

Project Update (March/April 2009): Spatial modeling and preparation of decision support system for conservation of biological diversity in Orang National Park, Assam, India

Orang National Park with an area of 78.8 km² is situated in the Brahmaputra flood plain of the Darrang District of Assam, India. Orang National Park is an integral part of Brahmaputra flood plain of Indo-Burma biodiversity hotspot. The key mammals found in this park are Greater Indian One Horned Rhino, the Royal Bengal Tiger, Pigmy Hog, and Barking Deer.

Orang National Park is one of the last strongholds of the Indian Rhino with a total population of 68 rhinos in the year 2006. It is also a potential habitat for Royal Bengal Tiger. In respect of avifaunal availability, both migratory and local birds viz. Peacocks, Bengal Florican, Hornbills, King Fisher and Woodpecker are common in this national park. So the importance of Orang National Park in respect of conservation of biodiversity is quite high. Hence, a proper scientific approach to conserve and properly manage this rich biodiversity area is an utmost necessity.

Until now, comprehensive scientific research in this park has not been initiated to manage the wildlife habitat as well as the resources available within the park. Similarly, a systematic database on the resources available, habitat pattern and habitat utilization by different species within the park is not available for proper management of the park. So considering all these factors, this project intends to study the habitat

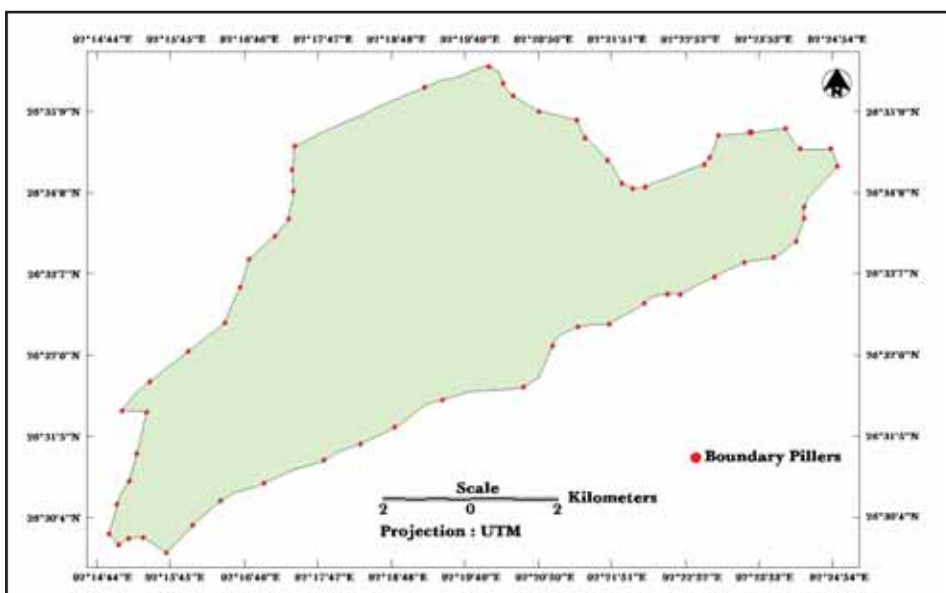
patterns and their utilization by different species, niche overlap of habitat by herbivores and carnivores and also create a comprehensive geo-spatial technology based database for the entire park area to assist managers to manage the national park based on sound information base and applied science.

The habitat patterns and their utilization by different species in Orang National Park will be estimated using recent dated high resolution remotely sensed data (satellite imageries) as well as ground based data that will be collected from the study area during ground data collection period. At the same time a systematic database (infrastructure, habitat patterns, available resources, etc) will be created for the entire national park using GIS and GPS technology which will act as a decision support system in near future to conserve the biodiversity of this important national park of India.

The project began on 1 March 2009 and the progress to date is as follows:

Establishment of field station

A field station has been established in collaboration with the state forest department inside the Orang National Park for collection and analysis of data. A computer has been procured and already installed in the field station. The field station has all the logistic



Left: Boundary map. Right: Personnel at the field station

facilities for four personnel.

Recruitment of field staff

One field assistant has been recruited for data collection. He will be based at the field station in Orang National Park during the whole project period. His name is Mr. Ajit Kumar Basumatary. He has a M.Sc. in Geography from Gauhati University, Assam, India.

Boundary demarcation

In regards to the generation of the GIS database, the boundary of the park has already been demarcated and digitized using proper global coordinate system.

Assistance has been taken from the project adviser Dr. Bibhab Kumar Talukdar and Mr. Jayanta Deka, Range Officer, Orang National Park for collection of GPS points and ground control points (GCPs). Satellite imagery (IRS P6 LISS IV) of the study area has already been ordered from National Remote Sensing Centre, Hyderabad and by the first week of May it will reach Aaranyak.

Preparation of Road Map

The road map of Orang National Park is progressing. Hopefully it will be completed by May, 2009.

Article and photos: Pranjit Kumar Sarma

New window into the life of Javan Rhinos: WWF Indonesia Programs

What do the Javan rhinos do during the night? In wallow holes? When rearing the young? When facing competition? These questions are no longer mysteries to the rhino researchers in Ujung Kulon National Park.

Automatic video cameras (video trap) installed in every corner of rhino habitat in Ujung Kulon National Park enable park and population managers to look closely into the behaviour of these rhinos in the existing habitat.

Although it is still premature to construct a robust list of Javan rhino behaviour, recent data from video footage show different activities performed by 14 individual rhinos in Ujung Kulon National Park.

These activities consist of: movement (walking, head movement), resting (sitting/standing still, sleeping), wallowing, aggression, and even social activities between mother and the calf.

Behaviour data packaged as a set of activities (ethogram) is initiated as a part of deeper understanding of the life of the Javan rhino.

A new window of observation made possible by the use of video trap equipment enhances existing information of individual Javan rhino, for it now provides baseline information on how rhinos behave in their habitat.

This information is the key to further study of the well being of the rhinos, as behaviour has been used as indicators of the health of many other species.

Furthermore, recent video trap data also enables us to observe basic physiology of the rhino: the respiration rate. Respiration rate can suggest if the animal is under resting, normal, or distress conditions.

Recent data shows that the respiration rate of the Javan rhino is between 11 and 29 breaths per minute which is similar to that of white rhino (16-23 breaths per minute) under normal condition.

The possibility for assessing the health of the Javan rhinos is now waiting to be explored.

Article and photo: Adhi Hariyadi

