

OCCURRENCE OF WHITE-WINGED WOOD DUCK (*CAIRINA SCUTULATA*) IN NAMERI NATIONAL PARK, ASSAM, INDIA¹

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Abstract. Nameri National Park is a part of the North Bank Landscape of Brahmaputra River as designated by World Wildlife Fund and located near Assam and Arunachal Pradesh; it also is a part of the Eastern Himalayan Bio-diversity Hotspot. A survey conducted during 2008-2009 logged 337 avian species and from that effort a detailed checklist of birds was compiled. Included was White-winged Wood Duck (*Cairina scutulata*), which is considered an endangered species (2010 IUCN Red List Category as evaluated by Bird Life International). Herein we describe the ecology and distribution of White Winged Wood Duck in Nameri National Park, based on this survey.

Key words: India, Nameri National Park, White Winged Wood Duck

FRECUENCIA DEL PATO *CAIRINA SCUTULATA* EN EL PARQUE NACIONAL NAMERI, ASSAM, INDIA

Resumen. El Parque Nacional Nameri forma parte del Paisaje de la Orilla Norte del Río Brahmaputra designado por el Fondo Mundial para la Naturaleza y ubicado cerca de Assam y Arunachal Pradesh; también forma parte del Hotspot de Biodiversidad de los Himalayas Orientales. Un conteo llevado a cabo en 2008-2009 registró 337 especies de aves, y de ese esfuerzo surgió una lista detallada de aves. La lista incluye al pato *Cairina scutulata*, considerado especie en peligro (categoría de la lista roja de la UICN evaluada por BirdLife International). Aquí describimos la ecología y distribución de *Cairina scutulata* en el Parque Nacional Nameri en base a este conteo.

Palabras clave: India, Nameri National Park, pato de ala blanca

INTRODUCTION

The White-winged Wood Duck (*Cairina scutulata*) is identified as an endangered species by the International Union on the Conservation of Nature (IUCN). Little is known of this species

and, therefore, we conducted a survey of Nameri National Park to better understand its habitat preferences and population status. Like most areas in North-East India, Nameri has been inadequately surveyed for avian species. No

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published checklist of the birds of the park exists, although some literature relates to birds in the neighboring Pakhui Wildlife Sanctuary of Arunachal Pradesh (Datta et al.1998; Singh 1991, 1994). Bird species from Nameri are recorded in Talukdar (1997), Talukdar and Das (1997), Dymond (1998), Hendriks (1998), and Barua and Sharma (1999); see also the IUCN Red List (Bird

Life International 2004). We conducted fieldwork in all seasons from 2008 to September 2009 and herein report our results.

DESCRIPTION OF NAMERI NATIONAL PARK

Nameri National Park (26°50' 48" to 27°03' 43" N, 92°39'00" to 92°59' 00" E) covers 200 km² in the foothills of the eastern Himalayas in Assam (Fig. 1).

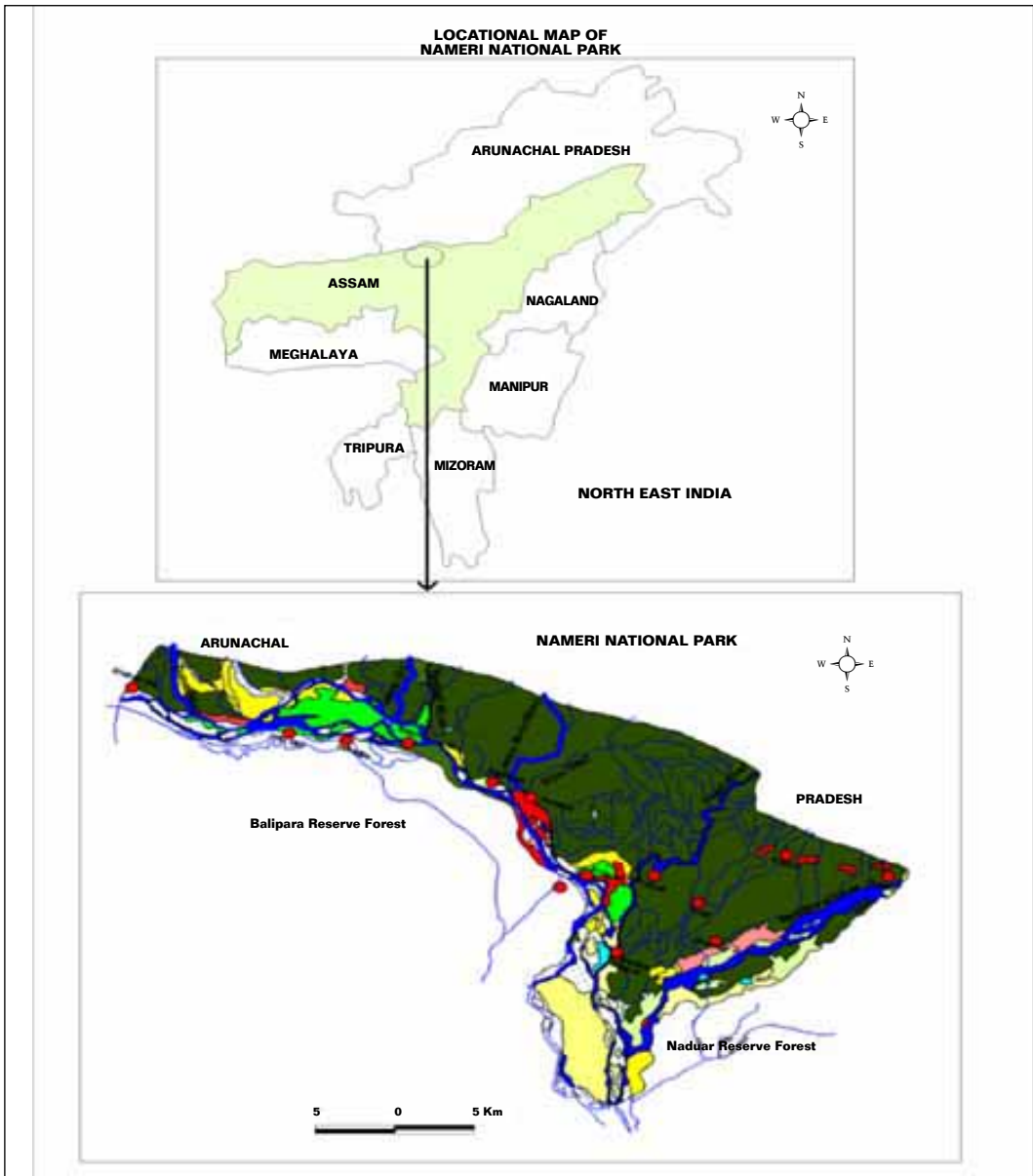


FIGURE 1. Geographic aspects of Nameri National Park.

It is contiguous with Pakhui Wildlife Sanctuary in Arunachal Pradesh to the north, and together they exceed 1,000 km² with an elevation ranging from 79 m to >1500 m. The park is bounded by the Bor-Dikorai River and Sijussa forest camp in the east. Its western border is marked by the Jia-Bhorelli River, adjacent to Balipara Reserve Forest, while its northern border is contiguous with Pakhui Wildlife Sanctuary of Arunachal Pradesh. The southern border is marked by the confluence of Jia-Bhorelli and Bor-Dikorai rivers. The park is criss-crossed by the tributaries of Jia-Bhorelli River, namely Diji, Dinai, Doigurung, Nameri, Dikorai, Khari etc.

The terrain is undulating; lower areas, 80–100 m, occur along the Jia-Bhorelli and its tributaries, and higher areas, 200–225 m, occur in the central and northern parts of the park. Soils are characterized by sandy or sandy loam alluvial deposits. Numerous small rivers and perennial streams originating in Arunachal Pradesh run through the park and feed into the Jia-Bhorelli River. Many rivers shift their course during the rainy season and form dry riverbeds during the winter. Forest and woodland cover the majority of the park (94%, 188 km²). Grasslands are found along the banks of the Jia-Bhorelli River and its tributaries and cover an area of 10 km² (5%). The remaining 2 km² (1%) is formed by various river beds. Nameri is covered by tropical evergreen, semi-evergreen, and moist deciduous forests, with cane and bamboo brakes and narrow strips of open grassland along rivers. Grasslands comprise <10% of the total area of the park; semi-evergreen and moist deciduous species dominate the area. The vegetation of the park is a mosaic of four major forest types (Champion and Seth 1968): (1) eastern alluvial secondary semi-evergreen forest, (2) low alluvial savannah woodland, (3) eastern dillenia swamp forest, and (4) wet bamboo forest (usually found along streams or on badly drained hollows), with areas of cane brakes formed by *Calamus tenuis*. Orchids include *Dendrobium*, *Cymbidium*, ladies slipper etc.; tree ferns, lianas and creepers are some of the specialties of this forest.

The subtropical monsoon climate of the region is characterized by heavy rainfall with an annual average of 3500 mm. The predominance of the southwest monsoon causes precipitation to be highly seasonal (Barthakur 1986). Most of the

rain falls between May and September, which forms the summer (hot) season. Winters (October to April) are usually cool and dry, although rains are not uncommon. The average temperature varies from 5°C in winter to 37°C in summer. The relative humidity is high, and varies 65-90% or more. Parts of the area were declared as Naduar Reserve Forest (Present East Buffer) in 1876 and Nameri Wildlife Sanctuary in 1985. The Nameri National Park was formed in 1998.

RIVERS AND WATER BODIES

The Jia-Bhorelli River forms the western boundary of the national park; its basin covers an area of 11,716 km² and lies between 26°37' to 28°0' N and 92°0' to 93°25'E (Table 1, Fig. 2). It originates in the great Himalayan ranges at an elevation of 4520 m and traverses a total distance of 247 km through mountain, hills and plains until reaching its confluence with the Brahmaputra. Perennial waters of numerous feeder streams coming from different ranges feed the Jia-Bhorelli River. The basin falls in the state of Assam and Arunachal Pradesh accounting for 6.7 % of the total catchments area of the Brahmaputra River system. Out of its total basin area, 10,239.8 km² (87.4%) lies in the hills of Arunachal Pradesh and 1,476.2 km² (12.6%) in the plains of Assam. The Jia-Bhorelli basin, with a truncated base, has a maximum length of 157 km and a maximum width of 143 km. In the Nameri National Park, Jia-Bhorelli River and its flood plain covers an area of 163.4 km², which is 1.39% of the entire Jia-Bhorelli basin. The river traverses a distance of 62 km from Bhalukpung, situated from Assam Arunachal Pradesh border, to its confluence with the Brahmaputra River just near the Bhomoraguri hill near Tezpur (Bora and Goswami 1988).

DESCRIPTION OF THE SPECIES

The White-winged Wood Duck is a large duck, with a black body, a white head thickly spotted with black, conspicuous white patches on the wings and red or orange eyes. Its average length is ~81 cm. The male has more gloss on the plumage and is much larger and heavier than the female. The usual call of the male is a trumpet-like cronk, while the call of the female in flight is a whistle. Its voice, distinctive and ghostly, accounts for the Assamese name 'Deo Hans' or

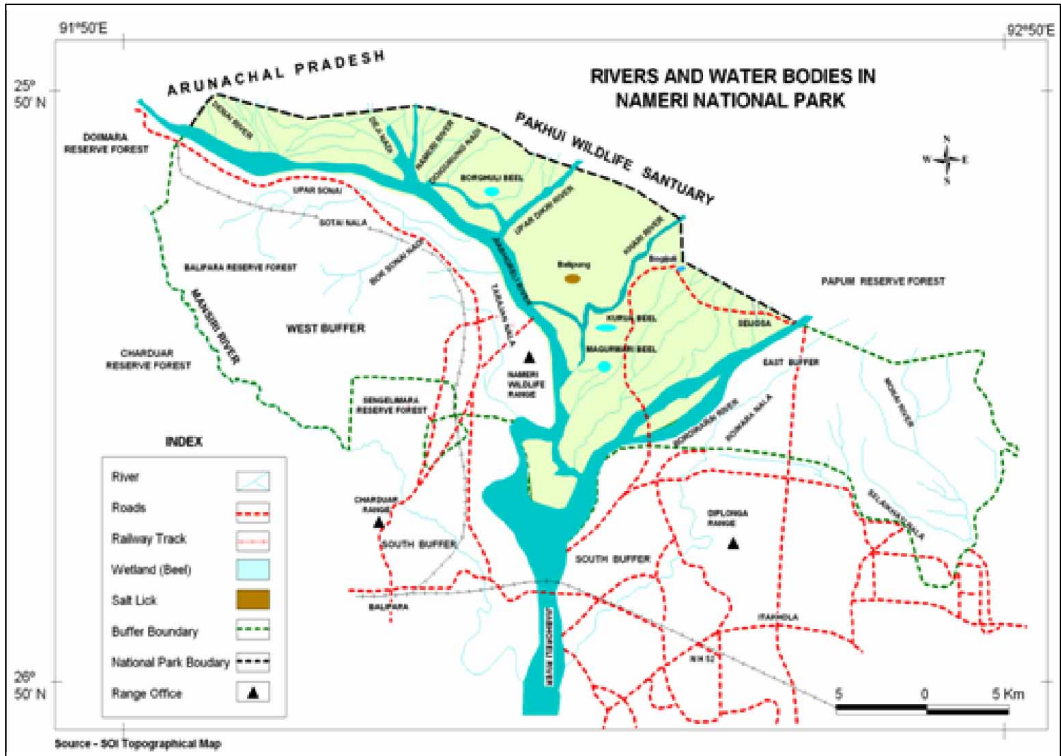


FIGURE 2. Rivers and water bodies in Nameri National Park.

Spirit Duck. In Burma, it is called '*Mandali*', and in Indonesia '*Itik Hutan*', or Forest Duck. It is one of the most endangered birds in the world, but was once distributed widely across north-east India and south-east Asia. But now only about 800 survive in the wild, of which about 450 are present in North-East India. In India, the duck is limited to Assam and Arunachal Pradesh.

The White-winged Wood Duck is essentially a resident of the dense tropical evergreen forest. It prefers to live in inaccessible swampy areas formed by numerous rivers, streams, crocks etc. This duck is generally found in pairs or in small parties of four to six, though parties of >10 have been recorded. It is a shade-loving bird remaining in secluded jungle pools, occasionally perching on the trees during the day. Each pair of White-winged Wood Ducks needs approximately 250 acres of habitat in order to breed. It breeds in the hollows of trees, during summer months.

This duck moves to its feeding ground in open waters after dusk and remains active throughout the night. Adults are largely omnivorous. The food consists of plant and animal material, aquatic plants, seed of wild and cultivated plants, aquatic insects, crustaceans, molluscs, frogs, snakes and fishes. The ducklings seem to start feeding entirely on small animals, progressively expanding their diet to include insects, worms, small snail and fish.

CONSERVATION STATUS

In the beginning of the 20th century this species was very common in south-east Asia. However, during the latter half of the century this duck has largely disappeared. In 1951, the bird was declared to be one of the most threatened species of the ducks of North-Eastern India, by the Indian Wild Life Board and was placed on the special protected list.

In 1997 it was estimated that there were only 450 birds left in the wild, spread between Laos,

TABLE 1. Water bodies, i.e. potential wood duck habitat, of Nameri National Park, based on the Survey of India Topographical Map and researchers' field observations; these areas were visited during our surveys.

Water Course	Nature	Location
CORE AREA		
Jia-Bhoreli River	Perennial	All along the western boundary of the Nameri National Park
Dihaiapur Nala	Perennial	Tributary of Jia-Bhoreli river
Diji Nadi	Perennial	Tributary of Jia-Bhoreli River
Nameri Nadi	Perennial	Tributary of Jia-Bhoreli River
Doigrung Nadi	Perennial	Tributary of Jia-Bhoreli River
Upar-Dikrai Nadi	Perennial	Tributary of Jia-Bhoreli River
Khari Nadi	Perennial	Tributary of Jia-Bhoreli River
Bogijuli Nala	Perennial	Tributary of Jia-Bhoreli River
Koilajuli Nala	Perennial	Tributary of Jia-Bhoreli river running through the area between Bogijuli Nala and Bor-Dikorai river.
EAST BUFFER		
Bor-Dikorai River	Perennial	Tributary of Jia-Bhoreli River along the eastern boundary of the Park
Boimara Nadi	Perennial	Tributary of Jia-Bhoreli River through Nauduar Reserve Forest
Monai Nala	Perennial	Tributary of Ghiladhari River starting from Nauduar Reserve Forest
Selaikhathi Nadi	Perennial	Tributary of Ghiladhari River
Monai and Chota	Perennial	Tributary of Ghiladhari River
WEST BUFFER		
Ghiladhari River	Perennial	Along the Eastern Boundary of Nauduar Reserve Forest
18th mile Nala	Seasonal	Tributary of Jia-Bhoreli River
Upar -Sonai Nadi	Perennial	Tributary of Jia-Bhoreli River
Chotai Nadi	Perennial	Tributary of Uper -Sonai Nadi
Bor-Sonai Nala	Perennial	Tributary of Jia-Bhoreli River
Tarajan Nala	Perennial	Tributary of Jia-Bhoreli River

Thailand, Vietnam, Cambodia, Indonesia (Sumatra), India (north-eastern part) and Myanmar (IUCN). It is thought to now be extinct in Malaysia and Java.

The severe decline in the duck's population is largely attributed to the destruction, degradation and disturbance of riverine habitats, including loss of riparian forest corridors owing to human activity. The resultant small, fragmented populations are vulnerable to extinction due to loss of genetic variability, disturbance, hunting and collection of eggs and chicks for food or pets. More local threats to the bird include inappropriate forest management, and pollution.

World Wildlife Fund-India is working to conserve the habitats of White-winged Wood Duck through its Western Arunachal Pradesh and North Bank Landscapes programmes in Arunachal Pradesh and Assam, respectively. Captive breeding programs have had success in

increasing the captive population, but little success in benefiting the wild population. A few of the captive bred ducks were able to be released into the wild, but rarely is this possible.

RESULTS

Nameri is one of the few areas where this species has been recorded outside its main stronghold in the Dibru-Saikhowa Biosphere Reserve in Dibrugarh and Tinsukia districts, where we now estimate a population of 200 individuals (out of a total Indian population of 300–350 individuals; Islam and Rahmani 2002). As a result of our surveys, it appears that three wetlands, in addition to perennial rivers and streams, namely Borghuli Beel, Kurua Beel, Magurmari Beel (dry courses of Jia-Bhorelli River), comprise the habitat of White-winged Wood Duck in the park (Fig. 3, Table 2). Sightings were fairly regular and evidence of

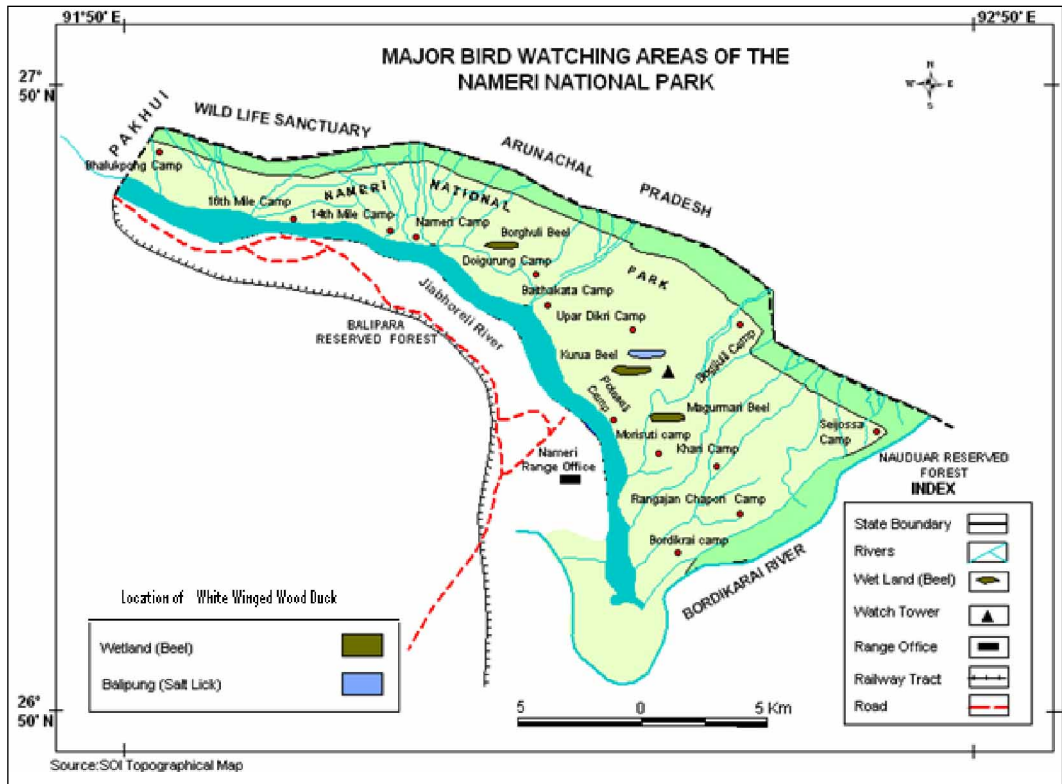


FIGURE 3. Wetland and salt lick locations where White-winged Wood Ducks were found in 2008-09.

TABLE 2. Wetlands, with area, where White-winged Wood Ducks were seen in 2008-09.

Name of wetlands	Area (km ²)	Seasonality
Borghuli Beel	0.20	Only in winter
Kurua Beel	0.30	Throughout the year
Magumari Beel	0.30	Throughout the year
Near the confluences of Diji and Khari river	0.60	Only in winter
Near the edge of the high forest in Bogijuli area	0.20	Throughout the year

breeding was obtained when 11 ducklings were seen on 17 November 2006 with two adults along with a small group of Oriental Darter (*Anhinga melanogaster*) in Borghuli Beel (secluded wetland).

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