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Front cover: An adult Saltwater crocodile (*Crocodylus porosus*) taking a sunbath at a muddy bank. The tip of the upper jaw was chipped off in a territorial fight. (Photo: Shingo Onishi)

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TRANSLOCATION OF RHINO IN ASSAM

by Bishen Singh Bonal, Bibhab Kumar Talukdar and Amit Sharma

The conservation of the Great Indian one-horned rhino (*Rhinoceros unicornis*) is being regarded as the epitome of the conservation movement in Assam. Assam is also regarded as the last stronghold of the Indian rhino with a wild population of over 2,000 rhinos in Assam. Planned conservation initiatives in terms of rhino conservation in Assam led by the Department of Forest made it possible for the rhinos to build up their population to 1,855 in Kaziranga National Park, 68 in Orang National Park and 81 in Pabitora Wildlife Sanctuary. However, losses and subsequent extermination of rhino by poachers were witnessed during periods of social unrest in the early 1980s in Laokhowa Wildlife Sanctuary and in Manas National Park during the 1990s. Although the rhinos were exterminated from Laokhowa and Manas during the social unrest, the land remained under the Forest Department and that is how the concept of the Indian Rhino Vision 2020 came to the forefront during the year 2005. The political solution that came into being in the Manas area included autonomy given to local people in the form of the Bodoland Territorial District Council; the support from the local communities has helped to revive Manas back to its past glories. The Assam Forest Department explored the possibilities of bringing rhinos back to Manas from other rhino habitats in Assam with the International Rhino Foundation, WWF-India and other similar agencies. This would be a step towards Manas regaining its status as a full fledged World Heritage Site, rather than the current recognition as a "World Heritage Site in Danger."

The Government of Assam constituted the Rhino Task Force in June 2005, incorporating conservationists from diverse backgrounds, from government as well as non-governmental organizations, to make the dream drafted under IRV 2020 into reality. The first meeting of the Rhino Task Force was held in November 2005 at Guwahati. The preliminary plan of action was

prepared and the budget needed to initiate the work to enable re-introduction of rhinos in Manas National Park and other rhino habitats within the state was estimated. At the first meeting of the Rhino Task Force it was decided to set up two sub groups, namely the Security Assessment Group and the Habitat Assessment Group. The responsibility of the Security Assessment Group (SAG) was to assess the current state of the security and support needed to strengthen the security in Manas National Park, Laokhowa Wildlife Sanctuary, Orang National Park, Burachapori Wildlife Sanctuary and Dibru-Saikhowa National Park where rhinos could be translocated. The responsibility of the Habitat Assessment Group (HAG) was to assess the current state of the habitat in Manas National Park, Laokhowa Wildlife Sanctuary, Orang National Park, Burachapori Wildlife Sanctuary and Dibru-Saikhowa National Park and whether the sites were still suitable for rhinos.

Accordingly, the HAG made an in-depth assessment of the habitat in the probable release sites, including the existing rhino-bearing areas, and recommended Manas National Park as a priority site for rhino translocation. The salient findings of the HAG are summarized in Table-1.

Similarly, the SAG assessed the security scenario in the probable rhino release sites in Assam and recommended certain measures that need to be adopted for Manas National Park for the first phase of translocation under the IRV 2020. The salient suggestions that were put forward by the SAG are as follows:

1. *Improving the status of the anti-poaching infrastructure*

- About 12 anti-poaching camps need to be operational in the identified core zone for release of translocated rhinos.

- Manpower redistribution is needed to strengthen the anti-poaching camps.
 - Communications equipment (transport as well as wireless networks) needs to be in place and strengthened.
 - The southern boundary road, along with some roads inside the Manas NP, needs to be operational.
2. **Identified encroached areas in the Manas NP under the Bhuyanpara and Panbari ranges should be cleared. This is necessary to maintain the sanctity of the park.**
 3. **An intelligence network should be created immediately for it to become effective within a year's time.**
 4. **Immediate steps must be taken to improve the morale of the staff by providing basic training on legal matters as well as anti-poaching.**
 5. **A strong communications/education programme should be initiated to send clear messages to the communities.**

The Manas National Park authorities took every step suggested to improve the security scenario of

Manas and in the meeting of the Rhino task Force held on 23rd November 2007 at the Assam State Zoo, the Field Director of Manas National Park assured the members of the Rhino Task Force that the security scenario had improved and the park was close to being cleared to receive the first batch of translocated rhinos from Pabitora to Manas. Accordingly, the Rhino Task Force constituted a Translocation Core Committee (TCC) on 23rd November 2007 to carry forward the translocation in a timely manner. The mandates of the TCC as envisaged in the Task Force meeting included planning, execution and monitoring every detail involved in capturing, transporting, releasing and monitoring of the rhinos to be translocated from the source PAs to the target PA.

With the improving conditions in Manas and upon identification of potential rhinos to be translocated, the first phase was termed as training-cum-translocation and the decision was taken to translocate four rhinos from Pabitora WLS to Manas NP.

Detail functions and mandates of the Rhino Task Force can be seen in the chart below.

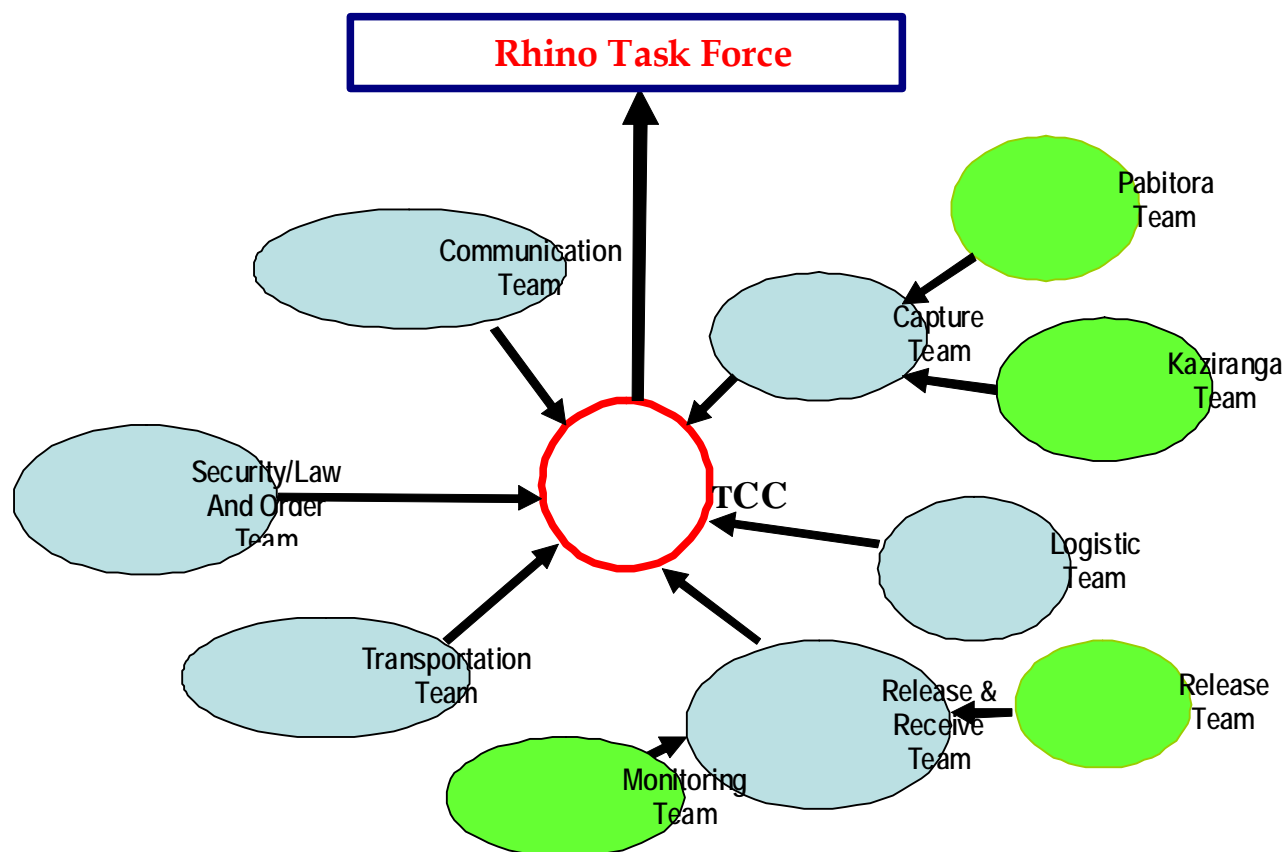


Table-1: Comparative statement of ecology of both target and source PAs

Parameters	Source PAs			Target PAs		
	Kaziranga NP	Pabitara WLS		Manas NP	Laokhowa – Burachapori-Kushmara	R.G. Orang NP
Habitat Status for Rhinos	SUITABLE	SUITABLE		SUITABLE	SUITABLE	SUITABLE
Area	859.33 sq km	38.8 sq km		519.77 sq km	135.71 sq km	78.80 sq km
Rhino population 1999 census	1552	74		-	-	46
2006 census	1852	81		-	-	68
Configuration	alluvial plain	alluvial plain		alluvial terrain and bhabar	alluvial plain	alluvial plain
Vegetation	Tropical moist mixed deciduous forests, Alluvial grassland	Tropical moist mixed deciduous forests, Alluvial grassland		Tropical semi-evergreen forests, Tropical moist and dry deciduous forests, Alluvial grassland	Tropical moist mixed deciduous forests, Alluvial grassland	Tropical moist mixed deciduous forests, Alluvial grassland
Grassland area (%) (Govt. data)	64.02	60.00		46.40	27.92 (Laokho) 62.77 (Burachai)	59.70
Wetland area (%) (Govt. data)	7.63	18.00		3.90	12.57 (Laokho) 4.72 (Burachai)	12.60
Source of water/wetland	River, Beels, Nallas	Beels, Nallas		Rivers, Ponds, Streams	River, Beels, Nallas	River, Beels, Nallas
Wallowing facility	Adequate	Adequate		Inadequate	Adequate	Adequate
Interference by domestic cattle	Low	High		Medium	High	Medium
Flooding	High	High		Low	High	Medium
Food availability	Abundant	Affected due to domestic cattle grazing		Abundant	Affected due to domestic cattle grazing	Abundant
Succession/ Siltation/ Erosion	Slow succession, Medium Siltation, Medium Erosion	Slow succession, Medium Siltation, Erosion nil		High succession, Low siltation, Low erosion	Succession in Laokhowa-Low Burachapori-High Medium siltation in both	Medium succession, Low siltation, Low erosion

The translocation operation

The process and activities involved with a translocation can be divided into three distinct stages:

- preparatory / planning stage;
- implementation (capture-transport-release); and
- post-release.

Preparatory stage: The first step in any process involves the detailed planning covering every aspect for successful implementation. For utilizing the benefits of all resources and manpower, the TCC prepared the following lists for the final event:

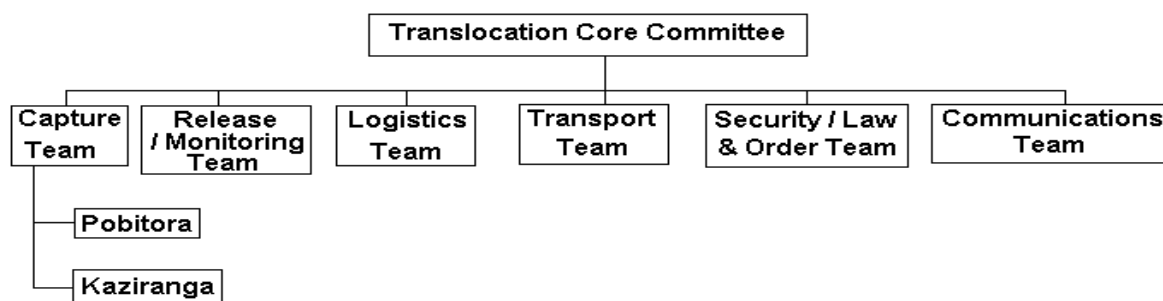
- Names of officers of the Forest Department, Assam (including retirees) who had prior experience of participating in the translocation operations in Nepal.
- Names of officers of Forest Department, Assam (including retirees) having experience in working in the PA's, especially in rhino-bearing areas.
- Veterinary doctors of Assam who had prior experience of participating in the translocation

operations in Nepal, as well as doctors experienced in handling wildlife.

- NGO's in Assam having experience of working with wildlife, especially rhinos.
- Reputed individuals having experience of working in wildlife in Assam, especially rhinos.
- Reputed individuals in India and abroad having relevant experience of working in wildlife and involved in translocations.
- Institutions of relevance.
- NGO's in India and abroad having relevant experience of working in wildlife and involved in translocations.
- A comprehensive list of trained elephants available with Forest Department of Assam, as well as trained private elephants having experience of working in rhino bearing areas.

After detailed discussions and keeping in view the various activities, seven sub- teams under TCC were formed with pre-identified responsibilities to carry out all activities successfully.

Chart 1 – TCC and sub-teams



Implementation stage: This stage includes locating the rhinos, capturing, transporting and then releasing the rhinos at the destination. Monitoring of rhinos has been going on in wildlife sanctuaries for the last year by the Assam Forest Department and WWF-India. The release site has been made ready by the Park authorities with the support of the IRV partners (WWF, IRF, USFWS and BTC) under the supervision of the TCC. Basic training on monitoring and radio telemetry was also organized for the staff of Manas NP at Basbari.

12-13 February were the initial dates fixed for capture and translocation, but due to the unavailability of drugs in time, the operation had to be postponed. The Task Force rescheduled the dates for 11-12 April 2008 for capture and release in Manas NP. Training in how to attach and operate radio collars was organized at Assam State Zoo using domestic cattle for demonstration.

On 11 April at Pobitora WLS, the area was cordoned off and full security cover was provided by the Assam Police Department and the Central Reserve Police Force (CRPF). The operation commenced at about 4.30 a.m., with the locators being the first unit moving out on elephant back to locate the pre-identified rhinos. After locating the rhinos, the other units viz. veterinarians / darters, radio collar and cordoning teams set off on elephant back to the identified area. The rhinos got alarmed by the approach of too many people on elephant back and escaped from the cordoned site. It was decided to allow only two elephants with the darting team to approach the rhinos and other elephants to be kept at a safe distance. This new strategy was successful and the first rhino, a male aged about 10 years, was successfully darted between Tuplung and Pagladova camp at about 8.30 a.m. and the tranquilized rhino was loaded into the crate. Before crating, all necessary screening and medical care was provided by the veterinary team, recording necessary details as per format and fitting a radio collar on the neck of the rhino. The crate with rhino was loaded onto the truck using a crane and backhoe loader. The rhino was quite aggressive in nature and made all possible attempts to break free from the crate, even after sedation. As this training-cum-translocation was being attempted for the very first time, it took a little more effort and time. By the time the first rhino was placed in the truck and parked in shade

it was almost 11 a.m. The success of the first attempt made the confidence of the whole team grow and all were now very eager to go for the second one. After resting for about half an hour, the team swung into action to capture the next rhino, which was located in the area between Pagladova and Nekerahabi camp. The second rhino, also a male, about seven years old, was darted at about 12.20 p.m. Following all necessary procedures, this rhino was loaded onto the truck by about 1.30 p.m. The experience of the first capture increased the efficiency of the team manifold with a more systematic approach as the driver of dodger, crane and truck did the job in a synchronized way. An attempt was also made to locate and capture a third rhino, a female, but as it was not successful and in view of the increasing temperature the capture operations were called off for the day at 2.00 p.m. The trucks loaded with the sedated rhinos were parked in shaded areas and the rhinos were watered at regular intervals to keep the animals cool and to protect them from the scorching temperature.

The movement of the rhinos in convoy started from Pobitora WLS at about 6.00 p.m. to Manas NP. It was an emotional moment when the convoy on leaving the Pobitora Wildlife Sanctuary was greeted by a huge number of local people at *Mayang*, who had gathered to catch a glimpse of “their” rhinos about to journey to a new home. The people cheered as the vehicle passed by and also requested to convey a message to the people of Manas to take proper care of the rhinos.

A police escort vehicle led the convoy with the rhinos, and the traffic in cities and towns along the route was regulated throughout the journey by the police to make way for the convoy to pass by. At Khanapara, weighing of the trucks with the empty crates as well as the fully loaded truck was done in order to get the weight of the respective rhinos. One of the rhinos weighed 1,570 kg and second one weighed 1,540 kg. The distance of 240 kms from Pobitora WLS to Manas NP was covered in about twelve hours due to the slow movement of vehicles in the interest of the comfort and safety of the rhinos. The veterinary team kept monitoring the rhinos at regular intervals and water was poured over them periodically to keep them cool. The vehicles in the convoy kept in contact with each other through walkie-talkies. The convoy

of vehicles carrying the two male rhinos stopped at Rangia for food and rest and ultimately reached Basbari, Manas NP at about 5.30 a.m.

The release team under the leadership of FDTP Manas made everything ready for the release and was ready to welcome the convoy with the rhinos at the gate of the park in Basbari. Four ramps were prepared for parking the trucks for the release and the trucks were placed accordingly in two adjoining ramps in the release site near Buraburijhar camp. The door of the first crate was opened for the rhino at about 6.15a.m., but the rhino took almost thirty minutes to come out of the crate to take its first steps in his new home. When the animal finally emerged from the crate it charged and hit a truck containing staffs and observers parked nearby, and then moved southwards into the grasslands. The second rhino did not take much time. Once the door of the crate was opened, it also charged the first truck and moved south-west towards the grassland. It eagerly fed on the grasses and initially moved west and then to the north. By 7.30a.m. both the rhinos had been released into the wilderness of Manas National Park to roam freely in its vast grasslands. Both the released rhinos have been fitted with radio collars and are being regularly monitored using the telemetry equipment.

Post-release stage: This period involves regular monitoring, patrolling and protection of the released rhinos in Manas NP. Regular monitoring of the rhinos in Manas is a continual process under the supervision of FDTP Manas and Deputy FDTM. The monitoring team at present comprises of three units of two frontline staff assisted by home guards and volunteers; the units will be increased with the release of more rhinos.

The patrolling activity has been strengthened and is effective round the clock through the efforts of the frontline staffs with the supporting strength of the Assam Forest Protection Force, Home Guards and Conservation Volunteers.

The rhinos are presently seen to be exploring the areas under Basbari range. The first rhino, designated Rhino1, moved towards the south and is using the areas along the southern boundary near Kasimdoha and Kureebeel. The second rhino, named Rhino2, moved towards the north and is mainly using the area near Charpoli camp. The laceration wounds observed in the rhinos at the time of release are now completely healed and both the rhinos are behaving normally and adapting well to their new environment.

The TCC will be regularly visiting the sites to overall supervise, assess, analyze and make any improvements that are considered necessary and also to utilize these experiences in the next phase of translocations to follow.

Conclusion

The success achieved in the first phase of the training-cum-translocation has strengthened the morale of all the people associated with the process, directly or indirectly. The first batch of two male rhinos translocated to Manas NP from Pobitora WLS is just the first step on the road to success of the IRV 2020 Program and to bring back the lost glory of Manas NP. By March 2009, the plan is to translocate another eighteen rhinos into Manas NP from both Pabitora WLS and Kaziranga NP to make it a viable breeding population in years to come. Hopefully, Manas is showing the way for other potential rhino habitat sites like Dibru Saikhowa, Laokhowa and Burachapori to be prepared for future rhino translocation.

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