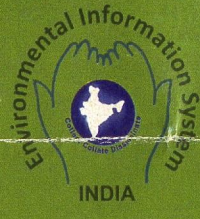




सत्यमेव जयते



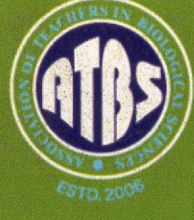
मानवो ज्ञानेन संपन्नः  
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INDIA



॥ बुद्धिर्मानसं शुद्धयति ॥



ESTD 2006

# Wetlands

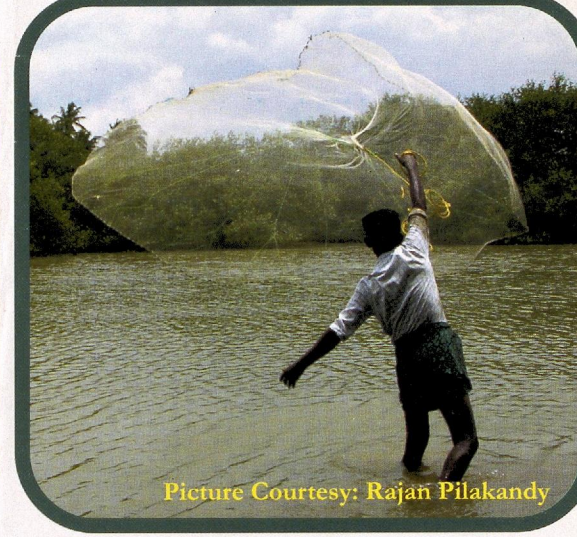
## Ecology & Conservation



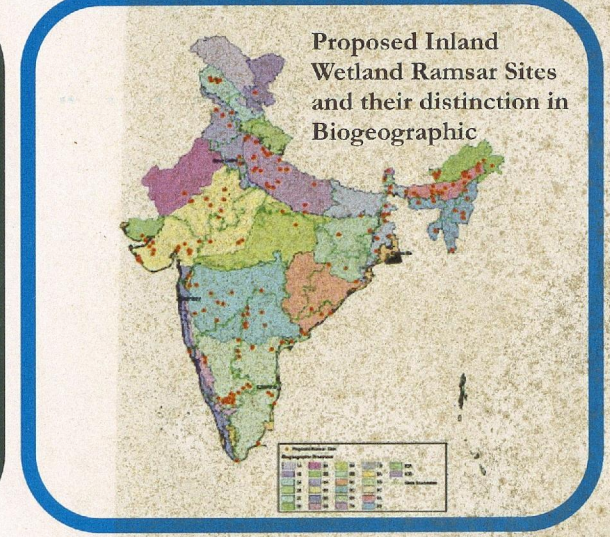
Picture Courtesy: Pankaj Koparde



Picture Courtesy: K Ganesan



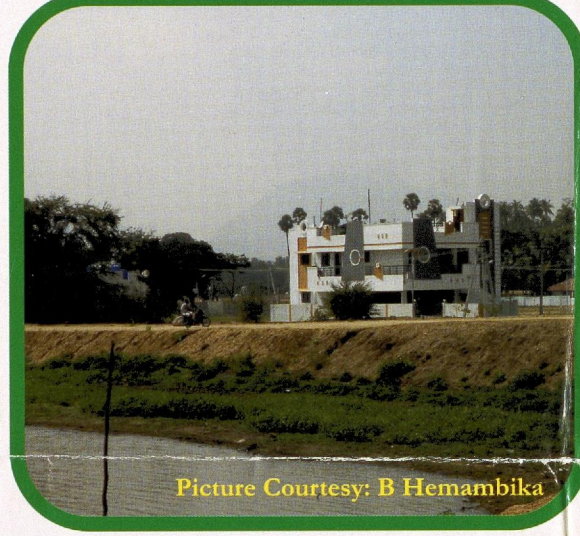
Picture Courtesy: Rajan Pilakandy



Proposed Inland Wetland Ramsar Sites and their distinction in Biogeographic



Picture Courtesy: M A RajaMamannan



Picture Courtesy: B Hemambika



Picture Courtesy: V Kirubhnanandhini



Picture Courtesy: Malvika Puntombekar

### India's Existing Policy, Frameworks and Programmes for Wetlands, Coastal and Marine Ecosystems

No.	Year	Acts/policies/programmes
1	1897	Indian Fisheries Act
2	1908	Indian Ports Act
3	1927	Indian Forest Act
4	1958	Merchant Shipping Act
5	1972	Indian Wildlife (Protection) Act [Amended in 1983, 1986, 1991, 1997, 2011]
6	1974	Water (Prevention and Control of Pollution) Act
7	1976	Maritime Zones Act
8	1978	Coast Guard Act
9	1978	Marine Fishing Regulation Act
10	1980	Forest (Conservation) Act (Amended in 1988)
11	1982	Coastal Pollution Control Series
12	1986	Environment (Protection) Act
13	1991	Coastal Regulation Zone Notification (under EPA 1986)
14	1991	Coastal Ocean Monitoring and Prediction Systems
15	1995	National Environmental Tribunal Act

No.	Year	Acts/policies/programmes
16	1994	United Nations Convention on the Law of the Sea
17	1996	Coastal Zone Management Plans
18	1997	National Environment Appellate Authority Act
19	1998	Ocean Observation and Information Services
20	1998	Integrated Coastal and Marine Area Management Project
21	1998	Turtle Excluder Device
22	1998	DOD Programme on assessing marine life beyond 70m depth
23	2002	The Biological Diversity Act
24	2004	Expert Committee to review CRZ Notification 1991 (Headed by Prof. M.S. Swaminathan)
25	2005	The Coastal Aquaculture Authority Act
26	2006	National Environment Policy
27	2008	National Biodiversity Action Plan
28	2010	Wetland (Conservation and Management) Rules
29	2011	Coastal Regulation Zone Notification
30	2011	Island Protection Zone Notification

Source: J.R.Bhatt, Ritesh Kumar and K.Kathiresan 2013 Mangroves in India : their biology and uses pp. 3-32

# Brow-antlered Deer

**Other Common English Name(s):** Eld's Deer, Thamin

**Local Name:** Sangai

**Scientific Name:** *Rucervus eldii eldii* **Family:** Cervidae

**Height at shoulder:** 105 to 120 cm **Average Weight:** 170 kg

**Lifespan:** 10 years (Maximum)

**Diet:** Water plants, grasses, herbaceous plants and shoots

## Description

The brow-antlered deer is a medium-sized deer with extremely long brow tine, which form the main beam. The two tines form a continuous curve at right angles to the closely set pedicels. This signifies its name, brow-antlered deer. The antlers of the opposite sides are unsymmetrical with respect to each other. The beams are unbranched initially whereas curvature increases as length increases and they get forked. The sexes are moderately dimorphic in body size and weight.

## Habitat

Dancing Deer prefer to stay in open Indian parkland areas or light woodland, which are near to rivers or wet marshy land. The Loktak lake population in Manipur, India, inhabits an area of floating marsh called locally "phumdi". This population has adaptations of the feet which are thought to help the animals move easily in their marshland habitat

## Distribution

The global Sangai deer population is currently very localised to small areas within the species' former range and is now confined to a single small population at the southern end of Loktak Lake in Manipur, India.

## Threats

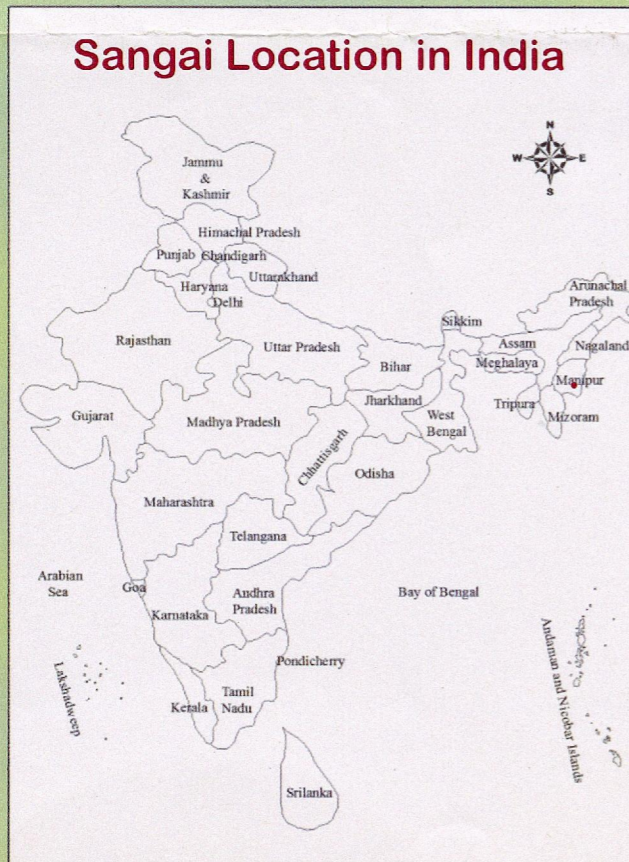
A combination of hunting and habitat loss, as the habitats of the deer have been encroached for grazing, cultivation, fish farming, risk of disease transfer from domestic livestock and a hydro-electric project in Loktak Lake. There may also be the threat of low genetic diversity resulting from the effect of a very small founder population.

## Conservation Status

**Indian Wildlife Protection Act:** Schedule I

**IUCN Status:** Endangered

**CITES:** Appendix I



# Sangai

Picture Courtesy: L Joykumar Singh



**ENVIS Centre on wetland ecosystems including inland wetlands**

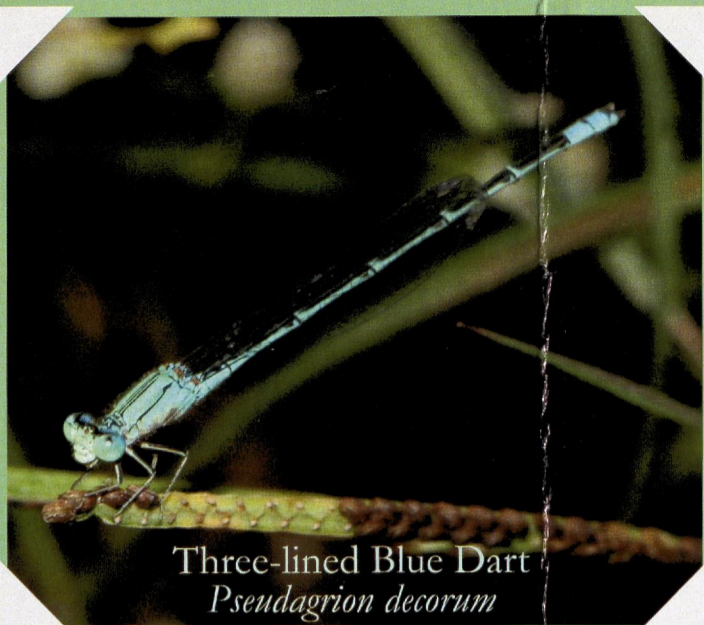
Poster Concept by Dr. Goldin Quadros, Dr. B. Hemambika and Ms. A. Julffia Begam. Design by Ms. A. Julffia Begam. Poster Published by Dr. P. A. Azeez (Director, SACON) for SACON ENVIS Centre, Map Courtesy: N. Mohamed Ibrahim. Acknowledgments to Dr. Asha Gupta, Manipur Cental University for technical suggestions  
Sálim Ali Centre for Ornithology and Natural History, Anaikatty, Coimbatore - 641 108, Tamil Nadu. PH.: 0422 2203100 E-mail: sacon-env@nic.in; staff.envis@gmail.com Website: www.sacon.in; www.saconenvis.nic.in

Poster No.: SACONENVIS#009/22-03-2015

# Odonates - Guardians of Wetlands



Stream Ruby  
*Rhinocypha bisignata*



Three-lined Blue Dart  
*Pseudagrion decorum*



White Dartlet  
*Agriocnemis pieris*



River Heliodor  
*Libellago lineata*



Emerald spreadwing  
*Lestes elatus*



Coromandel Marsh Dart  
*Ceragrion coromandelianum*

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Damselflies predate on smaller insects and are good ecological indicators.

## International Day for Biological Diversity

May 22, 2015



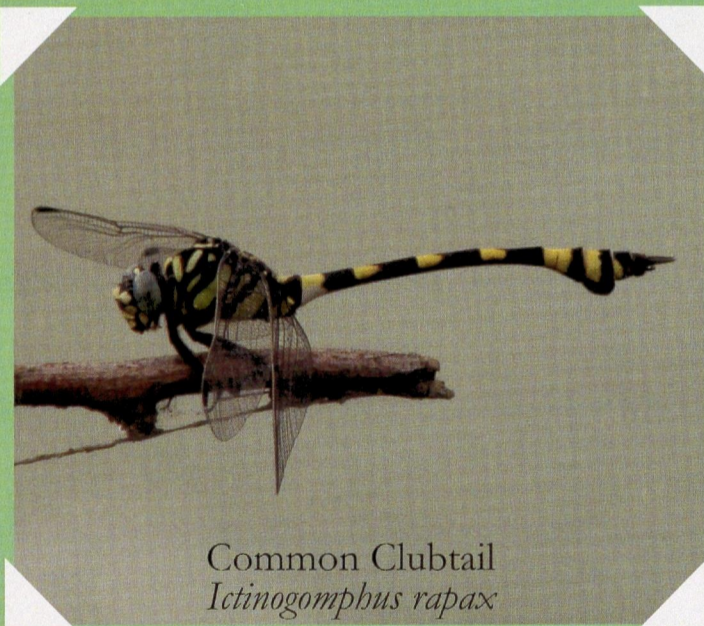
22 MAY 2015  
INTERNATIONAL DAY  
FOR BIOLOGICAL DIVERSITY  
BIODIVERSITY FOR SUSTAINABLE  
DEVELOPMENT

## ENVIS Centre on

wetland ecosystems including inland wetlands

*Don't let species go extinct! We are all Linked...*

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Common Clubtail  
*Ictinogomphus rapax*



Trumpet Tail  
*Acisoma panorpoides*



Brown-backed Red Marsh Hawk  
*Orthetura chrysis*



Yellow-tailed Ashy Skimmer  
*Potamaracha congener*



Blue Darner  
*Anax guttatus*



Asiatic blood tail  
*Lathrecista asiatica*

Dragonfly larvae are aquatic predators; whereas adults are aerial predators.

Poster Concept by Dr. Goldin Quadros, Dr. B. Hemambika, Ms. A. Julffia Begam and Mr.A.Srinivasan. Design by Ms. A. Julffia Begam.

Published by Dr. P. A. Azeez (Director, SACON) for SACON ENVIS Centre,

Sálím Ali Centre for Ornithology and Natural History, Anaikatty, Coimbatore - 641 108, Tamil Nadu. PH.: 0422 2203100

E-mail: sacon-env@nic.in; staff.envis@gmail.com Website: www.sacon.in; www.saconenvis.nic.in. Picture Courtesy: Pankaj Koparde

# Barasingha

## Swamp Deer

Scientific Name: *Rucervus duvaucelii*

Family: Cervidae

### Sub species

*R. d. duvaucelii* (G. Cuvier, 1823) (Wetland Barasingha): Indo-Gangetic plain, north of the Ganges: Nepal, India, and, where extinct, Pakistan.

*R. d. branderi* (Pocock, 1943) (Hard-ground Barasingha): central India, between the rivers Ganges and Godavari.

*R. d. ranjitsinhi* (Groves, 1982) (Eastern Barasingha): Brahmaputra plain;

Height at Shoulder: 115 to 135 cm

Weight: 170-180 kg

Average antlers: 76 cm round the curve with a girth of 13 cm at mid beam

Life span: Probably no more than 20 years. The breeding season: extends from September to April.

Diet: Grasses and aquatic plants, primarily on *Saccharum*, *Imperata cylindrica*, *Narenga porphyrocoma*, *Phragmites karka*, *Oryza rufipogon*, *Hygroryza* and *Hydrilla*.

### Description

The barasingha's hair is rather woolly and yellowish brown above but paler below, with white spots along the spine and males being slightly darker than females. The throat, belly, inside of the thighs and beneath the tail is white. During the summer, the pelage lightens, and some populations develop faint spots on the back and sides and become bright rufous-brown. The neck is maned. The underparts, including the underside of the tail, are whitish. There is a dark dorsal stripe, on each side of which may be a row of light spots. The smooth antlers are worn only by males, and have a crown-like look with the points concentrated near the tips of the arching antler beam. Young are spotted. As the barasingha's name suggests, there may be 12 or even up to 15 points per head (6-8 on each antler), with each antler growing up to 1 meter / 3.3 feet in length. The barasingha is the only deer species known to be monestrous, with females coming into heat only once every year.

### Habitat

Grasslands, Swamps (North & North East India) and sal forest in Central India.

### Threats

Habitat degradation is still problematic within protected areas supporting Barasingha. Grass, timber and fuelwood cutting, by local people, degrade the surviving habitat, which lies mostly within protected areas, and external threats include change in river dynamics due to human developmental activities, increase in siltation and reduced flow of water during critical periods of summer.

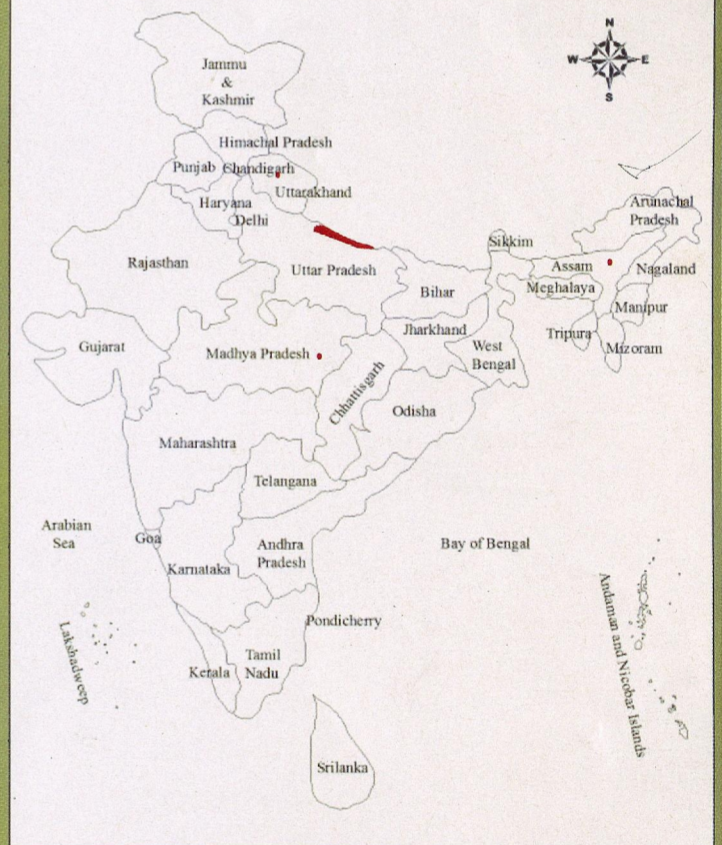
### Conservation Status

Indian Wildlife Protection Act: Schedule I

IUCN Status: Vulnerable

CITES: Appendix I

### Barasingha Location in India



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Map Courtesy: N. Mohamed Ibrahim. Poster Published by Dr. P. A. Azeez (Director, SACON) for SACON ENVIS Centre,

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