zone, an area which gets over 2000 mm of annual rain, at an altitude of about 800 m. On the tree the nest was ensconced just below the canopy. Two sides of the crown were more or less open, determining the direction of the flight path. As is the usual case, the parents used the north-facing gap to arrive at the nest and the east-facing gap to leave the nest. Directly above the nest was also a smaller opening, which the parents used to descend vertically in an emergency.

Emergencies were few and far between and we observed them using the emergency entrance only once, when a group of Torque Macaques (*Macaca sinica*) – generally considered a nest predator of small birds – came to the vicinity of the nest. The alpha male climbed up close to the nest and shook one of the branches, to which the young Black Eagle responded by puffing up its feathers and giving an alarm call. This was followed up by the rapid arrival of the parents, descending vertically. The macaques dispersed quickly and hid well within the undergrowth of the forest until the eagle parents withdrew from the vicinity of the nest. Gunawardena (2001), also noted Black Eagles chasing a different species of monkey, the Purple-faced Leaf Monkey (*Trachypithecus vetulus*).

Black Eagles also defend their nests against other raptor species. During our period of observation, we saw them attacking a White-bellied Sea Eagle, in flight.

Sometimes we observed one of the parents sitting on nearby trees for long periods; on one occasion for as long as fifty minutes. These long perch times were rather surprising for a bird species that almost never perches. This leads us to speculate that these eagles only perch close to their aerie. So if you see a perched Black Eagle, perhaps it would make sense to scrutinize the area for a nest.

The wild mango tree was mostly covered by *Drynaria quercifolia*, an epiphytic fern that has a wide distribution from Southeast Asia to Sri Lanka. Their luxuriant growth right around the trunk is an indication that large mammals, including humans, have not been climbing/using this tree for sometime, as climbing would cause the ferns to fall off. For the eagle young, the selection of such trees by their parents may have survival



A Torque monkey (*Macaca sinica*), a nest predator of birds. (Photo courtesy of Madhava Meegaskumbura)

significance. It would be useful to note if these epiphytes are also observed on trees that have other raptor nests. The presence of *Drynaria* (or other epiphytes) would also camouflage the nest and perhaps also facilitate the positioning of the nesting material on the large branches on which the nest is built.

A single nest site of a Black Eagle had been located prior to this, in Dolukanda forest reserve, Kurunegala, in the intermediate zone, an area that gets less rain than Gannoruwa and located at a lower elevation (Fernando *et al.*, 2001). Observations were carried out (Gunawardena, 2002) at the same site. Observations were made from November to February, over three months, from an estimated incubation time of 35-40 days and a further 60 days for successful development to a juvenile capable of flight.

We only discovered the nest that we observed in Gannoruwa when the juvenile had almost reached the flight-capable stage. We made five trips to the nest over 12 days, observing from dawn till dusk. The nest was a large stage that lacked a well-defined brim, measuring about 1m in width and 0.5 m in height, made of branches and twigs. In these characteristics, the nest was very similar to those observed at Dolukanda.

During our periods of observation, we did not observe parents bringing in fresh green foliage to the nest, but we noticed some older green foliage that may have been placed a few days before,

lying within the nest. Many raptors line their nests with green foliage, including the nest observed at Dolukanda. Presumably, the absence of fresh green foliage at the Gannoruwa nesting site would have been due to the fact that the juvenile eagle was about to leave the nest.

It appears that the Black Eagle breeding season is towards the end of the year, as the young eagle left the nest in early February 2010. Presumably, if it is assumed that the Gannoruwa population had the same developmental period as the Dolukanda population, the Gannoruwa birds would also have initiated breeding in November.

We were not fortunate enough to see into the nest as it was about 15m above us, but the growing eagle was large enough to be seen from this angle. Nevertheless, to investigate the prey items that were brought into the nest, one of us had to climb a nearby tree that was covered with lianas (which camouflaged it from the eagles, and hence acted as a natural hide), and this tree was located 75 m away from the nest. A spotting-scope was set up on one of the branches.

We concur with Gunawardena's observation that these eagles mostly prey on small mammals, and not eggs and nestlings of other birds, as suggested by some. Most of the prey items that were seen at Gannoruwa were Palm Squirrels (*Funambulus*

*palmarum*), a wide-ranging squirrel also found in India, and a common rat species (*Rattus rattus*). In contrast to the Dolukanda observation, we did not observe Giant Squirrel (*Ratoufa macroura*) being preyed upon. This is mainly because Giant Squirrel is not very abundant in forests in this region, being only recently introduced to the area. We also observed that the parents feed on the remnants of the food items that were fed to the young, and nothing was wasted.

We have observed that *Rattus rattus* also nests within abandoned squirrel nests, even in South India. So rats may be an inadvertent part of the diet when Black Eagles hunt for squirrels. Squirrel nests are usually built on top of trees, using dead material that stands out against the background. Since the Black Eagle's flight is slow and controlled, this would enable them to skim and scrutinize the tree-tops, helping them to target squirrel nests with accuracy. It seems that evidence is mounting to highlight the fact that Black Eagle is a top squirrel predator.

It is difficult to determine whether the squirrel nests are transported to the nest as additional nesting material to line the nest, or to extract immature squirrels within the nest, or both.

We also observed that the young eagle had a curious behavior when it defecated. It usually



The nest, with *Drynaria* growing on the *Mangifera zeylanica* tree. (Photo courtesy of Pradeep Samarawickrama)

moved towards the edge of the nest, raised its vent above its head and forcefully sprayed out the fecal matter, often towards the direction of the steepest slope, well away from the nest. The absence of a well-defined brim to the nest perhaps helps this behavior. This action would help keep the nest clean. We are not sure how the nest was kept clean during the early stages of development, but lining the nest with foliage, as most raptors do, would presumably help keep it clean.

The young bird left the nest on February 17, 2010. This was after much preparation for flight, not only by the young eagle but also with encouragement by the parents over several days. Rapid flapping by the young bird started about seven days prior to flying; sometimes precariously holding on to the edge of the nest. The parents reduced the amount of food that they brought to the nest, making only 1-3 daily visits. However, they could be heard and be seen around the nest, calling wildly as they approached the nest and leaving it.

On the day that the young eagle left the nest, one of the parents perched on a nearby tree for about 45 minutes while the other circled the nest with a food item dangling from its claws; both were

calling periodically. The young eagle, after much stretching, flapping, and head bobbing, jumped out of the nest onto a branch about 1m above the nest. It then remained on this branch for about two hours, stretching its wings, flapping vigorously several times. Finally it jumped onto a thicker branch momentarily and took flight, mostly gliding off into the distance, to be lost to our sight. Once the young eagle left the nest, the family remained in the vicinity of the nest for the next two weeks, but never really came back to the nest.

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*One of the parent eagles bringing a rat to its nest. (Photo courtesy of Niroshan Samarasingha)*